

# Notes on Taiwanese Caraboidea (Coleoptera)

## VI. Redescriptions of Three Species of the Genus *Colpodes* MacLeay (Carabidae: Platynini)

Katsuyuki Terada<sup>1\*</sup>, Lan-Wei Yeh<sup>2</sup> and Wen-Jer Wu<sup>3</sup>

<sup>1</sup> Omiya 1-2-20-203, Nishi-ku, Hiroshima 733-0007, Japan

<sup>2</sup> Department of Agricultural Extension, Hualien District Agricultural Research and Extension Station, 150 Ji'an Road, Section 2, Ji'an Township, Hualien County 97365, Taiwan

<sup>3</sup> Department of Entomology, National Taiwan University, 1 Roosevelt Road, Section 4, Taipei 10617, Taiwan

(Received May 17, 2016; Accepted October 17, 2016; Published online December 31, 2016)

**Abstract.** *Colpodes acroglyptus* Bates, 1892, *C. punctatus* Jedlička, 1934, and *C. mixtus* Jedlička, 1940 are redescribed and illustrated.

**Key words:** Carabidae, *Colpodes*, Platynini, redescription, Taiwan.

### INTRODUCTION

Over 70 species of the tribe Platynini were recorded from Taiwan by several authors during the past decades (see Terada *et al.*, 2005; Terada, 2006). Above all, Jedlička's work is remarkable. He described 19 new species and one new subspecies of the genus *Colpodes* MacLeay from Taiwan and recorded many other species as well (Jedlička, 1934, 1939, 1940, 1952, 1954). However, most of them have not been studied in detail. Recently we had a chance to examine type specimens (as digital images) of several *Colpodes* species in Jedlička's collection preserved in the National Museum, Praha, Czech Republic and those in Bates' collection in Museo Civico di Storia Naturale, Genoa, Italy. We were thus able to identify some of the Taiwanese specimens in our collection.

Following Liebherr's study in 1998, many subsequent authors limited the genus *Colpodes* to certain species. For example, Bousquet (2003) did not use the generic name "*Colpodes*" for Palaearctic species and transferred a number of

*Colpodes* species including the Taiwanese ones to the genus *Platynus*. However, the genus *Platynus* was obviously defined by Schmidt's study in 2000 and therefore, Bousquet's treatment of Taiwanese *Colpodes* in 2003 is unacceptable. All of the *Colpodes* species hitherto known from Taiwan may need to be transferred to other genera except *Platynus*. However, comprehensive studies on the Taiwanese Platynini have still not been attempted. Therefore, we temporarily use the name *Colpodes* in the present paper.

Specimens used in the present study are deposited in the following places: NMNS (National Museum of Natural Science, Taichung, Taiwan); LYHT (L.-W. Yeh collection, Hualien, Taiwan); and KTHJ (K. Terada collection, Hiroshima, Japan). Abbreviations used in the present paper are the same as those in our previous paper (Terada, *et al.*, 2013).

***Colpodes acroglyptus* Bates, 1892** (Figs. 1-6)  
*Colpodes acroglyptus* Bates, 1892: 374. [Burma: Karin]  
*Colpodes acroglyptus*: Jedlička, 1934: 189; 1940: 9.

\*Corresponding author. E-mail: ter-3k.t@ccv.ne.jp

*Agonum* (subg. ?) *acroglyptus*?: Habu, 1965: 85.

*Platynus acroglyptus*: Bousquet, 2003: 464.

### Redescription.

**Measurements.** Length 9.1~9.8 mm. Width 3.8~4.0 mm. Antennomeres I: II: III: IV: V: VI: VII: VIII: IX: X: XI, 1: 0.43~0.46: 1.08~1.24: 1.16~1.18: 0.87~1.03: 0.82~1.01: 0.81~1.05: 0.75~0.90: 0.77~0.90: 0.72~0.81: 0.98~1.01. HW/FW, 1.57~1.64. PW/HW, 1.32~1.38. PW/PL, 1.37~1.47. PW/PA, 1.45~1.56. PW/PB, 1.27~1.40. PA/PB, 0.84~0.89. EW/PW, 1.48~1.59. EL/EW, 1.49~1.52.

**Color.** Head black, labrum and mandibles reddish-brown, palpi and antennae light reddish-brown; pronotum dark reddish-brown to blackish-brown, with a silky luster on sides, lateral channels reddish-brown; elytra dark reddish-brown or blackish-brown, iridescent, usually with faintly-bluish (sometimes faintly-greenish) reflections; elytral epipleura reddish-brown or dark reddish-brown; scutellum blackish-brown; legs reddish-brown (femora darker than tibiae and tarsi); ventral side of body reddish-brown.

**Microsculpture.** Head with isodiametric microsculpture; pronotum transversely meshed on disc (Fig. 3A), finely granulate on sides (Fig. 3B); elytra with fine transverse lines, lateral channels with isodiametric microsculpture.

**Form.** Head moderately convex, impunctate, striated on ventral side (gula and genae), with 2 supraorbital setiferous pores on each side (Fig. 1B, D): anterior pore located slightly before mid-eye level and posterior pore away from posterior margin of eye; mandibles moderately long, gently arcuate at apex; palpi slender, more or less long, apical palpomeres elongate, subfusiform, glabrous, penultimate palpomeres aetose in maxillary palpi, 2-setose laterally in labial palpi; labrum 6-setose, transversely oblong, slightly convex in middle area; clypeus 2-setose; frons (Fig. 1C) longitudinally wrinkled on each side; frontal impressions divergent behind, reaching anterior supraorbital setiferous pores; lateral grooves deep, extending toward posterior margin of eyes; antennae moderately long, reaching basal 1/3 of elytra, antennomeres I and II 1-setose, antennomere III slightly longer than I, with verticillate setae at apex (Fig. 1E), antennomeres IV~XI densely pubescent; eyes large, moderately convex; temples (oblique parts behind eyes as seen from above) shorter than eye diameter (Fig. 1D, left arrow); dorsal impression of neck faint; mentum tooth acute-triangular (Fig. 1F).

Pronotum subcordate (Fig. 2A) or a little more transverse (Fig. 2B), moderately convex and impunctate on disc, faintly striated on both sides of median line, with 2 lateral setae on each side (Fig. 2C): anterior seta located near the widest part and posterior seta near hind angle; apex deeply emarginate, faintly bordered; anterior transverse impression distinct medially, obsolete away from middle; front angles strongly protruding, with minute setae at apex (Fig. 2D); base finely bordered, a little wider than apex (PA/PB, 0.84~0.89); posterior transverse impression shallow; hind angles rectangular (Fig. 2A) or obtuse (Fig. 2B); basal foveae deep, strongly granulate; lateral margins not bordered, moderately arcuate in anterior part, moderately sinuate before hind angles (Fig. 2A) or barely sinuate (Fig. 2B); lateral channels wide and reflexed; median line distinct on disc, sometimes reaching base and apex.

Elytra oblong (EL/EW, 1.49~1.52), moderately convex; basal borders sinuate (Fig. 2F); humeri rounded; subapical sinuations very shallow (Fig. 2G); apices divergent at suture (forming inverted V-shape) (Fig. 2H); lateral margins subparallel at middle; lateral channels slightly narrower than interval IX in middle area; striae entirely and somewhat deeply impressed, impunctate, scutellar striae moderately long; intervals more or less flat (intervals VII and VIII slightly convex), impunctate, interval III with 3 discal setiferous pores (Fig. 2E): anterior pore adjoining stria III, 2 others adjoining stria II; basal setiferous pore located at base of stria I (Fig. F, arrow); marginal series consisting of 22~25 pores. Hind wings fully developed.

Ventral side glabrous on greater part, mesosterna and mesepisterna feebly punctate; prosternal process not bordered, carinate posteriorly (Fig. 4A); metepisterna longer than wide (length/width, 1.64~1.67) (Fig. 4B); apical ventrite 2-setose in ♂, whereas 4-setose in ♀ (Fig. 4C).

Legs moderately long; metacoxae 3-setose (Fig. 5A); metafemora 2-setose (Fig. 5B); tarsi bilaterally sulcate, with median carina on dorsal side of tarsomeres I~III (Fig. 5C), protarsomere IV subequally bilobed (inner lobe just a little longer than outer lobe) (Fig. 5D), mesotarsomere IV subequally bilobed (outer lobe just a little longer than inner lobe), metatarsomere IV subequally bilobed, but very shortly lobed (outer lobe just a little longer than inner lobe) (Fig. 5E, F), narrowed toward base in dorsal view,

thick in lateral view (Fig. 5G), without setae on dorsal side, pro-, meso-, and meta-tarsomeres V with minute setae on lateroventral side (Fig. 5H, arrows).

*Male and female genitalia.* Aedeagal median lobe slightly arcuate (Fig. 6A), widely membranous on dorsal side; apical lobe protruding (Fig. 6B, arrow); endophallus with scaly membrane and obscure sclerites (Fig. 6A, arrow; C); parameres ear-shaped (left paramere larger than right one).

Basal segments of styli with 8~10 apical setae on ventral side (Fig. 6D, upper arrow); apical segments gently curved outward, with 3 or 4 lateral spines, 1 dorsal spine (Fig. 6E, arrow), and fine setae arising from subapical foramens (Fig. 6D, lower arrow).

**Specimens examined.** Chihnan Temple area of Wenshan District, Taipei City, elev. 200~300 m (台北市文山區指南宮): 1 ♂, 8-vii-2001, K. Terada leg. (Terada-29); 2 ♀♀, 16-vii-2001, K. Terada leg. (Terada-31). Fulung, New Taipei City (former Taipei County), elev. 0~50 m (新北市福隆): 1 ♂, 1-x-2001, K. Terada leg. (Terada-53). Fushan Botanical Garden area, Yilan County, elev. 400~500 m (宜蘭縣福山植物園): 1 ♂, 29-iv-2001, K. Terada leg. (Terada-4); 1 ♂, 7-v-2001, K. Terada leg. (Terada-7). Taipingshan, Yilan County, elev. 1800~2000 m (宜蘭縣太平山): 1 ♂, 29-vi-1994, collector unknown. Yulao, Hsinchu County, elev. 1200~1300 m (新竹縣宇老): 1 ♀, 19-vii-2001, K. Terada leg. (Terada-32). Hsitou, Nantou County, elev. 1500~1600 m (南投縣溪頭): 1 ♂, 30-v-1977, K. Terada leg. (F-904). Kukuan, Taichung City (former Taichung County), elev. 600~700 m (台中市谷關): 1 ♀, 3-vi-1977, K. Terada leg. (Terada-no number); 1 ♀, 9-vi-1977, K. Terada leg. (F-657). Tahsuehshan Forest Recreation Area, Taichung City (former Taichung County), elev. 2000~2300 m (台中市大雪山森林遊樂區): 1 ♀, 21-v-2012, K. Terada leg. (Terada-123). Shanlinhsi, Nantou County, elev. 1600~1700 m (南投縣杉林溪): 1 ♀, 4-ix-1987, collector unknown (F-1593). The above specimens were collected by light trap.

**Remarks.** The first record of this species in Taiwan was by Jedlička in 1934, who listed two localities: Chiashien (甲仙) in Kaohsiung City (former Kaohsiung County) and Shuisheliao (水社寮) in Chiayi County. Habu (1965) recorded additional localities for the species: Penpuhsi (本部溪) and Hsitou (溪頭) in Nantou County.

Habu (1965) found two small differences

in his specimens as compared with the original description by Bates (1892), namely, the elytral color was not “viridi-aeneus” but “bluish”, and the elytral striae were not “vix perspicue punctulatis” but “impunctate”. However, we found both color types (faintly greenish and faintly bluish) in our specimens. It seems to us that “vix perspicue punctulatis” and “impunctate” have almost the same meaning. We have seen digital images from a syntype of *C. acroglyptus* preserved in Museo Civico di Storia Naturale, Giacomo Doria, Genoa. The Burmese specimen looks almost completely identical to the Taiwanese specimens. According to the original description, however, it is a little larger than our specimens.

The present species resembles a Japanese species *Colpodes (Celaenagonum) eurydamas* Bates, 1883, from which it can be distinguished by 1) the longer elytra (length/width, 1.49~1.52), 2) faintly-bluish reflections on the elytra, 3) the longer metepisterna (length/width, 1.66~1.67), and 4) the aedeagal median lobe with a prolonged apex.

***Colpodes punctatus* Jedlička, 1934** (Figs. 7-10)  
*Colpodes punctatus* Jedlička, 1934: 195. [Taiwan: Kosempo 高雄市甲仙]

*Platynus punctatus*: Bousquet, 2003: 465.

#### **Redescription.**

*Measurements.* Length 9.4~9.9 mm. Width 3.3~3.7 mm. Antennomeres I: II: III: IV: V: VI: VII: VIII: IX: X: XI, 1: 0.46~0.49: 1.11~1.25: 1.07~1.20: 0.90~1.01: 0.96~1.10: 0.88~0.92: 0.88~0.92: 0.88~0.92: 0.81~0.83: 1.01~1.09. HW/FW, 1.58~1.62. PW/HW, 1.38~1.45. PW/PL, 1.17~1.30. PW/PA, 1.85~1.96. PW/PB, 1.35~1.38. PA/PB, 0.70~0.74. EW/PW, 1.41~1.45. EL/EW, 1.60~1.69.

*Color.* Head black, shiny, labrum and mandibles reddish-brown, palpi and antennae light reddish-brown; pronotum blackish-brown, shiny, lateral channels reddish-brown; elytra reddish-brown, with metallic-blue reflections; elytral epipleura and scutellum reddish-brown; legs reddish-brown (femora darker than tibiae and tarsi); ventral side of body reddish-brown.

*Microsculpture.* Head without microsculpture; pronotum with transverse meshes, although very faint on disc; elytra with strongly transverse meshes, lateral channels with faint isodiametric microsculpture.

*Form.* Head moderately convex, impunctate,

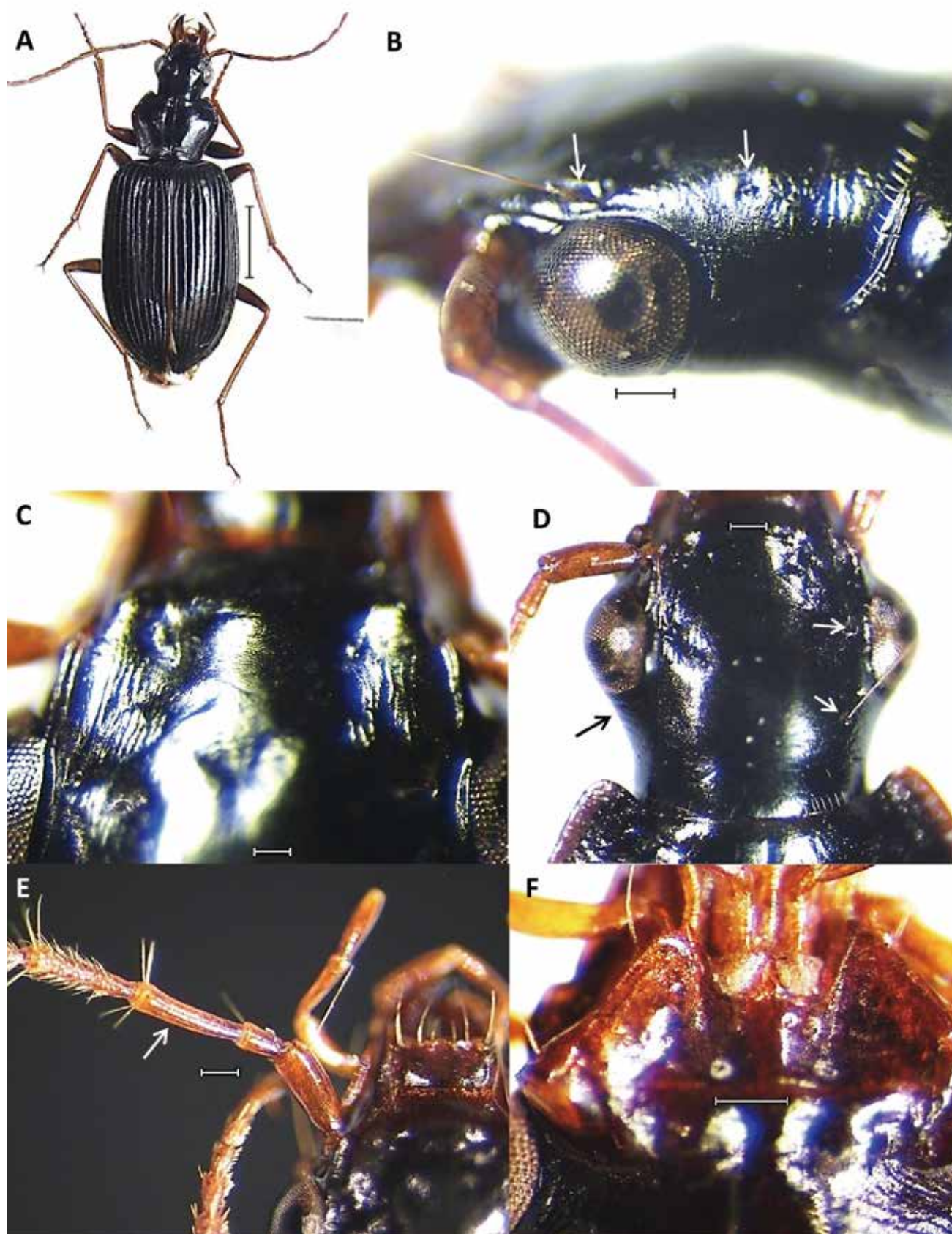


Fig. 1. *Colpodes acroglyptus*. A. Habitus, ♂, from Fushan Botanical Garden, Yilan County. B. Head, left lateral view. Arrows indicate supraorbital setiferous pores. C. Head, showing frons. D. Head, showing tempora (arrow, left) and 2 supraorbital setiferous pores (right arrows). E. Left antenna, showing antennomeres I~IV. Arrow indicates antennomere III. F. Head, ventral view, showing mentum with a triangular tooth. Scale bars = 2 mm (A); 0.2 mm (B~D, F); 0.1 mm (E).

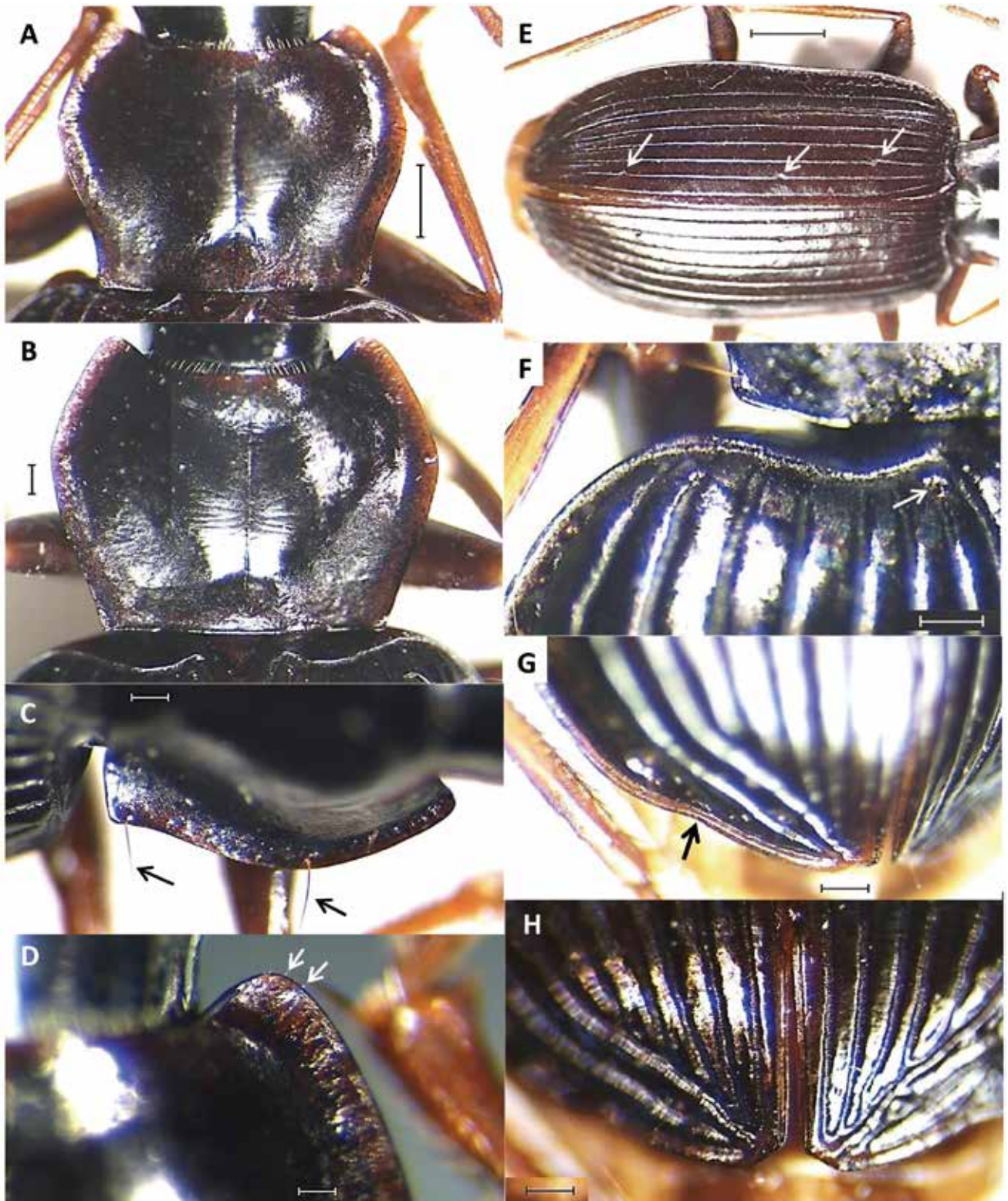


Fig. 2. *Colpodes acroglyptus*. A. Pronotum. B. Pronotum. C. Pronotum, right side, showing 2 lateral setae (arrows). D. Front angle of pronotum, right side. Arrows indicate minute setae. E. Elytra, showing 3 discal setiferous pores (arrows) on interval III of left elytron. F. Basal portion of left elytron, showing basal border and shoulder. Arrow indicates a basal setiferous pore. G. Apical portion of left elytron, showing subapical sinuation (arrow). H. Apical portion of elytra, showing divergent sutural apex. Scale bars = 0.2 mm (A~C, E~H); 0.1 mm (D).

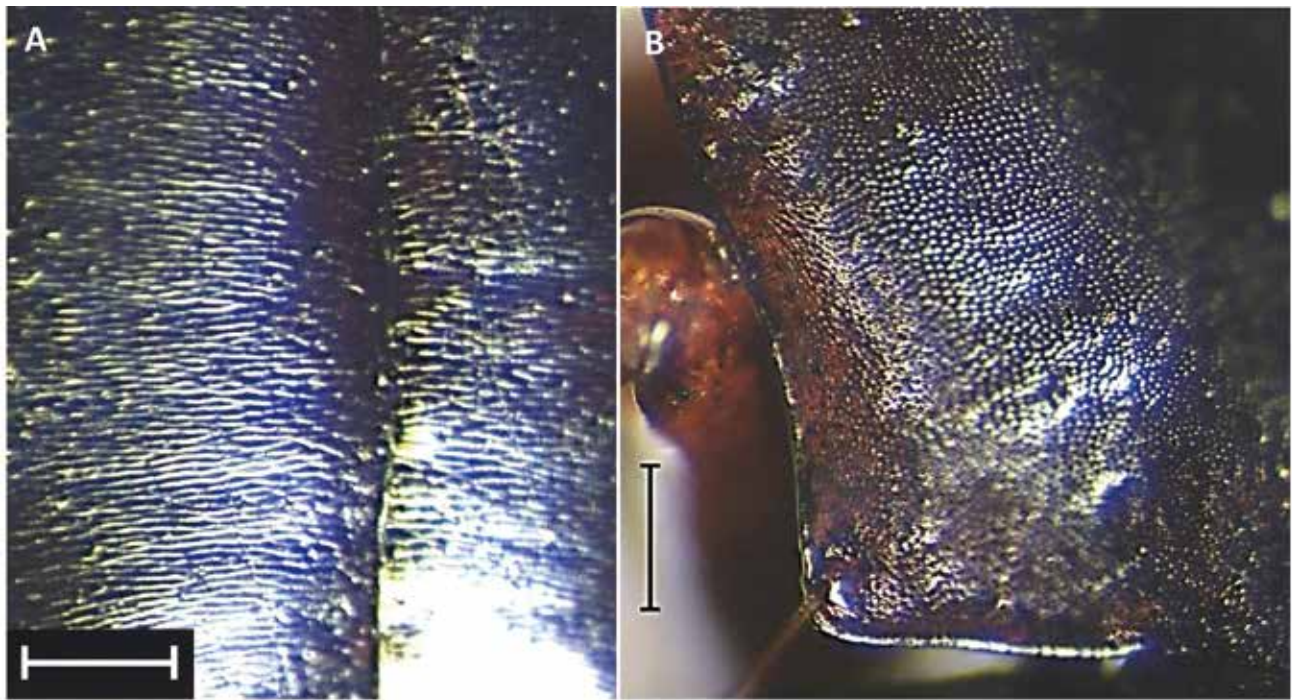


Fig. 3. Microsculpture of *Colpodes acroglyptus*. A. Middle portion of pronotal disc, showing transversely-meshed microsculpture. B. Basal portion of pronotum, left side, showing finely-granulate microsculpture. Scale bars = 0.2 mm.

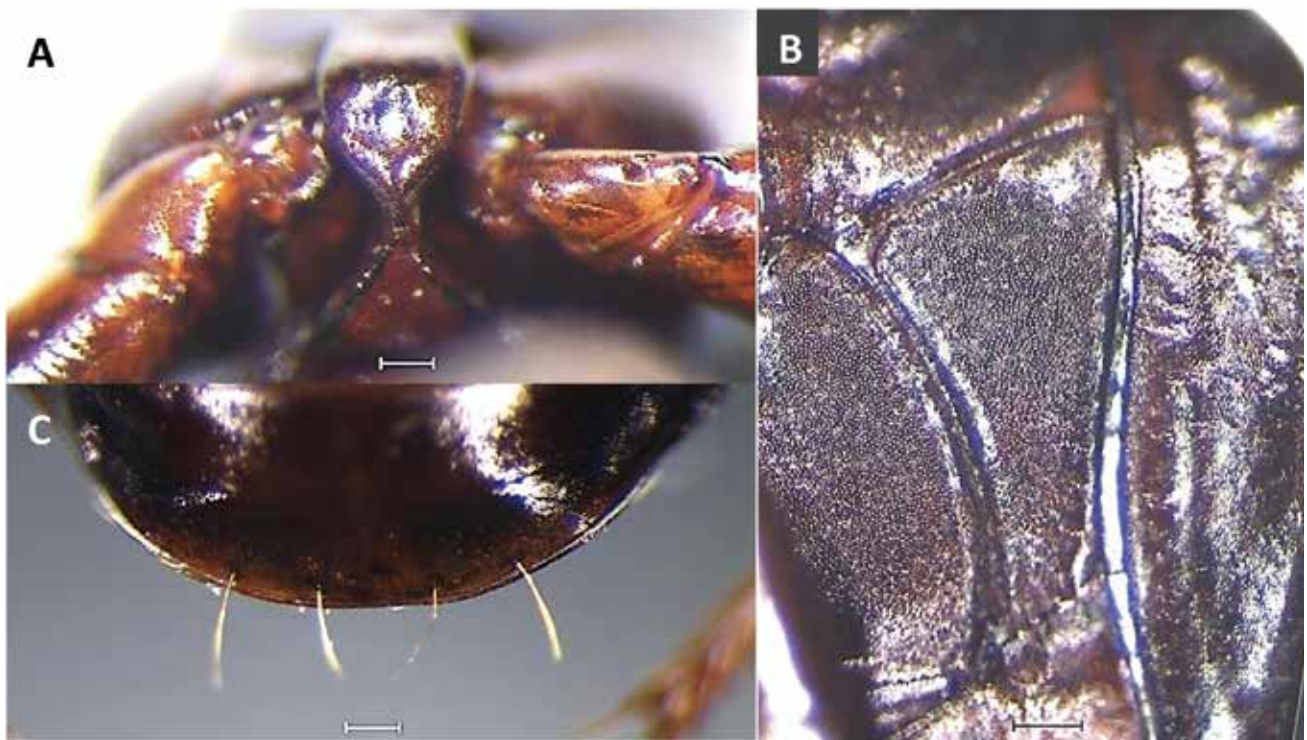


Fig. 4. *Colpodes acroglyptus*. A. Posterior part of prosternal process. B. Left metepisternum. C. Apical ventrite (♀) with 4 setae. Scale bars = 0.2 mm (B, C); 0.1 mm (A).

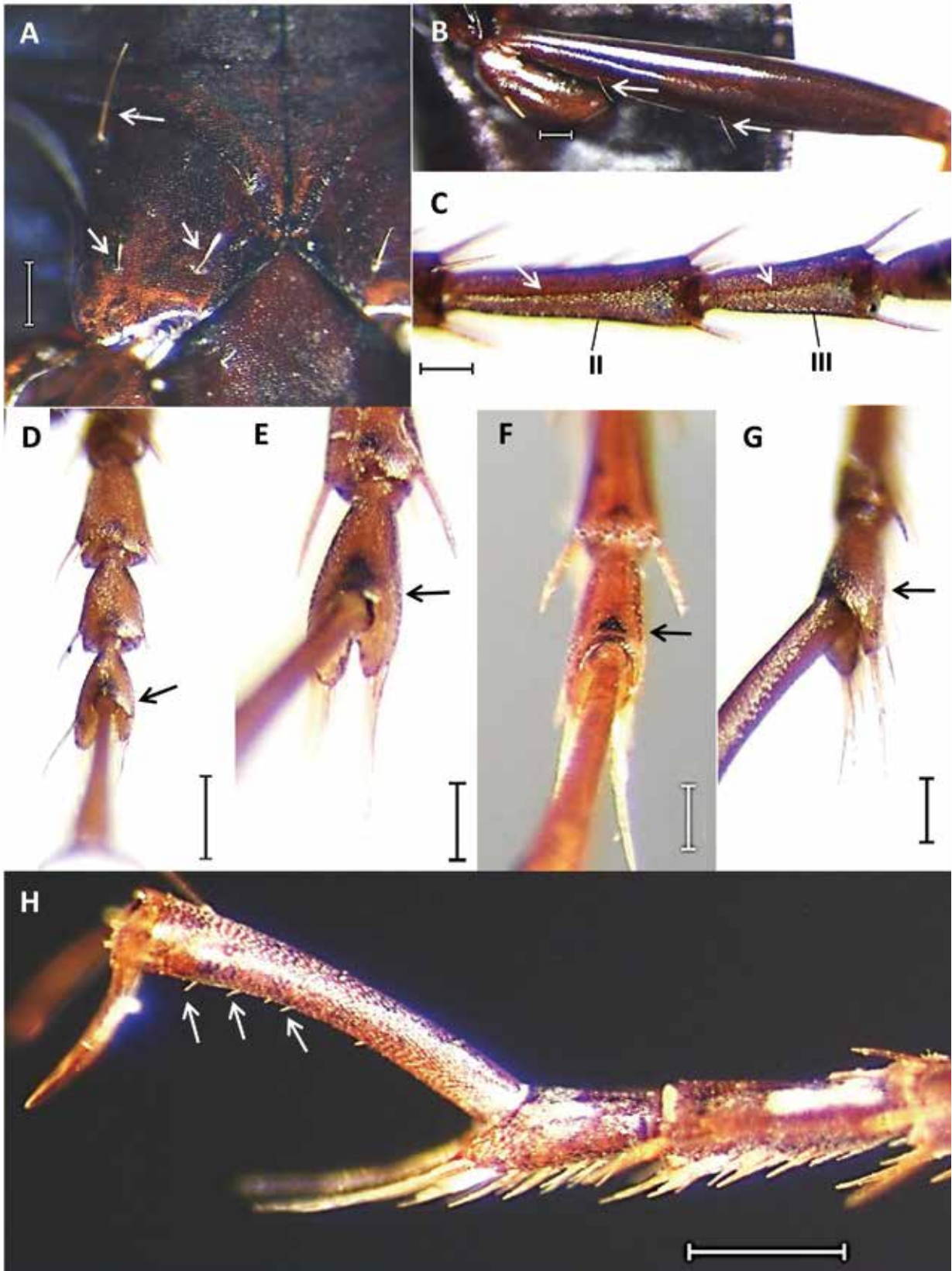


Fig. 5. Legs of *Colpodes acroglyptus*. A. Right metacoxa with 3 setae (arrows). B. Left metafemur with 2 setae (arrows). C. Right metatarsus, showing median carinae (arrows) of tarsomeres II and III. D. Left protarsus ( $\sigma$ ). Arrow indicates tarsomere IV. E. Left metatarsomere IV (arrow). F. Left metatarsomere IV (arrow). G. Left metatarsomere IV (arrow), lateral view. H. Right metatarsus, lateral view, showing lateroventral setae (arrows) of tarsomere V. Scale bars = 0.2 mm (A, B, D, H); 0.1 mm (C, E~G).

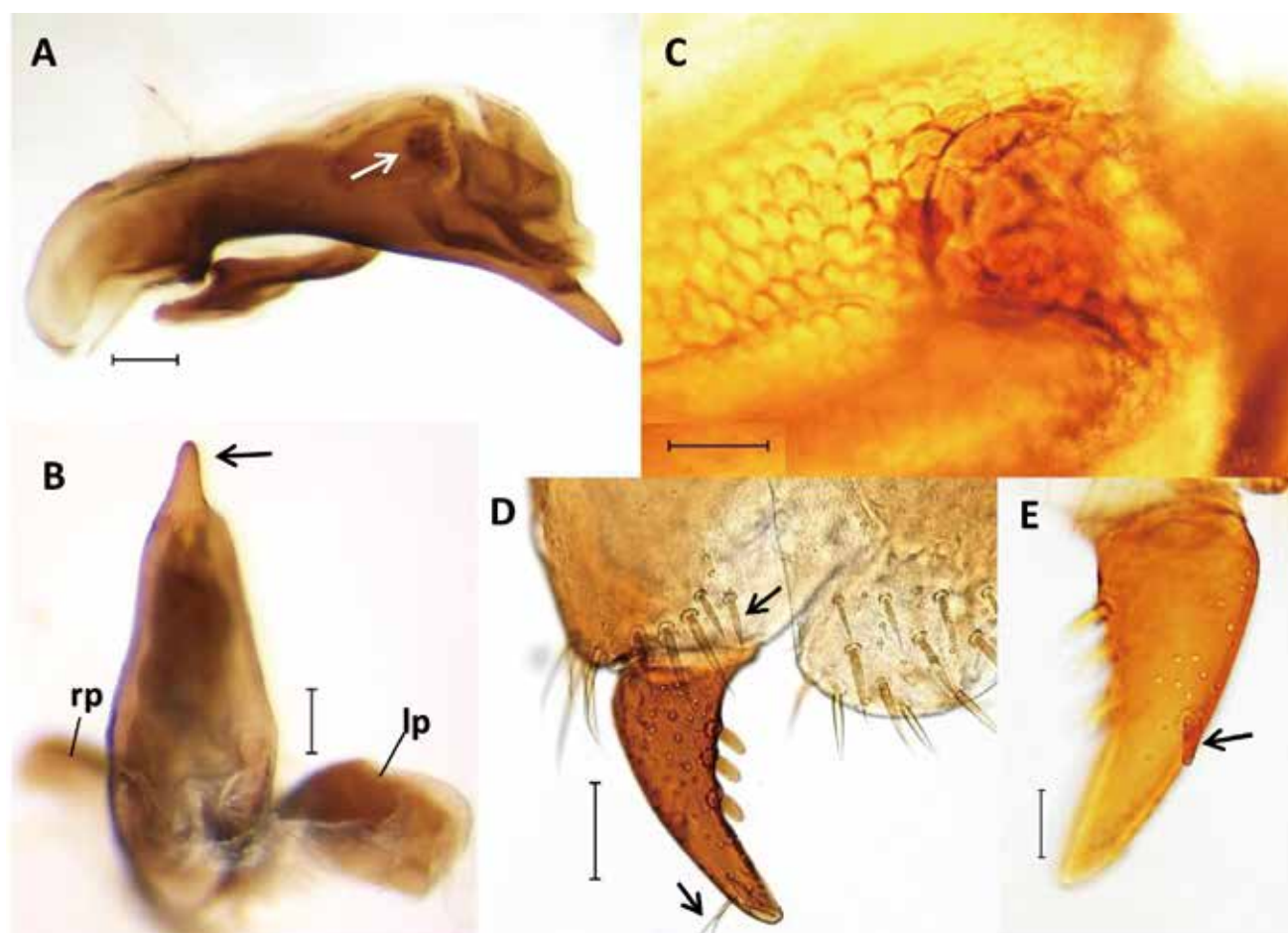


Fig. 6. Male and female genitalia of *Colpodes acroglyptus*. A. Aedeagus, left lateral view (with left paramere removed). Arrow indicates endophallic sclerites. B. Aedeagus, dorsal view. Arrow indicates apical lobe. Right (rp) and left (lp) parameres not fully focused. C. Endophallus, showing scaly membrane and obscure sclerites. D. Left stylus, ventral view, showing slender setae (upper arrow) of basal segment and 3 lateral spines of apical segment. Lower arrow indicates fine setae arising from subapical foramen. E. Apical segment of left stylus, dorsal view, showing 1 spine (arrow). Scale bars = 0.2 mm (A, B); 0.1 mm (D); 0.05 mm (C, E).

striated on ventral side (gula and genae), with 2 supraorbital setiferous pores on each side (Fig. 7B): anterior pore located slightly before mid-eye level and posterior pore away from posterior margin of eye; mandibles moderately long, gently arcuate at apex; palpi more or less short, apical palpomeres fusiform, glabrous, penultimate palpomeres aetose in maxillary palpi, 2-setose laterally in labial palpi; labrum 6-setose, transversely oblong, slightly convex in middle area; clypeus 2-setose; frons more or less wrinkled on each side; frontal impressions divergent behind, reaching anterior supraorbital setiferous pores; lateral grooves deep, extending toward posterior margin of eyes; antennae moderately long, reaching basal 1/3 of elytra, antennomeres I and II 1-setose, antennomere III slightly longer than I, with verticillate setae

at apex (Fig. 7C), antennomeres IV~XI densely pubescent; eyes relatively small, semiglobose; temples (oblique parts behind eyes as seen from above) longer than eye diameter (Fig. 7D); neck relatively narrow, with distinct dorsal impression; mentum tooth acute-triangular (Fig. 7E).

Pronotum subcordate (Fig. 8A), or slightly angulate at lateral margins (Fig. 8B), moderately convex and impunctate on disc, coarsely punctate on sides, faintly striated on both sides of a median line, with 2 lateral setae on each side (Fig. 8E): anterior seta located slightly before the widest part and posterior one near hind angle; apex moderately emarginate, finely bordered; anterior transverse impression obsolete; front angles slightly protruding; base finely bordered; posterior transverse impression shallow; hind angles nearly rectangular (Fig. 8C) or obtuse

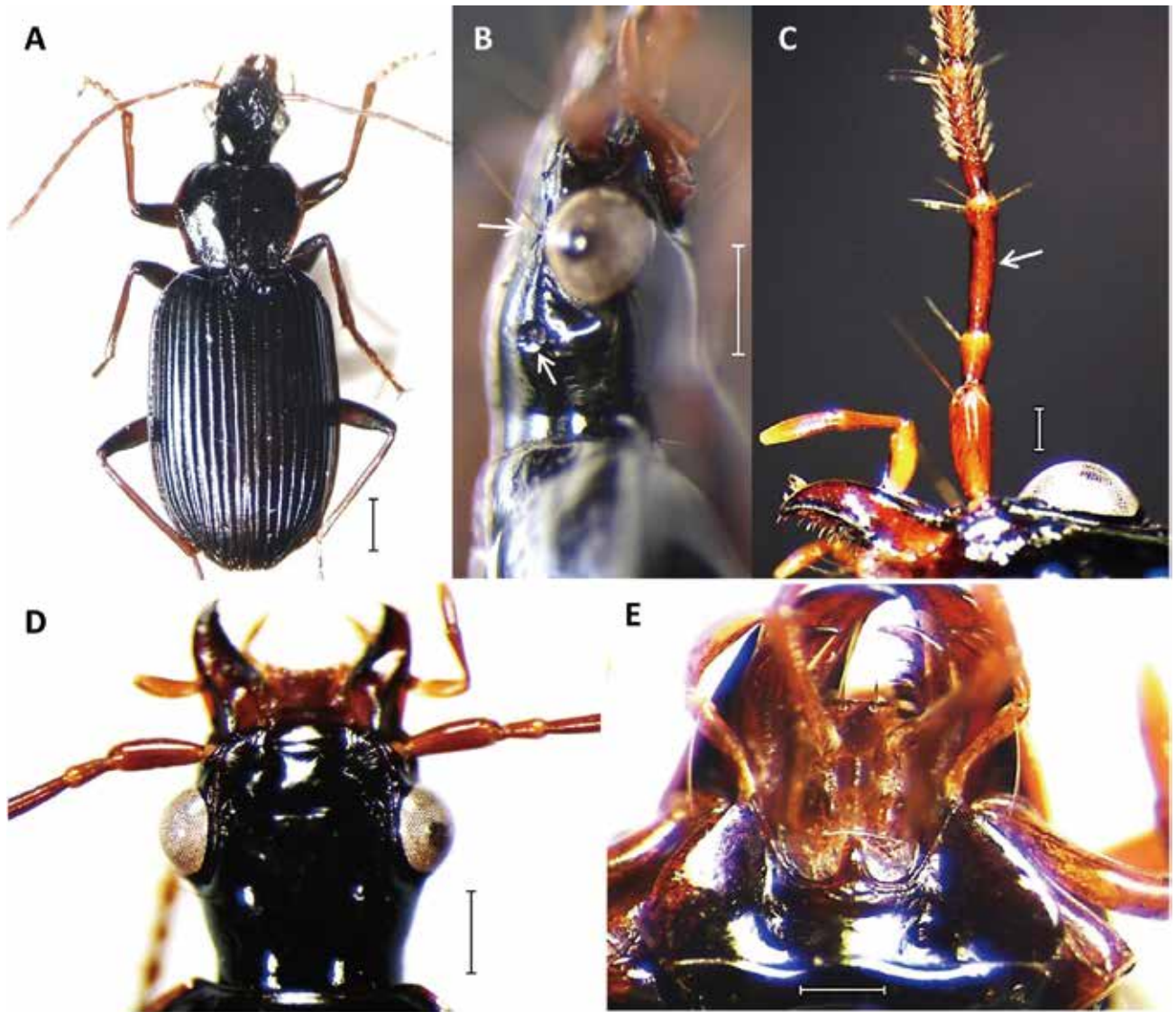


Fig. 7. *Colpodes punctatus*. A. Habitus, ♂, from Chihnan Temple area of Taipei City. B. Head, right lateral view, showing 2 supraorbital setiferous pores (arrows). C. Right antenna, showing antennomeres I~IV. Arrow indicates antennomere III. D. Head. E. Head, ventral view, showing mentum with a triangular tooth. Scale bars = 1 mm (A); 0.5 mm (B~D); 0.2 mm (E).

(Fig. 8D); basal foveae moderately deep, coarsely punctate; lateral margins not bordered, arcuate in anterior part, moderately sinuate before hind angles (Fig. 8C) or sometimes barely sinuate (Fig. 8D); lateral channels relatively narrow, much more narrowed apicad (Fig. 8E), reflexed, coarsely punctate; median line distinct on disc, obliterated at base and apex.

Elytra oblong (EL/EW, 1.60~1.69), moderately convex; basal borders sinuate; humeri rounded; subapical sinuations distinct (Fig. 8F); apices denticulate (Fig. 8G); lateral margins subparallel at middle; lateral channels about 1/2 as wide as interval IX in middle area; striae entirely and deeply impressed, punctate, scutellar

striae moderately long, stria VIII more deeply impressed than other striae; intervals moderately convex, impunctate, interval III with 3 discal setiferous pores: anterior pore adjoining stria III, 2 others adjoining stria II; basal setiferous pore located at base of stria I; marginal series consisting of 16~19 pores. Hind wings fully developed.

Ventral side impunctate on greater part, mesosterna and mesepisterna somewhat strongly punctate; prosternal process not bordered, carinate posteriorly (Fig. 8H); metepisterna much longer than wide (length/width, 1.69~1.76) (Fig. 8I); apical ventrite 2-setose in ♂, whereas 4-setose in ♀ (Fig. 8J).



Fig. 8. *Colpodes punctatus*. A. Pronotum. B. Pronotum. C. Pronotal base, left side, showing rectangular hind angle. D. Pronotal base, right side, showing obtuse hind angle. E. Pronotum, left side, showing 2 lateral setae (arrows). F. Apical portion of right elytron, showing subapical sinuation (arrow). G. Apical portion of elytra, showing 1 small tooth (arrows) at each elytral apex. H. Posterior part of prosternal process. I. Right metepisternum. J. Apical ventrite (♀) with 4 setae. Scale bars = 0.5 mm (A, B); 0.2 mm (C~E, G, I, J); 0.1 mm (F, H).

Legs moderately long; metacoxae 3-setose (Fig. 9A); metafemora usually 1-setose (Fig. 9B), sometimes 2-setose; tarsi bilaterally sulcate, with a median carina on dorsal side of tarsomeres I~III (Fig. 9D), protarsomere IV unequally bilobed (inner lobe longer than outer lobe) (Fig. 9C), mesotarsomere IV unequally bilobed (outer lobe longer than inner lobe), metatarsomere IV unequally bilobed (outer lobe much longer than inner lobe) (Fig. 9E), less narrowed toward base in dorsal view, less thick in lateral view (Fig. 9F), without setae on dorsal side, pro-, meso-, and meta-

tarsomeres V with minute setae on lateroventral side (Fig. 9G, arrows).

*Male and female genitalia.* Aedeagal median lobe arcuate (Fig. 10A), widely membranous on dorsal side, with a shallow concavity on ventral side (Fig. 10B, arrow); apical lobe short and rounded (Fig. 10C, arrow); endophallus with scaly membrane and 1 or 2 clusters of sclerites (Fig. 10D); parameres ear-shaped (left paramere larger than right one).

Basal segments of styli with 10~12 apically-uncinate setae (Fig. 10E, left arrow); apical

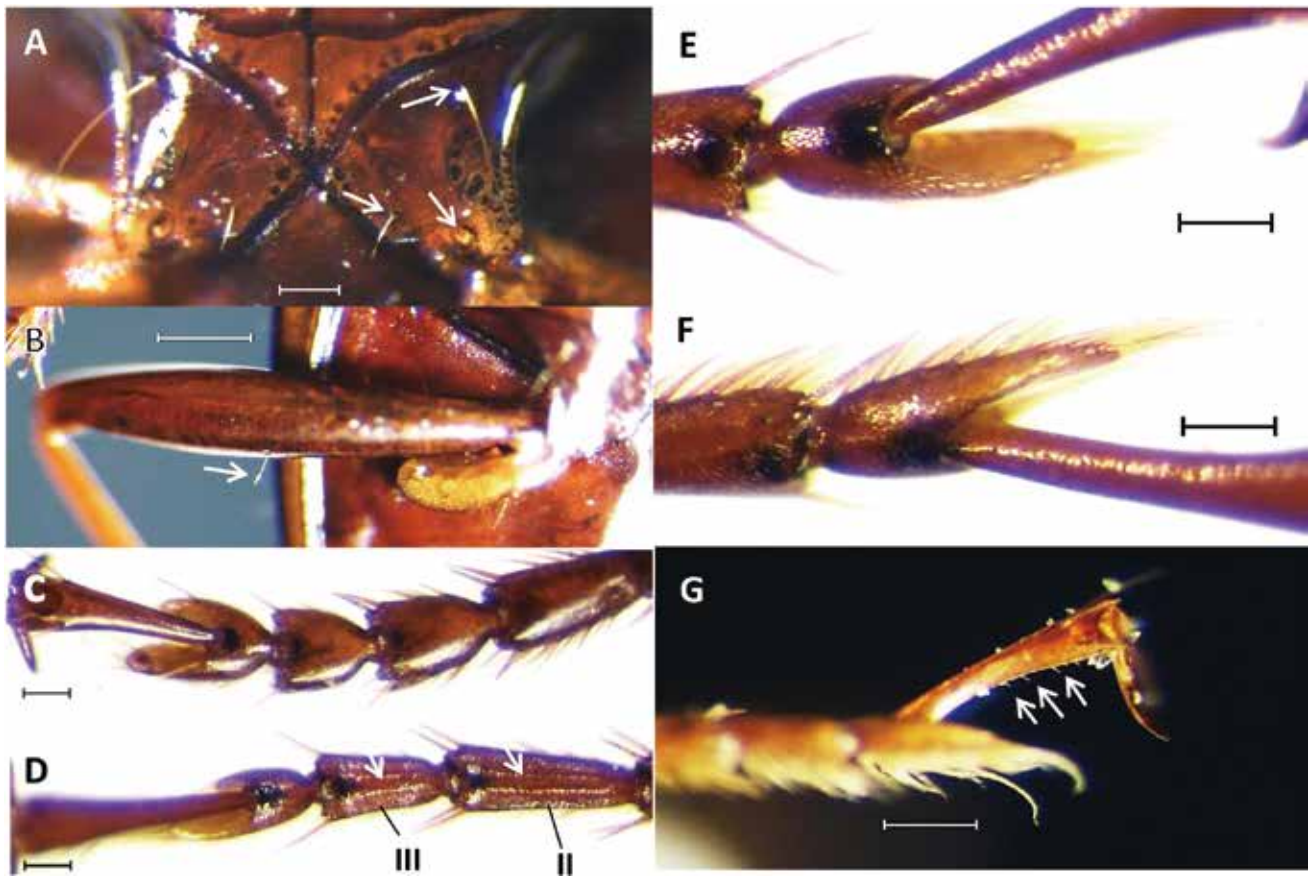


Fig. 9. Legs of *Colpodes punctatus*. A. Metacoxae, showing 3 setiferous pores (arrows) on right metacoxa. B. Right metafemur with a single seta (arrow). C. Right protarsus ( $\sigma$ ). D. Right metatarsus, showing median carinae (arrows) of tarsomeres II and III. E. Left metatarsus, showing tarsomere IV. F. Right metatarsus, lateral view, showing tarsomere IV. G. Left metatarsus, lateral view, showing lateroventral setae (arrows) of tarsomere V. Scale bars = 0.5 mm (B); 0.2 mm (A, G); 0.1 mm (C~F).

segments wide at base, strongly curved outward, with 4 or 5 lateral spines, 1 dorsal spine (not focused in Fig. 10E), and fine setae arising from subapical foramens (Fig. 10E, right arrow).

**Specimens examined.** Chihnan Temple area of Wenshan District, Taipei City, elev. 200~300 m (台北市 文山區 指南宮): 2 ♀♀, 5-v-2001, K. Terada leg. (Terada-6); 2 ♂♂, 14-v-2001, K. Terada leg. (Terada-8); 1 ♂, 30-v-2001, K. Terada leg. (Terada-14); 1 ♀, 18-vi-2001, K. Terada leg. (Terada-20); 1 ♂, 19-vi-2001, K. Terada leg. (Terada-20); 6 ♂♂, 2 ♀♀, 20-vi-2001, K. Terada leg. (Terada-21); 1 ♂, 1-vii-2001, K. Terada leg. (Terada-26); 1 ♀, 10-vii-2001, K. Terada leg. (Terada-29); 1 ♂, 16-vii-2001, K. Terada leg. (Terada-31). Yulao, Hsinchu County, elev. 1200~1300 m (新竹縣 宇老): 1 ♂, 19-vii-2001, K. Terada leg. (Terada-32). Shitoushan, Miaoli County, elev. 300~400 m (苗栗縣 獅頭山): 1 ♂, 6-vii-2001, K. Terada leg. (Terada-27). Kukuan, Taichung City (former

Taichung County), elev. 600~700 m (台中市 谷關): 1 ♀, 6-vi-1977, K. Terada leg. (F-639). The above specimens were collected by light trap.

**Remarks.** We have seen a clear image of *C. punctatus* (Type) preserved in the National Museum, Praha, and are convinced that our specimens well match this species. It was described from Taiwan (type locality: Chiashien, Kaohsiung City) based on a single specimen with broken elytra (Jedlička, 1934). Later, Jedlička (1940) described the elytral apex of this species as being denticulate. This character was confirmed in the present study (Fig. 8G).

*Colpodes (Gyrochaetostylus) atricomis* Bates, 1873, widely distributed in Japan, is similar to the present species in such characters as apically-curved setae of the styli and mucronate apices of the elytra. However, the two species are quite different from each other in such characters as the size of the eyes, the shape of the prothorax, the shape of the prosternal process, the color and

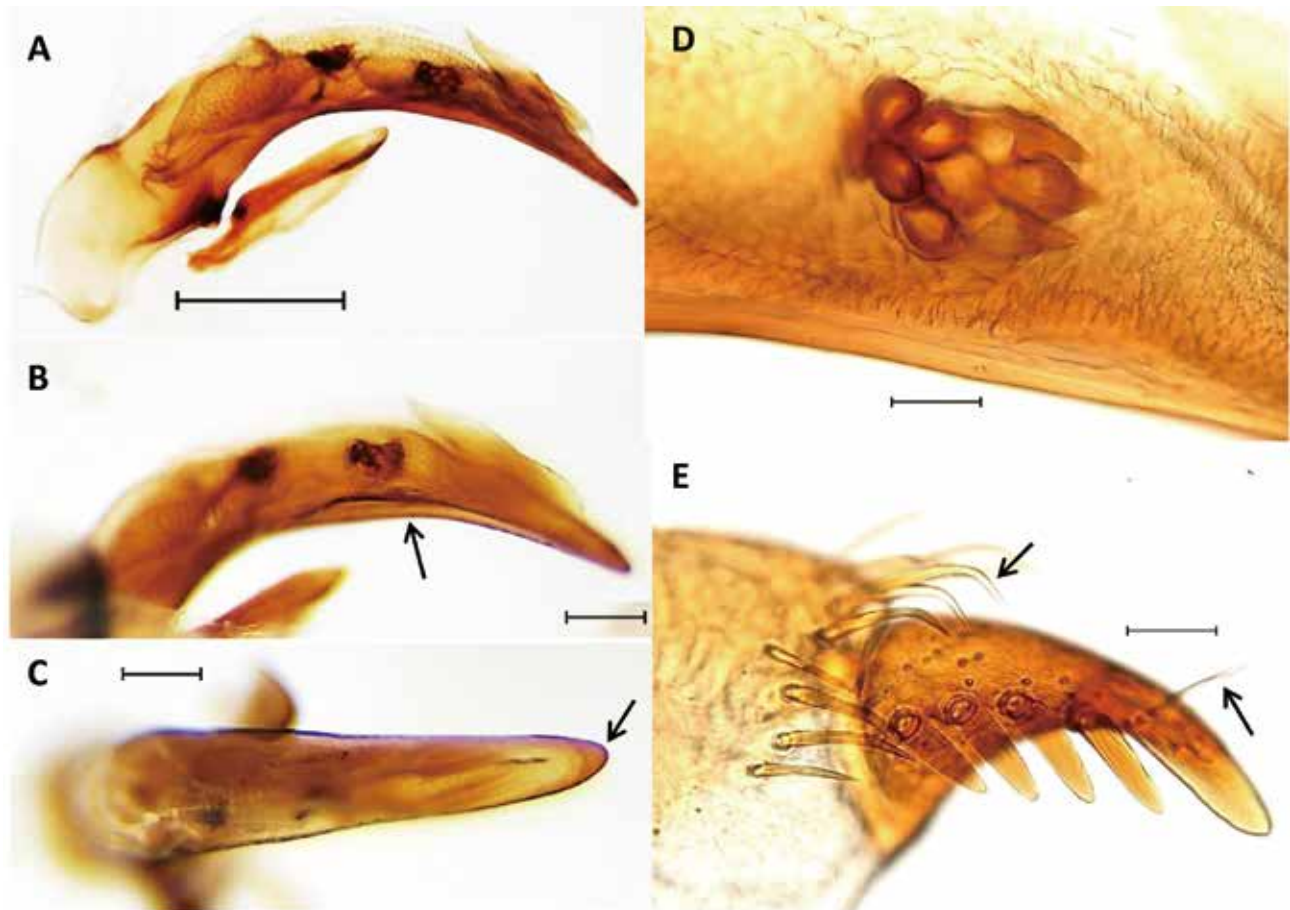


Fig. 10. Male and female genitalia of *Colpodes punctatus*. A. Aedeagus, left lateral view (with left paramere removed). B. Aedeagus, left lateral view, showing shallow concavity (arrow). C. Aedeagus, dorsal view. Arrow indicates apical lobe. D. Endophallic sclerites. E. Right stylus, ventral view, showing apically-uncinate setae (left arrow) of basal segment and 4 lateral spines of apical segment. Right arrow indicates fine setae arising from subapical foramen. Scale bars = 0.2 mm (A~C); 0.05 mm (D, E).

striation of the elytra.

***Colpodes mixtus* Jedlička, 1940** (Figs. 11-14)

*Colpodes mixtus* Jedlička, 1940: 6. 1940. [Taiwan: Musha 南投縣霧社]

*Platynus mixtus*: Bousquet, 2003: 465.

**Redescription.**

**Measurements.** Length 13.0~13.8 mm. Width 4.9~5.7 mm. Antennomeres I: II: III: IV: V: VI: VII: VIII: IX: X: XI, 1: 0.36~0.38: 0.87~0.89: 0.81~0.89: 0.80~0.88: 0.81~0.89: 0.83~0.88: 0.75~0.82: 0.74~0.83: 0.69~0.75: 0.75~0.88. HW/FW, 1.56~1.65. PW/HW, 1.39~1.47. PW/PL, 1.40~1.42. PW/PA, 1.62~1.72. PW/PB, 1.53~1.64. PA/PB, 0.94~0.95. EW/PW, 1.52~1.54. EL/EW, 1.48~1.59.

**Color.** Head black, shiny, labrum, mandibles, palpi and antennae reddish-brown; pronotum blackish-brown, lateral channels reddish-brown; elytra reddish-brown, with metallic-green or

-purplish reflections; elytral epipleura and scutellum reddish-brown; legs reddish-brown (femora darker than tibiae and tarsi); ventral side of body reddish-brown.

**Microsculpture.** Head without microsculpture; pronotum with transverse meshes, although very faint on disc; elytra with fine transverse lines.

**Form.** Head convex, impunctate, faintly striated on ventral side (gula and genae), with 2 supraorbital setiferous pores on each side (Fig. 11C, arrows): anterior pore located before mid-eye level and posterior pore near posterior margin of eye; mandibles moderately long and gently arcuate at apex; palpi slender, more or less long, apical palpomeres elongate, glabrous, subfusiform, penultimate palpomeres asetose in maxillary palpi, 2-setose laterally in labial palpi; labrum 6-setose, transversely oblong, slightly convex in middle area; clypeus 2-setose; frons impunctate, more or less wrinkled on each side;

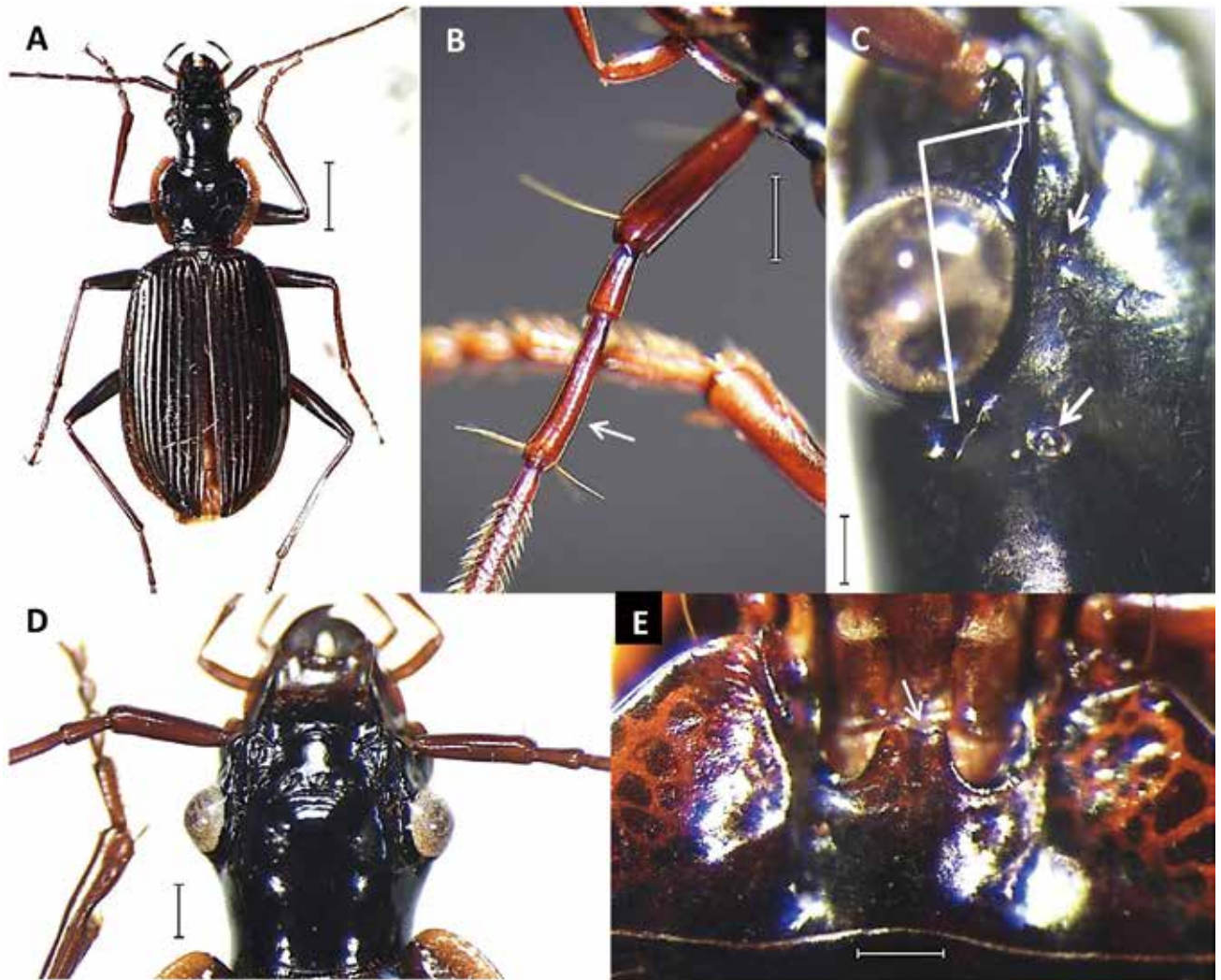


Fig. 11. *Colpodes mixtus*. A. Habitus, ♂, from Tahsuehshan Forest Recreation Area, Taichung. B. Left antenna, showing antennomeres I–III. Arrow indicates antennomere III. C. Head, left lateral view, showing lateral groove (V line) and 2 supraorbital setiferous pores (arrows). D. Head. E. Mentum tooth with shallow emargination (arrow). Scale bars = 2 mm (A); 0.5 mm (B, D); 0.2 mm (C, E).

frontal impressions deep, divergent behind, reaching anterior supraorbital setiferous pores; lateral grooves extending toward posterior margin of eyes (Fig. 11C, V-line); antennae long, reaching basal 2/3 of elytra, antennomeres I and II 1-setose, antennomere III just a little shorter than I, with verticillate setae at apex (Fig. 11B), antennomeres IV~XI densely pubescent; eyes relatively small, semiglobose (Fig. 11D); temples (oblique parts behind eyes as seen from above) obviously longer than eye diameter (Fig. 11D); neck relatively narrow, with shallow dorsal impression; mentum tooth slightly emarginate at apex (Fig. 11E).

Pronotum subcordate (Fig. 12A), moderately convex and impunctate on disc, rugose-punctate on sides, with 2 lateral setae on each side (Fig. 12C): anterior seta located slightly before the

widest part and posterior seta near hind angle; apex deeply emarginate, finely bordered; anterior transverse impression distinct, V-shaped at middle; front angles wide, strongly protruding; base distinctly bordered; posterior transverse impression shallow (Fig. 12D, arrow); hind angles obtuse (Fig. 12A); basal foveae deep, faintly punctate; lateral margins not bordered, arcuate in anterior part, usually not sinuate before basal angles (Fig. 12A); lateral channels wide, strongly reflexed, rugose-punctate, with numerous translucent circular patterns (with a minute dot in each circle) (Fig. 12B); median line fine on disc, obliterated at base and apex.

Elytra elongate-ovate (EL/EW, 1.48~1.59), slightly convex; basal borders sinuate; humeri, rounded; subapical sinuations faint; apices rounded; lateral margins not parallel at middle;

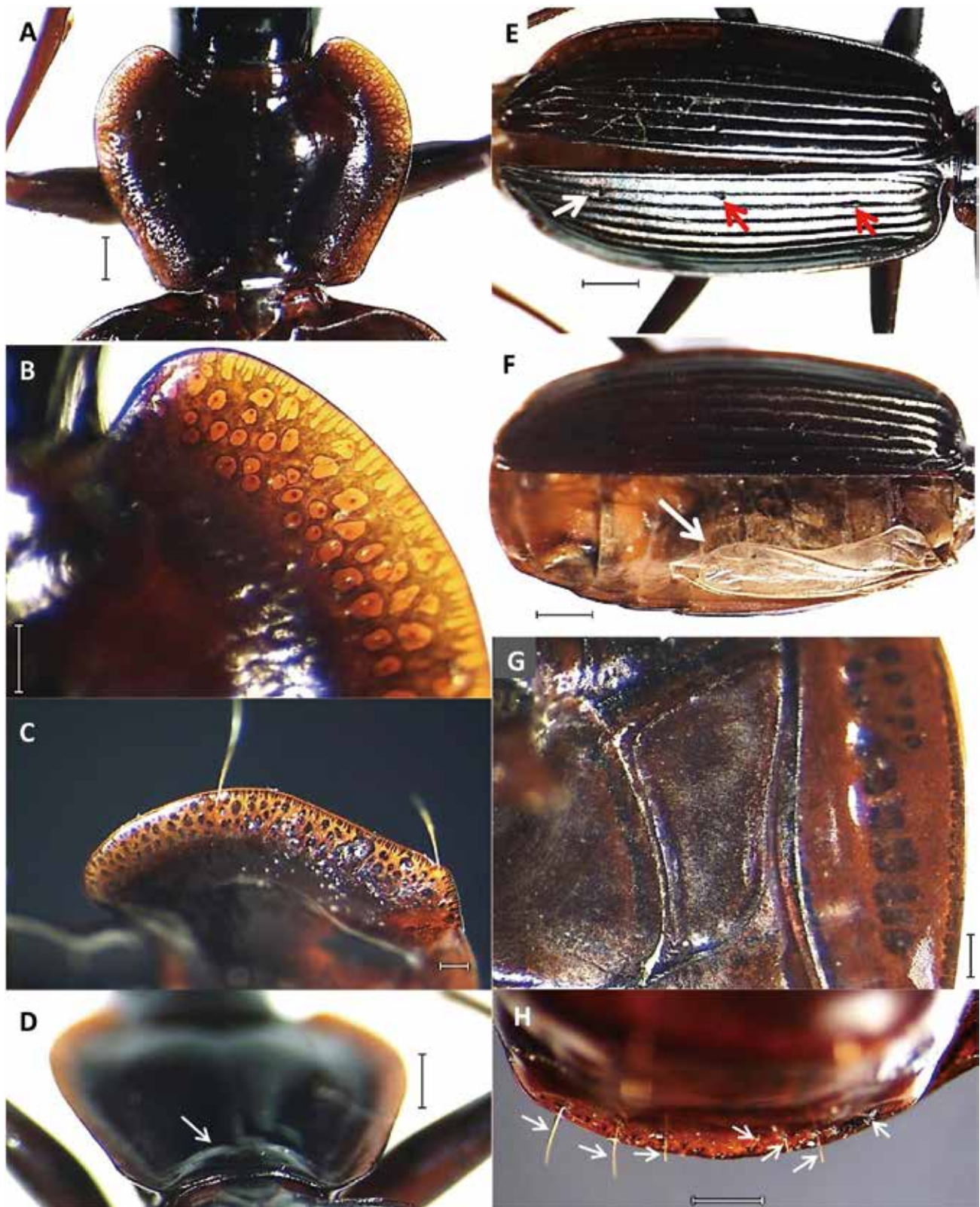


Fig. 12. *Colpodes mixtus*. A. Pronotum. B. Front angle of pronotum, right side. C. Pronotum, right side, showing 2 lateral setae. D. Pronotum, showing posterior transverse impression (arrow). E. Elytra, showing 3 discal setiferous pores (arrows) on interval III of right elytron. F. Right wing (arrow). G. Left metepisternum. H. Apical ventrite (♀) with 7 setae (arrows). Scale bars = 1 mm (D); 0.5 mm (A, C, F, H); 0.2 mm (B, E, G).

lateral channels less than 1/2 as wide as intervals IX in middle area; striae entirely and somewhat deeply impressed, sparsely punctate in basal area, almost impunctate in middle and posterior areas, scutellar striole moderately long; intervals slightly convex, impunctate, interval III with 3 discal setiferous pores (Fig. 12E): anterior pore adjoining stria III, 2 others adjoining stria II, interval VIII wider than VII in middle area; basal setiferous pore located at base of stria I; marginal series consisting of 20~24 pores. Hind wings atrophied, about 3/5 as long as elytra (Fig. 12F).

Ventral side glabrous on greater part, mesosterna and mesepisterna faintly punctate; prosternal process not bordered, carinate posteriorly; metepisterna short and wide (length/width, 1.48~1.55) (Fig. 12G); apical ventrite 2-setose in ♂, whereas 6- or 8-setose (3 or 4 on each side) in ♀ (Fig. 12H).

Legs moderately long; metacoxae 3-setose (Fig. 13A); metafemora 2- or 3-setose (Fig. 13B); protarsi not sulcate laterally, meso- and metatarsi sulcate on outer side of tarsomeres I~III (Fig. 13C), without inner sulci, protarsomere IV subequally bilobed (inner lobe just a little longer than outer lobe) (Fig. 13D), mesotarsomere IV subequally bilobed (outer lobe just a little longer than inner lobe), metatarsomere IV subequally bilobed, arrowhead-shaped (Fig. 13E), more or less flattened in lateral view (Fig. 13F), with apical setae on dorsal side (Fig. 13E, F, arrows), pro-, meso-, and meta-tarsomeres V with long setae on lateroventral side (Fig. 13G, arrow).

*Male and female genitalia.* Aedeagal median lobe arcuate (Fig. 14A, B), widely membranous on dorsal side (Fig. 14D); apical lobe triangular in dorsal view (Fig. 14E, arrow); endophallus armed with numerous, deeply pigmented, thorn-like

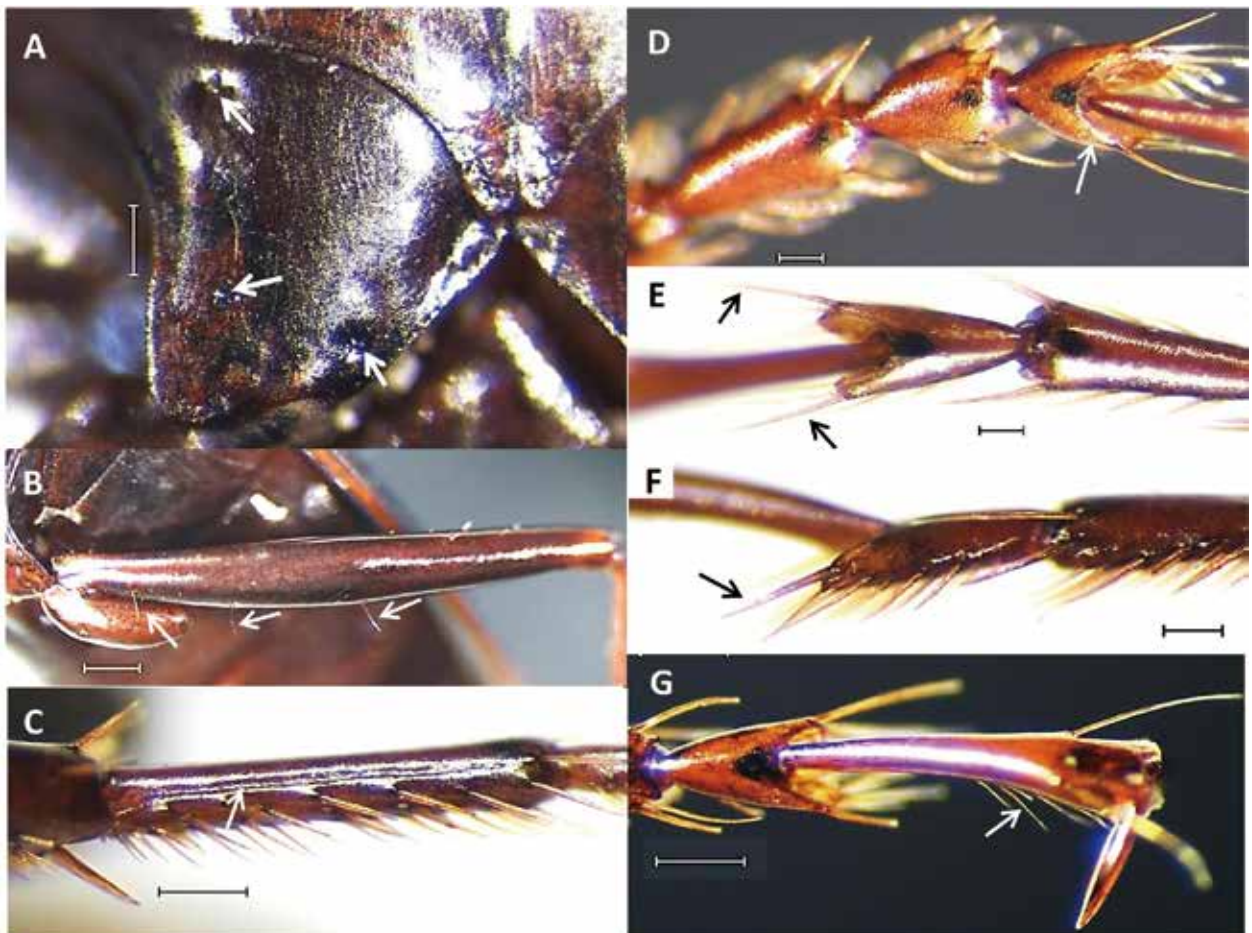


Fig. 13. Legs of *Colpodes mixtus*. A. Right metacoxa with 3 setiferous pores (arrows). B. Left metafemur with 3 setae (arrows). C. Left metatarsomere I, lateral view, showing sulcus (arrow) on outer side. D. Right protarsus (♂), showing tarsomeres II~IV. Arrow indicates tarsomere IV. E. Left metatarsus, showing tarsomere IV with apical setae (arrows). F. Right metatarsus, lateral view, showing an outer apical seta (arrow) of tarsomere IV. G. Left metatarsus, showing lateroventral setae (arrow) of tarsomere V. Scale bars = 0.5 mm (B); 0.2 mm (A, C, G); 0.1 mm (D~F).

sclerites in right lateral view (Fig. 14C), whereas in left lateral view, smooth on greater part (Fig. 14B); parameres ear-shaped (left paramere larger than right one).

Basal segments of styli with 15~17 rather long setae (Fig. 14F, left arrow); apical segments (Fig. 14G) less curved outward, with 6 or 7 lateral spines which are often atrophied (Fig. 14F, right arrows), with fine setae arising from subapical foramens (Fig. 14G, arrow), without dorsal spines.

**Specimens examined.** Tahsuehshan Forest Recreation Area, Taichung City (former Taichung

County), elev. 2000~2500 m (台中市大雪山森林遊樂區): 2 ♂♂ 1 ♀, 21-v-2012, K. Terada leg. (Terada-123); 3 ♂♂ 3 ♀♀, 27-vi-2012, L.W. Yeh leg. The above specimens were collected under stones scattered in the forest floor at 2000~2500 m in elevation.

**Remarks.** This species was described by Jedlička in 1940 (type locality: Wushe, Nantou County, Taiwan). According to the original description, the type specimen had only two discal setiferous pores on each elytral interval III (anterior pores were absent). In our specimens, however, those are three (namely, the anterior pore is always

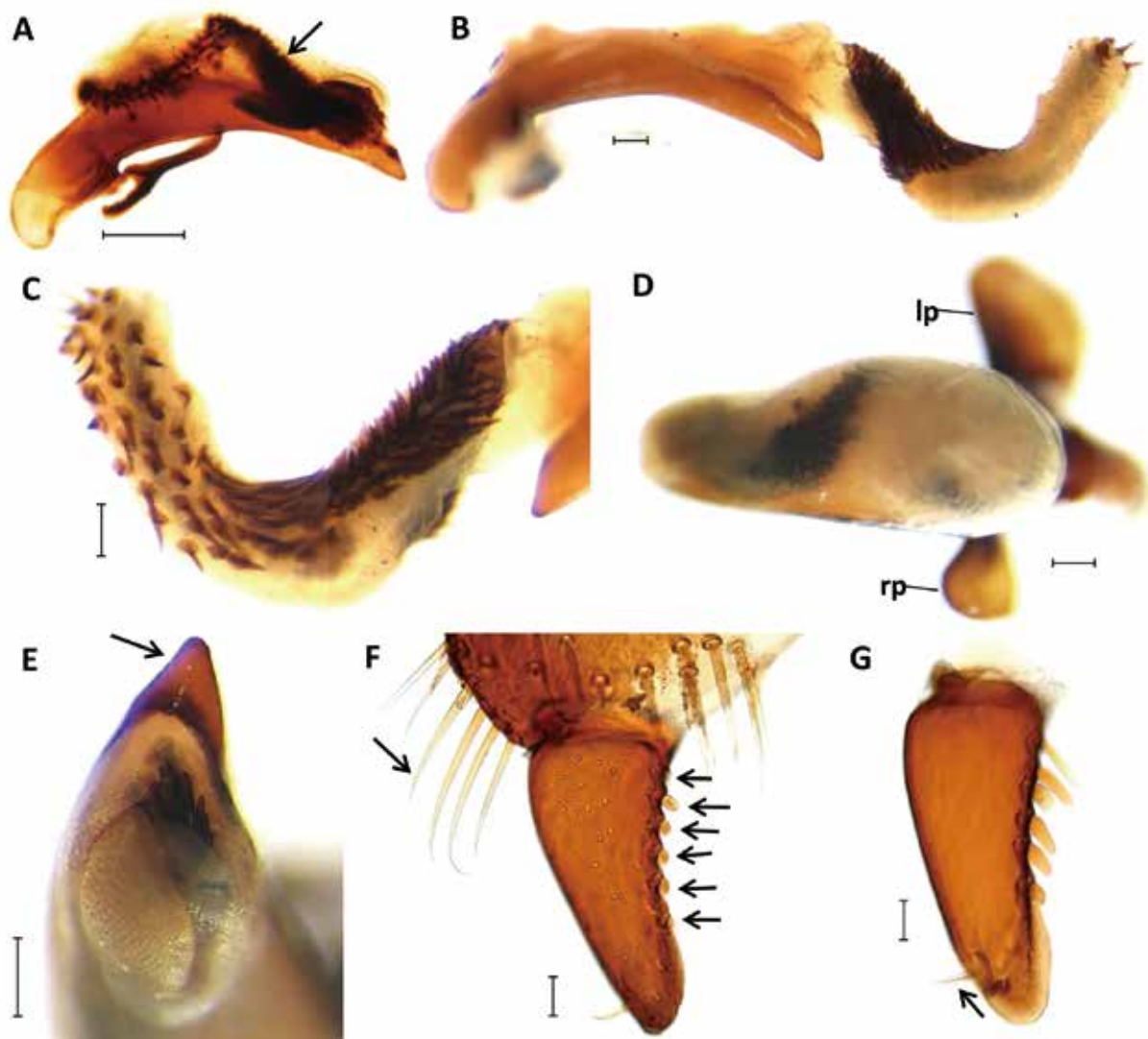


Fig. 14. Male and female genitalia of *Colpodes mixtus*. A. Aedeagus, left lateral view (left paramere removed). Arrow indicates endophallic sclerites. B. Aedeagus with everted endophallus, left lateral view. C. Everted endophallus, right lateral view. D. Aedeagus, dorsal view. Right (rp) and left (lp) parameres are out of focus. E. Apical portion of aedeagal median lobe, dorsal view, showing apical lobe (arrow). F. Left stylus, ventral view, showing long setae (left arrow) of basal segment and atrophied lateral spines (right arrows). G. Apical segment of left stylus, ventral view, showing developed lateral spines. Arrow indicates fine setae arising from subapical foramen. Scale bars = 0.5 mm (A); 0.2 mm (B-E); 0.05 mm (F, G).

present). We saw a digital image taken from the type specimen preserved in the National Museum, Praha, but could not confirm the presence of an anterior discal pore on each elytron.

This species somewhat resembles *Colpodes* (*Negreum*) *ehikoensis* (Habu, 1954) and *C. (N.) peliotes* (Habu, 1974), both distributed in Japan, but easily distinguished from the latter two species by 1) the larger size, 2) antennomere II without verticillate setae, 3) the unisulcate tarsi (sulcate only on the outer side), 4) the apical ventrite of females with 6 or 8 setae, and 5) the aedeagal endophallus with a great number of thorn-like sclerites.

### ACKNOWLEDGEMENTS

We sincerely thank Dr. Jiří Hájek (Department of Entomology, The National Museum, Praha, Czech Republic), Dr. Roberto Poggi (Museo Civico di Storia “Giacomo Doria”, Genoa, Italy), Dr. Luca Toledano (Verona, Italy), and Dr. Joachim Schmidt (Rostock, Germany) for providing digital images of the type specimens of *Colpodes* species treated in the present paper. Our thanks are also due to Mr. Masato Mori (Osaka, Japan) who provided several *Colpodes* specimens from Japan for our study.

### REFERENCES

- Bates, H. W. 1873. On the geodephagous Coleoptera of Japan. *Transact. Entomol. Soc. Lond.* 1873: 219-322.
- Bates, H. W. 1883. Supplement to the geodephagous Coleoptera of Japan, chiefly from the collection of Mr. George Lewis, made during his second visit, from February, 1880, to September, 1881. *Transact. Entomol. Soc. Lond.* 1883: 205-290, pl. xiii.
- Bates, H. W. 1892. Viaggio di Leonardo Fea in Birmania e regioni vicine. ILIV. List of the Carabidae. *Ann. Mus. Civ. Storia Nat. Genova* 32: 267-428.
- Bousquet, Y. 2003. Carabidae: Harpalinae: Platynini. In: I. Löbl and A. Smetana (eds.). *Catalogue of Palaearctic Coleoptera Vol. 1. Archostemata-Myxophaga-Adephaga*. Apollo Books, Stenstrup, Denmark, pp. 449-469.
- Habu, A. 1954. Species of the genus *Agonum* (Coleoptera, Carabidae) and its allied genera from Mt. Hiko, Kyushu (The Carabidae-fauna of Mt. Hiko, V). *Bull. Nat. Inst. Agric. Sci. (C)* 4: 295-337, pls. 1-3.
- Habu, A. 1965. Some carabid-beetles from Formosa. *Special Bull. Lepidopterol. Soc. Jpn.* 1: 83-87.
- Habu, A. 1974. Some new Japanese species and subspecies belonging to *Platynus* (s. lat.) in Mr. T. Shibata's collection (Coleoptera, Carabidae). *Entomol. Rev. Jpn.* 27: 13-31, pls. 3-5.
- Jedlička, A. 1934. Monographie der mit *Colpodes* verwandten gattungen aus China, Formosa und Philippinen. *Sbornik entomol. Oddelěni pñ Zool. Sbirkách Národního Mus. Praze* 12 (103): 177-205, 1 pl.
- Jedlička, A. 1939. Neue Carabiden aus Ostasien (XII Teil.) *Im Selbstverlag.* 8 pp.
- Jedlička, A. 1940. Neue Carabiden aus Ostasien. (Hauptsachlich von der Insel Formosa). (XIII Teil.) *Im Selbstverlag.* 18 pp.
- Jedlička, A. 1952. Neue Carabiden aus der Sammlung des Ungarischen Naturwissenschaftlichen Museums in Budapest (Col.), *Ann. Hist.-Nat. Mus. Natl. Hungarici (Ser. Nov.)* 2: 79-93.
- Jedlička, A. 1954. Neue Carabiden aus der Sammlung des Ungarischen Naturwissenschaftlichen Museums in Budapest (Coleoptera). *Ann. Hist.-Nat. Mus. Natl. Hungarici (Ser. Nov.)* 5: 225-229.
- Liebherr, J. K. 1998. On *Rembus* (*Colpodes*) *brunneus* MacLeay (Coleoptera: Carabidae, Platynini): redescription and relationships. *J. Nat. Hist.* 32: 987-1000.
- Schmidt, J. 2000. Ein Vorschlag zur Lösung nomenklatorischer Probleme der Gattung *Platynus* Bonelli, 1810 (Coleoptera, Carabidae). *Entomol. Blätter* 96: 9-23.
- Terada, K. 2006. A checklist of the Carabidae (Coleoptera) recorded from Taiwan. *Misc. Rep. Hiwa Mus. Nat. Hist.* 46: 1-72. (in Japanese)
- Terada, K., M.-H. Hsu and W.-J. Wu. 2005. A checklist of the Carabidae (Coleoptera) of Taiwan. *Misc. Rep. Hiwa Mus. Nat. Hist.* 45: 163-216.
- Terada, K., L.-W. Yeh and W.-J. Wu. 2013. Notes on the Taiwanese Caraboidea (Coleoptera) I. Eight species of the genus *Tachys* Dejean (Carabidae: Bembidiini). *Coll. Res.* 26: 1-24.

# 臺灣產步行蟲總科(鞘翅目)之註記(VI)－ 重新描述 *Colpodes* 屬三種(步行蟲科: Platynini)

寺田勝幸<sup>1</sup>、葉人瑋<sup>2</sup>、吳文哲<sup>3</sup>

<sup>1</sup>廣島市西區大宮1-2-20-203，日本

<sup>2</sup>花蓮區農業改良場農業推廣課，花蓮縣97365吉安鄉吉安路二段150號，臺灣

<sup>3</sup>國立臺灣大學昆蟲學系，臺北市10617羅斯福路四段1號，臺灣

本文重新描述 *Colpodes acroglyptus* Bates, 1892, *C. punctatus* Jedlička, 1934, 及 *C. mixtus* Jedlička, 1940，並附圖。

關鍵詞：步行蟲科，*Colpodes*，Platynini，重新描述，臺灣。