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The Group of *Stenus cirrus* in Taiwan (Coleoptera: Staphylinidae)

(310th Contribution to the Knowledge of Steninae)

Volker PUTHZ

c/o Burgmuseum Schlitz, Naturwissenschaftliche Abteilung,
Vorderburg 1, D–36110 Schlitz, Germany

Abstract Sixteen new species of the *cirrus*-group of the Genus *Stenus* LATREILLE, 1797 are described from Taiwan: *Stenus cirratitogatus* sp. nov., *S. cirratitunicatus* sp. nov., *S. cirrativestis* sp. nov., *S. cirrativestitus* sp. nov., *S. cirratus* sp. nov., *S. cirricinctus* sp. nov., *S. cirriger* sp. nov., *S. cirrimicans* sp. nov., *S. cirrimirificus* sp. nov., *S. cirriornatus* sp. nov., *S. cirripraestans* sp. nov., *S. cirritogatus* sp. nov., *S. cirritunicatus* sp. nov., *S. cirrivarians* sp. nov., *S. cirrivestis* sp. nov., *S. cirrivestitus* sp. nov. and a key to species is provided.

The *Stenus cirrus* group has been defined by PUTHZ (2003) and redefined by TANG *et al.* (2008) after knowledge of new species. This group is of special interest, since it is a model example to show that the traditional subgeneric classification of the large genus *Stenus* (with already more tha 2,400 described taxa) is artificial: within the same monophyletic group there are assembled species, which – following the traditional definition of the subgenera – should establish in three different subgenera. As a consequence of this I decided to abandon the traditional subgeneric classification and to systematize species into groups, preferably monophyletic groups (PUTHZ, 2008).

The *Stenus cirrus* species group is characterized as follows: Small to moderately large species (2.2–5.0 mm) with the abdominal pubescence long and erect. Paraglossae oval (*cirrus*-complex; most species) or coniform (*flammeus*-complex, 2 species). Sternum 9 with a distinctly prominent tooth apicolaterally (Fig. 2) (exceptions: male of *S. cirrimirificus* sp. nov.: fig. 7, and the *guangxiensis*-complex, 4 species, with apicolaterally serrated sternum 9). Tergite 10 at smooth posterior margin rounded. Male: Legs without special sexual characters, ventral characters of abdomen simple. Aedeagus variable. Female: spermatheca strongly sclerotized, spermathecal duct mostly long and thin and variously coiled. Abdomen either with distinct paratergites (1 species) or segments 4–6 line-like margined or immargined. Tarsal segment 4 bilobed or simple. Species of the "*Hypostenus*"-habitus brilliant with some aeneous tint often also with yellowish elytral spots, species of the "*Hemistenus*"-habitus either shining or densely reticulate.

Together with the Taiwanese representatives, the *Stenus cirrus*-group include at present 57 described species, 1 from Northern India, 3 from Vietnam, 13 from Japan, 21 from China (furthermore I know of about 20 more undescribed species from China).

In this paper I describe 16 new species of the *cirrus*-group from Taiwan, all endemic. Amongst these the first example of a species with complete abdominal paratergites was found (*S. cirrivarians* sp. nov.) and a number of species with dense microsculpture. Morphologically

all Taiwanese species have oval paraglossae. Only two (*S. cirricinctus* sp. nov. and *S. cirrativestis* sp. nov.) represent the "*Hypostenus*"-habitus, thirteen the "*Hemistenus*"-habitus with very finely margined abdomen but with simple tarsi. Within these species several types of genitalia are observed, which show, that a remarkable diversification has taken place in the various montainous systems. One species (*S. cirrimirificus* sp. nov.) is of special interest, since sternum 9 of the male is completely different from that of the other species of the group.

Except one (*S. cirrivarians* sp. n.) most of the hitheto in Taiwan collected species of the *cirrus*-group are micropterous to apterous (wings reduced to minute rudiments) and live montainous from 1,900 m up to nearly 3,900 meters! Most species of mainland China have been collected in minor heights of less than 1,000 meters.

Nearly the complete Taiwanese material has been collected by Dr. Aleš SMETANA (Ottawa) by sifting.

For the names of the new species I choose composita of the latin word "*cirrus*" = seta both to indicate the erect pubescence of (mostly) the abdomen and to call attention to the group relationship.

The following acronyms are used: aE = average distance between eyes; cP: private collection V. PUTHZ, SCHLITZ; cS = coll. SMETANA (to be deposited in the Muséum d'histoire naturelle, Genéve); dEm = depth of apical emargination of sternite 8; HT = holotype; lEl = greatest length of elytra; lP = length of pronotum; lS = length of suture; lSt = length of sternite; PM = proportional measurements (1 unit = 0,025 mm); PT/T = paratype/s; wEl = greatest width of elytra; wH = width of head; wP = width of pronotum.

Stenus cirratus sp. nov.

(Figs. 1, 2, and 16)

Apterous, black, fore-body with slight aeneous tint, moderately shiny, abdomen brilliant, fore-body coarsely, somewhat rugosely punctate, abdomen anteriorly coarsely and densely punctate, posteriorly very finely and very sparsely punctate; pubescence long, erect on abdomen. Antennae yellowish brown, club infuscate. Maxillary palpi yellowish, segment 3 infuscate. Legs yellowish brown, femora slightly infuscate apically. Clypeus black, labrum blackish brown, sparsely pubescent. Abdominal segments 3 and 4 with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 2.7–3.4 mm (fore-body: 1.3–1.6 mm).

PM of the HT: wH: 27.5; aE: 13.5; wP: 21; lP: 21; wEl: 25; lEl: 22.5; lS: 15.

Male: Metasternum slightly impressed, moderately coarsely and densely punctate, interstices very shallowly reticulate. Sternites 3–7 simple, sternite 7 densely punctured medially than laterally; sternite 8 with a broad and shallow apical emargination (lSt: dEm (52 : 2.5). Sternite 9 acute apicolaterally (Fig. 2). Aedeagus (Fig. 1), apical portion of median lobe broadly rounded, anterior margin of expulsion clasp broadly rounded at both sides; parameres nearly as long as the median lobe, with about 16 long apical setae.

Female: Sternite 8 broadly rounded posteriorly. Valvifer acute apicolaterally. Spermatheca (Fig. 16), spermathecal duct with a coiled portion medially, a very tiny collum and a short infundibulum.

Head broader than elytra, frons moderately broad, longitudinal furrows distinct, median

portion nearly as broad as each of the lateral portions, distinctly elevated above the level of dorsal eye margins; punctation coarse and very dense on lateral portions, sparser on median portion, diameter of punctures nearly as large as apical cross section of antennal segment 2, interstices laterally much smaller than a half diameter of punctures, larger medially, sometimes larger than diameters of punctures. Antennae short, when reflexed extending to the posterior third of pronotum, penultime segments about as long as broad. Pronotum as broad as long, broadest in anterior half, sides convex anteriorly, concave posteriorly; a deep and broad longitudinal impression medially, a shallow transverse constriction near anterior margin and a shallow transverse impression in posterior half on each side; punctation slightly coarser than on frons, very dense, very slightly coalescent, median impression impunctate. Elytra subtrapeziform, much narrower than head, about as long as broad, shoulders oblique, sides long shallowly convex, slightly narrowed behind, posterior margin broadly emarginate; sutural impression indistinct, humeral impression very shallow; punctation about as coarse as on pronotum but more distinctly (although slightly) coalescent longitudinally. Abdomen elliptical, basal furrows of first segments moderately deep, tergite 7 with a narrow, sometimes incomplete membranous fringe apically; punctation of tergite 3 and the bases of tergites 4 and 5 coarse and dense, on the rest increasingly finer and sparser, punctures on tergite 7 nearly as large as one eye facet at dorsal eye margin, interstices four times and more as large as punctures; tergite 10 nearly smooth. Legs slender, metatarsi nearly as long as four fifths of the metatibiae, segment 1 about as long as the 3 following segments combined, nearly twice as long as the last segment. Fore-body with (distinct reticulation, abdomen smooth anteriorly, shallowly reticulate from tergite 7 to tergite 10.

Variability: In a few specimens the elytral punctation is more distinctly coalescent longitudinally than in most specimens.

Holotype: ♂, TAIWAN: Nantou Hsien: Houkuanshan, Kuenyang, alt. 3,050 m, 27. IV. 1990 (T 29), A. SMETANA leg. Paratypes: 10 ♂♂, 16 ♀♀: ibidem; 11 ♂♂, 9 ♀♀: ibidem, 29. IV. 1990 (T 30); 6 ♂♂, 3♀♀: ibidem, 4. V. 1991 (T 63); 1♀: ibidem, alt. 3,220 m, 7. V. 1991 (T 64), all leg. A. SMETANA.- HT and PTT in cS, PTT also in cP.

For identification amongst the Taiwanese species see key.

Etymology. Cirratus (Latin) = with long setae

Stenus cirrivestis sp. nov.

(Figs. 3 and 17)

Apterous, black, fore-body moderately shiny, abdomen brilliant, fore-body coarsely punctate, punctation of pronotum slightly coalescent, elytral punctation mostly shortly longitudinally coalescent, anterior punctation of abdomen coarse and dense, posterior punctation fine and sparse; pubescence long, erect on abdomen. Antennae yellowish brown, club infuscate. Maxillary palpi yellowish, segment 3 infuscate. Legs brown. Clypeus black, labrum blackish brown, sparsely pubescent. Abdominal segments 3 and 4 with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 2.6–3.4 mm (fore-body: 1.4–1.5 mm).

PM of the HT: wH: 26.3; aE: 13.5; wP: 20.2; lP: 20.2; wEl: 24.3; lEl: 22; lS: 17.

Male: as in *S. cirratus*, sternite 8 with a broad and shallow emargination (lSt: dEm (50 : 4).

Aedeagus (Fig. 3) very similar to that of *S. cirratus*, but the median lobe slightly broadened anteriorly and the expulsion clasp bicuspid anteriorly; parameres with about 13–14 apical setae.

Female: about as in *S. cirratus*, spermatheca similar (Fig. 17).

In nearly all respects similar to *S. cirratus*, but the elytral punctation mostly more distincly coalescent longitudinally, the abdominal punctation less fine and less sparse, tergite 7 in most specimens without reticulation.

Variability: The elytral punctation is variable. In several specimens punctures are well delimited, but are coalescent longitudinally in most specimens. Since this character is also variable in *S. cirratus*, both species should be identified by the examination of the male genitalia.

Holotype: ♂, TAIWAN: Taichung Hsien, Hsueshan, above Shan-Liu-Gien Hut, alt. 3,200 m, 8. V. 1991 (T 72), leg. A. SMETANA. Paratypes: 13 ♂♂, 21 ♀♀, ibidem; 4 ♂♂, 5 ♀♀, ibidem alt. 3,150 m, 8. V. 1991 (T 71); 3 ♀♀, ibidem alt. 3,220 m, 7. V. 1991 (T 69); 1 ♀, ibidem, Hsueshan Main Peak, alt. 3,650 m, 9. V. 1991 (T 73); 1 ♀, ibidem alt. 3,750–3,884 m, 9. V. 1991 (T 74); 4 ♂♂, 1 ♀, Hsueshan near Hsueshan-Tun-Feng, alt. 3,170 m, 11. V. 1991 (T 76); 3 ♂♂, 2 ♀♀, ibidem, 7. V. 1991 (T 68); 1 ♀, Taichung Hsien: Anmashan, 2130 m, 1. V. 1990 (T 36), all leg. A. SMETANA.- HT and PTT in cS, PTT also in cP.

For identification amongst the Taiwanese species see key.

Etymology. Cirriventris (Latin) = clothed with setae.

Stenus cirriger sp. nov.

(Figs 4 and 18)

Apterous, black, fore-body moderately shiny, abdomen brilliant, fore-body coarsely and very densely, on elytra rugosely punctate/sculptured, tergite 3 coarsely and densely punctate, the punctation of the following tergites moderately coarsely to fine, sparse; pubescence long, erect on abdomen. Antennae light brown, club infuscate. Maxillary palpi light brown, segment 3 infuscate. Legs brown, apices of femora slightly infuscate. Clypeus black, labrum blackish brown, densely pubescent. Abdominal segment 3 with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 2.5–2.9 mm (fore-body: 1.3–1.4 mm).

PM of the HT: wH: 26.5; aE: 13; wP: 19; lP: 19; wEl: 22.2; lEl: 20; lS: 15.

Male: about as in *S. cirratus*, but the punctation of the metasternum moderately fine and moderately dense, the punctation of sternites denser; sternite 8 with a narrow and shallow emargination (lSt: dEm (49 : 3). Aedeagus (Fig. 4), expulsion clasp bicuspid anteriorly; parameres longer than the median lobe, with about 9–10 long apical setae.

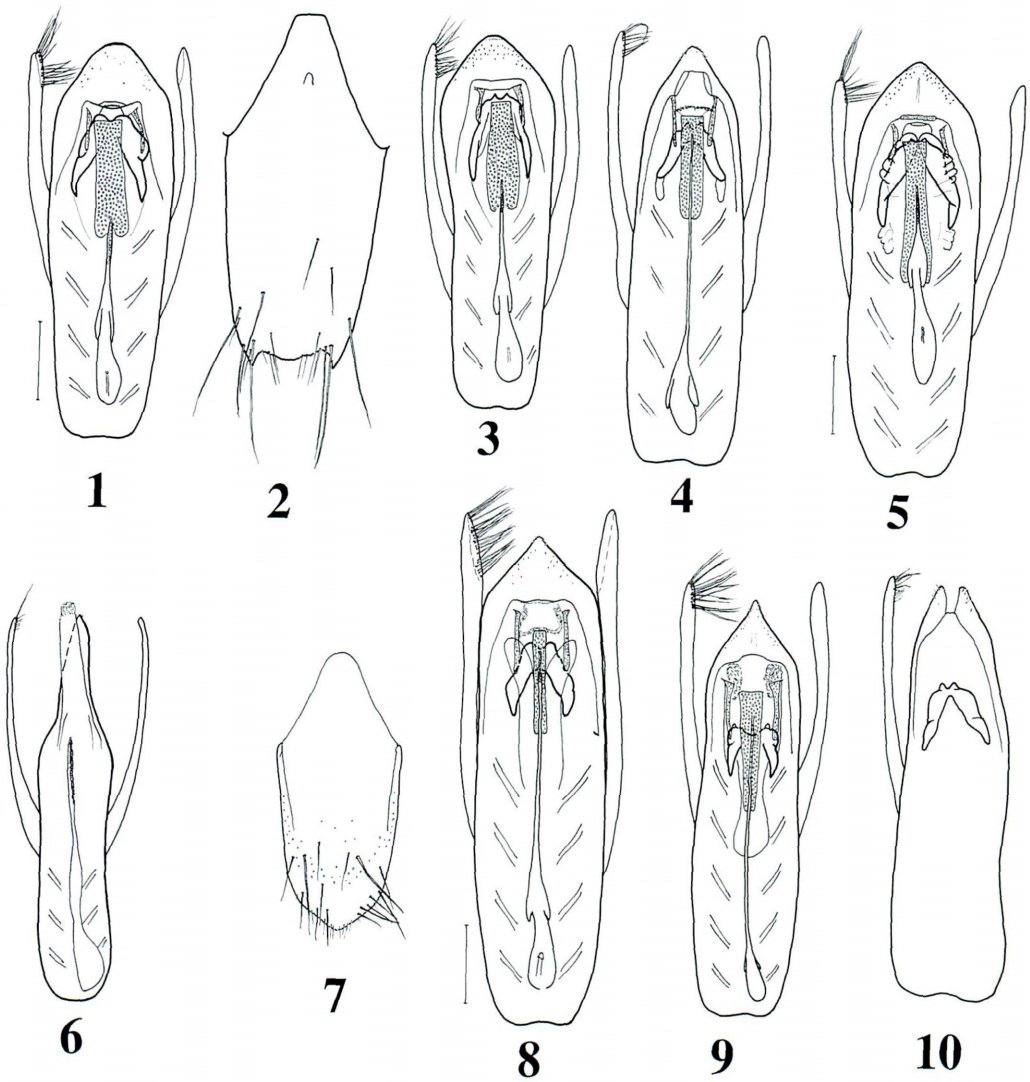
Female: about as in *S. cirratus*, but the spermatheca more slenderer and the infundibulum longer (Fig. 18).

Regarding the variability of the sculpture of the exosceleton this new species is similar to *S. cirratus*, from which it has to be distinguished by the genitalia.

Holotype ♂, and paratypes 1 ♂, 3 ♀♀, TAIWAN: Nantou Hsien, Nankaoshan Tenchi Hut, alt. 2,900 m, 5. V. 1992 (T 144), leg. A. SMETANA.- HT and PTT in cS, 1 PT in cP.

For identification amongst the Taiwanese species see key.

Etymoogy. Cirriger (Latin) = bearing setae.



Figs. 1–10. Ventral aspect of aedeagus (1, 3–6, 8–10) and sternite 9 of male (2, 7).—— *Stenus cirratus* sp. nov. (1, 2; T 29); *S. cirrivestis* sp. nov. (3; T 72); *S. cirriger* sp. nov. (4; T 114); *S. cirripraestans* sp. nov. (5, HT); *S. cirrimirificus* sp. nov. (6, 7; T 84); *S. cirratitogatus* sp. nov. (8; HT); *S. cirrivestitus* sp. nov. (9; T 115); *S. cirrimicans* sp. n. (10; HT, T 114). Scale bar = 0.1 mm.

Stenus cirripraestans sp. nov.

(Fig. 5)

Micropterous, black, fore-body moderately shiny, abdomen brilliant, fore-body very coarsely and very densely, on pronotum and elytra slightly rugosely punctate, tergite 3 coarsely and moderately densely punctate, punctation of the following tergites fine and very sparse; pubescence long, erect on abdomen. Antennae yellowish, club infuscate. Maxillary palpi yellowish, segment 3 infuscate. Legs yellowish brown, apices of femora feebly infuscate. Clypeus black, labrum blackish brown, densely pubescent. Abdominal segment 3 with very

narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 3.3 mm (interpolated from experience: 2,7–3.4 mm) (fore-body: 1.4 mm).

PM of the HT: wH: 27.2; aE: 13.5; wP: 20.6; lP: 22; wEl: 24.8; lEl: 23; lS: 16.

Male: about as in *S. cirrivestis*, but the aedeagus different (Fig. 5), the median lobe slightly longer, the expulsion clasp of different shape; parameres with about 12 long apical setae.

Female: unknown.

In most respects similar to *S. cirratus* and *S. cirrivestis*, but the median impression of the pronotum shorter and less broad, the punctation of the elytra mostly well delimited, and the abdominal punctation different: only tergite 3 is coarsely punctate, the punctation of the following tergites is abruptly much finer and very sparse (even sparser than in the compared species); no reticulation on the last tergites.

Holotype: ♂, TAIWAN: Hsinchu Hsien, Hsinkuang trib. village, km 48 road 60, Jienshih Township, (alt. 1,800 m, mountain forest litter, 25. III. 2008, leg. S. VÔ T: in MHNG.

For identification amongst the Taiwanese species see key.

Etymology. Cirripraestans (Latin) = distinct by setae

Stenus cirratitogatus sp. nov.

(Fig. 8)

Micropterous, black, fore-body moderately shiny, abdomen brilliant, head coarsely and very densely punctate, pronotum and elytra coarsely to very coarsely and rugosely punctate-sculptured, punctation of tergite 3 variegate, rest of abdomen very finely and very sparsely punctate; pubescence long, erect on abdomen. Antennae yellowish brown, club infuscate; Maxillary palpi yellowish brown, segment 3 slightly darker. Legs light brown, apices of femora feebly infuscate. Clypeus black, labrum dark brown, moderately sparsely pubescent. Abdominal segment 3 with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 3.6 mm (interpolated from experience: 3.1–3.8 mm) (fore-body: 1.6 mm).

PM of the HT: wH: 31.8; aE: 15; wP: 23; lP: 24; wEl: 28; lEl: 26; lS: 18.

Male: Metasternum with a shallow median impression, which is moderately coarsely and moderately densely punctate, medially with a shorter narrow carina. Punctation of sternites very fine and very sparse on posterior middle of sternite 7 somewhat denser than on the sides; sternite 8 with a very shallow apical emargination (lSt: dEm (23 : 1). Aedeagus (Fig. 8), apical portion of the median lobe triangularly narrowed, anterior margin of expulsion clasp rounded at both sides; parameres longer than median lobe, with 23 long apical setae.

Female: Unknown.

Head broader than elytra, frons moderately broad, with two deep longitudinal furrows, median portion as broad as each of the lateral portions, distinctly elevated to the level of dorsal eye margins; punctation coarse and very dense, diameter of punctures can become as large as median cross section of antennal segment 2, interstices much smaller than a half diameter of punctures, larger only on elevated median portion. Antennae short, when reflexed extending somewhat behind the middle of pronotum, penultimate segments about as long as broad. Pronotum nearly as broad as long, broadest in anterior half; sides convex anteriorly, concave

posteriorly; a deep median longitudinal impression distinct, more short impressions present in the irregular rugose sculpture; punctures slightly less coarse than those on frons, irregularly confluent, interstices smaller than half diameter of punctures. Elytra trapezoid, broader than long, shoulders oblique, sides feebly convex, narrowed in posterior quarter, posterior margin deeply emarginate; sutural impression shallow, humeral impression long and deep, furthermore a long and deep impression in posterior quarter laterally; the sculpture consists of very coarse punctures in sutural third and of longitudinally directed rugae in lateral two thirds. Abdomen elliptical, punctation of tergite 3 coarse anteriorly, fine posteriorly, moderately sparse; the following tergites are finely to very finely and very sparsely punctate, tergite 10 with a few fine punctures. Legs about as in *S. cirratus*. Fore-body with dense, shallow reticulation, abdomen smooth except faint reticulation on posterior portion of tergite 8.

Apart of the sexual characters *S. cirritogatus* sp. n. may be distinguished from its close relatives by greater length, the remarkable elytral impressions and the longitudinally confluent punctation of the elytra.

Holotype: ♂, TAIWAN: Kaohsiung Hsien, Peinantashan trail, ridge at alt. 2,800 m, 3. VII. 1993 (T.134), leg. A. SMETANA: in cS.

For identification amongst the Taiwanese species see key.

Etymology. Cirratitogatus (Latin) = clothed with setae.

Stenus cirrativestitus sp. nov.

(Fig. 21)

Micropterous, black, fore-body moderately shiny, abdomen brilliant, head very coarsely and densely punctate, pronotum coarsely, elytra very coarsely, rugosely punctate-sculptured, tergite 3 with the punctation variegate, following segments very finely and very sparsely punctate; pubescence long, erect on abdomen. Antennae yellowish, club infuscate. Maxillary palpi yellowish, segment 3 infuscate. Legs light brown, apices of femora feebly infuscate. Clypeus black, labrum dark brown, moderately sparsely pubescent. Abdominal segments 3 and 4 with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 3.9 mm (interpolated from experience: 3.2–4.0 mm) (fore-body: 1.8 mm).

PM of the HT: wH: 33.3; aE: 16; wP: 25.7; lP: 26; wEl: 33; lEl: 30; lS. 23.

Male: Unknown.

Female: Sternite 8 rounded at posterior margin. Valvifer acute apicolaterally. Spermatheca (Fig. 21), infundibulum long.

In most respects similar to *S. cirratitogatus*, but the elytra less broad and the punctation coarser (diameter of the comparatively shallow punctures larger than largest cross section of antennal segment 1) and more distinctly delimited, only slightly confluent logitudinally. Reticulation present already on tergite 7.

Holotype: ♂, Taiwan: Ilan Hsien, Taipingshan, alt. 1,950 m, 13. VII. 1993 (T 150), leg. A. SMETANA: in cS.

For identification amongst the Taiwanese species see key.

Etymology. Cirrativestitus (Latin) = clothed with setae.

Stenus cirrivestitus sp. nov.

(Fig. 9)

Apterous, black, fore-body moderately shiny, abdomen strongly shiny, head coarsely and very densely punctate, pronotum coarsely, somewhat rugosely punctate, elytra with coarse and slightly longitudinally confluent punctation, tergite 3 moderately coarsely, densely punctate, punctation of tergite 4 moderately fine and sparse, punctation of the following tergites very fine and very sparse; pubescence long, erect on abdomen. Antennae light brown, club infuscate. Maxillary palpi light brown, segment 3 infuscate. Legs light brown, apices of femora feebly infuscate. Clypeus black, labrum blackish brown, moderately densely pubescent. Abdominal segment 3 with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 2.2–2.8 mm (fore-body: 1.3 mm).

PM of the HT: wH: 25.8; aE: 12.5; wP: 19.3; lP: 18.5; wEl: 22.5; lEl: 21; lS: 16.

Male: Metasternum with a shallow median impression, which is moderately finely, densely punctate, interstices smooth. Median punctation of sternites fine and sparse, finer and denser in posterior middle of sternite 7; sternite 8 with a broad, very shallow apical emargination (lSt: dEm (49 : 2). Aedeagus (Fig. 9), apical portion of median lobe triangularly narrowed, expulsion clasp short, bicuspid anteriorly; parameres slightly longer than median lobe, with about 14-18 long apical setae.

Female: unknown.

In most respects very similar to *S. cirratus* but with even finer abdominal punctation and the tergite 7 without reticulation; tergite 8 and 10 with shallow microsculpture.

Holotype: ♂, and paratype, 1♀: TAIWAN: Nantou Hsien, Nankaoshan, 2.5 km SW Tenchi Hut, alt. 2,720 m, 6. V. 1992 (T 115), leg. A. SMETANA.- HT in cS, PT in cP.

For identification amongst the Taiwanese species see key.

Etymology. Cirrivestitus (Latin) = clothed with setae.

Stenus cirrimicans sp. nov.

(Figs 10 and 19)

Apterous, black with a faint aeneous tint, moderately shiny, fore-body moderately coarsely and very densely punctate, punctation of abdomen moderately coarse and dense anteriorly, very fine and sparse posteriorly; pubescence long, erect on abdomen. Antennae brownish. Maxillary palpi light brown. Legs yellowish brown, apical portion of femora slightly infuscate. Clypeus black, labrum blackish brown, moderately densely pubescent. Abdominal segment 3 with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segments 4 simple.

Length: 2.6–3.4 mm (fore-body: 1.3–1.4 mm).

PM of the HT: wH: 27; aE: 13.5; wP: 20.5; lP: 19.5; wEl: 24.5; lEl: 22; lS: 16.

Male: Metasternum shallowly impressed medially, moderately finely and moderately densely punctate, interstices smooth. Punctation of sternites moderately fine and moderately dense anteriorly, very fine and sparse posteriorly; sternite 8 with a shallow and narrow triangular apical emargination (lSt: dEm (49 : 4). Sternite 9 acute apicolaterally. Aedeagus (Fig. 10) [it was

expulsed and the expulsed internal structures were separated from the median lobe: the apical gap, figured, may be a result of dissection], expulsion clasp bicuspid anteriorly; parameres slightly longer than median lobe, with about 12 apical setae.

Female: Sternite 8 rounded at posterior margin. Valvifer acute apicolaterally. Spermatheca as figured (Fig. 19).

Head broader than elytra, frons moderately broad with two distinct longitudinal furrows, median portion about as broad as each of the lateral portions, distinctly elevated over the level of dorsal eye margins; punctation moderately coarse and very dense, diameter of punctures about as large as widest cross section of antennal segment 3, interstices much narrower than a half diameter of punctures, larger on actual middle of median portion. Antennae short, when reflexed extending to the posterior third of pronotum, penultimate segments nearly as broad as long. Pronotum slightly broader than long; sides strongly convex, distinctly concave posteriorly; a deep longitudinal median impression distinct, a transverse lateral impression less distinct, a small callus on each side in posterior third; punctation moderately coarse and dense, slightly coalescent, diameter of punctures nearly as large as apical cross section of antennal segment 2, the strongly reticulate interstices mostly smaller than half diameter of punctures. Elytra trapezoidal, broader than long, shoulders oblique, sides shallowly convex, posterior margin broadly emarginate; sutural impression indistinct, humeral impression distinct, an additional shallow impression in posterolateral quarter; punctation slightly coarser than on pronotum, but largest punctures smaller than widest cross section of antennal segment 2, interstices smaller than a half diameter of punctures. Abdomen elliptical, basal impressions of first segments deep, tergite 7 with rudiments of an apical membranous fringe; punctation of tergite 3 coarse and dense, less coarser and less denser on the following tergites, punctures of tergite 7 smaller than one eye facet near dorsal eye margins, interstices three times or more as wide as diameter of punctures; tergite 10 with few fine punctures. Legs moderately slender, metatarsi about three quarters as long as metatibiae, segment 1 as long as the 3 following segments combined, much longer than the last segment. The whole dorsal side is densely reticulate.

This new species was collected together wth *S. cirriger* sp. n., and their aedeagi are very similar. But the spermatheca is different (Fig. 19, compare Fig. 18). Since the exosceletal characters of both series of specimens from the same locality are clearly different and no intermediates are known I regard both as very close but distinct species.

Holotype: ♂, and -paratypes: 2 ♀♀, TAIWAN: Nantou Hsien, Nankaoshan, Tenchi Hu, 2900 m, 5. V. 1992 (T 114), leg. A. SMETANA.- HT and 1 PT in cS, 1 PT in cP.

For identification amongst the Taiwanese species see key.

Etymology: Cirrimicans (Latin) = shimmery with setae.

Stenus cirritogatus sp. nov.

(Figs. 12 and 23)

Apterous, black with slight aeneous tint, moderately shiny, fore-body coarsely, very densely, on pronotum and elytra rugosely punctate, abdominal punctation coarse and dense anteriorly, very fine and very sparse posteriorly; pubescence long, erect on abdomen. Antennae yellowish, club infuscate. Maxillary palpi yellowish, segment 3 infuscate. Legs light brown. Clypeus black, labrum blackish brown, moderately densely pubescent. Abdominal segment 3

with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 2.8–3.7 mm (fore-body: 1.4–1.5 mm).

PM of the HT: wH: 27.8; aE: 13.8; wP: 20.3; lP: 20; wEl: 24.5; lEl: 23; lS: 16.5.

Male: Metasternum with a distinct median impression, punctation moderately fine and dense, impression with a short and narrow carina medially (see below); punctation of sternites moderately fine and moderately dense anteriorly, fine and sparse posteriorly, sternite 7 medially denser punctate and pubescent than on the sides; sternite 8 with a shallow apical emargination (lSt: dEm (61 : 5). Sternite 9 acute apicolaterally. Aedeagus (Fig. 12), median lobe long, apical portion triangularly narrowed with a small ventral callus, expulsion hooks very small, internal sac flagelliform; parameres longer than median lobe, with about 18-20 long setae apically.

Female: Metasternum with a (distinct fine and very short median carina. Sternite 8 rounded at posterior margin. Valvifer acute apicolaterally. Spermatheca (Fig. 23), spermathecal duct duct narrow, with a coiled portion medially, and infundibulum very long.

In many respects similar to *S. cirratus*, but the sculpture of pronotum and elytra more rugose, elytra longer and the complete abdomen densely reticulate.

Variability: In few specimens the abdominal punctation is coarser than in most specimens. Elytral impressions in most specimens more distinct than in *S. cirratus*. The short median carina of the metasternum can be distinct or missing.

Holotype: ♂ and paratype: 11 ♂♂, 6 ♀♀, TAIWAN: Kaohsiung Hsien, Kuanshan, Kuanoshing Hut, alt. 3,020 m, 18. IV. 1992 (T 92), leg. A. SMETANA; 3 ♂♂, 1 ♀, same as the holotype, alt. 2,950 m, 18. IV. 1992 (T 93); 1 ♂, Kuanshan trail, above Kuanshanchi River, alt. 2,550 m, 21. IV. 1992 (T 6); 1 ♀, Kaohsiung Hsien, Peinantashan trail, ridge alt. 2,900 m, 4. V. 1995 (T 172); 1 ♂, 7 ♀♀, ibidem, ridge at alt. 2,800 m, 3. VII. 1993 (T 134); 1 ♀, ibidem Peinantashan trail, alt. 2,400 m, 4. VII. 1993 (T 135); 4 ♀♀, Pingtung Hsien, Peitawushan ridge, alt. 2,800–2,910 m, 28. IV. 1992 (T 105); 1 ♂, 1 ♀, Peitawushan above Kuai-Ku Hut, alt. 2,680 m, 29. IV. 1992 (T 106): 1 ♂, 1 ♀: Chiai Hsien, Yushan National Park, Mun-Li Clif, alt. 2,700 m, 27. IV. 1990 (T 28), all leg. A. SMETANA. – HT and PTT in cS, PTT also in cP.

For identification amongst the Taiwanese species see key.

Etymology. Cirritogatus (Latin) = clothed with setae.

Stenus cirratitunicatus sp. nov.

(Figs. 11 and 22)

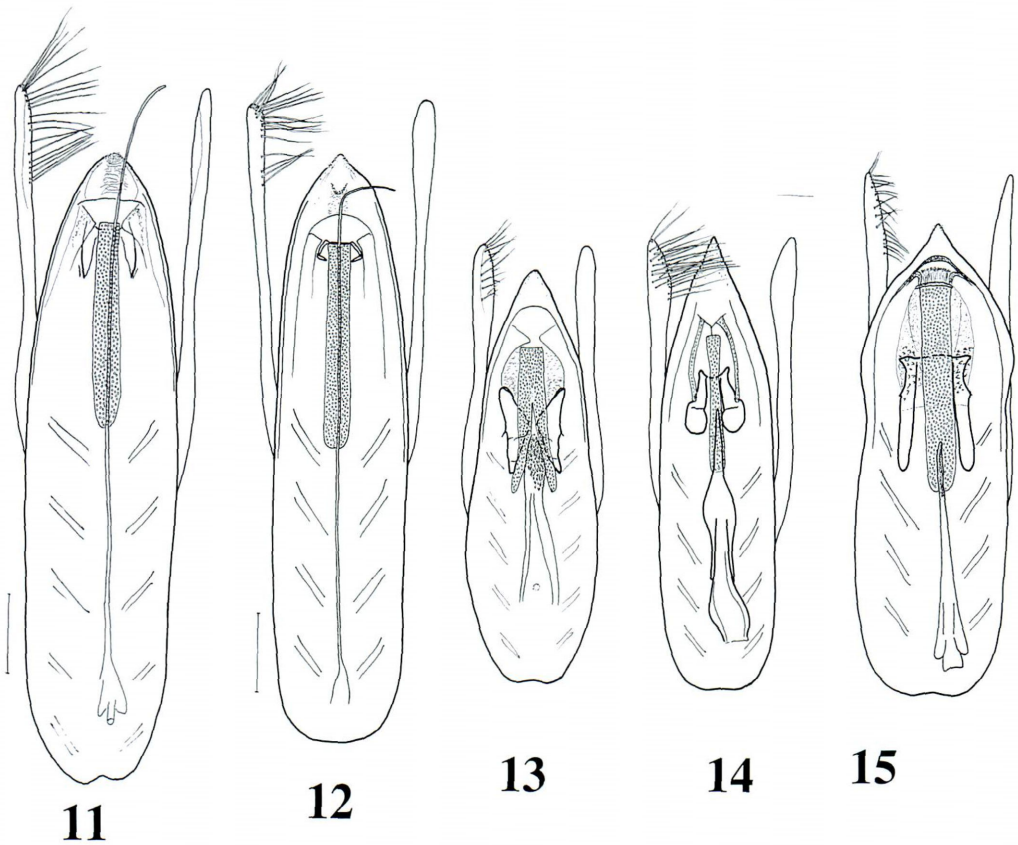
In most respects as *S. cirritogatus*, but the head broader and the genitalia different.

Length: 2.8–3.7 mm (fore-body: 1.5–1.6 mm).

PM of the HT: wH: 28,2; aE: 13.5; wP: 20; lP: 21; wEl: 24; lEl: 23; lS: 18.

Male: Metasternum with a shallow median impression, which is moderately coarsely and moderately densely punctate. Sternites moderately finely and moderately sparsely punctate, sternite 7 more densely punctate and pubescent in posterior middle; sternite 8 with a shallow apical emargination (lSt: dEm (60 : 4.5). Sternite 9 acute apicolaterally. Aedeagus (Fig. 11), median lobe broad, triangularly narrowed anteriorly, expulsion hooks long, connected medially; parameres much longer than median lobe, with about 19–22 apical setae.

Female: Sternite 8 rounded at posterior margin. Valvifer acute apicolaterally. Spermatheca



Figs. 11–15. Ventral aspects of aedeagi.—— *Stenus cirritunicatus* sp. nov. (11; T 27); *S. cirritogatus* sp. nov. (12; T 92); *S. cirricinctus* sp. nov. (13; HT); *S. cirrivarians* sp. nov. (14; HT); *S. cirratitunicatus* sp. nov. (15; HT). Scale bar = 0.1 mm.

as figured (Fig. 22).

Variability: In the ♂PT the elytra are dark brown and the reticulation of the whole insect is less strong than in the HT.

Holotype: ♂, and paratypes: 1♀, TAIWAN: Pingtung Hsien, Peitawushan ridge, 2,800–2,900 m, 28. IV. 1992 (T 105), leg. A. SMETANA; 1♂, Peitawushan Kuai-Ku Hut, 2,130 m, 27. IV. 1992 (T 101), leg. A. SMETANA.– HT and 1 PT in cS, 1 PT in cP.

For identification amongst the Taiwanese species see key.

Etymology. Cirratitunicatus (Latin) clorged with seta

Stenus cirritunicatus sp. nov.

(Fig. 15)

In nearly all respects similar to *S. cirritogatus*, but the elytra longer, the pronotum more unevenm, and the aedeagus different.

Length: 3.0–3.8 mm (fore-body: 1.7 mm).

PM of the HT: wH: 31; aE: 15.5; wP: 23; lP: 24.4; wEl: 27.5; lEl: 27.5; lS: 20.

Male: Metasternum with a distinct median impression, punctation moderately fine and moderately dense, diameter of punctures as large as basal cross section of segment 2 of the maxillary palpi, interstices about as large as diameter of punctures; no median carina present. Punctation of sternites moderately fine and sparse; sternite 8 with a shallow apical emargination (lSt: dEm (74 : 4.5). Sternite 9 acute apicolaterally. Aedeagus (Fig. 15) resembling that of *S. cirritogatus*, but the apical portion of the median lobe is more rounded, densely set with sensory setae and with a tiny tooth apically; expulsion mechanism weakly sclerotized; parameres with about 18–20 long apical setae.

Holotype: ♂, TAIWAN: Ilan Hsien, Taipingshan, alt. 1,950 m, 13. VII. 1993 (T 150), leg. A. SMETANA. Paratype: 1 ♂, Chiai Hsien, Yushan National Park, Ta-Ta-Ghia, alt. 2,750 m, 27. IV. 1990 (T 27), leg. A. SMETANA, – HT in cS, PT in cP.

For identification amongst the Taiwanese species see key.

Etymology. Cirritunicatus (Latin) = clothed with setae.

Stenus cirriornatus sp. nov.

(Fig. 24)

Apterous, black, moderately shiny, head coarsely and very densely punctate, pronotum and elytra coarsely rugosely sculptured, abdominal punctation coarse and dense anteriorly, fine and sparse posteriorly; pubescence long, erect on abdomen. Antennae light brown, club infuscate. Maxillary palpi light brown, segment 3 infuscate. Legs reddish brown. Clypeus black, labrum blackish brown, sparsely pubescent. Abdominal segment 3 with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 3.4–3.9 mm (fore-body: 1.8–1.9 mm).

PM of the HT: wH: 32.8; aE: 17.5; wP: 26; lP: 26; wEl: 32; lEl: 29; lS: 20.5.

Male: Unknown.

Female: Sternite 8 broadly rounded at posterior margin. Valvifer acute apicolaterally. Spermatheca as figured (Fig. 24).

Head as broad as elytra; frons broad, with two distinct longitudinal furrows, median portion as broad as each of the lateral portions, distinctly elevated above level of dorsal eye margins; punctation coarse and dense, diameter of punctures about as large as apical cross section of antennal segment 2, interstices distinctly smaller than half diameter of punctures, larger on median portion, where they become larger than diameter of a puncture. Antennae short, when reflexed extending to about posterior third of pronotum, penultimate segments as broad as long. Pronotum as long as broad, broadest in about middle; sides convex anteriorly, distinctly concave posteriorly; a short, deep longitudinal impression medially, a transverse impression near anterior margin, a transverse lateral impression in posterior half, and a small callus on each side posteriorly; sculpture coarse to very coarse, irregularly (short) confluent, very dense. Elytra trapezoidal, distinctly broader than long, shoulders oblique, sides shallowly convex, posterior margin deeply emarginate; sutural impression shallow, humeral impression deep and narrow, a shallow impression in posterolateral quarter; sculpture very coarse and confluent longitudinally, diameter of indistinctly delimited punctures about as large as widest cross section of antennal segment 2, the deeply reticulated interstices smaller than half diameter

of punctures. Abdomen elliptical, basal furrows of first tergites deep, tergite 7 with a rudimentary membranous fringe apically; punctation coarse (anteriorly) to fine (posteriorly), dense (anteriorly) to sparse (posteriorly): punctures on tergite 3 as large as those on frons, interstices smaller (anteriorly) or as large as diameter of punctures (posteriorly), punctures of tergite 7 about as large as one eye facet at dorsal eye margin, interstices three times or more as large as diameter of punctures, tergite 10 with few very fine punctures. Legs moderately slender, metatarsi about 4/6 as long as metatibiae, segment 1 slightly longer than the 3 following segments combined, much longer than the last segment. The whole surface deeply reticulate.

Holotype: (♀) and paratypes: 1♀, TAIWAN: Nantou Hsien, Yushan National Park, SW-slope below Yushan Mountain Peak, alt. 3,650 m, 14. V. 1991 (T 80), leg. A. SMETANA; 1♀, ibidem, 15.V.1991 (T 82); 2 ♀♀, W-slope below Yushan Mountain Peak, alt. alt. 3,720 m, 15. V. 1991 (T 81), all leg. A. SMETANA, – HT and PTT in cS, 1 PT also in cP.

For identification amongst the Taiwanese species see key.

Etymology. Cirriornatus (Latin) = decorated with setae.

Stenus cirrimirificus sp. nov.

(Figs 6, 7 and 20)

Apterous, black with faint aeneous tint, moderately shiny, fore-body moderately coarsely and very densely, slightly rugosely punctate, abdominal punctation moderately coarse and moderately dense anteriorly, fine and sparse posteriorly; pubescence long, moderately erect on abdomen. Antennae yellowish brown, club infuscate. Maxillary palpi yellowish, segment 3 infuscate. Legs light brown. Clypeus black, labrum blackish brown, moderately densely pubescent. Abdominal segment 3 with very narrow paratergites, the following segments only with a very fine line laterally. Tarsal segment 4 simple.

Length: 2.3–2.8 mm (fore-body: 1.2–1.3 mm).

PM of the HT: wH: 25.5; aE: 12.5; wP: 19.3; lP: 19.5; wEl: 22; lEl: 19.5; lS: 15.

Male: Metasternum shallowly impressed with a short, deeper impression posteromedially, punctation moderately fine and dense, the deeply reticulate interstices nearly as large as punctures. Punctation of sternites fine, dense on anterior portion, moderately sparse posteriorly, sternite 7 with denser and finer punctation and pubescence along middle; sternite 8 with a moderately broad, shallow apical emargination (lSt: dEm (42 : 2.5). Sternite 9 (Fig. 7), shape differing from those of other known members of the *cirrus*-group. Aedeagus (Fig. 6), anterior half of median lobe lancet-like, no distinctly sclerotized expulsion mechanism; parameres nearly as long as median lobe, with about 7 apical setae.

Female: Sternite 8 rounded at posterior margin. Valvifer acute apicolaterally (!). Spermatheca (Fig. 20), spermathecal duct comparatively broad and little coiled, infundibulum comparatively short.

Head distinctly broader than elytra, frons about as in *S. cirratus*, diameter of punctures variegate, as large as widest cross section of antennal segment 3 (HT) or as apical cross section of antennal segment 2 (some PTT), very dense, but sparser on actual middle of the median portion, where they become as large as diameter of punctures. Pronotum as broad as long, very deeply reticulate, punctures smaller than widest cross section of antennal segment 2, very dense, slightly confluent. Elytra distinctly broader than long, moderately coarsely punctate, diameter of

punctures about as large as apical cross section of antennal segment 2, interstices smaller than half diameter of punctures. Abdominal punctation moderately coarse only on anterior half of tergite 3, much finer behind and on the following tergites, punctures of tergite 7 about as large as one eye facet near dorsal eye margin, interstices two to three times as large, tergite 10 nearly impunctate. Legs moderately slender, metatarsi 3/5 as long as metatibiae, segment 1 slightly shorter than the 3 following segments combined, distinctly longer than the last segment. Fore-body deeply reticulate, abdomen with shallow microsculpture.

This new species is remarkable because of its aberrant shape of the male's sternite 9.

Holotype: ♂,and paratypes: 3♂♂,1♀, TAIWAN: Nantou Hsien, Yushan National Park, 2 km W Pai-Yun Hut, alt. 3,350 m, 16. V. 1991 (T 84), leg. A. SMETANA, – HT and PTT in cS, 1 PT in cP.

Etymology. Cirrimirificus (Latin) = remarkable for setae.

Stenus cirrivarians sp. nov.

(Fig. 14)

Black, fore-body moderately, abdomen stronger shiny, fore-body very coarsely and very densely, rugosely punctate, abdominal punctation coarse and dense anteriorly, fine and sparse posteriorly; pubescence long, erect on abdomen. Antennae brown. Maxillary palpi brownish. Legs dark brown, tarsi slightly less dark. Clypeus black, labrum blackish brown, moderately densely pubescent. Abomen completely margined. Tarsal segmnts 4 simple.

Length: 3.7 mm ((interpolated from experience: 3.0–3.8 mm) (fore-body: 1.7 mm).

PM of the HT: wH: 31; aE: 16.5; wP: 22.5; lP: 24; wEl: 29.5; lEl: 29,.5; lS: 24.

Male: Metasternum broadly and shallowly impressed, moderately coarsely and densely punctate, interstices brilliant. Punctation of first sternites moderately coarse anteriorly, fine posteriorly, sternite 7 in posterior middle finely and densely punctate and pubescent; sternite 8 with a broad and shallow apical emargination (lSt: dEm (54 : 3). Sternite 9 acute apicolaterally. Aedeagus (Fig. 14), median lobe triangularly pointed, expulsion clasp bicuspid anteriorly; parameres as long as medianlobe, slightly broadened apically, with about 22 long apical setae.

Female: Unknown.

Head slightly broader than elytra; frons broad with two shallow longitudinal furrows, median portion as broad as each of the lateral portions, slightly elevated, but distinctly above dorsal eye margins; punctation very coarse and extremely dense, diameter of largest punctures larger than widest cross section of antennal segment 2, interstices much smaller than half diameter of punctures, larger on median portion posteriorly. Antennae short, when reflexed extending to posterior third of pronotum, penultimate segments about as broad as long. Pronotum slightly longer than broad, sides moderately convex anteriorly, concave posteriorly; a moderately distinct median impression and a transverse posterolateral impression present; sculpture consisting of very large, shortly confluent punctures. Elytra trapezoidal, nearly as broad as head, shoulders rectangular, straightly broadened, slightly narrowed in posterior fifth; posterior margin broadly emarginate; sutural impression long, humeral impression shallow, a transverse impression in lateral half medially; sculpture very coarse and more distinctly confluent that on pronotum. Abdomen broad, completely margined, paratergites slightly directed ventrad, paratergites of tergite 4 as broad as segment 1 of the metatarsi, with few punctures,

basal furrows of anterior tergites deep, tergite 7 with a distinct membranous fringe apically (the species is nearly fully winged); punctation of tergite 3 and 4 coarse and dense, diameter of punctures larger than widest cross section of antennal segment 3, interstices mostly smaller than diameter of punctures; punctation of the following tergites much finer and sparser, punctures of tergite 7 finer than one eye facet near dorsal eye margin, interstices five times and more as wide, tergite 10 with few fine punctures. Legs robust, tarsi simple, segment 1 distinctly a little shorter than the 3 following segments combined, distinctly longer than the last segment. The whole body without microsculpture.

Holotype: ♂, TAIWAN: Tauchung Hsien, Hsuehshan, near Hsuehshan Tun-Feng, alt. 3170 m, 7. V. 1991 (T 68), leg. A. SMETANA: in cS.

S. cirrivarians sp. n. may be easily distinguished from its relatives by the completely margined abdomen and the aedeagus.

Etymology. Cirrivarians (Latin) = distinguished by setae.

Stenus cirricinctus sp. nov.

(Fig. 13)

Micropterous, black with feeble brownish tint, elytra with a slightly distinct oval yellowish spot, fore-body very coarsely and densely punctate, abdominal punctation moderately coarse and moderately dense anteriorly, fine and sparse posteriorly; pubescence long, erect. Antennae yellow, club infuscate. Maxillary palpi yellow, segment 3 infuscate. Legs yellowish brown, apical portion of femora infuscate. Clypeus black, labrum blackish brown, moderately densely pubescent. Only abdominal segment 3 marginate. Tarsal segment 4 deeply bilobed.

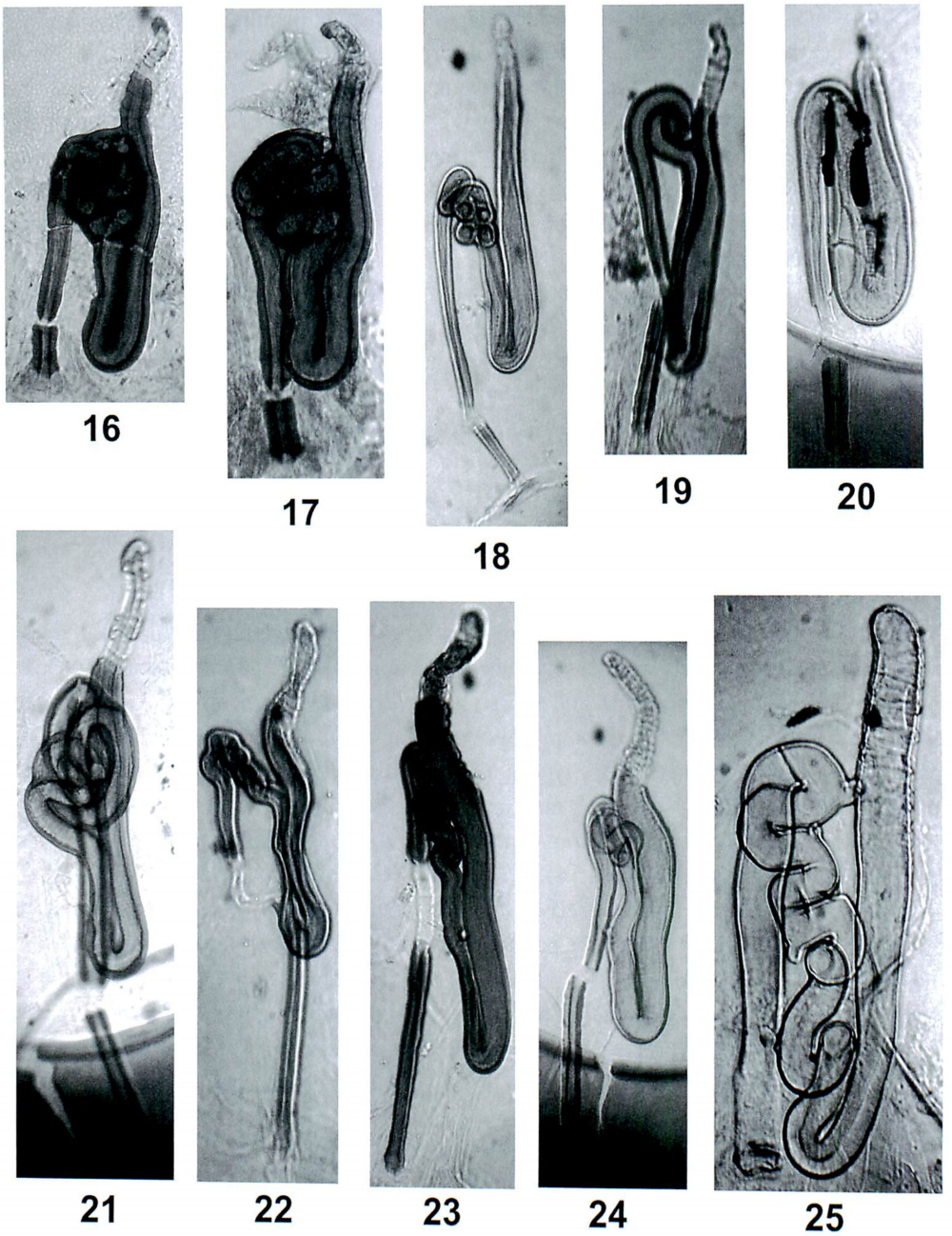
Length: 3.8 mm (interpolated from experience: 3.3–4.0 mm) (fore-body: 1.8 mm).

PM of the HT: wH: 31.8; aE: 15.8; wP: 23.8; lP: 26; wEl: 29.5; lEl: 29; lS: 21.

Male: Metasternum flat, coarsely and densely punctate and pubescent, first abdominal segment moderately finely, sparsely punctate ventrally, posterior segments very finely and extremely sparsely punctate, sternite 7 medially denser punctate and pubescent than on the sides; sternite 8 with a broad an very shallow apical emargination (lSt: dEm (64 : 3). Sternite 9 acute apicolaterally. Aedeagus (Fig. 13), median lobe triangularly narrowed anteriorly, expulsion hooks separate; parameres longer than median lobe, distinctly broadened anteriorly, with about 15 long apical setae.

Female: Unknown.

Head slightly broader than elytra, frons broad, nearly flat, longitudinal furrows indistinct, median portion broader than each of the lateral portions, indistinctly elevated; punctation very coarse and dense, punctures of lateral portions about as large as widest cross section of antennal segment 2, those on median portion even larger, nearly as large as apical cross section of profemora. Antennae slender, when reflexed extending about to the posterior margin of the pronotum, penultimate segments 1.5× as long as broad. Pronotum longer than broad, broadest in about middle, sides in anterior half convex, concave posteriorly; no distinct impressions; punctation very coarse and very dense, about as coarse as on median portion of frons, brilliant interstices distinct, but distinctly smaller than half diameter of punctures. Elytra trapezoidal, shoulders oblique, sides straightly widened, moderately narrowed in posterior sixth, posterior margin broadly emarginate; no distinct impressions; punctation about as coarse and as dense as



Figs. 16–25: Spermathecae of *Stenus*.— *S. cirratus* sp. nov. (16; T 59), *S. cirrivestis* sp. nov. (17; T 79), *S. cirriger* sp. nov. (18; T 114), *S. cirrimicans* sp. nov. (19; T 114), *S. cirrimirificus* sp. nov. (20; T 84), *S. cirrativestitus* sp. nov. (21; HT), *S. cirratitunicatus* sp. nov. (22; T 105), *S. cirritogatus* sp. nov. (23; T 28), *S. cirriornatus* sp. nov. (24; T 81) and *S. cirrativestis* sp. nov. (25; HT). All same scale.

on pronotum; the slightly distinct oval yellowish spot laterally in posterior half is about as long as antennal segment 3 and as broad as antennal segment 4. Abdomen cylindrical, basal furrows of first segments very deep, segment 7 with rudiments of a membranous fringe apically; punctation of tergite 4 moderately coarse and moderately dense, diameter of punctures about as

large as medial cross section of antennal segment 3, interstices mostly smaller than diameter of punctures; punctation of the following segments much finer and sparser, punctures on tergite 7 nearly as large as one eye facet near dorsal eye margin, interstices four times and more as large as wide, tergite 10 with few fine punctures. Legs slender, metatarsi two-thirds as long as metatibiae, segment 1 nearly as long as the 3 following segments combined, nearly twice as long as the last segment; segment 4 deeply bilobed. The whole insect without microsculpture.

S. cirricinctus sp. n. resembles some of the mainland Chinese members of the *cirrus*-group, e. g. *S. jiulongshanus* TANG & PUTHZ, but may be distinguished from them by the flat frons, the very coarse punctation and the aedeagus. From *S. cirrativestis* sp. n. it may be distinguished by body size, the shorter and much less distinct elytral spot, and less coarse abdominal punctation. For identification amongst the Taiwanese species see key.

Holotype: ♂, TAIWAN: Hsinchu Hsien, env. Yulao Scenic platform, Road No. 60: Jienshih Township, (alt. 1,400 m, road side slope's litter, 25. III. 2008, S. Vit: In MHNG.

Etymology. Cirricinctus (Latin) = girded with setae.

Stenus cirrativestis sp. nov.

(Fig. 25)

Micropterous, shiny, black with some aeneous tint, elytra with a long oval orange spot in lateral half, fore-body very coarsely, densely punctate, anterior punctation of abdomen coarse to moderately coarse and moderately dense, posterior punctation fine and sparse; pubescence long, erect. Antennae yellowish brown, club infuscate. Maxillary palpi yellowish, segment 3 slightly infuscate. Legs light brown. Clypeus black, labrum brown/light brown, sparsely pubescent. Only abdominal segment 3 marginate. Tarsal segment 4 deeply bilobed.

Length: 4.0–5.0 mm (fore-body: 2.0 mm).

PM of the HT: wH: 37; aE: 20; wP: 28; lP: 29; wEl: 34; lEl: 34.5; lS. 25.

Male: Unknown.

Female: Sternite 8 broadly rounded at posterior margin. Valvifer serrate with a prominent tooth apicolaterally. Spermatheca (Fig. 25), spermathecal duct multiple coiled.

In many respects similar to *S. cirricinctus* but larger, and the elytral spot distinct, extending from shoulder to posterior margin.

S. cirrativestis sp. n. resembles strongly *S. ovalis* TANG *et al.* from Zhejiang, but may be distinguished by the longer elytra with denser punctation and the even coarser punctation of frons, pronotum and elytra. For identification amongst the Taiwanese species see key.

Holotype: ♀, and paratype:1 ♀, TAIWAN: Taoyuan Hsien, Takaoshan forest, alt. 1,650 m, 17. IV. 1990 (T 5), leg. A. SMETANA, – HT in cS, PT in cP.

Etymology. Cirrativestis (Latin) = clothed with setae.

Key to the Taiwanese species of the *cirrus*-group

1. Abdomen completely margined, lateral margin can be line-like 2
— Abdominal segments 4–6 immargined 3
2. Abdominal segments 4–6 with paratergites. Black species. 3.0–3.8 mm (fore-body: 1.7 mm). ♂: Aedeagus (fig. 14). Taichung Hsien ..... *cirrivarians* sp. n.

— Abdominal segments 4–6 line-like margined 4

3. Larger: 4.0–5.0 mm (fore-body: 2.0 mm). Elytral spot distinct, longer, extending from shoulder to posterior margin. ♂: Unknown. ♀: Spermatheca (Fig. 25). Taoyuan Hsien ..... *cirrativestis* sp. n.

— Smaller: 3.3–4.0 mm (fore-body: 1.8 mm). Elytral spot less distinct, smaller, in posterior half of elytra. ♂: Aedeagus (Fig. 13). ♀: Unknown. Hsinchu Hsien ..... *cirricinctus* sp. n.

4. Abdominal segments 3–6 brilliant, without microsculpture 5

— Abdominal segments 3–6 moderately shiny, with distinct microsculpture 11

5. Larger species, fore-body ≧ 1.6 mm 6

— Smaller species, fore-body ≦ 1.6 mm 7

6. Head about as broad as elytra. Tergite 7 with faint reticulation. 3.2–4.0 mm (fore-body:1.8 mm). ♂: Unknown. ♀: Spermatheca (Fig. 21). Ilan Hsien ..... *cirrativestitus* sp. n.

— Head distinctly broader than elytra, tergite 7 brilliant. 3.1–3.8 mm (fore-body: 1.6 mm). ♂: Aedeagus (Fig. 8). ♀: Unknown. Kaohsiung Hsien ..... *cirratitogatus* sp. n.

7. Abdominal punctation denser, interstices on tergite 5 at most 1.5× as large as diameter of punctures. 2.6–3.4 mm (fore-body: 1.4–1.5 mm). ♂: Aedeagus (Fig. 3). ♀: Spermatheca (Fig.17). Taichung Hsien, Hsueshan Hsien ..... *cirrivestis* sp. n.

— Abdominal punctation sparser, interstices on tergite 5 2× or more as large as diameter of punctures 8

8. Abdominal tergite 3 coarsely punctate, tergite 4 and the following segments abruptly much finer and sparser punctures. 3 very similar species 9

— Abdominal tergite 3 coarsely punctate, punctation of tergite 4 less coarse, but not abruptly much finer. 2.7–3.4 mm (fore-body: 1.4 mm). ♂: Aedeagus (Fig. 5). ♀: Unknown. Hsinshu Hsien. ..... *cirripraestans* sp. n.

9. Smaller: 2.2–2.9 mm 10

— Larger: 2.7–3.4 mm (fore-body: 1.3–1.6 mm). ♂: Aedeagus (Fig. 1). ♀: Spermatheca (Fig. 16). Nantou Hsien ..... *cirratus* sp. n.

10. ♂: Aedeagus (Fig. 4). ♀: Spermatheca (Fig. 18). 2.5–2.9 mm (fore-body: 1.3–1.4 mm). Nantou Hsien ..... *cirriger* sp. n.

— ♂: Aedeagus (fig. 9). ♀: Unknown. 2.2–2.8 mm (fore-body: 1.3 mm). Nantou Hsien ..... *cirrivestitus* sp. n.

11. Smaller: 2.3–2.8 mm (fore-body: 1.2–1.3 mm). ♂: Sternite 9 (Fig. 7), aedeagus (Fig. 6). ♀: Spermatheca (Fig. 20). Nantou Hsien ..... *cirrimirificus* sp. n.

— Larger, > 2.6 mm. ♂: Sternite 9 acute apicolaterally (Fig. 2) 12

12. Head about as broad as elytra. 3.4–3.9 mm (fore-body: 1.8–1.9 mm). ♂: Unknown. ♀: Spermatheca (Fig. 24). Nantou Hsien ..... *cirriornatus* sp. n.

— Head distinctly broader than elytra 13

13. Elytra about as long as broad 14

— Elytra longer than broad 15

14. ♂: Aedeagus (Fig. 15). ♀: Unknown. 3.0–3.8 mm (fore-body: 1.7 mm). Ilan Hsien ..... *cirritunicatus* sp. n.

— ♂: Aedeagus (Fig. 11). ♀: Spermatheca (Fig. 22). 2.8–3.7 mm (fore-body: 1.5–1.6 mm). Pingtung Hsien ..... *cirratitunicatus* sp. n.

15. ♂: Aedeagus (Fig. 12). ♀: Spermatheca (Fig. 23). 2.8–3.7 mm (fore-body: 1.4–1.5 mm). Kaohsiung Hsien, Pingtung Hsien, Chiai Hsien ..... *cirritogatus* sp. n.

— ♂: Aedeagus (Fig. 10). ♀: Spermatheca (Fig. 19). 2.6–3.4 mm (fore-body: 1.3–1.4 mm). Nantou Hsien ..... *cirrimicans* sp. n.

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要　　約

Volker PUTZH：台湾産 *Stenus cirrus* グループについて．——台湾からメダカハネカクシ *S. cirrus* グループの 16 新種を記載し，それらの検索表を付した．

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Entomological Review of Japan, **64** (2): 135–138, Dec. 30, 2009

A New False Click Beetle Species (Coleoptera: Eucnemidae: Melasinae) from Okayama Prefecture, West Japan

Akihiko WATANABE

1050–1, Jôtô, Kurashiki City, Okayama Pref., Japan

Abstract A new species of false click beetle *Bioxylus natsumiae* sp. nov. (Eucnemidae, Melasinae) is described based on the specimens collected from Okayama Prefecture, West Japan. It is clearly distinguished from the other Japanese species by the coloration and the serrated apical margin of 8th abdominal sternite.

About 80 species of the family Eucnemidae have hitherto been known from Japan. The faunistic study of the Japanese species is still incomplete, and several undescribed species still remain to be described.

The genus *Bioxylus* FLEUTIAUX, 1923, was established for *Xylobius japonensis* FLEUTIAUX, 1900 (type species) and *B. galloisi* FLEUTIAUX, 1923 (FLEUTIAUX, 1923). After that, HISAMATSU (1955, 1959, 1963, 1985) added seven species of the genus to the Japanese fauna.

Recently, the author collected an undescribed species of the genus from Okayama Prefecture, West Japan which was clearly distinguished from the known species in Japan. In the present paper, I am going to describe it as a new species.

Before going further, I wish to express my deep gratitude to Dr. Masahiro SAKAI and Mr. Shoma SEJIMA of Ehime University (Laboratory of Environmental Entomology) for supplying with important literature on Eucnemidae, written by the late Dr. Sadanari HISAMATSU. My thanks is also due to Dr. Munetoshi MARUYAMA of the Kyushu University Museum for his useful suggestion and review of the manuscript.

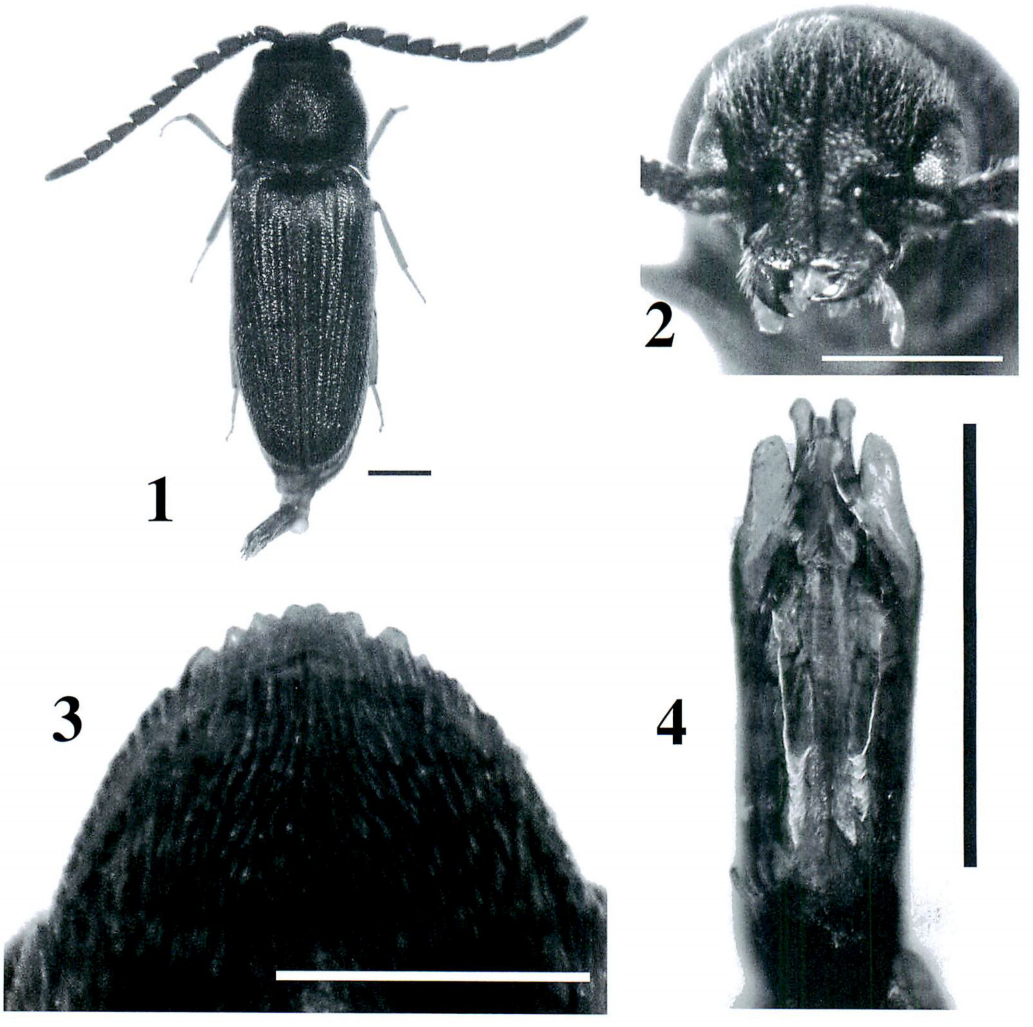
Bioxylus natsumiae sp. nov.

[Japanese name: Neaka-hime-futo-kometsukidamashi]

Male. Length 2.6–3.9 mm (Holotype: length 3.9 mm, width 1.2 mm).

Body (Fig. 1) oblong, strongly convex, subcylindrical, subopaque, clothed dull-yellowish pubescence. Body coloration blackish brown, expect anterior and posterior margin of pronotum, scutellum, basal one-fifth of elytra and legs brownish red.

Head (Fig. 2) rather glabrous, evenly convex in frons, with a distinct medio-longitudinal



Figs.1–4 *Bioxylus natsumiae* sp. nov. —— 1, Habitus, holotype, dorsal view; 2, head, frontal view; 3, 8th sternite, ventral view; 4, Male genitalia, dorsal view. Scales=0.5 mm.

carina running from occiput to apex of clypeus; surface moderately and finely punctate; clypeus slightly concave at middle expect medio-longitudinal carina; anterior angles rounded and sinuated in middle of apex. Antennae rather long, reaching middle of body; 1st segment long and robust; 2nd short and obconical; 3rd very short and transverse or discoid; 4th elongate and longer than preceding two segments combined; 4th to 10th almost same in length and weakly serrate, without longitudinal carina on upper surface, 11th oblong.

Pronotum strongly convex and transverse, widest at middle (expect posterior angles), width 1.3 times as wide as long (at middle); surface rather opaque, densely punctate with yellowish pubescence; sides rounded and narrowed anteriad, weakly sinuate before posterior angles; disc very strongly convex; posterior angles rather acute, projected behind and slightly outwards.

Scutellum triangular, longer than wide, rather flattened, punctate and pubescent.

Elytra slightly wider than pronotum, length about 2.1 times as long as wide, widest at base;

sides weakly rounded, tapering toward apices which are conjointly rounded; striae distinct and punctate; intervals weakly elevated, moderately punctate, and irregularly rugose.

Abdominal sternites densely and finely punctate with yellowish brown pubescence; posterior margin of 8th sternite (Fig. 3) broadly rounded and serrated in apical half.

Male genitalia (Fig. 4) with outer process of lateral lobe parallel with main part, but there is an interval between that part, and acute process shorter than main part.

Female. Unknown.

Type materials. Holotype: ♂, Chiya, Niimi City, Okayama Prefecture, 13–26. VII. 2008, A. WATANABE leg. Paratypes: 3 ♂♂, same locality and collector as the holotype, 13–26. VII. 2008. 1 ♂ ditto, 26. VII.–8. VIII. 2008. 1 ♂ ditto, 8–30. VIII. 2008.

All the specimens were collected by flight interception traps.

Distribution. Okayama Prefecture, Honshu, Japan.

Remarks. This new species is similar to *Bioxylus laticollis* HISAMATSU, 1963 from Amami-oshima Is., Japan, but it is easily distinguished from the latter in having serrated posterior margin of the 8th sternite. This species is somewhat similar to the species of the genus *Proxylobius* (*P. longicornis* HISAMATSU, 1958 and *P. hilleri* FLEUTIAUX, 1900), but easily distinguished from them by lack of longitudinal carina on upper surface of antennae and the serration of the 8th sternite.

Type depository. The holotype is preserved in the collection of the Kurashiki Museum of Natural History, other paratypes are in the author's collection.

Etymology. This species is named for the author's daughter Natsumi WATANABE.

要　　約

渡邊 昭彦：岡山県産コメツキダマシの一新種．——岡山県新見市千屋で得られたコメツキダマシを新種と認め，ネアカヒメフトコメツキダマシ *Bioxylus natsumiae* sp. nov. を記載した．なお，今回の記載に用いた個体は全て FIT (flight interception trap) によって得られている．

邦産の同属既知種とは，体色が黒褐色で上翅の基部・小盾板，及び前胸背板前・後縁部などが明赤褐色であり，腹板末端節後縁が明瞭な鋸歯状を呈するなどの独特の形態により区別は容易である．なお，一般概形や色彩が別属のスジヒゲコメツキダマシ属 *Proxylobius* のナガスジヒゲコメツキダマシ *P. longicornis* HISAMATSU, 1958 やスジヒゲコメツキダマシ *P. hilleri* FLEUTIAUX, 1900 に一見似るが，*Proxylobius* 属の特徴である触角上面の縦隆条を欠くことや腹板後縁が鋸歯状になるなどにより簡単に区別できる．なお，久松（1985）は，日本産本属に 2 亜属を認めているが，その内 *Phizoshirus* FLEUTIAUX, 1930 は既に別属のシノニムとされており，筆者も後者の処理に従った．

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Notes on the Lepturine Genus *Pidonia* (Coleoptera: Cerambycidae) from East Asia IX

Redescription of *Pidonia kurosawai*, New Status

Mikio KUBOKI

47–15, Ôhara 1 chôme, Setagaya-ku, Tokyo, 156–0041 Japan

Abstract *Pidonia amentata kurosawai* of the lepturine genus *Pidonia* is raised to a species and redescribed. The distributional ranges of *P. amentata* and *P. kurosawai* in the Tohoku district, Northern Honshu, Japan are noted. The sympatric populations of these two species are confirmed in the several places of Akita, Iwate and Miyagi Prefectures. The formation of their distributional ranges in the Last Glacial Age is briefly discussed.

Key words: *Cryptopidonia*, Japan, Last Glacial.

The adult of the lepturine genus *Pidonia* visits various kinds of flowers and feeds on the pollen and nectar after the emergence. *P. amentata* (BATES) is one of the earliest visitors to flowers in various regions of Japan. It has horizontally the broadest distributional range in Japanese *Pidonia* species and distributes in Kyushu, Shikoku, Honshu, Hokkaido and Kurils.

In 1960, OHBAYASHI and HAYASHI described *kurosawai* as the subspecies *of P. amentata* from Rausu in Eastern Hokkaido. Many paratypes collected in Hokkaido, Aomori, Iwate, Akita, Yamagata and Fukushima Prefectures seem to be used for the description of this new subspecies. But the data (localities, collecting date and collectors) of these paratypes were not recorded in this publication. The cord designation of paratypes of the subspecies *kurosawai* gave rise to confusion referring to the systematic treatment of the subspecies *kurosawai*. For instance, the specimens of the nominotypical subspecies, *amentata* which have reduced elytral markings was collected in the Chubu and Kanto district. These specimens were considered as the subspecies *kurosawai* (KUBOKI, 1984; SAITO, 1992, 2007).

In the course of investigation of *P. amentata*, I became aware of taxonomical problem to be solved; it was the true systematic position of the subspecies *P. amentata kurosawai*. I had an opportunity to examine many specimens of *P. amentata* in the Tohoku district. The sympatric populations of *P. amentata* and *P. kurosawai* were discovered by field surveys. It was revealed that *kurosawai* was in fact an independent species. The purpose of this paper is to revise the systematic position of *kurosawai* from subspecies to species, *P. kurosawai* will be redescribed.

Before going further, I wish to express my heartfelt thanks to Messrs. K. AOKI (Kanagawa) I. DATE (Iwate), T. HIRANO (Iwate), T. KITAMURA (Tokyo), A. KURIHARA (Tokyo), T. KUSHIDA (Aomori), K. MORIKAWA (Tokyo), H. NAKABAYASHI (Mie), H. NAKAMURA (Tokyo), K. SASAKI (Hokkaido), F. SATÔ (Akita), S. TAKECHI (Tokyo), H. TAKEDA (Niigata), T. TAMURA (Aomori),

and K. TSUTSUI (Tokyo), for their kind help in obtaining materials.

Pidonia (*Cryptopidonia*) *kurosawai* OHBAYASHI et HAYASHI, **stat. nov.**

[Japanese name: Kita-sesuji-hanakamikiri]

(Figs. 1–8)

Pidonia amentata kurosawai OHBAYASHI et HAYASHI, 1960, Ent. Rev. Japan, 11: p. 13, pl. 2, figs. 7, 8; pl. 3, figs. 2, 14; type locality: Rausu, Hokkaido.——OHBAYASHI, 1963, Icon. Ins. Japon. Col. nat. ed., 2: p. 273. ——HAYASHI, 1968. Bull. Osaka Jonan Women's Coll., 3: p. 25, pl. 3, figs. 78, 79; pl. 9, fig. 39.——KOJIMA & HAYASHI, 1969, Ins. Life Japan, 1: p. 15, pl. 6, figs. 4b, 4c.

Pseudopidonia amentata: GILMOUR, 1960. Ent. Rev. Japan, 11: p.1.

Pidonia (*Cryptopidonia*) *amentata kurosawai*: KUBOKI, 1984, Long. Beetle. Japan Col., p. 194, pl. 14, figs. 87f, 87g; 1994, Elytra, Tokyo, 22: p. 189. ——SAITO, 1992. Ill. Guide Ident. Longic. Beetl. Japan, p. 443; 2007, Longic. Beetl. Japan, p. 388.

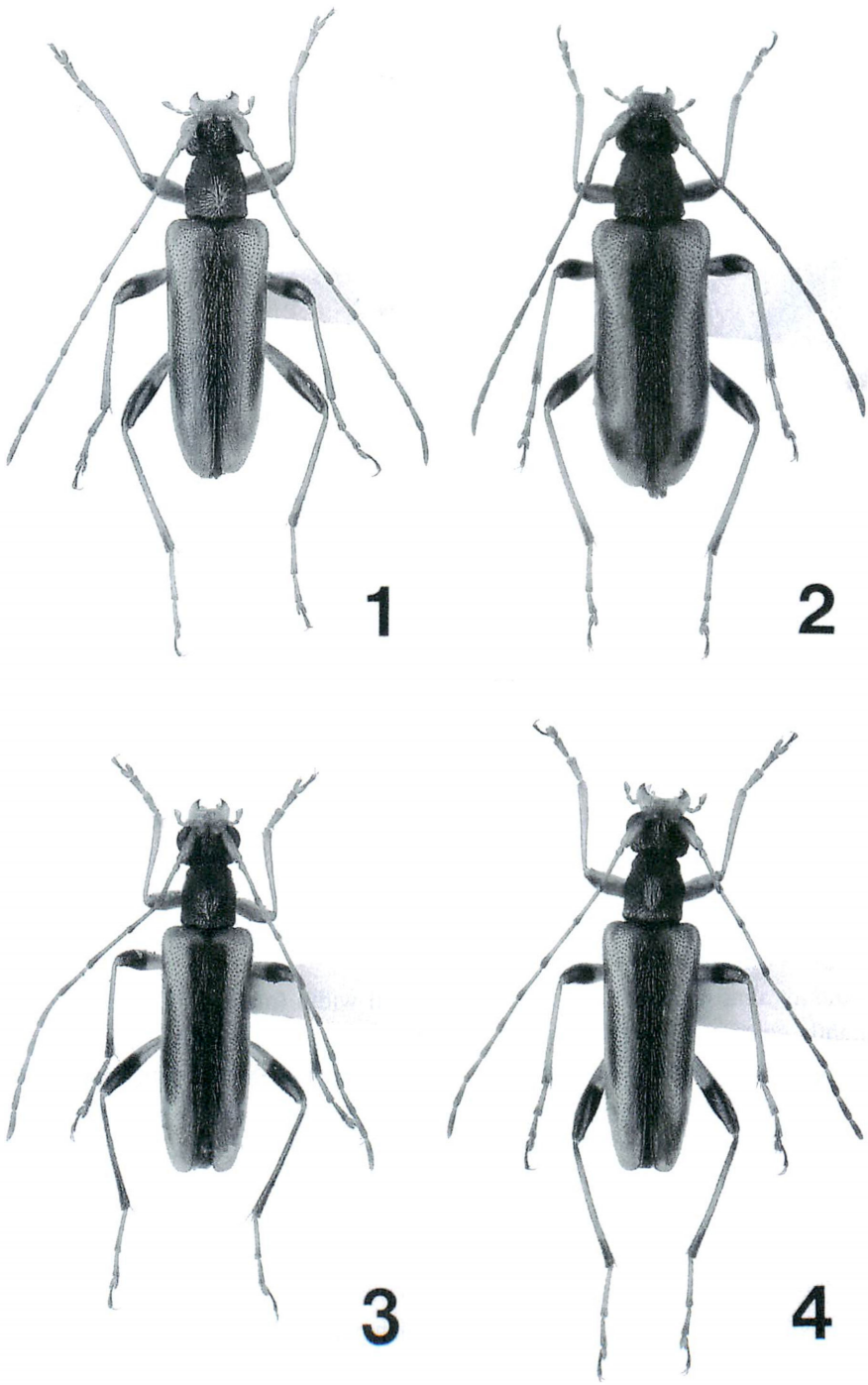
Redescription. Body small, relatively roundish, slightly tapering apically (male) or more robust (female) and furnished with pale fulvous pubescence.

Length: 8.4–5.6 mm (male), 8.4–5.5 mm (female); breadth: 2.2–1.4mm (male), 2.4–1.7 mm (female).

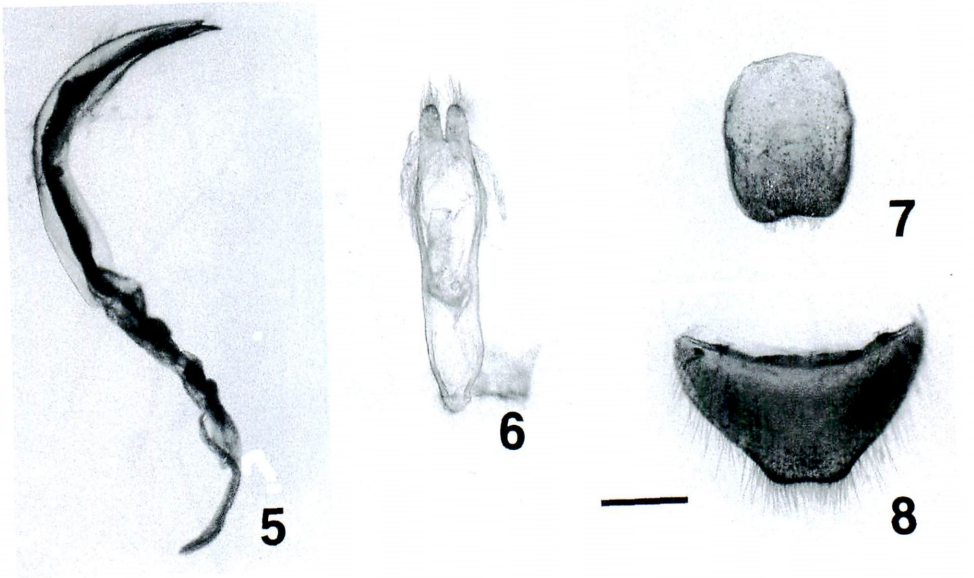
Color. Male. Body almost black; frons reddish fulvous; mouth parts yellowish brown except for reddish brown apex of each mandible; eyes black; antennae reddish fulvous, each apex of 3rd and following segments infuscate, apex of 11th segment reddish fulvous; coxae and trochanters reddish fulvous; femora reddish fulvous, each apex of mid and hind femora black; tibiae reddish fulvous, sometimes apex of each hind tibiae infuscate; tarsi reddish fulvous, sometimes each apex of mid and hind tarsi dark brown. Elytra yellowish fulvous to reddish brown, with black markings; humeral area brownish fulvous. Ventral surface:— head almost black, gula yellowish brown, tempora black; thorax and abdomen black. Elytral markings:— sutural marking wedge-shaped with straight lateral sides, converging posteriorly, vanishing behind scutellum, rarely developing forward and reaching frontal margin of elytra; latero-anterior marking small, oblong; latero-median marking large, linear; latero-posterior marking lacking.

Female. Body coloration similar to that of male but elytral markings distinctly more developed than in male: frons and mouth parts reddish brown; eyes black; antennae reddish brown, each apex of 3rd and following segments almost infuscate; mid and hind femora almost black. Ventral surface:— head almost black, gula yellowish brown, tempora black; thorax and abdomen black. Elytral markings:— sutural marking thick, vanishing behind scutellum, sometimes developing forward and reaching frontal margin of elytra; latero-anterior marking small, oblong; latero-median marking large, broad linear ; latero-posterior marking small, quadrate.

Structure. Head subrectangular, broad, broader across eyes than basal width of prothorax (male, 1.12 : 1.00; female, 1.01 : 1.00); terminal segment of maxillary palpus broadened apically, with slightly curved outer margin in male; terminal segment of maxillary palpus club-shaped, gradually broadened in basal two-thirds and narrowed toward apex, obliquely truncate at apex, with curved outer margin in female; tempora expanded, slightly convergent posteriorly; neck steeply constricted, impressed behind tempora, almost impunctate and shining with several setae; frons subvertical and transverse, covered with coarse punctures, bearing a fine but distinct median longitudinal furrow extending backward to vertex; vertex relatively flat, coarsely and



Figs. 1–4. *Pidonia* (*Cryptopidonia*) *kurosawai* OHBAYASHI et HAYASHI. —— 1(♂), 2(♀), Sibari Spa., Kazuno-shi, Akita Prefecture; 3(♂), Koarasawa-rindô, Taiwa-chô, Miyagi Prefecture; 4(♂), Mt. Hikari, Oshika Peninsula, Oshika-chô, Miyagi Prefecture , Northern Honshu, Japan.



Figs. 5–8. *Pidonia* (*Cryptopidonia*) *kurosawai* OHBAYASHI et HAYASHI, ♂ —— 5, median lobe of male genitalia, lateral view; 6, lateral lobes of the same, ventral 1 view; 7, last tergite; 8, last stergite. Scale: 0.3 mm.

irregularly punctured; gula shining, very sparsely clothed with long pubescence. Eyes relatively prominent, moderately faceted and shallowly emarginate at middle of internal margins. Antennae relatively short and slender, slightly longer (male) or distinctly shorter (female) than body; 1st segment distinctly dilated toward apex, weakly shining and sparsely clothed with fine pubescence; 2nd to 11th segments densely clothed with fine appressed pubescence and sparsely clothed with fine erect pubescence; comparative length of each antennal segment as follows:—5>1+2>6≧4=3 (male) or 5>1+2=6≧4≧3 (female).

Prothorax almost cylindrical, longer than basal width (male, 1.17 : 1.00; female, 1.08 : 1.00), slightly constricted both behind apex and before base and weekly expanded laterally just before the middle; breadth across expanded portions slightly shorter than base in both sexes; basal margin bisinuate, obviously broader than apical margin (male, 1.00 : 0.81; female, 1.00 : 0.75); disc of pronotum convex above, coarsely punctate, and sparsely clothed with fine pubescence; posterior lateral setae long. Scutellum small, triangular, slightly longer than broad and bearing thin pubescence on the surface. Elytra 2.48 times (male) or 2.28 times (female) as long as basal width, gradually narrowed posteriorly (male) or almost parallel-sided (female) and separately rounded at apices; surface coarsely and deeply punctate, sparsely clothed with suberect pubescence; interspace amng punctures narrower than diameter of each puncture.

Legs relatively slender, finely punctate and clothed with short pubescence; femora clavate with subappressed pubescence; hind femora not reaching elytral apices in both sexes; tibiae linear with suberect pubescence; tarsi densely clothed with short pubescence on under surface; 1st segment of metatarsus longer than the following two taken together; 3rd segment strongly dilated apically and deeply emarginate at middle of apex.

Abdomen elongate and gradually narrowed toward apex; surface of each sternite densely covered with extremely fine pubescence; in male, hind margin of last sternite round, projecting

square at apex (Fig. 8), tergite rectangular, distinctly tapering toward apex 1.15 times as long as central width (Fig. 7); in female, apex of last sternite round, apex of last tergite round, weakly angular.

Male genitalia:— Median lobe long, relatively slender, gradually sclerotized toward apex, moderately curved ventrally and acutely pointed at apex (Fig. 5); ventral plate of median lobe long; lateral lobes distinctly shorter than median lobe, deeply bilobed at apex; each lobe round at apex and densely furnished with long terminal hairs (Fig. 6); endophallus long, thick and furnished with a pair of falcate sclerites; diverticulum long and thick.

Female genitalia:— Spermatheca fairly sclerotized, minutely striated, comma-shaped, widest at a middle and gradually narrowed toward apex; cornu curved at apical part; ramus swollen roundly with relatively long spermathecal gland; collum funneled proximally, glabrous without folds; vagina enlarged basally; paraproct almost parallel-sided; basal segment of coxite gradually narrowed apically; apical segment of coxite round at apex, weakly sclerotized at each inner part and sparsely furnished with sensory pubescence; stylus relatively large, rather sclerotized except for apex and gradually enlarged apically with sparse and long hairs at terminal area.

Specimens examined. [Hokkaido] 18♂♂, 7♀♀, Mt. Rausu, Rausu-chô, Nemuro, 9–13. VII. 1971, M. Kuboki leg.; 5♂♂, 3♀♀, Chimikeppu, Tsubetsu-chô, Abashiri-gun, 3. VII. 1972, N. Yamamoto leg.; 5♂♂, 3♀♀, Yukomanbetsu, Higashikawa-chô, Kamikawa-gun, 24. VII. 1978, I. Yamada leg.; 1♂, 3♀♀, Eoroshi, Higashikawa-chô, 22–23. VI. 1991, K. Sasaki leg.; 15♂♂, 7♀♀, Misumai(210 m alt.), Sapporo-shi, 26–30. VI. 1971, M. Kuboki leg.; 15♂♂, 7♀♀, Matsumae, Matsumae-chô, 23. V. 1996, K. Sasaki leg. [Honshu] 〈Aomori Prefecture〉 6♂♂, 3♀♀, Osore-zan, Ôhata-machi, Shimokita-gun, 14. VI. 1992, T. Kushida leg.; 1♂, 1♀, Mozawa-rindô, Aomori-shi, 24. V. 2002, T. Tamura leg.; 1♂, 1♀, Kuromori-rindô, Towadako-machi, Kamikita-gun, 7. VII. 2002, T. Tamura leg.; 24♂♂, 6♀♀, Kodomari, Kodomari-mura, Kitatsugaru-gun, 15. VI. 2002, M. Kuboki leg.; 5♂♂, 3♀♀, Ôjikari, Ajigasawa-machi, Nishitsugaru-gun, 16. VI. 1985, T. Kushida leg.; 3♂♂, 3♀♀, Kawaratai, Nishimeya-mura, Nishitsugaru-gun, 31. V. 1979, T. Kushida leg.; 2♂♂, 1♀, Jûniko, Iwasaki-mura, 6. VI. 1991, T. Kushida leg.; 11♂♂, 5♀♀, Komine, Iwasaki-mura, Nishitsugaru-gun, 16. VI. 2002, M. Kuboki leg.; 1♂, 1♀, Hyakuzawa (600～800 m alt.) Mt. Iwaki, Iwaki-machi, Nakatsugaru-gun, 23. VI. 1985, T. Kushida leg.; 2♂♂, Dake, Mt. Iwaki, Iwaki-machi, 4. VI. 1980, T. Kushida leg.; Sennintai, Mt. Ô-dake, Hakkouda, 18. VII. 1979, T. Kushida leg.; 1♂, Mt. Bonju, Namioka-machi, 1. VI. 1975, T. Narita leg.; 2♀♀, Mt. Kudoji, Hirosaki-shi, 5. V. 1976, T. Narita leg.; 1♂, 1♀, same locality, 13. VI. 1979, T. Narita leg.; 3♀♀, Herai, Singô-mura, Sannohe-gun, 16. VI. 1995, Abe leg.; 3♂♂, 1♀, Moichi, Takko-machi, Sannohe-gun, 9. VI. 1995, Abe leg. 〈Akita Prefecture〉 Chôkei Pass, near Mt. Tashiro, Tashiro-machi, Kitaakita-gun, 7. VII. 1983, M. Kuboki leg.; 2♂♂, 2♀♀, Sotokawara, Tashiro, Ôdate-shi, 2. VI. 2007, F. Satô leg.; 3♂♂, 2♀♀, Hikage Spa., Ôdate-shi, 5. VI. 1985, T. Kushida leg.; 3♂♂, 4♀♀, Mt. Kenashi, Oga Peninsula, Oga-shi, 23. VI. 1991, F. Satô leg.; 1♀, Hon-zan, Oga Peninsula, Oga-shi, 24. V. 1991, H. Kanou leg.; 1♂, Toga, Oga-shi, 12. V. 2001, F. Satô leg.; 22♂♂, 12♀♀, Shibari Spa. (460 m alt.), Kazuno-shi, 11. VI. 2006, M. Kuboki leg.; 18♂♂, 9♀♀, Toroko(580 m alt.), Kazuno-shi, 11. VI.2006, M. Kuboki leg. 〈Iwate Prefecture〉 5♂♂, 3♀♀, Matsukawa(580 m alt.), Higashihachimantai, Matsuo-mura, Iwate-gun, 12. VI. 2006, M. Kuboki leg.; 5♂♂, 2♀♀, Yoriki (380 m alt.), Matsuo-mura, 12. VI. 2006, M. Kuboki leg.; 2♂♂, 2♀♀, Maemori (450 m alt.), Matsuo-mura, 12. VI. 2006, M. Kuboki leg.; 5♂♂, 2♀♀, Akasakata (400 m alt.), Ashiro-chô, Iwate-gun, 12. VI. 2006, M. Kuboki leg.; 15♂♂, 5♀♀, Fudônotaki, Ashiro-chô, 12. VI. 2006, M. Kuboki leg.; 2♂♂, Onyama, Jôhôji-

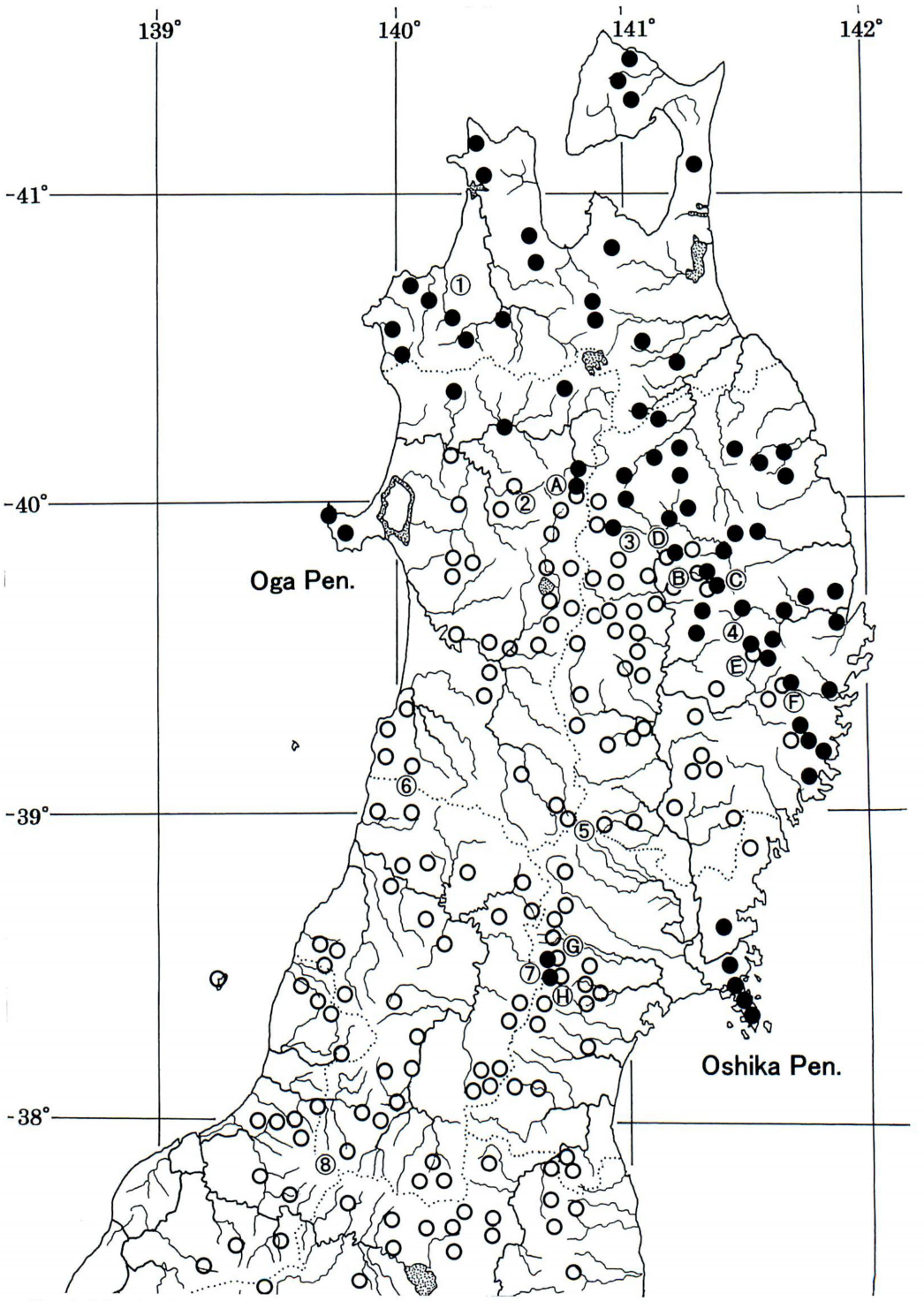


Fig. 9. Map showing the known localities of *Pidonia (Cryptopidonia) kurosawai* OHBAYASHI et HAYASHI and *P. (C.) amentata* (BATES) in the Tohoku district, Northern Honshu, Japan. ●: *P. kurosawai*; ○: *P. amentata*. Black and white circles overlapped each other indicate the sympatric populations of *P. kurosawai* and *P. amentata* : Ⓐ, Toroko; Ⓑ, Ôshida; Ⓒ, Kashimata-sawa; Ⓓ, Kashiwagidaira; Ⓔ, Mt. Hitotsuishi; Ⓕ, Aonoki; Ⓖ, Koarasawa-rindô; Ⓗ, Izumigatake-rindô. ①, Mt. Iwaki; ②, Mt. Moriyoshi; ③, Mt. Iwate; ④, Mt. Hayachine; ⑤, Mt. Kurikoma; ⑥, Mt. Chôkai; ⑦, Mt. Funagata; ⑧, Mt. Iide.

machi, Iwate-gun, 12. VI. 2006, M. KUBOKI leg.; 3♂♂, 4♀♀, Ôshida, Hiranuka, Ichinohe-machi, Ninohe-gun, 29. V. 1995, I. DATE leg.; 2♂♂, 3♀♀, same locality, 15. VI. 1995, I. DATE leg.; 3♂♂, 2♀♀, Yamane, Kuji-shi, 28. V.– 6. VI. 2000, I. DATE leg.; 1♂, 3♀♀, Oguni, Yamagata-mura, Kunohe-gun, 4. VI. 2000, I. DATE leg.; 2♂♂, 1♀, Hosozawa, Oguni, Yamagata-mura, 29. V. 1999, I. DATE leg.; 3♂♂, Akka, Iwaizumi-chô, Shimohei-gun, 3. VI. 2000, I. DATE leg.; 5♂♂, 1♀♀, Ôsakamoto, Iwaizumi-chô, 27. V.– 4. VI. 2000, I. DATE leg.; 2♂♂, Orikabe, Iwaizumi-chô, 24. VI. 2000, I. DATE leg.; 1♂, 1♀, Matsugasawa, Iwaizumi-chô, 29. V. 1999, I. DATE leg.; 5♂♂, 5♀♀, Hayasaka-kôgen, Iwaizumi-chô, 11. VI. 2008, T. HIRANO leg.; 2♂♂, 2♀♀, Shibukawa, Nishine-chô, Iwate-gun, 11. VI. 2005, M. KUBOKI leg.; 8♂♂, 5♀♀, Imodamukai, Tamayama-mura, Iwate-gun, 11. VI. 2005, M. KUBOKI leg.; 7♂♂, 10♀♀, Yukiura, Tamayama-mura, 12. VI. 2006, M. KUBOKI leg.; 10♂♂, 3♀♀, Kawaba (620 m alt.), Yabukawa, Tamayama, Morioka-shi, 6. VI. 2008, S. TAKECHI leg.; 2♂♂, 3♀♀, Kuwahata (300 m alt.), Tamayama-mura, 11. VI. 2005, M. KUBOKI leg.; 2♀♀, Takinosawa, Tamayama-mura, 11. VI. 2005, M. KUBOKI leg.; 2♂♂, 2♀♀, Makibori, Tamayama-mura, 11. VI. 2005, M. KUBOKI leg.; 6♂♂, 4♀♀, Ôshida (720 m alt.), Hitsutori-rindô, Morioka-shi, 11. VI. 2005, M. KUBOKI leg.; 16♂♂, 7♀♀, Kashimata-sawa (850 m alt.), Midaidô-rindô, Morioka-shi, 11. VI. 2005, M. KUBOKI leg.; 1♂, 1♀, Kashiwagidaira (230 m alt.), Tamayama-mura, 11. VI. 2005, M. KUBOKI leg.; 3♂♂, 2♀♀, Hiratsudo, Kawai-mura, Shimohei-gun, 28. V. 1989, H. NAKAMURA leg.; 3♂♂, 2♀♀, Matsukusa, Kawai-mura, 8. VI. 1989, H. NAKAMURA leg.; 4♂♂, 7♀♀, Kuzube-zawa, Kawai-mura, 20. VI. 1982, H. NAKAMURA leg.; 5♂♂, 3♀♀, Kurano-sawa, Niisato-mura, Shimohei-gun, 10. VI. 1984, H. NAKAMURA leg.; 7♂♂, 5♀♀, Kamegamori, Miyako-shi, 26. VI. 1983, H. NAKAMURA leg.; 3♂♂, 3♀♀, Mt. Jûnijin, Miyako-shi, 9. VI. 1986, H. NAKAMURA leg.; 4♂♂, 2♀♀, Sentoku, Miyako-shi, 25. V. 1985, H. NAKAMURA leg. ; 1♀, Takusari, Miyako-shi, 18. V. 2000, I. DATE leg.; 1♀, Rouki, Miyako-shi, 19. V. 2000, I. DATE leg.; 3♂♂, 1♀, Mt. Hitotsuishi (1,000 m alt.), Kamitsukimoushi, Tôno-shi, 14. VI. 2008, K. MORIKAWA leg.;18♂♂,8♀♀, Kabasaka Pass (1,000 m alt.), Tôno-shi, 7. VI. 2009, M. KUBOKI leg.; 7♂♂,3♀♀, Aonoki (460 m alt.), Kamaishi-shi, 7. VI. 2009, M. KUBOKI leg.; 3♂♂, 1♀, Itsutsuba, Shiwa-chô, Shiwa-gun, 16. V. 1998, I. DATE leg.; 5♂♂, 2♀♀, same locality, 1. VI. 1998, I. DATE leg.; 1♀, same locality, 21. VI. 1998, I. DATE leg.; 1♂, Torigasawa, Kamaishi-shi, 25. V. 23. VI. 1998 [Trap], I. DATE leg.; 1♂, Kamiheita, Kamaishi-shi, 24. IV.–25. V. 1998 [Trap], I. DATE leg.; 1♂, Naranokidaira, Kamaishi-shi, 4. VI. 1999, I. DATE leg.; 3♂♂, 1♀, Ôkubo, Sanriku-machi, Kesen-gun, 4. VI. 1999, I. DATE leg. 〈Miyagi Prefecture〉 12♂♂, 2♀♀, Koarasawa-rindô (740 m alt.), Masuzawa, Taiwa-chô, Kurokawa-gun, 18. VI. 2008, S. TAKECHI leg.; 16♂♂, 3♀♀, same locality, 18. VI. 2008, M. KUBOKI leg.; 1♂, 1♀, Izumigatake-rindô (797 m alt.), near Mt. Ôkura, Taiwa-chô, 18. VI. 2008, S. TAKECHI leg.; 1♂, 1♀, Oshika Peninsula, 1. VI. 2003, K. AOKI leg.; 9♂♂, 3♀♀, Mt. Hikari (310 m alt.), Oshika-chô, Ishinomaki-shi, 24. V. 2009, M. Kuboki leg.; 2♂♂, 1♀, Sanjôsan-Kanno, Oshika-chô, Oshika-gun, 24. V. 2009, M. KUBOKI leg.; 1♂, Ogatsu, Ogatsu-chô, Ishinomaki-shi, 24. V. 2009, M. KUBOKI leg.; 1♂, 1♀, Nojiri, Yokoyama, Tsuyama-chô, Tome-shi, 24. V. 2009, M. KUBOKI leg.

Distribution. Hokkaido, Northern Tohoku, Oga Pen., Oshika Pen. and its adjacent region, Eastern foot of Mt. Funagata; Kurils (Kunasir Is., Urup Is.).

Notes. This species resembles *P. amentata* (BATES), but may be readily distinguished from it by the wedge-shaped sutural marking of elytron, both sides of sutural marking almost straight; the rectangular tergite tapering toward apex in male; the linear (male) or broad linear (female) latero-median marking of elytron; the vanishing latero-posterior marking of elytron in male.

Distribution of *Pidonia kurosawai* and its Relative, *P. amentata* in the Tohoku district

Map shows the localities of *Pidonia kurosawai* and *P. amentata* in the Tohoku district (Fig. 9). *P. kurosawai* is mainly distributed over the northern parts of the Tohoku district. On the other hand, *P. amentata* is restricted to the southern parts of the Tohoku district. Sympatric populations of these two species were recognized in several collecting sites: Toroko (580 m alt.) (Fig. 9Ⓐ), Kazuno-shi, Akita Prefecture; Ôshida (720 m alt.) (Fig. 9Ⓑ), Hitsutori-rindô, Morioka-shi, Iwate Prefecture; Kashimata-sawa (850 m alt.) (Fig. 9Ⓒ), Midaidô-rindô, Morioka-shi; Kashiwagidaira (230 m alt.) (Fig. 9Ⓓ), Tamayama, Morioka-shi; Mt. Hitotsuishi (1,000 m alt.) (Fig. 9Ⓔ), Kamitsukimoushi, Tôno-shi, Iwate Prefecture; Aonoki (460 m alt.) (Fig. 9Ⓕ), Kamaishi-shi, Iwate Prefecture; Koarasawa-rindô (744 m alt.) (Fig. 9Ⓖ), Masuzawa, eastern foot of Mt. Funagata, Taiwa-chô, Kurokawa-gun, Miyagi Prefecture; Izumigatake-rindô (797 m alt.) (Fig. 9Ⓗ), Taiwa-chô.

According to my investigation made along the Route 341 in Kazuno-shi, *P. kurosawai* was distributed from 450 to 600 m in altitude. It was collected from the flowers of *Weigela hortensis* and *Aesculus turbinate* in April to the middle ten days of June. On the other hand, *P. amentata* occupied from 560 to 980 m in altitude. It was collected from the flowers of *W. hortensis* and *Viburnum sargenti* in the first ten days of June to July. Two species were collected together from the flowers of *W. hortensis* from the first ten days to the middle ten days of June. No intermediate form between the two species has been found in this area.

The habitat of *P. kurosawai* was sporadically discovered in the distributional range of *P. amentata*. Although *P. amentata* was widely distributed over the Dewa mountains, *P. kurosawai* alone was collected from the Oga Peninsula: Hon-zan; Mt. Kenashi; Toga, Oga-shi. Although *P. amentata* extensively occupied the southern parts of Iwate and Miyagi Prefectures, *P. kurosawai* was collected at the Oshika Peninsula and its adjacent region of the southern extremity of the Kitakami highlands.

P. kurosawai was collected at the eastern foot of Mt. Funagata where is at the latitude as the Oshika Peninsula. The population of *P. kurosawai* in Mt. Funagata is about 130 km distant from the Northern Tohoku population. Two species were collected together from the flowers of *V. sargenti* and *W. hortensis* in Mt. Funagata.

Since the Last Glacial Age, *P. amentata* extended in distribution northwards owing to the rise in temperature with the result that *P. kurosawai* was obliged to migrate toward the north under the extension of distributional range of *P. amentata*. The small population of *P. kurosawai* was left behind at both the Oshika and Oga Peninsulas where *P. amentata* could not migrate. All habitats of *P. kurosawai* were not occupied by *P. amentata* in southern Honshu. Sympatric populations of the two species, *P. amentata* and *P. kurosawai* had been found in the eastern foot at Mt. Funagata. The another sympatric populations of two species may be discovered by future field surveys.

要　　約

窪木 幹夫：東アジア産ハナカミキリ亜科 *Pidonia* 属の研究： *Pidonia kurosawai* キタセスジヒメハナカミキリ の種昇格ならびに再記載. ——— *Pidonia amentata kurosawai* OHBAYASHI et HAYASHI は，北海道羅臼産の♂個体に基づいて *P. amentata* (BATES) セスジヒメハナカミキリの

亜種として記載された．副模式標本の産地として，北海道，青森県，秋田県，岩手県，福島県が挙げられている．しかし，これらの標本の具体的な産地，採集日，採集者の記述がなく，長い間，両亜種の区別に混乱が続いてきた．たとえば，中部地方の日本海側地域と関東地方北部に分布する基亜種 *amentata* の鞘翅斑紋の縮小した個体が，亜種 *kurosawai* と扱われた．東北地方各地で同じ花から採集したセスジヒメハナカミキリを比較検討した結果，形態的に区別できる２群を確認した．これら同所性の２群は，基亜種 *amentata* と亜種 *kurosawai* に該当した．両者は，それぞれ独立した種と考えられる．*P. kurosawai* は，鞘翅中央(S)紋が両側ほぼ直線のくさび型で，♂の末端節背板が先端に向かって狭まる長方形で，中側（Lm）紋が♂で線形，♀で広線形で，♂の後側(Lp)紋が消失することで *P. amentata* と区別できる．東北地方での両種の分布を示した．北部には *P. kurosawai*，南部には *P. amentata* が分布する．両種の混生が６調査地点で確認された．*P. amentata* の分布域内の男鹿半島，牡鹿半島とその隣接地域，奥羽山脈の船形山の東麓で *P. kurosawai* が確認された．最終氷期最盛期以降の２種の分布域の変化について考察した．気温上昇に伴い *P. amentata* の分布域が北に拡大し，結果として，*P. kurosawai* の分布域の後退がおきた．*P. amentata* が分布を拡大できなかった男鹿半島や牡鹿半島とその隣接地域には，*P. kurosawai* が生き残り，遺存的分布が形成された．船形山の東麓では，*P. amentata* と *P. kurosawai*の混生地も確認された．

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Entomological Review of Japan, **64** (2): 149–151, Dec. 30, 2009

Notes on the Species of *Nazeris* from Japan, XII
A New Species of the Genus *Nazeris* (Coleoptera: Staphylinidae) from the Izu Peninsula, Honshu in Japan

Tateo ITO
E12–102, Otokoyama Yutoku 7, Yawata, Kyoto, 614–8371 Japan
E-mail : itokyoto@gb3.so-net.ne.jp

Abstract A new species of the genus *Nazeris* are described from the Izu Peninsula, Central Honshu in Japan, under the name *Nazeris izuensis* T. ITO, sp. nov.

Many species of the genus *Nazeris* have been described from Japan for these decades. In the present paper I am going to add a new species of *Nazeris* to the Japanese fauna.

Before going further into detailed description of it, I would like to express my hearty thanks to Dr. Shun-Ichiro NAOMI (Natural History Museum and Institute, Chiba) and to Mr. Takashi WATANABE (Fujisawa City, Kanagawa Prefecture) for their kindly offering materials examined in this study.

Nazeris izuensis T. ITO, sp. nov.

(Figs. 1–3)

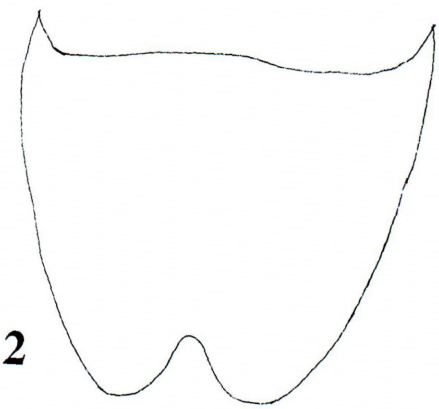
Body rather stout, moderate-sized, shiny and brownish black to black; mandibles, labrum, basal segments of antennae reddish brown. The remainings of antennae, maxillary and labial palpi, legs pale yellow; pubescence on body brownish black, but on mouth parts, antennae and legs yellowish brown to brown. Length : 5.8–6.3 mm.

Head suboblong, slightly longer than wide (1.07 : 1.00), with punctures rather coarse and close on vertex, and apparently sparser and more irregular on frons; interspaces of the punctures smooth and not microsculptured; frons slightly depressed; vertex evenly convex and without such a perceptible V-shaped impression as in *N. optatus*; postgenae subparallel-sided behind eyes and then arcuately constricted toward neck. Under side of head with punctures similar to those on the upper side, but more regular in arrangement, spaces among them nearly even and not microsculpltured. Labrum narrowly and deeply excised in middle, four teeth pointed at tip, inner two teeth thicker and clearly longer than the outer two. Mentum smooth and shiny, submentum slightly depressed and coarsened. Eyes moderately sized, each longitudinal diameter about a half length of postgenae. Antennae extending to middle of pronotum; all segments dis-









Figs. 1–3. *Nazeris izuensis* T. Ito sp. nov. —— 1, habitus (holotype); 2, the outline of the 8 th sternite in male; 3, aedeagus: l= in lateral view; v=the same in ventral view. (paratype)

tinctly longer than wide, 1st segment thick, cylindrical, as long as the following two segments together; 3rd segment a little less than twice as long as 2nd, and to 10th decreasing gradually in length; 11th segment longer than 10th.

Pronotum oval, rather narrow (ratio of width to length=1.00 : 1.18), slightly shorter (1.00: 1.09), and narrower than head (1.00 : 1.20), without any characterized setae a near the widest point at apical third, wholly arched apically and gradually sublinearly narrowed basally; lateral margins mostly invisible when viewed from above; apical and basal margins visible; disc deeply, more coarsely and more regularly punctate than on head, the punctures somewhat disturbed by median line in arrangement; median line narrow and not passing the middle, slightly depressed on each side. Prosternum very coarsely, deeply and rugosely punctate except smooth subapical area and medianly carinate; the median carina lessened in height toward apex and almost vanishing extremely; each proepipleural process scattered with punctures which are very deep, very coarse, and more than ten in number. Scutellum small, distinctly punctate.

Elytra abbreviate, narrowed basally, widest near apex and hardly wider than pronotum (1.02 : 1.00); surface coarsely punctate but more sparsely and more irregularly than on head.

Abdomen slightly enlarged laterally; 6th segment widest and wider than head; basal tergites coarsely and closely punctate and more coarsely, more closely than on apical tergites; punctures on each sternite coarser and deeper than those on the corresponding tergite, those on the apicalmost tergite fine; microsculpture not discernible throughout. In the male 7th sternite very weakly sinuated at apical margin in middle, 8th one rather widely and triangularly excised at apical margin in middle (Fig. 2).

Legs of moderate length, hind femora and their trochanters without any specific characters.

Aedeagus (Fig. 3) almost symmetrical, consisting of three parts, namely median lobe and a pair of long processes (as apophyses); median lobe each with a small aural projection laterally, a ventral plate subtriangulate, well-chitinized, gradually narrowed toward near apex and then suddenly so to tip, the tip not pointed, scarcely hooked ventrally and without any screen-shaped belongings dorsally; the long processes forficate, moderately chitinized, projecting from dorsolateral side, passing through the tip of median lobe, not pointed at apices and without any distinct tumidities on each inside.

Holotype : ♂ , Mt. Amagisan, Shizuoka Pref., 18. VI. 2008, S. TSUYUKI leg. (coll. to be eventually deposited in the Osaka Museum of Natural History). Paratypes : 1♂, the same data as holotype.; 2♂♂,1♀, Shimogamo, Minamiizu-cho, Shizuoka Pref., 15. III. 1996, S. NAOMI and M. MARUYAMA leg.; 1♀, Amagi-toge, Yugashima-cho, Shizuoka Pref., 12. XI. 2000, T. WATANABE leg.

Distribution. Japan (Honshu: Tokai district: the Izu Peninsula).

Etymology. The specific epithet is given after the Izu Peninsula in which the type locality is located.

Notes. The present new species is similar to *Nazeris ohkurai* T. ITO in general appearance, but is easily distinguishable from the latter in the following points: the body in color darker, almost black and without clear reddish tinge; the aedeagus with an apex of ventral plate of median lobe not sharply pointed and discernibly hooked ventrally at tip, also dorsally without any screen-shaped belongings; the aedeagal forficate processes shorter and less slender; the apical excision of the male 8th sternite less wide and deeper.

要　　約

伊藤 建夫：日本産 *Nazeris* 属（ハネカクシ科）の1新種の記載. ——— 伊豆半島南部から *Nazeris izuensis* T. ITO sp. nov. イズアバタコバネハネカクシ（新称）として命名記載した.

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Emendation of genus for *Lobrathium daibosatsu* T. ITO

Tateo ITO
E12–102, Otokoyama Yutoku 7, Yawata, Kyoto, 6l4–8371 Japan
E-mail : itokyoto@gb3.so-net.ne.jp

I erroneously described *Lobathium daibosatsu* as a member of *Lobrathium*, but it belongs truely to the genus *Lathrobium*. Therefore I will emend the genus.

Lathrobium daibosatsu (T. ITO) comb. nov.

Lobrathium daibosatsu T. ITO, Ent. Rev. Japan, 64(1): 28. syn. nov.

I thank Mr. Shotaro TANAKA who had the indication of the erratum.

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Entomological Review of Japan, **64** (2): 153–159, Dec. 30, 2009

Description of a New Species, *Donacia lungtanensis* (Coleoptera: Chrysomelidae: Donaciinae) from Taiwan

Masakazu HAYASHI
Hoshizaki Green Foundation, 1659–5 Okinoshima, Sono, Izumo, 691–0076 Japan

and

Chi-Feng LEE
Applied Zoology Division, Taiwan Agricultural Research Institute, Council of Agriculture, 189 Chung-cheng Road, Wufeng, 413 Taichung, Taiwan

Abstract A new donaciine species, *Donacia* (*Donacia*) *lungtanensis* sp. nov., is described. The new species resembles *Donacia* (*Donacia*) *akiyamai* KOMIYA from Honshu, Japan but shape of hind leg, apex of median lobe and a cap of tegmen of male genitalia are useful for their identification. A new key to the species of the Taiwanese *Donacia* is given.

The donaciine fauna of Taiwan includes five species of the genus *Donacia* FABRICIUS: *D.* (*Cyphogaster*) *lenzi* SCHÖNFELDT, *D.* (*C.*) *provostii* FAIRMAIRE, *D.* (*Donaciomima*) *bicoloricornis* CHEN, *D.* (*D.*) *frontalis* JACOBY and *D.* (*D.*) *lusow* HAYASHI et LEE (KIMOTO & TAKIZAWA, 1997; HAYASHI & LEE, 2007). In 2009, additional species of *Donacia* was found from Taiwan, which is recognized as a new species of the subgenus *Donacia*.

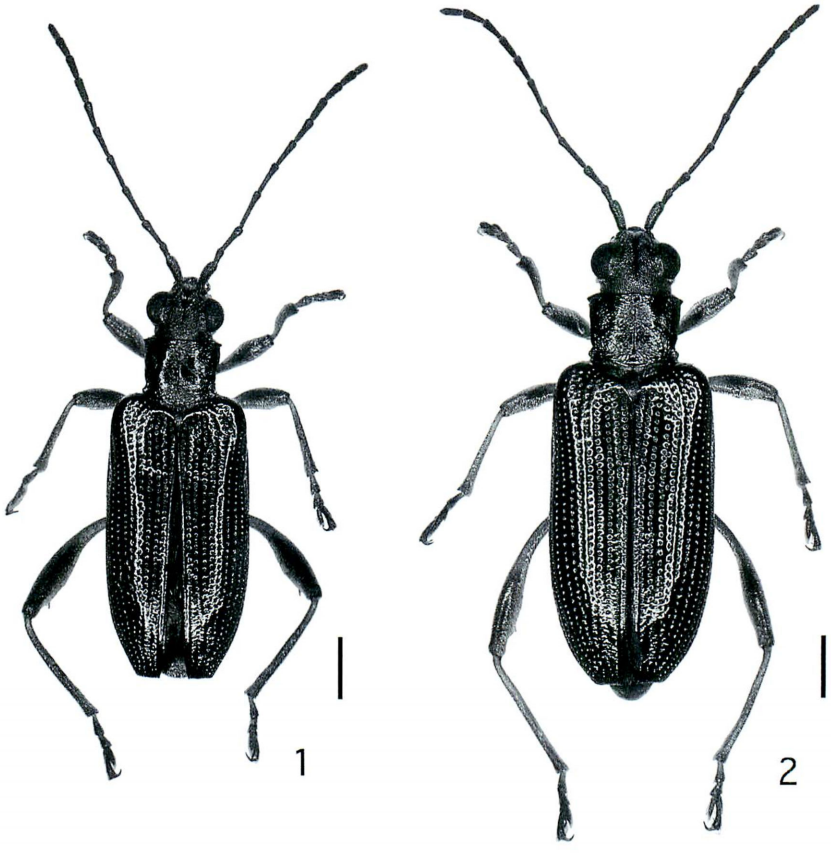
We dedicate this paper to the memory of the late Dr. Shinsaku KIMOTO who was a well-known specialist of Chrysomelidae of Taiwan, Japan and other Asian regions.

Donacia (*Donacia*) *lungtanensis* sp. nov.

(Figs. 1–13, 16–19)

Diagnosis: Eyes large and convex; antennomere 4th longest in 2nd to 6th; pronotal disc glabrous, with fine transverse rugae; legs partly metallic; metafemur slender, with two small teeth on underside in male, with one small tooth in female; apex of median lobe of male genitalia rounded; tegmen broad, apex notched; median process of endophallus (MP) and paired dorsal sclerites (PDS) short, basal supporting block (BSB) elongate.

Description: Male. Body entirely coppery. Eyes large and convex; supraocular furrow present; vertex pubescent and flat, with deep median line. Antenna entirely coppery and pubescent but base of each segment rufous; antennomere 4th longest in 2nd to 6th; antennomere 5th as long as 3rd; antennomere 3rd 2 times as long as 2nd. Pronotal outline quadrate, length as long as



Figs.1–2. *Donacia lungtanensis* sp. nov. —— 1, male (holotype); 2, female (paratype). Scale bar = 1.0 mm. All photographs by Stereoscopic Microscope.

width, anteriole and posteriole corners prominent; anterolateral calli indistinct; disc with transverse fine rugae; median line distinct; basal sulcus present but shallow, with punctate sparsely. Elytron shiny; sutural interval without rugae, gradually narrowing towards apex; other intervals with transverse rugae sparsely; apex broadly truncate. Legs slender; partly metallic colored; outer apical angle of protibia acute; underside of metafemur with two small teeth. Pygidial apex rounded. Median lobe of genitalia narrowed apically, apex rounded, without median lip; a cap of tegmen broad, apex notched. Sterna entirely coppery and pubescent; last sternite (sternum VII) punctate, apical shape gently rounded with shallow depression.

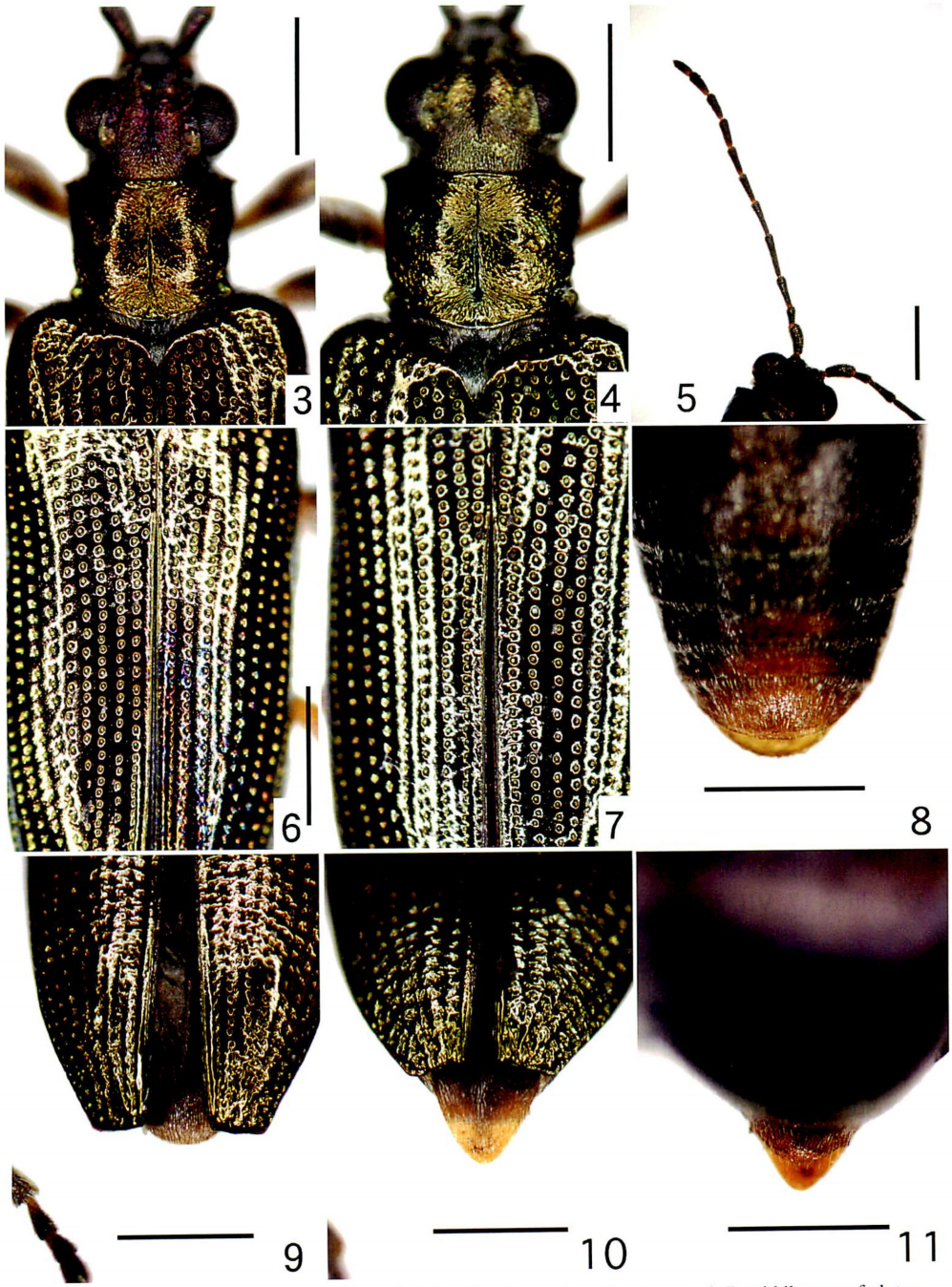
Female. Pronotal outline quadrate, width longer than length; metafemur with one tooth; pygidial apex acute. Apical shape of last sternite gently acute.

Body length: Males, 6.2–7.3 mm; females 6.9–8.2 mm.

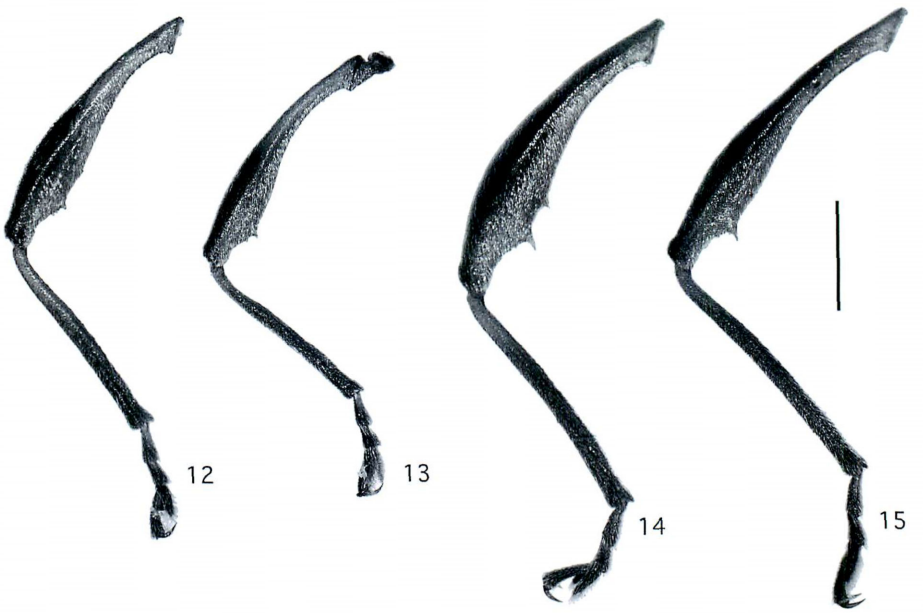
Remarks. The new species is similar to a Japanese species, *D. akiyamai* KOMIYA in almost every characters but shape of metafemur (Figs. 12–15), apex of median lobe (Figs. 16, 17, 20), and a cap of tegmen (Figs. 18, 21) are different from each other.

Distribution: Taiwan.

Host plants: *Nuphar shimadai* HAYATA.



Figs. 3–11. *Donacia lungtanensis* sp. nov. —— 3, 4, head and pronotum; 5, antenna; 6, 7, middle part of elytra; 8, 11, apex of abdominal sternite; 9, 10, apices of elytron and pygidum; 3, 5, 6, 8, 9, male; others, female. Scale bars = 1.0 mm. All photographs by Stereoscopic Microscope.



Figs. 12–15. Left hind leg. —— 12, 13, *Donacia lungtanensis* sp. nov.; 14, 15, *Donacia akiyamai* KOMIYA. 12, 14, male; 13, 15, female. Scale bar = 1.0 mm. All photographs by Stereoscopic Microscope.

Type series: Holotype and 28 paratypes are designated. Holotype: ♂, Lungtan, Taoyuan, Taiwan, 17. VII. 2009, H. LEE leg.; Paratypes: 4♂♂, 2♀♀, same data as holotype. 4♂♂, 3♀♀, ditto, 11. VII. 2009, M.-H. TSOU leg. 2♂♂, 7♀♀, ditto, 17. VII. 2009, H.-J. CHEN leg. 2♂♂, 1♀, ditto, 17. VII. 2009, C.-M. LO leg. 1♂, 2♀♀, Erhtzuping, Taipei, Taiwan, M.-H. TSOU leg.

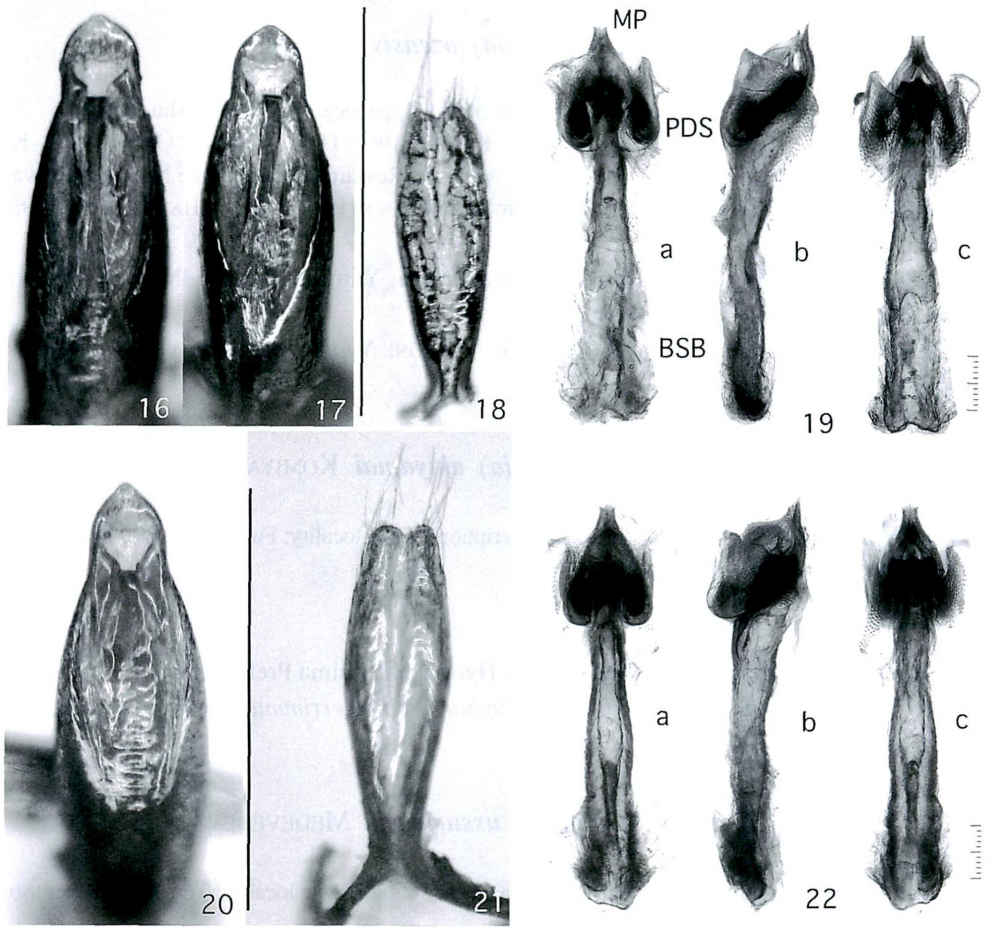
The holotype and 19 paratypes are deposited in the Taiwan Agricultural Research Institute (TARI), and 8 paratypes are in the Hoshizaki Institute of Wildlife Protection, Izumo, Japan.

Etymology: It is named after the type locality: Lungtan, at the Taoyuan County.

Note: One population was found at the Erhtzuping, Yangmingshan National Park. An artificial pond was established over there in 2007. A number of aquatic plants were transplanted from Lungtan, including its host plant. It is assumed that the beetle larvae were transported accidentally by means of soils attached with the host plants.

Key to species of the genus *Donacia* of Taiwan

1 (2) Legs entirely metallic 3
2 (1) Legs partly or entirely rufous 5
3 (4) Metafemur slender, without tooth. Pronotal disc with punctures and rugae. Elytral apex rounded. Body size large. Length: 8.1–10.0 mm. ··· *D.* (*Donaciomima*) *lusow* HAYASHI et LEE
4 (3) Metafemur robust and short, with a small tooth. Pronotal disc coarsely punctate, without course rugae. Elytral apex truncate. Body size small. Length: 5.0–8.7 mm. .....
..... *D.* (*Donaciomima*) *frontalis* JACOBY



Figs. 16–22. Male genitalia. —— 16–19, *Donacia lungtanensis* sp. nov.; 20–22, *Donacia akiyamai* KOMIYA. 16, 17, 20, apex of median lobe; 18, 21, a cap of tegmen; 19, 22, endophallus (a, dorsal-; b, lateral-; c, ventral-view). Scale bars = 1.0 mm in figs. 16-18, 20, 21; 19, 20 in 0.1 mm. Photographs of figs. 16–18, 20, 21 by Stereoscopic Microscope; figs. 19, 22 by Light Microscope.

5 (6) Pronotal disc with coarse punctures. Metafemoral tooth blunt. Length: 6.0–10.0 mm. ····· ····· *D.* (*Donaciomima*) *bicoloricornis* CHEN

6 (5) Pronotal disc with fine rugae mainly. Metafemoral tooth sharply pointed ····· 7

7 (8) First abdominal segment of male lacks tubercles on middle. Length: 6.2–8.2 mm. ····· ····· *D.* (*Donacia*) *lungtanensis* sp. nov.

8 (7) First abdominal segment of male with two tubercles on middle ····· 9

9 (10) Elytron rufous with metallic-lustre. Anntenomere III evidently longer than II. Length: 6.0 –9.0 mm. ····· *D.* (*Cyphogaster*) *provostii* FAIRMAIRE

10 (9) Elytron metallic coloured. Anntenomere III as long as II. Length: 6.1–8.0 mm····· ····· *D.* (*Cyphogaster*) *lenzi* SHÖNFELDT

Check-list of the subgenus *Donacia* from eastern Palaearctic region

Donacia (*Donacia*) *ozensis* NAKANE

Donacia ozensis NAKANE (1954: 739) (original description). Type locality: Oze, Honshu, Japan.
Donacia ozensis: CHÛJÔ & KIMOTO (1961: 121); — KIMOTO (1964: 114); — JOLIVET (1970: 24); — KIMOTO (1983: 10); — BOROWIEC (1984: 443); — Fossil Insect Research Group for the Nojiriko Excavation (1985: 7); — ASKEVOLD (1990: 645); — KIMOTO & TAKIZAWA (1994: 101); — HAYASHI (2004: 66).

Distribution. Japan (East Honshu: Aomori, Akita, Yamagata, Iwate, Miyagi, Fukushima, Gunma, Niigata, Nagano Prefectures).

Host plant. *Nuphar japonica* (D.C.) G. LAWSON, *Nuphar pumilum* var. *ozeense* (MIKI) HARA.

Donacia (*Donacia*) *akiyamai* KOMIYA

Donacia akiyamai KOMIYA (2001:41) (original description). Type locality: Fukuda (ca. 390 m alt.), Daiwa-chô, Kamo-gun, Hiroshima Pref., Japan.
Donacia akiyamai: HAYASHI (2004: 67)

Distribution. Japan (West Honshu: Mie, Hyogo, Hiroshima Prefectures).

Host plant. *Nuphar oguraense* MIKI, *Nuphar subintegerrimmu* (Casp.) FERNALD, *Nuphar japonica* (D.C.) G. LAWSON.

Donacia (*Donacia*) *ussuriensis* MEDEVEDEV

Donacia ussuriensis MEDVEDEV (1973: 876) (original description). Type locality: Tumangan River, Soviet-Korean frontier.
Donacia ussuriensis: BÍENKOWSKI (1997: 92).

Distribution. Far East Russia (Primorsky, Amur).

Host plant. Unknown.

Donacia (*Donacia*) *lungtanensis* sp. nov.

Distribution. Taiwan (Taoyuan, Taipei).

Host plant. *Nuphar shimadai* HAYATA.

Acknowledgements

We gratefully acknowledge to the Taiwan Chrysomelid Research Team for assisting in collecting, including Hsueh Lee, Mei-Hua, TSOU, and Hou-Jay CHEN. We especially thank Chi-Ming LOU for discovering the habitat of this new species.

要　　約

林　成多・李　奇峰：台湾から発見されたネクイハムシ属 *Donacia* の1新種．――― 2009年に台湾で発見されたネクイハムシ属の一種を新種 *Donacia* (*Donacia*) *lungtanensis* sp. nov. として記載した．本新種は日本のセラネクイハムシ *D.* (*Donacia*) *akiyamai* KOMIYA によく似ているが，肢が全体に細く，特に雄の後腿節が細く下面の歯が発達しないこと，雄交尾器陰茎先（median lobe）端部が丸く突出しないこと，背片（a cap of tegmen）が伸長しないことにより区別される．生態はセラネクイハムシと同様に止水域に生えるコウホネ属を寄主としている．旧北区東部では，狭義の *Donacia* 亜属は本新種を含めても４種しか記録されていないが，今回の発見は周辺地域でも本種やその近縁種が発見される可能性を示唆している．

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Entomological Review of Japan, **64** (2): 161–172, Dec. 30, 2009

Notes on the Lycid Genus *Plateros* (Coleoptera: Lycidae) from East Asia, III

Two New Species of the *Plateros chinensis* Complex in Taiwan

Kiyoshi MATSUDA

15-27 Matsugaoka, Hanayashiki, Takarazuka City, Hyogo Prefecture, Japan

Abstract Two new species of the genus *Plateros* BOURGEOIS, 1879, *P. takagii* sp. nov. and *P. lushanus* sp. nov. are described from Taiwan. *P. chinensis* WATERHOUSE, 1879 and *P. kleineanus* NAKANE, 1971 are redescribed. A key to the species of the *Plateros chinensis* complex in Taiwan is provided.

Altogether 28 species of the genus *Plateros* BOURGEOIS, 1879 in the tribe Platerodini have been recorded from Taiwan. Sixteen species among them are now regarded as valid species. The *Plateros chinensis* complex in Taiwan contains following three species: *P. chinensis* WATERHOUSE, 1879, *P. kleineanus* NAKANE, 1971 and *P. pseudochinensis* KAZANTSEV, 2004. They are characterized by the yellowish brown pronotum with or without a black stripe in the middle and the unicolor black elytra.

Recently the author had an opportunity to examine a series of 95 specimens of *P. chinensis* complex collected from eight sites in the central and southern Taiwan. After the close examination, the author found two new species among them. Accordingly he is going to describe these two new species, *Plateros takagii* sp. nov. and *P. lushanus* sp. nov., and redescribe *P. chinensis* WATERHOUSE and *P. kleineanus* NAKANE in the present paper.

Depositories. SEHU－Hokkaido University Museum, Sapporo; NSMT－National Museum of Nature and Science, Tokyo; CBM－Natural History Museum and Institute, Chiba; OMNH－Osaka Museum of Natural History, Osaka; EUM － Ehime University Museum, Matsuyama.

Taxonomy

Subfamily Lycinae LAPORTE, 1836
Tribe Platerodini KLEINE, 1928

Genus ***Plateros*** BOURGEOIS, 1879

Type species. *Eros brasiliensis* LUCAS, 1857: 81. Type locality: Brésil intérieur.

Type species of the genus *Plateros* BOURGEOIS was originally designated by ZARAGOZA (1999). Neotype of *Plateros brasiliensis* (LUCAS) was designated by BOCÁKOVÁ (2001) based on ♂, Brasil, São Paolo, now deposited in the National Museum, Prague.

Plateros chinensis WATERHOUSE, 1879

(Figs. 1, 5, 9, 13-15)

Plateros chinensis WATERHOUSE, 1879: 29. Type locality: Hong Kong.
Melaneros chinensis: BOCÁKOVÁ, 1997: 177.
Plateros sycophanta FAIRMAIRE, 1888: 352. Type locality: Hanoi, Tonquing.
Plateros formosanus PIC, 1921: 7. Type locality: Formose.
Plateros formosanus var. *nigrolineatus* PIC, 1921: 7. Type locality: Formose.
Plateros flavomarginatus KLEINE, 1936: 264. Type locality: Canton, China.

Redescription. Male. Body blackish brown, shining, with mandibles, mesosternum and basal portions of femora light reddish brown; head, antennae and scutellum blackish brown; pronotum yellowish brown with a longitudinal brackish brown stripe in the middle; elytra unicolor blackish brown; claws yellowish brown.

Body surface closely covered with short, recumbent or suberect, light reddish brown pubescence except for sides of pronotum clothed with short yellowish brown pubescence.

Head mostly concealed under pronotum, finely and sparsely punctured; frons short, strongly deflexed, slightly rounded in front, with a short narrow longitudinal groove between frontal tubercles, which are not strongly swollen just behind antennal insertions; vertex with two oval impressions in central portion.

Eyes large, lateral, hemispherically prominent; distance between eyes about 1.1 times as wide as eye diameter.

Antennae barely reaching 2/5 of elytra; 1st segment stout, strongly swollen at apex; 2nd segment short, cylindrical; 3rd segment triangular, about as long as the apical width; 4th to 10th segments serrate; 4th segment the widest in length; 11th segment fusiform; relative lengths of 1st to 11th segments from basal to apical: 1.1 : 0.6 : 1.0 : 1.6 : 1.7 : 1.7 : 1.7 : 1.7 : 1.6 : 1.6 : 2.2.

Maxillary palpi with terminal segment long, securiform, about 2.7 times as long as wide, slightly longer than 2nd segement.

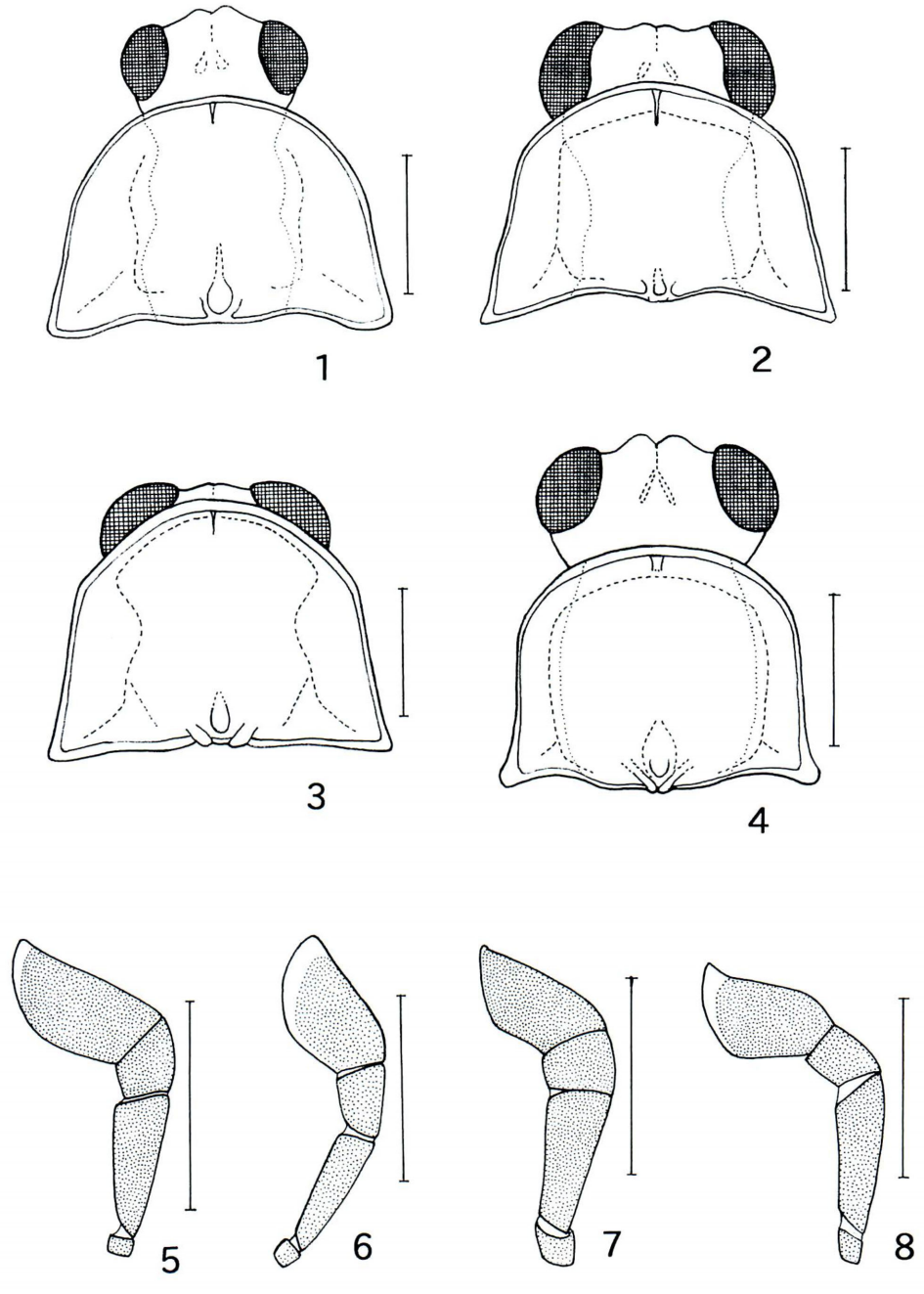
Labial palpi with terminal segment elongate, secriform, about 2.1 times as long as wide.

Pronotum transverse, about 0.6 times as long as the basal width; anterior margin widely arched, slightly diverging posteriad; anterior angles widely rounded, and posterior angles triangularly projecting laterad; basal margin bisinuate; sides widely reflexed; disc smooth, convex, obliquely dented from each anterior corner to the middle of posterior margin, deeply and triangularly depressed at insides of anterior and posterior corners, respectively, finely and closely punctured on central portion, coarsely and closely punctured along antero-lateral margins, provided with a short narrow longitudinal carina in front and an oval longitudinal fovea before the middle of basal margin.

Scutellum subquadrate, transversely truncate at apex; surface minutely and rather closely punctured.

Elytra slightly diverging posteriad, dehiscent behind scutellum and separately rounded at apices, about 3.2 times as long as wide, about 5.3 times as long as pronotum, each elytron bearing four longitudinal costae, the intervals between costae with double rows of subquadrate and irregular cells.

Ventral surface rugose, finely and closely punctured; 7th abdominal sternite slightly emarginate at apex; anal sternite subtriangular, gradually narrowed towards apex.



Figs.1–8. *Plateros* spp. ♂♂. 1–4: Head and pronotum; 5–8: Maxillary palpus.——1 & 5, *P. chinensis* WATERHOUSE; 2 & 6, *P. kleineanus* NAKANE; 3 & 7, *P. takagii* sp. nov.; 4 & 8, *P. lushanus* sp. nov. Scale for 1–4: 0.5 mm; scale for 5–8: 0.25 mm.

Legs moderate in length; hind tibiae slender, slightly dilated apicad, about as long as hind femora; hind tarsi with 1st to 4th segments subequal in length; 5th segment distinctly longer than 1st segment; claws simple, somewhat angulate at bases.

Aedeagus long; median lobe strongly bent at the middle, with the distal portion gradually narrowed towards apex; phallobase relatively large.

Female: Eyes large, hemispherically prominent; interval between eyes about 1.1 times as long as eye diameter. Antennae serrate, rather robust, not reaching 2/5 of elytra; 3rd segment about 1.1 times as long as wide; relative rengths of 1st to 11th segments from basal to apical: 0.9 : 0.4 : 1.0 : 1.3 : 1.3 : 1.3 : 1.4 : 1.4 : 1.4 : 1.3 : 1.3. Pronotum about 0.7 times as long as the basal width, about 2.0 times as wide as head. Elytra about 2.9 times as long as wide, about 5.0 times as long as pronotum.

Measurements. Length: 4.7–7.6 mm; width 1.3–2.2 mm.

Materials examined. 1♂, Lushan Hot Springs, alt. 1,200 m, Nantou Hsien, Taiwan, 19. V. 1974, K. MATSUDA leg.; 1♂, Lushan Hot Springs, 1. VI. 1975, S. IMASAKA leg.; 1♂, 3♀♀, Lushan Hot Springs, 25. VI. 1976, S. IMASAKA leg.; 1♂, Lushan Hot Springs, 19. VI. 1978, H. AKIYAMA leg.; 2♂♂, Wushe, alt. 1,100 m, Nantou Hsien, Taiwan, 27. V. 1975, S. IMASAKA leg.; 1♂, Wushe, 10. VI. 1975, M. KUBOTA leg.; 1♂, Nanshanchi, alt. 800 m, Nantou Hsien, Taiwan, 21. VI. 1974, K. MATSUDA leg.; 2♀♀, Nanshanchi, 26. V. 1975, K. MATSUDA leg.; 1♂, 1♀, Nanshanchi, 30. V. 1975, S. IMASAKA leg.; 1♀, Nanshanchi, 12. VI. 1975, M. KUBOTA leg.; 1♀, Nanshanchi, 25. VII. 1976, K. MATSUDA leg.; 13♂♂, 14♀♀, Nanshanchi, 1. VIII. 1977, Y. SHIBATA leg.; 10♂♂, 15♀♀, Nanshanchi, 14–17. V. 1978, S. IMASAKA leg.; 4♂♂, 2♀♀, 2-9. VII. 1978, T. MIKAGE leg.; 1♀, Nanshanchi, 24. VI. 1979, T. MIKAGE leg.; 1♀, Puli, Nantou Hsien, Taiwan, 29. V. 1975, K. MATSUDA leg.; 1♀, Chihpen Hot Springs, Taitung Hsien, Taiwan, 20. V. 1975, S. IMASAKA leg.; 1♂, Hsinfa, near Liukuei, Kaohsiung Hsien, Taiwan, 2. VIII. 1976, K. MATSUDA leg.; 1♂, 3♀♀, Tsuholin National Park, Guandong Province, SE. China, 21. VI. 1990; 3♂♂, 3♀♀, Mt. Hin Lek Phai, Hua Hin, Pechaburi, S. Thailand, 16. VIII. 1997, S. OHMOMO leg.

Distribution. China, Taiwan, Vietnam, Thailand.

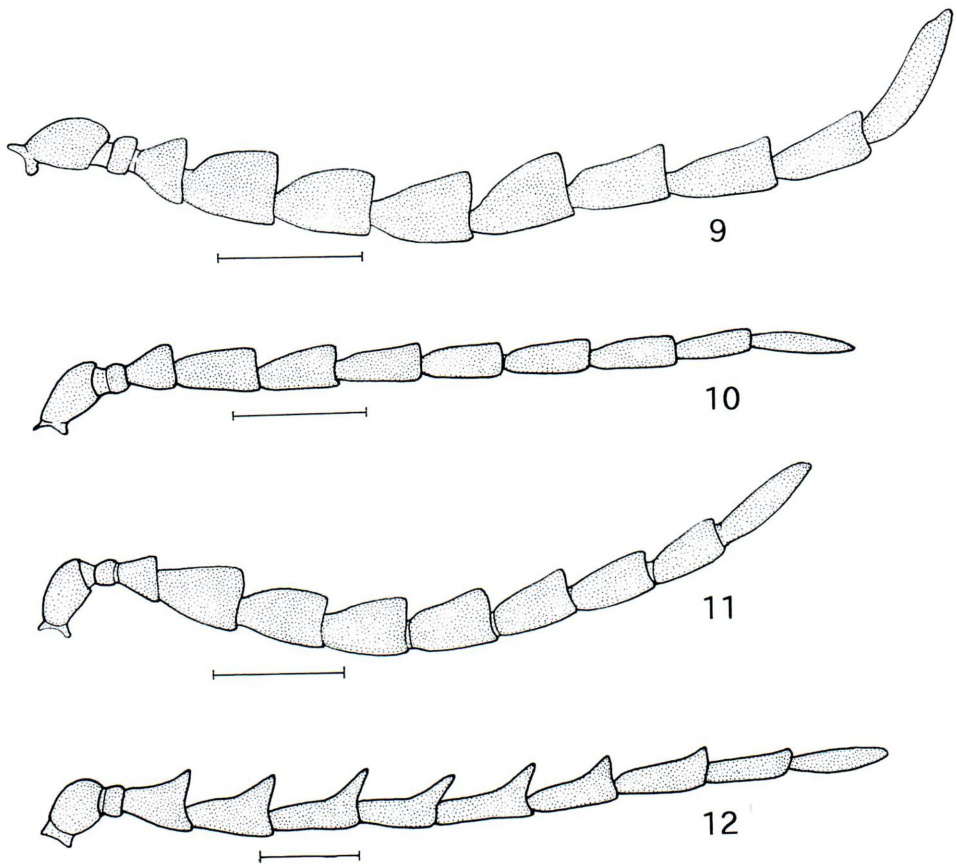
Remarks. This species occurs in China, Taiwan and Indochina. BOCÁK & BOCÁKOVÁ (1987) designated the lectotype of *Plateros formosanus* PIC based on the 1♂, labelled *Sokutsu (Kaohsiung Hsien), Taiwan, 1912, collected by H. SAUTER with three paralectotypes from Takao (Kaohsiung). BOCÁKOVÁ (1997) synonymized *Plateros sycophanta* FAIRMAIRE, *P. formosanus* PIC and *P. flavomarginatus* KLEINE to *P. chinensis* WATERHOUSE based on these types. She mentioned there are no differences between the holotype of *P. chinensis* and all types of other three species. The author also came to the same conclusion on his inspection of the specimens from China, Taiwan and Thailand.

Plateros kleineanus NAKANE, 1971

(Figs. 2, 6, 10, 16–18)

Dihammatus atricolor : KLEINE, 1926: 99.
Plateros kleineanus NAKANE, 1971: 150.
Plateros kleineanus : JENG, YANG & SATÔ, 2002: 177; — BOCÁKOVÁ & BOCÁK, 2007: 220.

Redescription. Male. Body dark reddish brown, shining, with mandibles, fore trochanters, basal portions of fore and mid femora light reddish brown; head, antennae and scutellum dark reddish brown; pronotum yellowish brown with a longitudinal dark reddish brown stripe in the middle; elytra unicolor blackish brown; claws yellowish brown.



Figs.9–12. Antennae of *Plateros* spp. ♂♂. —— 9, *P. chinensis* WATERHOUSE; 10, *P. kleineanus* NAKANE; 11, *P. takagii* sp. nov.; 12, *P. lushanus* sp. nov. Scale: 0.5 mm.

Body surface closely covered with short, recumbent or suberect, light reddish brown pubescence.

Head mostly concealed under pronotum, finely and closely punctured; frons short, strongly deflexed, slightly rounded in front, with a short narrow longitudinal groove between frontal tubercles, which are not strongly swollen just behind antennal insertions; vertex with two oblique oval impressions in central portion.

Eyes very large, lateral, hemispherically prominent; distance between eyes about 0.8 times as wide as eye diameter.

Antennae barely reaching 2/5 of elytra; 1st segment stout, strongly swollen at apex; 2nd segment short, cylindrical; 3rd segment triangular, about 1.2 times as long as the apical width; 4th to 10th segments feebly serrate; 4th segment the widest in length; 11th segment fusiform; relative lengths of 1st to 11th segments from basal to apical: 1.4 : 0.5 : 1.0 : 1.6 : 1.6 : 1.6 : 1.6 : 1.6 : 1.6 : 1.5 : 2.0.

Maxillary palpi with terminal segment long, securiform, about 1.6 times as long as wide, about as long as 2nd segement.

Labial palpi with terminal segment securiform, about 1.8 times as long as wide.

Pronotum transverse, about 0.6 times as long as the basal width and strongly diverging

posteriad; anterior margin widely arched; anterior angles widely rounded; posterior angles triangularly projecting laterad; basal margin bisinuate; sides widely reflexed; disc smooth, convex, obliquely dented from each anterior corner to the middle of posterior margin, deeply and triangularly depressed at insides of anterior and posterior corners, respectively, finely and closely punctured on central portion, coarsely and closely punctured along antero-lateral margins, provided with a short narrow longitudinal carina in front and an oval longitudinal fovea before the middle of basal margin.

Scutellum rotundate, gradually narrowed towards apex; surface minutely and closely punctured.

Elytra slightly diverging posteriad, dehiscent behind basal 1/4 and separately rounded at apices, about 3.2 times as long as wide, about 5.8 times as long as pronotum; each elytron bearing four longitudinal costae; intervals between costae with double rows of subquadrate and irregular cells.

Ventral surface rugose, finely and closely punctured; 7th abdominal sternite slightly emarginate at apex; anal sternite subtriangular, gradually narrowed apicad.

Legs moderate in length; hind tibiae slender, slightly dilated apicad, slightly shorter than hind femora; hind tarsi with 2nd to 4th segments subequal in length; 1st and 5th segments longer than the remainder segments; claws simple, somewhat angulate at bases.

Aedeagus long; median lobe elongate, twisted near the middle, with a pair of acute projections at the middle in dorsal aspect, distal portion strongly pointed; phallobase relatively small.

Measurements. Length: 5.2 mm; width 1.3 mm.

Material examined. 1♂, Lushan Hot Springs (Hotso), alt. 1200 m, about 9 km from Wushe, Nantou Hsien, Taiwan, 24. VII. 1976, K. MATSUDA leg.

Distribution. Taiwan.

Remarks. The male collected in Lushan Hot Springs is well agreed with the original description of *Dihammatus atricolor* PIC, 1921 and also the redescription and figures given by KLEINE (1926). NAKANE (1971) regarded KLEINE's "*D. atricolor*" is defferent with PIC's *D. atricolor* on the basis of body length and coloration. Then he proposed the replaced name, *Plateros kleineanus* for the KLEINE's *D. atricolor* because *Plateros atricolor* was preoccupied by a South American species as pointed out by JENG, YANG & SATÔ (2002). On *P. kleineanus* and *D. atricolor*, further study will be needed including inspections of both types. Therefore, the author now tentatively select the species name, *P. kleineanus* for a small Taiwanese *Plateros* shown by KLEINE.

Plateros takagii MATSUDA, sp. nov.

(Figs. 3, 7, 11, 19–21)

Male. Body dark reddish brown, shining, with fore trochanters and basal portions of fore femora light reddish brown; head, antennae and scutellum dark reddish brown; pronotum light yellowish brown; elytra unicolor blackish brown; claws yellowish brown.

Body surface closely covered with short, recumbent or suberect, light reddish brown pubescence except for pronotum clothed with short yellow pubescence.

Head mostly concealed under pronotum, finely and sparsely punctured; frons short, strongly deflexed, slightly rounded in front, with a short narrow longitudinal groove between frontal

tubercles, which are not strongly swollen just behind antennal insertions; vertex with a large round impression in central portion.

Eyes very large, lateral, hemispherically prominent; distance between eyes about 0.6 times as wide as eye diameter.

Antennae barely reaching 2/5 of elytra; 1st segment stout, strongly swollen at apex; 2nd segment short, cylindrical; 3rd segment triangular, about 1.1 times as long as the apical width; 4th to 10th segments feebly serrate; 4th segment the widest in length; 11th segment fusiform; relative lengths of 1st to 11th segments from basal to apical: 1.5 : 0.6 : 1.0 : 2.0 : 1.7 : 1.9 : 1.8 : 1.8 : 1.8 : 1.7 : 2.2.

Maxillary palpi with terminal segment long, securiform, about 2.7 times as long as wide, slightly longer than 2nd segement.

Labial palpi with terminal segment securiform, about 2.1 times as long as wide.

Pronotum transverse, about 0.7 times as long as the basal width, slightly diverging posteriad; anterior margin widely arched; anterior angles widely rounded; posterior angles triangularly projecting laterad; basal margin bisinuate; sides widely reflexed; disc smooth, convex, obliquely dented from each anterior corner to the middle of posterior margin, deeply and triangularly depressed at insides of anterior and posterior corners, respectively, finely and closely punctured on central portion, coarsely and closely punctured along antero-lateral margins, provided with a short narrow longitudinal carina in front and an oval longitudinal fovea before the middle of basal margin.

Scutellum subquadrate, transversely truncate at apex; surface minutely and rather closely punctured.

Elytra slightly diverging posteriad, dehiscent behind scutellum and separately rounded at apices, about 3.3 times as long as wide, about 5.2 times as long as pronotum; each elytron bearing four longitudinal costae; the intervals between costae with double rows of large round or irregular cells.

Ventral surface rugose, finely and closely punctured; 7th abdominal sternite deeply emarginate at apex; anal sternite subtriangular, gradually narrowed towards apex.

Legs moderate in length; hind tibiae slender, slightly dilated apicad, slightly longer than hind femora; hind tarsi with 2nd to 4th segments subequal in length; 5th segment the longest in length; claws simple, somewhat angulate at bases.

Aedeagus long; median lobe elongate, slightly bent at the middle, slightly widened in distal 1/2, with the apical portion flattened, gradually narrowed towards apex; phallobase relatively large.

Female: Eyes large, hemispherically prominent; interval between eyes about 1.3 times as long as eye diameter. Antennae feebly serrate, rather robust, not reaching 2/5 of elytra; 3rd segment about 0.9 times as long as wide; relative rengths of 1st to 11th segments from basal to apical: 1.2 : 0.6 : 1.0 : 1.5 : 1.3 : 1.4 : 1.4 : 1.4 : 1.4 : 1.4 : 1.9. Pronotum about 0.6 times as long as the basal width, about 2.0 times as wide as head. Elytra about 2.7 times as long as wide, about 4.5 times as long as pronotum.

Measurements. Length: 5.0-6.1 mm; width 1.2-1.9 mm.

Type series. Holotype: ♂, Kenting Park, alt. 100 m, about 10 km from Hengchun, Pintung Hsien, Taiwan, 11. V. 1970, M. TAKAGI leg. The holotype is deposited in the collection of the Ehime University Museum, Matsuyama. Paratypes: 1 ♂, Kenting Park, 26. IV. 1975, S. IMASAKA leg.; 1 ♀, Kenting Park, 16. V. 1975, K. MATSUDA leg. (OMNH); 2 ♀ ♀, Kenting Park, 17.

V. 1975, K. MATSUDA leg. (1 ♀. CBM).

Distribution. Taiwan.

Etymology. This new species is named in honor of Mr. Masato TAKAGI, Takamatsu, Japan, who collected this interesting new species for the first time.

Remarks. This new species closely related to *Plateros rufomarginatus yonagunianus* MATSUDA from Yonaguni Island, Japan, but can be distinguished from the latter by the following characteristics: 1) scutellum dark reddish brown, 2) antennae shorter in length, 3) male aedeagus with median lobe not strongly bent at the middle.

Plateros lushanus MATSUDA sp. nov.

(Figs. 4, 8, 12, 22-24)

Male. Body blackish brown, shining, with trochanters and claws yellowish brown; head, antennae and scutellum blackish brown; pronotum blackish brown with marginal rims and sides of pronotum yellowish brown; elytra unicolor black.

Body surface closely covered with short, recumbent or suberect, light reddish brown pubescence except for antennae densly clothed with long, suberect, reddish brown hairs.

Head mostly concealed under pronotum, finely and closely punctured; frons short, strongly deflexed, slightly rounded in front, with a short narrow longitudinal groove between frontal tubercles, which are not strongly swollen just behind antennal insertions; vertex with two shallow oblique oval impressions in central portion.

Eyes large, lateral, hemispherically prominent; distance between eyes about 1.1 times as wide as eye diameter.

Antennae long, fully reaching 1/2 of elytra; 1st segment stout, strongly swollen at apex; 2nd segment short, cylindrical; 3rd segment subtriangular, about 1.3 times as long as the apical width; 4th to 9th segments strongly serrate; 6th segment the widest in length; 11th segment fusiform; relative lengths of 1st to 11th segments from basal to apical: 0.7 : 0.4 : 1.0 : 1.2 : 1.3 : 1.4 : 1.5 : 1.6 : 1.5 : 1.5 : 1.7.

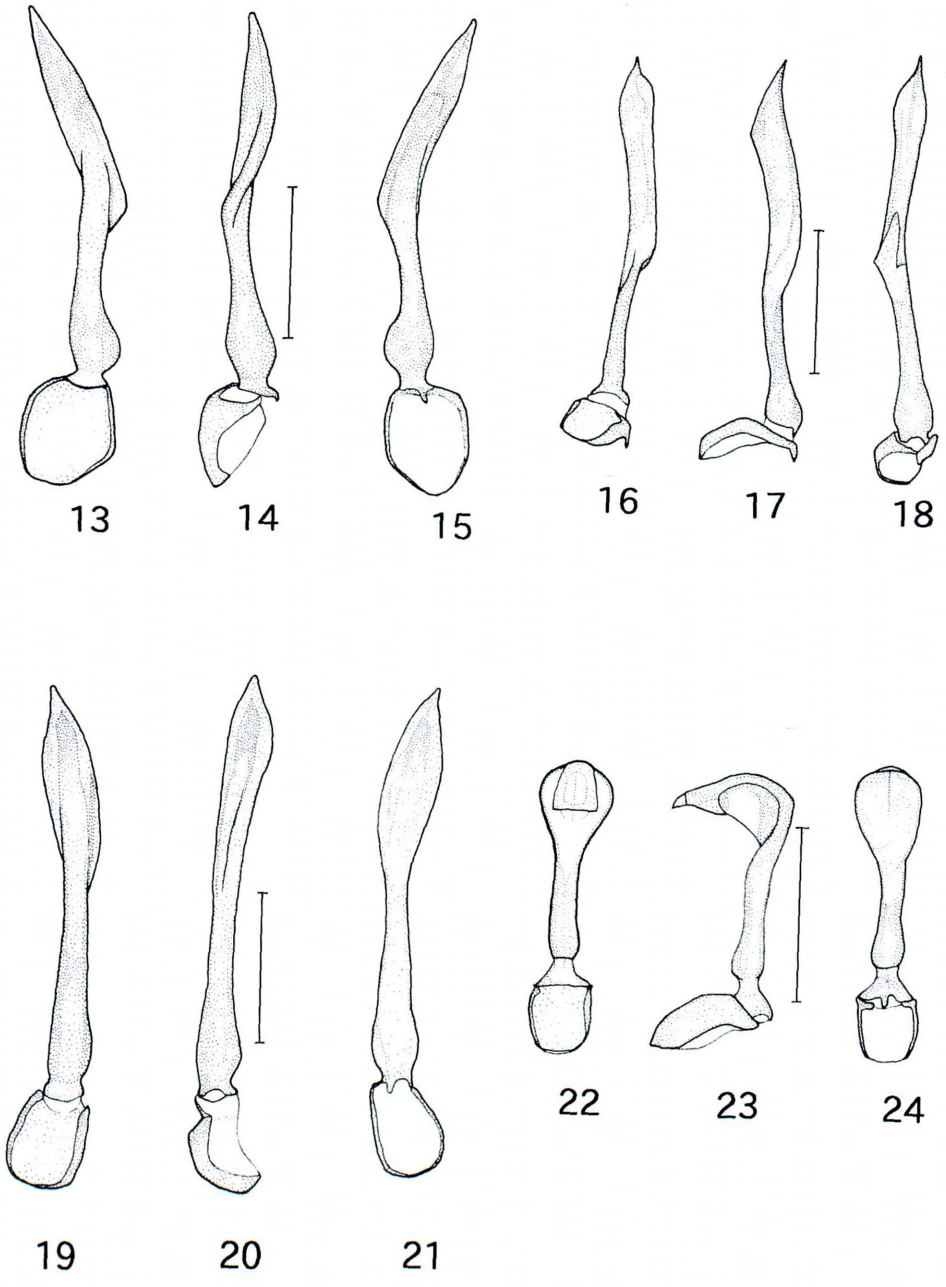
Maxillary palpi with terminal segment long, securiform, about 1.9 times as long as wide, about as long as 2nd segement.

Labial palpi with terminal segment securiform, about 1.7 times as long as wide.

Pronotum transverse, about 0.7 times as long as the basal width; anterior margin widely arched; anterior angles widely rounded; lateral mangins subparallel-sided to each other; posterior angles triangularly projecting laterad; basal margin bisinuate; sides widely reflexed; disc smooth, convex, obliquely dented from each anterior corner to the middle of posterior margin, deeply and triangularly depressed at insides of anterior and posterior corners, respectively, finely and closely punctured on central portion, coarsely and closely punctured along antero-lateral margins, provided with a short narrow longitudinal carina in front and an oval longitudinal fovea before the middle of basal margin.

Scutellum subquadrate, narrowly incised at apex; surface minutely and closely punctured.

Elytra slightly diverging posteriad, dehiscent behind basal 1/3 and separately rounded at apices, about 3.4 times as long as wide, about 5.0 times as long as pronotum; each elytron bearing four longitudinal costae; intervals between costae with double rows of round and irregular cells.



Figs.13–24. Male aedeagus of *Plateros* spp. ♂♂.—— *P. chinensis* WATERHOUSE in ventral (13), lateral (14) and dorsal (15) view; *P. kleineanus* NAKANE in ventral (16), lateral (17) and dorsal (18) view; *P. takagii* sp. nov. in ventral (19), lateral (20) and dorsal (21) view; *P. lushanus* sp. nov. in ventral (22), lateral (23) and dorsal (24) view. Scale: 0.5 mm.

Ventral surface rugose, finely and closely punctured; 7th abdominal sternite roundly emarginate at apex, anal sternite strongly swollen at the middle, sharply narrowed towards apex.

Legs moderate in length; hind tibiae slender, slightly dilated apicad, about as long as hind femora; hind tarsi with 2nd to 4th segments subequal in length; 1st and 5th segments longer than

the remainder segments; claws simple, somewhat angulate at bases.

Aedeagus short; median lobe widened in distal 1/2, with a hoe-shaped appendage at apex; phallobase relatively small.

Female: Eyes large, hemispherically prominent; interval between eyes about 1.1 times as long as eye diameter. Antennae long, feebly serrate, fully reaching 1/2 of elytra; 3rd segment about 1.4 times as long as wide; relative rengths of 1st to 11th segments from basal to apical: 0.9 : 0.4 : 1.0 : 1.2 : 1.2 : 1.3 : 1.3 : 1.3 : 1.3: 1.2 : 1.3. Pronotum about 0.8 times as long as the basal width, about 1.5 times as wide as head. Elytra about 3.4 times as long as wide, about 5.0 times as long as pronotum.

Measurements. Length: 4.3–5.9 mm; width 1.1–1.4 mm.

Type series. Holotype: ♂, Lushan Hot Springs, alt. 1,200 m, about 9 km from Wushe, Nantou Hsien, Taiwan, 24. VII. 1976, K. MATSUDA leg. The holotype is deposited in the collection of the Hokkaido University Museum, Sapporo. Paratypes: 1 ♀, Lushan Hot Springs, 25. V. 1976, K. AKIYAMA leg. (NSMT); 1 ♀, Lushan Hot Springs, 22. VII. 1976, K. MATSUDA leg.; 1 ♂, Lushan Hot Springs, 13. V. 1978, S. IMASAKA leg.; 1 ♀, Shihtyutou, Nantou Hsien, 6–7. VI. 1996, M. KASAGI leg.

Distribution. Taiwan.

Etymology. This new species is named after the type locality, Lushan Hot Springs.

Remarks. This new species is similar to *Plateros chinensis* WATERHOUSE, but can be distinguished from the latter by the following characteristics: 1) male eyes larger, 2) male antennae strongly serrate, 3) hind tibiae more slender and subparallel-sided in distal 1/2, 4) male aedeagus short, with median lobe not strongly bent at the middle, 5) phallobase smaller.

Key to the Species of the *Plateros chinensis* complex from Taiwan based on males

1(2) Pronotum light yellowish brown; eyes very large; distance between eyes about 0.6 times as long as eye diameter. 5.0–6.1 mm. Southern Taiwan. ..... *P. takagii* MATSUDA, sp. nov.
2(1) Pronotum brackish brown to dark reddish brown with the sides yellowish brown.
3(4) Antennae strongly serrate; aedeagus short; median lobe with a hoe-shaped appendage at apex. 4.3–5.9 mm. Central Taiwan. ..... *P. lushanus* MATSUDA, sp. nov.
4(3) Antennae feebly serrate; aedeagus long; median lobe without an appendage at apex.
5(6) Eyes large; distance between eyes about 1.1 times as long as eye diameter. 4.7–7.6 mm. China, Taiwan, Vietnum and Thailand. ..... *P. chinensis* WATERHOUSE
6(5) Eyes very large; distance between eyes about 0.5–0.6 times as long as eye diameter.
7(8) Aedeagus with median lobe subparallel-sided in distal 1/2. 5.0–7.0 mm. Taiwan. ..... *P. kleineanus* NAKANE
8(7) Aedeagus with median lobe curved in distal 1/2. 4.5–7.2 mm. Northern Taiwan. ..... *P. pseudochinensis* KAZANTSEV

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要　　約

松田　潔：東アジア産ハナボタル属の研究，III. ——*Plateros chinensis* 種群に属す台湾産ハナボタルの2新種, *Plateros takagii* sp. nov. と *P. lushanus* sp. nov. を命名記載した。また，*P. chinensis* WATERHOUSE と *P. kleineanus* NAKANE の2種のハナボタルについては、台湾産の標本に基づいて再記載を行い，台湾産のこの種群5種の雄の検索表を示した.

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Entomological Review of Japan, **64** (2): 173–179, Dec. 30, 2009

Taxonomic Notes on the Lycid Beetles (Coleoptera: Lycidae) from Japan, II

Description of a New Subspecies of *Lycostomus* (*Lycostomus*) *formosanus* Pic from the Ryukyu Islands, Southwest Japan

Kiyoshi Matsuda
15–27 Matsugaoka, Hanayashiki, Takarazuka City,
Hyogo Prefecture, 665–0801, Japan

Abstract A new lycid taxon, *Lycostomus* (*Lycostomus*) *formosanus ishigakianus* subsp. nov. is described from the Ryukyu Islands, Southwest Japan. Two new localities of the nominotypical subspecies, *L.* (*L.*) *formosanus formosanus* Pic, 1937: Lutao and Lanyu Islands, Taitung Hsien, Taiwan are reported.

A Taiwanese lycid beetle, *Lycostomus formosanus* was originally described by Pic (1937) from "Formose." Nakane (1973) reported this species based on the Pic's type deposited in the Museum National d'Histoire, Paris with his handwriting figures of the head, antenna, pronotum and male aedeagus. Satô & Matsuda (1985) reported *L. formosanus* from Ishigaki-jima Island, the Ryukyu Islands, Southwest Japan. The record was cited by Jeng, Yang & Satô (2002) and Bocáková & Bocák (2007). Therefore, we recognize the species occurs in Taiwan and Ishigaki-jima Island at present.

In recent years, the author had an opportunity to re-examine a series of the 71 specimens of *L.* (*L.*) *formosanus* from Taiwan and Ishigaki-jima Island. After the close examination, he found several significant morphological differences between the populations of Taiwan and Ishigaki-jima Island.

In the present paper, the author is going to describe the latter as a new subspecies, *Lycostomus* (*Lycostomus*) *formosanus ishigakianus* subsp. nov in comparison with the nominotypical subspecies, *L.* (*L.*) *formosanus formosanus* Pic.

Abbreviations for measurements. HW—head width; E—eye diameter; DE—distance between eyes; PW—maximum width of pronotum; PL—pronotal length; EW—elytral width at humeri; EL—elytral length.

Depositories. SEHU—Hokkaido University Museum, Sapporo; NSMT—National Museum of Nature and Science, Tokyo; OMNH—Osaka Museum of Natural History, Osaka; KUM—Kyushu University Museum, Fukuoka; URM—University of the Ryukyus, University Museum, Nishihara.

Taxonomy

Subfamily Lycinae LAPORTE, 1836
Tribe Lycini LAPORTE, 1836
Genus *Lycostomus* MOTSCHULSKY, 1861
Subgenus *Lycostomus* MOTCHULSKY, 1861

Type species. *Lycus coccineus* MOTSCULSKY, 1861. type locality. Ceylon.(=*Lycus similes* HOPE, 1831)

Lycostomus (*Lycostomus*) *formosanus formosanus* PIC, 1937

(Figs. 3, 8–10, 12)

Lycostomus formosanus PIC, 1937: 147. type locality. Formose; — NAKANE, 1973: 9; — JENG, JANG & SATÔ, 2002: 173; — BOCÁK & MATSUDA, 2003: 1476. (larva).
Lycostomus (*Lycostomus*) *formosanus*: BOKÁKOVÁ & BOCÁK, 2007: 211.

Diagnosis. Body black to blackish brown, shining, with mandibles and claws light reddish brown; pronotum red with a longitudinal black macula in the middle; elytra unicolor red.

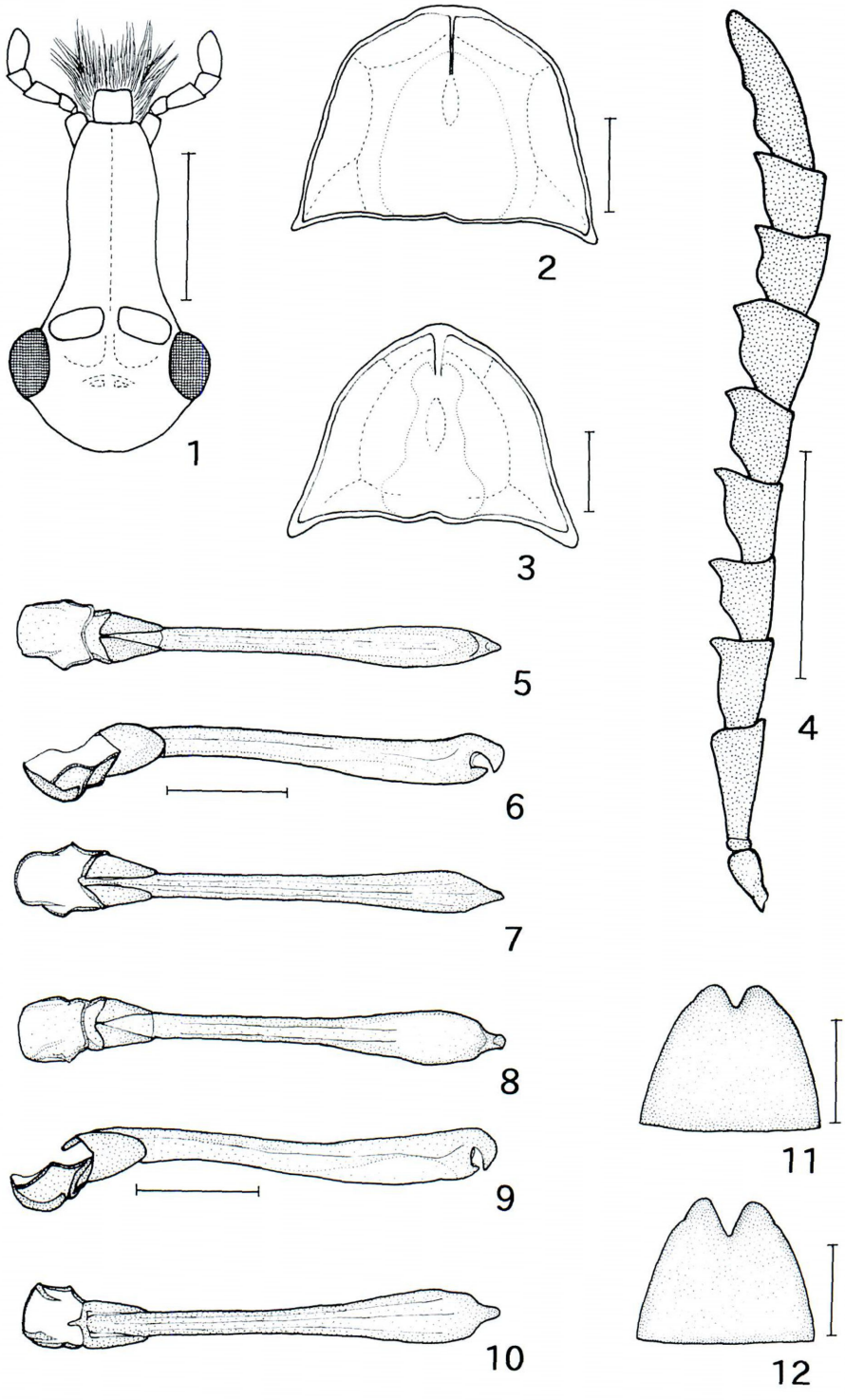
Body surface closely furnished with short, recumbent, light reddish brown pubescence; antennae closely covered with short, recumbent, grayish pubescence; pronotum and elytra closely covered with short, recumbent red pubescence.

Head with long rostrum. Terminal segments of maxillary palpi securiform. Eyes small, oblique in dorsal aspect, moderately prominent. Antennae strongly serrate, not reaching the middle of elytra. Pronotum transverse, subpentagonal; anterior margin slightly produced anteriad; disc weakly convex, widely reflexed at sides, provided with a short narrow longitudinal carina in front. Scutellum subtriangular, feebly incised at apex. Elytra long, strongly diverging posteriad, dehiscent just behind scutellum and separately rounded at apices; each elytron bearing four longitudinal costae; intervals between costae coarsely and irregularly reticulate. Anal sternite elongate, gradually narrowed towards apex in male. Terminal abdominal sternite deeply emarginate at apex in female. Legs moderate in length; femora subclavate; hind tibiae slender, slightly arched laterad. Male aedeagus very long; median lobe elongate, strongly widened in the distal portion, with a hook-shaped apex; parameres small, attached to the base of median lobe; phallobase large, asymmetrical.

Quantitative characters. DE/E ≒ 1.4 (male), 1.5 (female); relative lengths of 1st to 11th antennal segments from basal to apical: 0.3 : 0.1 : 1.0 : 0.7 : 0.6 : 0.6 : 0.6 : 0.7 : 0.6 : 0.6 : 1.2 (male), 0.3 : 0.1 : 1.0 : 0.6 : 0.6 : 0.5 : 0.6 : 0.5 : 0.5 : 0.5 : 1.0 (female); PW/HW ≒ 2.6 (male), 2.9 (female); PL/PW ≒ 0.6 (male), 0.6 (female); EL/EW ≒ 3.0 (male), 2.9 (female); EL/PL ≒ 5.4 (male), 5.6 (female).

Measurements. Length: 12.1–18.8 mm; width 3.4–5.8 mm.

Material examined. 1 ♂, Sankuang, Taoyuang Hsien, Taiwan, 2. V. 1978, T. KAMAKARI leg.; 1 ♂,1 ♀, Sankuang, 16. V. 1978, S. INOKAWA leg.; 2 ♀ ♀, Sankuang, 29. IV. 1979, S. TSUYUKI leg.; 1 ♂, Paling, alt. 800 m, Taoyuang Hsien, 29. VI. 1989, M. TANIKADO leg.; 1 ♀, Mt. Kuantaoshan, Nantou Hsien, Taiwan, 14. IV. 1973, K. MATSUDA leg.; 1 ♂, Nanshanchi, alt. 800 m, Nantou Hsien, 17. IV. 1974, K. SUGINO leg.; 1 ♂, Nanshanchi, 21. V. 1974, K. MATSUDA leg.; 1 ♂, 2 ♀ ♀, Nanshanchi, 1-4. VII. 1974, T. OCHI leg.; 7 ♂ ♂, 1 ♀, Nanshanchi, 8. V. 1975, K. MATSUDA leg.; 1 ♂, Nanshanchi, 1. V. 1979, M. TÔYAMA leg.; 3 ♂ ♂, Nanshanchi, 3. IV.



Figs. 1–12. *Lycostomus* (*Lycostomus*) *formosanus* subspp., ♂♂.—— 1. Head; 2, 3. Pronotum; 4. Antenna; 5, 8. Aedeagus in ventral view; 6, 9. same in lateral view; 7, 10. same in dorsal view; ♀♀—11, 12. Terminal abdominal sternite; 1, 2, 4, 5–7, 11. *L.* (*L.*) *formosanus ishigakianus* subsp. nov.; 3, 8–10, 12. *L.* (*L.*) *formosanus formosanus* Pic. Scale: 1 mm.

1986, M. OHARA leg.; 1 ♂, 1 ♀, Lushan Hot Springs, alt. 1,200 m, Nantou Hsien, 3-5. V. 1974, K. SUGINO leg.; 1 ♂, Lushan Hot Springs, 3. V. 1975, S. TAKEDA leg.; 1 ♂, 3 ♀ ♀, Lushan Hot Springs, 8–10. V. 1975, K. MATSUDA leg.; 1 ♀, Sungkang, alt. 1,950m, Nantou Hsien, 7. IX. 1991, M. TANIKADO leg.; 1 ♂, 2 ♀ ♀, Sungkang, Nantou Hsien, 20. IV. 1997, C. LOU leg.; 1 ♂, Meifeng, alt. 2200 m, Nantou Hsien, 22. VI. 1994, N. OKUDA leg.; 1 ♀, Tsuifeng, alt. 2,300 m, Nantou Hsien, 22. VI. 1978, H. AKIYAMA leg.; 1 ♂, Tehuashe, alt. 800 m, Nantou Hsien, 20. IV. 1981, S. TSUYUKI leg.; 7 ♂ ♂, Liukuei, Kaohsiung Hsien, Taiwan, 18. V. 1975, K. MATSUDA leg.; 1 ♂, Tengchih, alt. 2,000 m, Kaohsiung Hsien, 20. IV. 1981, W. CHENG, leg.; 1 ♂, Kenting Park, Pintung Hsien, Taiwan, 16. V. 1975, K. MATSUDA leg.; 1 ♂, Chihpen Hot Springs, Taitung Hsien, Taiwan, 11. III. 1971, K. MATSUDA leg.; 2 ♂ ♂, Chihpen Hot Springs, 20. V. 1975, S. IMASAKA leg.; 1 ♂, Taipingtsun, Taitung Hsien, 11. VII. 1973, T. OCHI leg.; 2 ♂ ♂, Lanyu Is., Taitung Hsien, 24–25. VII. 1990, M. TANIKADO leg. (first record); 1 ♂, 1 ♀, Lutao Is., Taitung Hsien, 30. III. 1971, M. MIHARA leg. (first record); 1 ♂, Lutao Is., 23. VII. 1990, M. TANIKADO leg.; 1 ♀, Juisui, Hualien Hsien, Taiwan, 15. V. 1974, K. SUGINO leg.; 1 ♂, Juisui, 26. V. 1974, K. MATSUDA leg.; 1 ♀, Juisui, 8. VII. 1974, S. TAKEDA leg.; 1 ♂, Juisui, 16. V. 1975, S. IMASAKA leg.

Distribution. Taiwan: the main island, Lanyu Island and Lutao Island.

Remarks. *Lycostomus* (*Lycostomus*) *formosanus formosanus* PIC occurs throughout Taiwan, mainly lowlands to mountaineous areas, but is rarely found in altitudinous areas over 2000 m. This time the author reported the species occurs not only in the main island of Taiwan, but also occurs in the adjacent islands such as Lanyu Is. (Orchid Is.) and Lutao Is. (Green Is.). He could not found any significant differences between populations of the main island and the latter two islands. Three specimens from Lanyu Is. and Lutao Is. show the pronotum and elytra unicolor red, but they have the male aedeagus with median lobe strongly widened in the distal portion as well as the specimens of the main island of Taiwan. *Lycostomus* (*Lycostomus*) *formosanus formosanus* PIC has wide variations on pronotal form and body colour. Generally this species seems to have a tendency of developing light colored portions of pronotum and abdomen from north to south in Taiwan. PIC's type clearly belongs to the light colored type judging from the original description and the figures of type (male) drawn by NAKANE (1973). Therefore, the author considers the specimens from Lanyu Is. and Lutao Is. as belonging to the nominotypical subspecies in the present paper.

Lycostomus* (*Lycostomus*) *formosanus ishigakianus MATSUDA, subsp. nov.

(Figs. 1, 2, 4–7, 11)

Lycostomus formosanus: SATÔ & MATSUDA, 1985: 94; — JENG, YANG & SATÔ, 2002: 173.
Lycostomus (*Lycostomus*) *formosanus*: BOCÁKOVÁ & BOCÁK, 2007: 211.

Description. Body black to blackish brown, shining, with mandibles and claws light reddish brown; pronotum red with a longitudinal black macula in the middle; elytra red except for the bases of sutural rims blackish.

Body surface closely furnished with short, recumbent, light reddish brown pubescence; antennae closely covered with short, recumbent, grayish pubescence; pronotum and elytra closely covered with short, recumbent red pubescence.

Head with long rostrum. Terminal segment of maxillary palpi securiform. Eyes small, oblique in dorsal aspect, moderately prominent. Antennae strongly serrate, not reaching the middle of elytra. Pronotum transverse, semielliptical; anterior margin roundly arched; disc weakly convex, widely reflexed at sides, provided with a short narrow longitudinal carina in front. Scutellum subtriangular, widely rounded at apex. Elytra long, strongly diverging posteriad, dehiscent just behind scutellum and separately rounded at apices; each elytron bearing four longitudinal costae; intervals between costae coarsely and irregularly reticulate. Anal sternite elongate, gradually narrowed towards apex in male. Terminal abdominal sternite shallowly emarginate at apex in female. Legs moderate in length; femora subclavate; hind tibiae slender, slightly arched laterad. Male aedeagus very long; median lobe elongate, slightly widened in the distal portion, with a hook-shaped apex; parameres small, attached to the base of median lobe; phallobase large, asymmetrical.

Quantitative characters. DE/E≒ 1.5 (male), 1.7 (female); relative lengths of 1st to 11th antennal segments from basal to apical: 0.3 : 0.1 : 1.0 : 0.7 : 0.7 : 0.7 : 0.7 : 0.7 : 0.7 : 0.6 : 1.4 (male), 0.3 : 0.1 : 1.0 : 0.6 : 0.6 : 0.6 : 0.7 : 0.7 : 0.6 : 0.6 : 1.2 (female); PW/HW≒ 2.6 (male), 2.3 (female); PL/PW≒ 0.7 (male), 0.7 (female); EL/EW≒ 2.8 (male), 2.8 (female) ; EL/PL≒ 5.1 (male), 5.4 (female).

Measurements. Length: 14.7–17.2 mm; width 4.4–5.4 mm.

Type series. Holotype: ♂, Takeda-rindo, Ishigaki-jima Is., Okinawa Pref., Ryukyu Islands, Southwest Japan, 23. III. 1992, T. HANATANI leg. The holotype is deposited in the collection of the Hokkaido University Museum, Sapporo. Paratypes: 1 ♂, Mt. Omoto-dake, Ishigaki-jima Is., Okinawa Pref., Ryukyu Islands, Southwest Japan, 15. VIII. 1961, M. MOGI leg; 2 ♂ ♂, Mt. Omoto-dake, 6. V. 1978, M. YAGI leg.; 1 ♂, Mt. Omoto-dake, 29-30. V. 1997, M. TAKAKUWA leg.; 2 ♂ ♂, Takeda-rindo, Ishigaki-jima Is., 13. IV. 1991, T. HANATANI leg. (1 ♂. NSMT); 2 ♂ ♂, 1 ♀, Takeda-rindo, 22. III. 1992, T. HANATANI leg. (1 ♂. OMNH); 4 ♂ ♂, Takeda-rindo, 23. III. 1992, T. HANATANI leg. (1 ♂. KUM & 1 ♂. URM).

Distribution. Ishigaki-jima Is., Ryukyu Islands, Japan.

Etymology. This new subspecies is named after the type locality, Ishigaki-jima Island.

Remarks. This new subspecies is closely rerated to the nominotypical subspecies, but can be distinguished from the latter by the following characteristics: 1) bases of the sutural rims of elytra blackish in color, 2) antennae wider in length, 3) pronotum not strongly produced apicad, 4) elytra shorter in length, 5) male aedeagus with median lobe not strongly widened in the distal portion, 6) terminal female abdominal sternite shallowly emarginate at apex.

The holotype and four paratypes were collected from on the floweres of *Meliosma oldhamii* MIQ. ex MAXIM. in a wet subtropical forest in Ishigaki-jima Island.

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要　　約

松田　潔：日本産ベニボタル科甲虫の分類学的覚書，II. ——— 沖縄県石垣島産のタイワンベニボタル *Lycostomus* (*Lycostomus*) *formosanus* PIC, 1937を再検討した結果，外部形態並びに雄交尾器等に安定した差異が認められたので，新亜種 *L.* (*L.*) *formosanus ishigakianus* subsp. nov. として命名記載した．また，台湾産の基亜種 *L.* (*L.*) *formosanus formosanus* PIC について，台東縣緑島と蘭嶼島の分布を記録し，台湾本島産とは明瞭な差異が認められないことを示した．

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Two New Species of the Lycid Genus *Cautires* (Coleoptera: Lycidae) from Taiwan

Kiyoshi MATSUDA
15–27 Matsugaoka, Hanayashiki, Takarazuka City, Hyogo Prefecture, 665–0801 Japan

Abstract Two new species of the lycid genus *Cautires*, *C. lutaoensis* sp. nov. and *C. oharai* sp. nov. are described from Taiwan.

Twelve valid species of the lycid genus *Cautires* WATERHOUSE, 1879 belonging to the tribe Matriorrhynchini have hitherto been recorded from Taiwan. They are *C. fainanensis* (PIC, 1925); *C. diversicollis* (PIC, 1925); *C. certus* (KLEINE, 1926); *C. katoi* NAKANE, 1969; *C. klapperichi* BOCÁK & BOCÁKOVÁ, 1987; *C. hsui* KAZANTSEV & YANG, 1999; *C. chui* KAZANTSEV & YANG, 1999; *C. ilanensis* KAZANTSEV & YANG, 1999; *C. bulenoides* KAZANTSEV, 2000; *C. jengi* KAZANTSEV, 2000; *C. leei* KAZANTSEV, 2002 and *C. tengjiensis* KAZANTSEV, 2002.

Last year, the author had an opportunity to examine a series of 304 specimens of *Cautires* collected in 44 sites in Taiwan. After the close examination, he found several new species among them. In the present paper, the author is going to describe two new species, *Cautires lutaoensis* sp. nov. and *C. oharai* sp. nov. from Lutao and Lanyu Islands, Taiwan based on the new classification by BOCÁK & BOCÁKOVÁ (2008).

Taxonomy

Subfamily Lycinae LAPORTE, 1836
Tribe Metriorrhynchini KLEINE, 1926

Genus *Cautires* WATERHOUSE, 1879
Type species: *Lycus* (gen. 22) *excellens* WATERHOUSE, 1878. type locality. Sarawak.

Cautires lutaoensis MATSUDA, sp. nov.

(Figs. 1–10)

Male. Body blackish brown, shining, with mandibles and claws light reddish brown; head blackish brown, shining; antennae black to brackish brown except for yellowish brown 2nd segments; pronotum, scutellum and elytra orangish red; legs blackish brown with trochanters and

bases of femora somewhat lighter in color.

Body surface and legs densely furnished with short, recumbent, yellowish brown pubescence; head and antennae closely covered with short, recumbent, yellowish brown pubescence; pronotum and scutellum closely covered with short, recumbent, orangish red pubescence; elytra closely covered with short, recumbent, orangish red pubescence on the longitudinal costae and the marginal rims of reticulate cells.

Head mostly concealed under pronotum, finely and closely punctured; frons short, strongly deflexed, slightly rounded in front, with a short feeble longitudinal groove between frontal tubercles, which are strongly swollen just behind antennal insertions; vertex with a distinct small impression in central portion.

Eyes very large, lateral, hemispherically prominent; distance between eyes about 0.9 times as wide as eye diameter.

Antennae long, fully reaching the middle of elytra; 1st segment stout, strongly widened towards apex; 2nd segment very short and cylindrical; 3rd to 10th segments flabellate; 6th antennal branch the longest in length, about 2.0 times as long as the segment; 11th segment fusiform; relative lengths of 1st to 11th segments from basal to apical: 0.9 : 0.1 : 1.0 : 0.8 : 0.9 : 0.9 : 0.9 : 1.1 : 1.1 : 1.1 : 1.9.

Maxillary palpi with terminal segment, securiform, about1.5 times as long as wide, a little shorter than 2nd segment.

Labial palpi with terminal segment securiform, about 1.8 times as long as wide.

Pronotum transverse, subpentagonal, subparallel-sided in apical 1/2, then strongly diverging posteriad, about 0.8 times as long as the basal width, about 1.4 times as wide as head; anterior margin roundly projecting and widely collared; anterior angles widely rounded; posterior angles triangularly projecting latero-posteriad; basal margin bisinuate; sides widely reflexed; disc coarsely and closely punctured in antero-lateral portions, with seven areoles; antero-median areoles slightly narrower than antero-lateral areoles; central lanceolate areole about 1/4 times as wide as postero-lateral areoles.

Scutellum subquadrate, hemispherically emarginate at apex; surface minutely and rather closely punctured.

Elytra slightly diverging posteriad, dehiscent behind scutellum and separately rounded at apecies, about 3.4 times as long as wide, about 4.5 times as long as pronotum; each elytron bearing four longitudinal costae; intervals between costae with double rows of round and irregular cells.

Ventral surface weakly rugose, finely and moderately punctured; 7th abdominal sternite roundly emarginate at apex; anal sternite fusiform, gradually narrowed apicad.

Legs moderate in length; hind tibiae slender, slightly dilated apicad, about as long as hind femora; hind tarsi with 1st and 5th segments subequal in length, distinctly longer than 2nd to 4th segments ; claws simple, somewhat angulate at base.

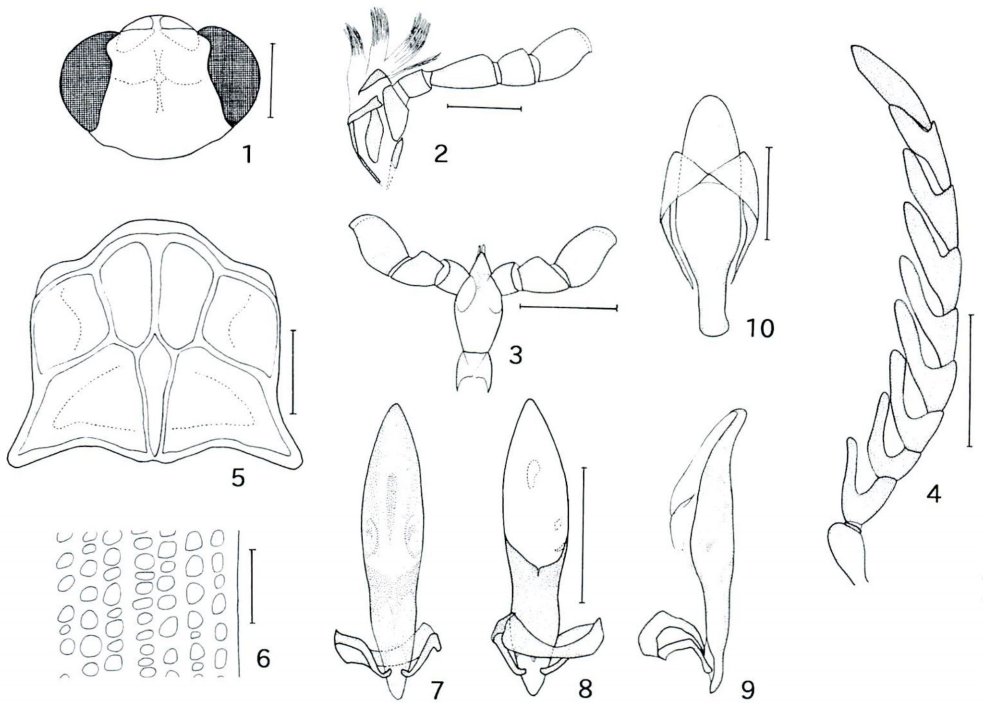
Aedeagus elongate, median lobe fusiform, widest in the middle, gradually narrowed towards apex; phallobase ring-shaped.

Female unknown.

Measurements. Length: 8.0 mm; width: 1.9 mm.

Type series. Holotype: ♂, Lutao Island, Taitung Hsien, Taiwan, 18. IV. 1975, S. TAKEDA leg. The holotype is deposited in the collection of the Hokkaido University Museum, Sapporo.

Distribution. Lutao Island (Green Is.), Taiwan.



Figs. 1–10. *Cautires lutaoensis* sp. nov. ♂——1. Head; 2. Maxilla; 3. Labium; 4. Antenna; 5. Pronotum; 6. Elytral cells; 7. Aedeagus in dorsal view; 8. same in ventral view; 9. same in lateral view; 10. Terminal abdominal segments. Scale for 1, 4–10: 0.5 mm; scale for 2, 3: 0.25 mm.

Etymology. This new species is named after the type locality, Lutao Island.

Remarks. This new species is similar to *Cautires exploratus* KLEINE, 1926 from Philippines, but can be distinguished from the latter by the following characteristics: 1) postero-lateral areoles of pronotum transverse, 2) male aedeagus with median lobe wider in basal 2/3.

Cautires oharai MATSUDA, sp. nov.

(Figs.11–19)

Female. Body dark reddish brown, shining, with mandibles and claws light yellowish brown; head dark reddish brown, shining; antennae black to dark reddish brown except for yellowish brown 2nd segments; pronotum, scutellum and elytra orangish red; legs blackish brown with trochanters and bases of femora and tibiae somewhat lighter in color.

Body surface and legs densely furnished with short, recumbent, yellowish brown pubescence; head and antennae closely covered with short, recumbent, yellowish brown pubescence; pronotum and scutellum closely covered with short, recumbent, orangish red pubescence; elytra closely covered with short, recumbent, orangish red pubescence on the longitudinal costae and the marginal rims of reticulate cells.

Head mostly concealed under pronotum, finely and closely punctured; frons short, strongly deflexed, slightly rounded in front, with a short feeble longitudinal groove between frontal

tubercles, which are strongly swollen just behind antennal insertions; vertex with an inverse V-shaped impression in central portion.

Eyes relatively large, lateral, hemispherically prominent; distance between eyes about 1.1 times as wide as eye diameter.

Antennae moderately long, reaching 1/3 of elytra; 1st segment stout, slightly widened toward apex; 2nd segment very short, cylindrical; 3rd to 10th segments serrate; 3rd antennal branch the widest in length, about as long as the segment; 11th segment fusiform; relative lengths of 1st to 11th segments from basal to apical: 0.8 : 0.1 : 1.0 : 0.8 : 0.8 : 0.9 : 0.9 : 0.9 : 0.9 : 0.9 : 1.6.

Maxillary palpi with terminal segment, securiform, about 1.4 times as long as wide, a little shorter than 2nd segment.

Labial palpi with terminal segment securiform, about 2.0 times as long as wide.

Pronotum transverse, subpentagonal, subparallel-sided in apical 1/2, then slightly sinuate at middle and strongly diverging posteriad, about 0.8 times as long as the basal width, about 1.6 times as wide as head; anterior margin roundly projecting and narrowly collared; anterior angles widely rounded; posterior angles triangularly projecting latero-posteriad; basal margin bisinuate; sides widely reflexed; disc coarsely and closely punctured in antero-lateral portions, with seven areoles; antero-median areoles distinctly narrower than antero-lateral areoles; central lanceolate areole about 1/4 times as wide as postero-lateral areoles.

Scutellum subquadrate, roundly emarginate at apex; surface minutely and closely punctured.

Elytra slightly diverging posteriad, dehiscent behind scutellum and separately rounded at apecies, about 3.2 times as long as wide, about 4.8 times as long as pronotum; each elytron bearing four longitudinal costae; intervals between costae with double rows of subquadrate and irregular cells.

Ventral surface weakly rugose, finely and moderately punctured; terminal abdominal sternite shallowly emarginate at apex, with a short speculum gastrae at the middle of basal margin.

Legs moderate in length; hind tibiae arched, widest in the middle, about as long as hind femora; hind tarsi with 1st and 5th segments subequal in length, distinctly longer than 2nd to 4th segments; claws simple, somewhat angulate at base.

Female genitalia elongate; styli short, with several long hairs at each apex; coxites oblong, gradually narrowed towards apicies, sparsely covered with short hairs; valvifers slender and long.

Male unknown.

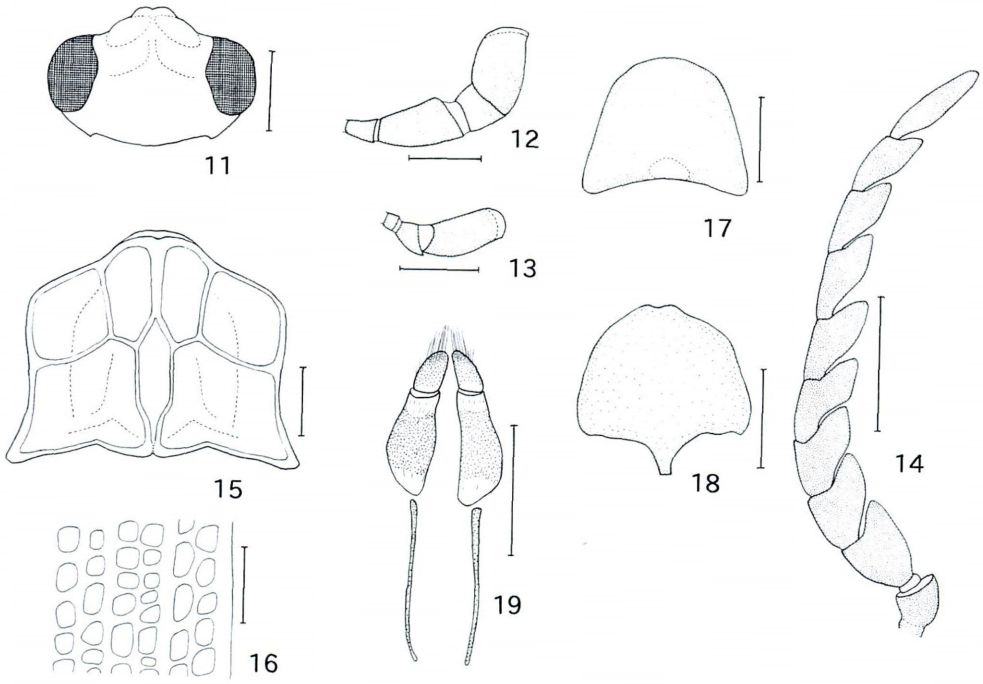
Measurements. Length: 6.3–9.9 mm; width: 2.0–2.5 mm.

Type series. Holotype: ♀, Lanyu Island, Taitung Hsien, Taiwan, 18-22. IV. 1986, M. ÔHARA leg. The holotype is deposited in the collection of the Hokkaido University Museum, Sapporo. Paratype: 1 ♀, Lanyu Island, Taitung Hsien, Taiwan, 2. V. 1971, S. TAKEDA leg.

Distribution. Lanyu Island (Orchid Is.), Taiwan.

Etymology. This new speices is named in honor of Dr. Masahiro ÔHARA of the Hokkaido University, Sapporo, Japan, who is a prominent specialist of Histeridae, and collected this interesting new species.

Remarks. This new species is similar to *Cautires exploratus* KLEINE, 1926 from the Philippines, but can be distinguished from the latter by the following characteristics: 1) pronotum much wider, 2) lateral transverse costae of pronotum more distinct. It also differs from *C.*



Figs. 11–19. *Cautires oharai* sp. nov. ♀—— 11. Head; 12. Maxillary palpus; 13. Labial palpus; 14. Antenna; 15. Pronotum; 16. Elytral cells; 17. Terminal abdominal tergite; 18. Terminal abdominal sternaite; 19. Female genitalia. Scale for 11, 14–19: 0.5 mm; scale for 12, 13: 0.25 mm.

lutaoensis MATSUDA sp. nov. from Lutao Island by the median longitudinal costa of pronotum wider and somewhat glabrous in anterior 1/2.

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要　　約

松田　潔：台湾産クロベニボタル属の２新種．——台湾・台東縣緑島と蘭嶼島からクロベニボタル属 *Caurtires* の２新種，*C. lutaoensis* sp. nov. と *C. oharai* sp. nov. を命名記載した．

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Entmological Review of Japan **64**(2):189–205, Dec. 30, 2009

Six New Taxon of the Subgenus *Indachorius* of the Genus *Onthophagus* (Coleoptera: Scarabaeidae) from Borneo

Teruo OCHI
Kôhûdai 5–21–6, Toyono-cho, Toyono-gun, Osaka, 563–0104 Japan

Masahiro KON
School of Environmental Science, The University of Shiga Prefecture,
Hassaka-cho 2500, Hikone, Shiga, 522–8533 Japan

and

Maxwell V. L. BARCLAY
Department of Entomology, The Natural History Museum
London SW7 5BD, England

Abstract The Bornean species of the subgenus *Onthophagus* (*Indachorius*) are reviewed. Five new species, *O.* (*I.*) *danumensis* sp. nov., *O.* (*I.*) *mendeli* sp. nov., *O.* (*I.*) *semidanumensis* sp. nov., *O.* (*I.*) *paramasaoi* sp. nov. and *O.* (*I.*) *pseudoworoae* sp. nov. are described. In addition, a subspecies of *O.* (*I.*) *woroae* is described under the name of *O.* (*I.*) *woroae bruneiensis* ssp. nov. A key to the Bornean species and subspecies of *Onthophagus* (*Indachorius*) is provided.

Up to the present, eight species of the subgenus *Indachorius* of *Onthophagus* have been known from Borneo (OCHI & KON, 2006). Thereafter, we had an opportunity to examine Bornean material of this subgenus preserved in the collection of the Natural History Museum, London. As a result, we found five undescribed species in the collection, and herewith describe them. In addition, we describe a subspecies of *O. (I.) woroae* from Brunei. A key to the Bornean species and subspecies of *Onthophagus* (*Indachorius*) is also provided.

All the holotypes designated herein are deposited in the collection of the Natural History Museum, London. The abbreviations for the museums and institutions are as follows: BMNH – the Natural History Museum, London; MNHN – the Museum national d'Histoire Naturelle, Paris; OMNH – the Osaka Museum of Natural History, Osaka; UMS – the Institute for Tropical Biology and Conservation, University of Malaysia Sabah; ZMB – the Zoological Museum, Bogor, Indonesia.

We herein define the following terminology used in the classification of *Indachorius* species as follows: 1) f–g junction: the junction is the point where forntoclypeal suture is conjointed with genal sutures on either side; 2) p–a excavation: the shallow excavation of prothoracic ante-

rior angle on the ventral side, which is always found in the species of the subgenera *Indachorius, Micronthophagus, Pseudophanaeomorphus* and *Furconthophagus*; 3) p–a carina: the carina distinctly defined on the external upper edge of the shallow excavation of prothoracic anterior angle on the ventral side.

Subgenus *Indachorius* BALTHASAR

Onthophahus (*Indachorius*): BALTHASAR, 1941: 161; BALTHASAR, 1963: 153; NOMURA, 1973; 48; MASUMOTO, 1976: 5; KABAKOV & JANUSHEV, 1983: 157; KABAKOV, 1994: 77; KABAKOV & NAPOLOV, 1999: 73; KRAJCIK, 2005: 86. (Type species: *Onthophagus nefarius* BALTHASAR, 1941)

Body strongly to moderately convex dorsally; dorsal side shining or mat, mostly clothed with obviously long, sometimes short hairs; pygidium and ventral side also clothed with similar hairs as those on dorsum. Color black to brown, sometimes tinged with weak to distinct metallic luster; elytra sometimes with yellowish or reddish bands or patches. Head transverse, sometimes narrow, with clypeal margin rounded or truncate at apex; frontoclypeal suture usually carinate and genal ones also mostly finely carinate, and two carinae usually formed junction (= f–g junction) on either side; vertex armed with a laminal-horn or a pair of small tubercles or simply formed in male, similar but slightly stronger two tubercles in female. Pronotum always simply formed though slightly and longitudinally depressed for receiving a laminal-horn in males of some species; lateral margins straight in front, more or less sinuate behind; anterior angles sharply produced forward, with apices often only slightly expanded laterad; base finely bordered, sometimes unbordered laterad; surface usually simply punctuate, the punctures often ocellate. Elytra moderately convex; striae distinctly grooved, with 7th stria often strongly curved; intervals flat or more or less slightly convex, with suture bearing a single longitudinal row of punctures, 2nd to 7th intervals bearing mostly two longitudinal rows of punctures, 8th bearing three or four rather irregular longitudinal rows of punctures. Prothrax with anterior angles rather shallowly but clearly excavate on the ventral side, the excavation (=p–a excavation) distinctly defined by the strong carina (=p–a carina) on the upper edge. Protibiae armed with usually three, sometimes four, external teeth in male, and usually four, rarely three, external teeth in female. Mesotibiae short, mostly incurved at the middle. Metatibiae almost straight; metatarsi with basal segment fairly long, more than 3 times and less than 4 times as long as the 2nd segment. Aedeagus; parameres mostly slender, often right paramere and left one slightly asymmetrical in dorsal view, and sometimes clothed with fine hairs at each apex.

Notes. This subgenus have some remarkable characters in the genus *Onthophagus*, especially, hairy apices of parameres are very unique.

Key to the species of the subgenus *Indachorius* from Borneo

1 (2) Prothorax with anterior angle ordinary on the ventral side. Pronotum with lateral margin rounded or straight in front, with anterior angle rectangular or sharp or rounded. Protibia with usually four, occasionally three, external teeth, the remaining external margin not finely nor evenly denticulate. ..... Other subgenera of the genus *Onthophagus*

2 (1) Prothorax with anterior angle shallowly excavate on the ventral side, the excavation defined by a distinct or strong carina on the external edge. Pronotum with lateral margin

straight or slightly sinuate in front, with anterior angle sharply produced, often very slightly expanded externally at tip. Protibia with three or four external teeth, the remaining external margin finely and evenly denticulate ..... *Indachorius* & *Micronthophagus*

3 (4) Eyes noticeably large, the interspace between them narrow, about less than three times as wide as eye. Body usually unicolor black or brown. ♂: protibiae often conspicuously elongate ..... *Micronthophagus*

4 (3) Eyes ordinary, the interspace between them broad, about more than three times as wide as eye. Body mostly clothed with conspicuously long erect hairs dorsally. Color usually not unicolor black or brown, sometimes with metallic luster; elytron mostly at least with a round yellowish or reddish patch at humerus. ♂: protibiae ordinary: parameres sometimes slightly asymmetrical, with apex often clothed with fine hairs ..... *Indachorius*

5 (10) Elytra with intervals micro-granulose or weakly shining, densely, sometimes partly confluently, and strongly punctate. Head strongly micro-granulose at least in basal half.

6 (7) Elytra with intervals clearly micro-granulose, very slightly uneven and weakly wrinkled. 5.2－6.3mm ..... *O.* (*I.*) *hikidai* OCHI et KON

7 (6) Elytra with intervals noticeably uneven, and strongly wrinkled, weakly shining and at most only slightly micro-granulose.

8 (9) Head narrow, with frons weakly micro-granulose to slightly shining, rather densely to densely covered with clearly coarse strong punctures; clypeus strongly produced forward, distinctly narrow. Small species, 3.8–4.3 mm ..... *O.* (*I.*) *liwagensis* OCHI et KON

9 (8) Head broad, with frons strongly micro-granulose and opaque, sparsely covered with not so coarse strong punctures; clypeus somewhat strongly produced forward, rather transverse. Large species, 5.1–5.8 mm ..... *O.* (*I.*) *yumotoi* OCHI et KON

10(5) Elytra with intervals shining; 2nd to 7th intervals arranged with two longitudinal rows of punctures along either stria. Head weakly micro-granulose or weakly shining on basal half.

11(12) Eyes fairly large, interspace between them about 3.3 times as wide as the width of eye. Body uniformly black, with weak but distinct greenish luster on head and pronotum. 4.5–5.7 mm. ..... *O.* (*I.*) *uedai* OCHI et KON

12(11) Eyes not fairly large, interspace between them more than 4 times as wide as the width of eye.

13(14) Head with a distinct short transverse carina on vertex which is curved backward. 3.8–4.9 mm. ..... *O.* (*I.*) *danumensis* sp. nov.

14(13) Head without a distinct short transverse carina on vertex; posterior portion of head simply formed or with a pair of independent tubercles.

15(16) Head with clypeus distinctly emarginate at apex. Elytron black, usually with four bright yellowish patches. Pronotum tinged with strong greenish or cupreous luster. 4.0–5.6 mm. Borneo ?, Palawan. ..... *O.* (*I.*) *aereopictus* BOUCOMONT

16(15) Head with clypeus not distinctly emarginate at apex. Elytron distinctly bi-colored, black with two or more noticeable bright colored patches.

17(20) Large species, mostly more than 5 mm in length. Elytorn black with yellowish or orange small round patch at shoulder, which is often well developed into wholly yellowish or orange.

18(19) ♂: Head with a strong and slightly elevated short transverse carina on vertex. ♀: Head with a pair of slight tubercles on vertex, strongly and clearly depressed before the tubercles. 4.6–6.5 mm. ..... *O.* (*I.*) *mendeli* sp. nov.

19(18) ♂: Head simply formed, without a strong and slightly elevated short transverse carina on vertex. ♀: Head with a pair of slight tubercles on vertex, but not strongly nor clearly depressed before the tubercles. 4.4–6.4 mm. ····· *O.* (*I.*) *woroae* OCHI et KON

— A. Dorsal side tinged with metallic luster. ····· *O.* (*I.*) *woroae woroae* OCHI et KON

— B. Dorsal side entirely devoid of metallic luster.····*O.* (*I.*) *woroae bruneiensis* subsp. nov.

20(17) Small species, mostly less than 5 mm in length.

21(22) Head and pronotum uniformly black, without metallic luster. Elytra black, with dark reddish small round patch at shoulder, which is sometimes well developed into wholly dark reddish. 4.4–5.3 mm. ····· *O.* (*I.*) *pseudoworoae* sp. nov.

22(21) Head and pronotum with metallic luster. Elytra black or brown, sometimes wholly reddish brown, with one or more yellowish to reddish patches at shoulder or at base or other place.

23(24) Elytra brown or reddish brown, with an unnoticeable reddish transverse band at base or similar colored round small patch at shoulder. ♂&♀: head with a pair of slight tubercles on vertex. 4.0–4.8 mm. ····· *O.* (*I.*) *semidanumensis* sp. nov.

24(23) Elytra black or brown with noticeable yellowish or reddish band or 2–3 patches. ♂: head simply formed on vertex; ♀: head with a pair of slight tubercles on vertex.

25(26) Elytra black, often brown, without reddish or yellowish small patch near the middle of 7th and 8th intervals. 3.0–4.3 mm. ····· *O.* (*I.*) *paramasaoi* sp. nov.

26(25) Elytra usually black, with reddish or yellowish small patch near the middle of 7th and 8th intervals.

27(28) Head with clypeus strongly produced forward, parabolic or rather narrow trapezoidal in outline in both sexes. Pronotum densely and fairly coarsely punctate, the punctures distinctly ocellate at the middle. 4.5–4.9 mm. ····· *O.* (*I.*) *masaoi* OCHI

28(27) Head with clypeus less strongly produced forward, broadly trapezoidal in outline in both sexes. Pronotum densely and coarsely punctate, the punctures ocellate at the middle. 4.8–5.2 mm. ····· *O.* (*I.*) *cheyi* OCHI et KON

Onthophagus* (*Indachorius*) *hikidai OCHI et KON

(Fig. 10)

Onthophagus (*Indachorius*) *hikidai* OCHI et KON, 2006: 171.

Length: 5.2–6.3 mm; width: 2.4–3.4 mm (n=45).

Type specimen examined. ♂, Headquarter, 1,600 m, Mt. Kinabalu, Sabah State, Malaysia, 3. IV. 1995, T. KIKUTA leg. (holotype, UMS).

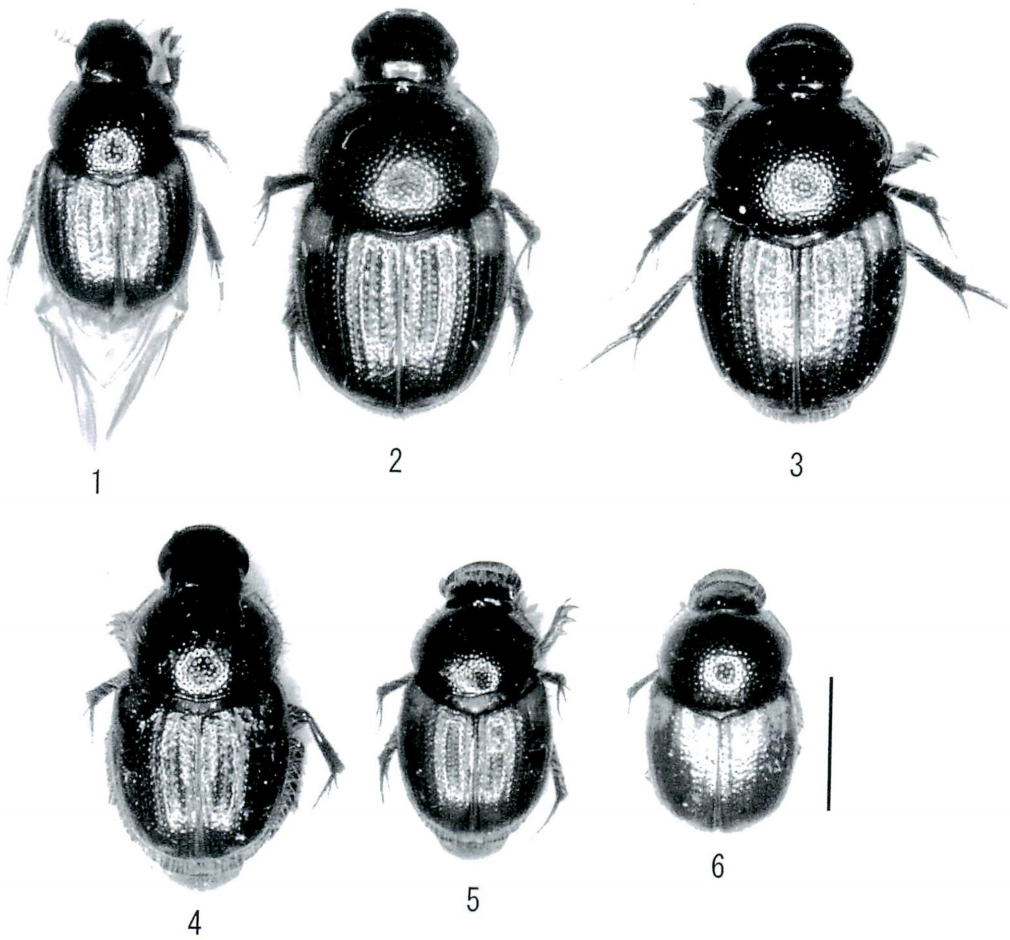
Distribution. Borneo (Sabah).

Onthophagus* (*Indachorius*) *liwagensis OCHI et KON

(Fig. 11)

Onthophagus (*Indachorius*) *liwagensis* OCHI et KON, 2006: 169.

Length: 3.8–4.3 mm; width: 2.2–2.4 mm (n=13).



Figs. 1–6. Habitus of *Onthophagus* (*Indachorius*) spp., scale 2 mm. —— 1, *O.* (*Indoachorius*) *danumensis* sp. nov.; 2, *O.* (*I.*) *mendeli* sp. nov.; 3, *O.* (*I.*) *woroae bruneiensis* subsp. nov.; 4, *O.* (*I.*) *pseudoworoae* sp. nov.; 5, *O.* (*I.*) *semidanumensis* sp. nov.; 6, *O.* (*I.*) *paramasaoi* sp. nov.

Type specimen examined. ♂, Liwagu near Headquarter, 1,400 m, Mt. Kinabalu, Sabah State, Malaysia, 6. IV. 1995, T. KIKUTA leg. (holotype, UMS).

Distribution. Borneo (Sabah).

Onthophagus* (*Indachorius*) *yumotoi OCHI et KON

(Fig. 12)

Onthophagus (*Indachorius*) *yumotoi* OCHI et KON, 2006: 173.

Length: 5.1–5.8 mm; width: 3.0–3.1 mm (n=4).

Type specimen examined. ♂, Headquarter, 1,800 m, Mt. Kinabalu, Sabah State, Malaysia, 12. II. 1995, T. KIKUTA leg. (holotype, UMS).

Distribution. Borneo (Sabah).

Onthophagus (*Indachorius*) *uedai* OCHI et KON
(Fig. 13)

Onthophagus (*Indachorius*) *uedai* OCHI et KON, 2006: 177.

Type specimen examined. ♂, Sungai Wain, near Balikpapan, E. Kalimantan, Indonesia, 3. I. 2006, A. UEDA leg. (holotype, ZMB).

Distribution. Borneo (Kalimantan).

Onthophagus (*Indachorius*) *danumensis* sp. nov.
(Figs. 1, 14)

Length: 3.8–4.9 mm; width: 2.3–2.5 mm (n=35).

Body small-sized, oblong-oval, rather strongly convex dorsally; dorsal side shining, somewhat sparsely clothed with erect, conspicuously long and yellowish hairs; ventral side shining, partly clothed with similar hairs as those on the dorsal side. Color dark brown to blackish brown, though anterior portion of head reddish; head and pronotum tinged with weak purplish or dark cupreous luster; elytra brown, sometimes more reddish, each with a transverse unnoticeable orange band at base, which is extending from 2nd to 7th intervals, and sometimes constricted or interrupted at 5th interval; legs, mouth parts and palpi somewhat reddish; antennae with footstalks reddish brown, club segments bright reddish brown to light brown.

Male. Head broader than long; clypeus strongly produced anteriad, trapezoidal in outline, with margin weakly reflexed, apex shortly truncate; frontoclypeal suture distinctly carinate, the carina weakly procurved; genal sutures finely carinate before f-g junction and not carinate behind the junction; genae weakly produced laterad, with margin broadly rounded at the middle; vertex with a short transverse carina which is clearly curved backward and distinctly shorter than the anterior one; surface weakly micro-granulose and very sparsely covered with coarse setiferous punctures except for shining, transversely and strongly wrinkled clypeus.

Pronotum simply formed, moderately convex, about 1.4 times as wide as long (n=3), without a median longitudinal groove; anterior margin emarginate, finely bordered; sides strongly produced externally; lateral margins rounded at the middle, straight or feebly sinuate in front, sinuate behind, finely bordered; anterior angles strongly and sharply produced forward; posterior angles obtuse; basal margin rounded, finely bordered; surface somewhat sparsely covered with strong ocellate punctures except for impunctate narrow longitudinal area along midline, the interspaces between punctures smooth.

Elytra convex dorsally, about 1.3–1.4 times as wide as long (n=3); striae clearly grooved, with fine ridges throughout on either side, strial punctures small, slightly notching either margin of intervals; 7th stria fairly strongly curved near base; intervals gently convex, slightly uneven along midline, with suture bearing a single longitudinal row of fine punctures, 2nd to 7th intervals bearing two irregular longitudinal rows of fine punctures, 8th bearing three or four irregular longitudinal rows of small punctures

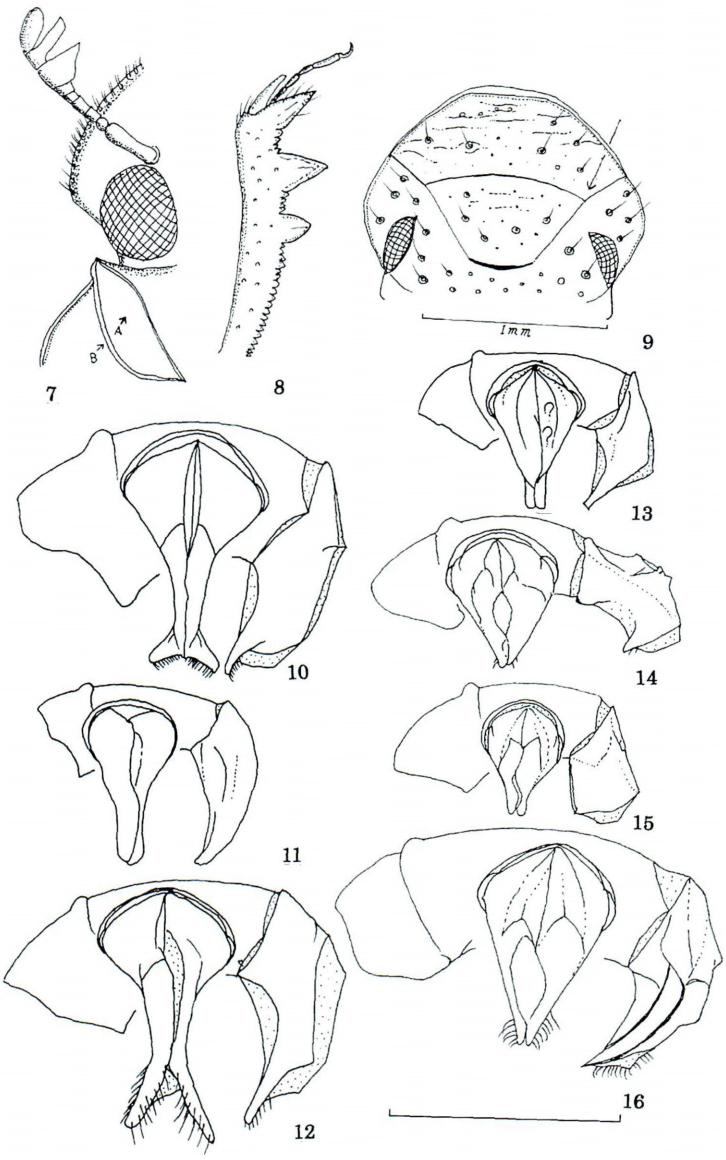


Fig. 7–16. *Onthophagus* (*Indachorius*) species. ——7, right anterior angle of prothorax, arrow A indicating p–a excavation, ventral view and arrow B indicating p–a carina; 8, right protibia, dorsal view; 9, head of *O.* (*I.*)*danumensis* sp. nov., an arrow indicating f–g junction. Fig. 10–16. Male genitalia:, dorsal and lateral views, scale 1 mm. —— 10, *O.* (*I.*) *hidakai* OCHI et KON; 11, *O.* (*I.*) *liwagensis* OCHI et KON; 12, *O.* (*I.*) *yumotoi* OCHI et KON; 13, *O.* (*I.*) *uedai* OCHI et KON; 14, *O.* (*I.*) *danumensis* sp. nov.; 15, *O.* (*I.*) *aereopictus* BOUCOMONT; 16, *O.* (*I.*) *mendeli* sp. nov.

Pygidium feebly convex, carinate at base, shining, densely covered with strong hairy punctures. Prothorax with p-a excavation clear, p-a carina strong on the ventral side. Protibiae short and stout, slightly curved near the middle, with four sharp external teeth; 1st tooth sharp, 2nd largest, 3rd smaller and 4th very small though well noticeable; the remaining external margin

finely and regularly denticulate. Metatarsi with basal segment about 3.2 times as long as 2nd (n=1).

Aedeagus. Phallobase about 0.9 mm (n=1) in length, 0.4 mm in apical width (n=1). Parameres about 0.6 mm (n=1) in length, bold in lateral view; apices slightly produced ventrally and clothed with several short hairs in lateral view though not well visible in dorsal view.

Female. Although very similar to male, transverse wrinkles on clypeus stronger, front-clypeal carina more distinct and external four teeth of protibiae longer and larger.

Type series. Holotype: ♂, Danum Valley, 4°58'N, 117°47'E, Sabah, Borneo, VI. 1999, by [FIT], BMNH{E}, 2005–177, H. MENDEL leg. Paratypes: 13♂♂, 22♀♀, the same data as the holotype.

Distribution. Borneo (Sabah).

Etymology. The present new species is named after the type locality, Danum Valley.

Notes. As for this species, sexual dimorphism is less evident developed than in the related species, and male and female are very similar to each other except for a few characters. The present new species is closely related to *Onthophagus* (*Indachorius*) *aereopictus* BOUCOMONT from the Philippines and Borneo, but can be distinguishable from the latter by the following characters: 1) pronotum is moderately convex, whereas in *O. aereopictus*, it is strongly convex, especially in large males; 2) head has a short transverse carina on posterior portion in both sexes, whereas in *O. aereopictus*, it does not have such carina on posterior portion; 3) head and pronotum are reddish brown with weak cupreous luster, whereas in *O. aereopictus*, they are black with distinct greenish or purplish luster; 4) elytra are light brown with orange basal transverse band, whereas in *O. aereopictus*, they are black with bright yellowish three patches.

Onthophagus* (*Indachorius*) *aereopictus aereopictus BOUCOMONT

(Fig. 15)

Onthophagus aereopictus BOUCOMONT, 1914: 326 (Type locality: Palawan, MNHN).

Onthophagus (*Indachorius*) *aereopictus*: BALTHASAR, 1963: 265; OCHI, 1992: 4; OCHI et KON, 2006: 176, 179.

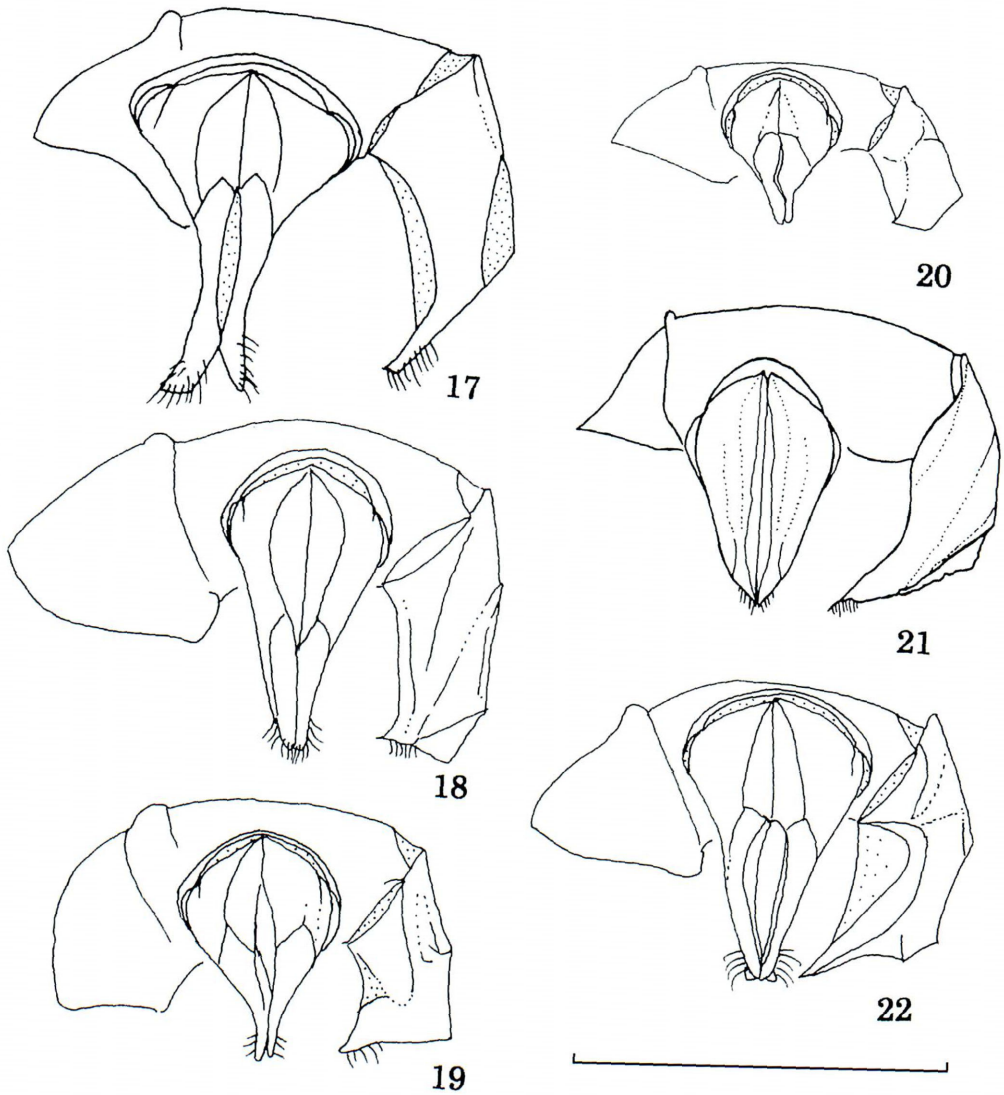
Onthophagus aereopictus subsp. *rubropictus* BOUCOMONT, 1924: 213; PAULIAN, 1945: 91, 127.

Length: 4.0–5.6 mm; width: 2.4–3.0 mm (n=7).

Specimens examined. 4♂♂, 2♀♀, Rizal, Palawan Is., the Philippines, 22. XII. 2001; 1♀, ditto, Olanguan, 25. VIII. 1992, K. SUGINO leg.

Distribution. Borneo?, Philippines.

Notes. This species was described from the Philippines by BOUCOMONT (1914, p. 326), and he recorded this species from Borneo in the same paper. He regarded the Bornean form of this species as "var.", but he proposed no name for the "var." from Borneo. As far as we are aware, we have examined no specimen of *O. (I.) aereopictus* from Borneo. Therefore, we suspect that the Bornean form recorded as "*O. aereopictus* var." by BOUCOMONT (1914) was not true *O. (I.) aereopictus* but some other species belonging to the subgenus *Indachorius*.



Figs.17–22. Male genitalia of *Onthophagus* (*Indachorius*) spp., dorsal and lateral views, scale 1 mm. —— 17, *O.* (*Indoachorius*) *woroae* OCHI et KON; 18, *O* (*I.*) *pseudoworoae* sp. nov.; 19, *O.* (*I.*) *semidanumensis* sp. nov.; 20, *O.* (*I.*) *paramasaoi* sp. nov.; 21, *O.* (*I.*) *masaoi* OCHI; 22, *O.* (*I.*) *cheyi* OCHI et KON.

Onthophagus* (*Indachorius*) *mendeli sp. nov.

(Figs. 2, 16)

Length: 4.6–6.5 mm; width: 2.5–3.4 mm (n=32).

Very similar to *O. woroae*. Body moderate-sized, distinctly convex above; dorsal side weakly shining, rather sparsely clothed with erect, fairly long, and yellowish white hairs; ventral side shining, partly clothed similar hairs as those on dorsum. Color black, head and pronotum mostly apparently entirely black by naked eyes, though sometimes tinged with weak cupreous or

greenish luster under high magnification; elytra black, each with a yellowish brown round patch extending from 5th to 8th intervals at base, which is variable, often constricted; legs, especially protibiae, mouth parts and palpi somewhat reddish; antennae with foot-stalks reddish brown, club segments dark yellowish brown.

Male. Head nearly parabolic or somewhat trapezoidal in front; clypeus distinctly produced forward, with clypeal margin clearly bordered and slightly reflexed, apex rounded or shortly truncate; genae rather narrow as well as in *O. woroae*, weakly produced laterad, gently rounded at the middle; frontoclypeal suture a little strongly and sharply carinate and slightly curved forward; genal sutures also carinate before f-g junction far from margin and then the carinae gradually becoming obsolete toward eyes; frons distinctly depressed as a shallow concavity; vertex with a slightly elevated transverse carina in middle which is almost straight, situated at post-eye level, about 0.5 mm in width and 0.2 mm in height in large individuals; surface weakly micro-granulose, slightly wrinkled on apical half of clypeus, sparsely and finely punctate, with coarse setiferous punctures intermixed.

Pronotum simply formed, moderately to strongly convex, 1.3–1.4 times as wide as long (n=3), without a median longitudinal groove; anterior margin emarginate, with finely bordered; lateral margins strongly produced laterad and rounded at the middle, almost straight or feebly sinuate in front, weakly sinuate behind, finely bordered; anterior angles strongly produced forward, rounded at tip, very slightly expanded at outside; posterior angles obtuse; basal margin rounded, finely bordered; surface weakly micro-granulose, rather densely covered with strong punctures, which are becoming denser and stronger laterad.

Elytra moderately convex, about 1.3–1.4 times as wide as long (n=3); striae strongly and rather widely grooved, finely ridged throughout on either side, strial punctures sparse, small, and slightly invading both margins of intervals; 7th stria fairly strongly curved near base; intervals weakly convex, rather shining, more or less uneven along midline, with suture bearing a single longitudinal row of small asperate punctures, 2nd to 7th intervals bearing two or three irregular longitudinal rows of small asperate punctures, 8th bearing three or four irregular longitudinal rows of similar punctures, the punctures becoming slightly asperate in part.

Pygidium rather produced anteriad though external margin not forming semicircular, convex, carinate at base, shining, rather densely covered with strong annular hairy punctures. Prothorax with p-a excavation fairly broad and rather shallow, p-a carina strong on the ventral side. Protibiae rather elongate, weakly curved, with four sharp external teeth; 1st and 2nd teeth almost the same in length, 3rd rather smaller, 4th very small; the remaining external margin finely and regularly denticulate. Metatarsi with basal segment fairly elongate, slightly longer than the remaining four ones combined.

Aedeagus. Phallobase about 1.4 mm (n=1) in length, 0.6 mm in apical width. Parameres about 0.8 mm (n=1) in length, strongly bent downward at basal third, and then slightly curved ventrad in lateral view; apices sharply projected in lateral view, almost symmetrical and not produced laterad in dorsal view, and fringed with twenty or so yellowish hooked hairs on either dorsal portion.

Female. Head with clypeal margin more distinctly rounded than in male, genae more strongly produced laterad, vertex with a pair of small tubercles which are distinctly stronger than those of *O. woroae*, clypeus wholly covered with transverse wrinkles. Protibiae with four external teeth stronger, especially 4th tooth clearly larger.

Type series. Holotype: ♂, Busang, Rekut confl., 0° 03'S, 113° 59'E, Kalimantan, Indone-

sia, VIII. 2001, by [FIT], "Barit Ulu 2001", BRENDELL/ MENDEL leg., BMNH(E). Paratypes: 14 ♂♂, 17♀♀, the same data as the holotype.

Distribution. Borneo (Kalimantan).

Etymology. Name of the present species is dedicated to Mr. Howard MENDEL, the Natural History Museum, London, who collected the holotype.

Notes. The present new species is closely related to *Onthophagus* (*Indachorius*) *woroae* OCHI et KON from Kalimantan, but can be distinguishable from the latter by the following characters: 1) dorsal side with blackish portions are entirely devoid of metallic luster or has slight metallic tinge, whereas in *O. woroae*, they are usually tinged with distinct greenish or purplish luster; 2) in the male, head has a strong and slightly elevated transverse carina between eyes near posterior margin, whereas in *O. woroae*, it does not not such a carina between eyes; 3) pygidium is rather produced anteriad, not semicircular in outline, whereas in *O. woroae*, it forms semicircular in outline; 4) in the female, head is weakly and transversely wrinkled on clypeus instead of being more strongly so; 5) in the female, head has a pair of sharp tubercles stronger, whereas in *O. woroae*, they are distinctly weaker; 6) in the female, gena of head is weakly produced laterad, whereas in *O. woroae*, it is more strongly produced laterad.

Onthophagus* (*Indachorius*) *woroae OCHI et KON, 2006

(Fig. 17)

Onthophagus (*Indachorius*) *woroae* OCHI et KON, 2006: 178.

Length: 4.4–6.5 mm; width: 2.4–3.5 mm (n=57).

Additional descriptions. Prothorax with p-a excavation fairly broad and rather shallow, p-a carina strong on the ventral side.

Specimens examined. 22♂♂, 33♀♀, Busang, Rekut confl., 0°03'S, 113°59'E, Kalimantan, Indonesia, VIII. 2001, by [FIT], "Barit Ulu 2001", BRENDELL/ MENDEL leg., BMNH(E); 1 ♂, 1♀, Danum Valley, 4°58'N, 117°47'E, Sabah, Borneo, VI. 1999, by [FIT], BMNH{E}, 2005–177, H. MENDEL leg.

Distribution. Borneo (Sabah, Kalimantan).

Notes. In the present study based on the collection of the Natural History Museum, London (BM), we could obtain many interesting additional data. Although this species was described three years ago from East Kalimantan, it is in reality widely distributed in Borneo and many specimens were collected from various localities of Borneo. In the same locality, there are two forms in the colouration of elytron, *e.g.*, one is wholly orange and another black with small round orange patch on the 6th and the 7th intervals at base. They show subtle geographic variation in the external morphology. Thus, we recognize herein one subspecies from Brunei.

Onthophagus* (*Indachorius*) *woroae bruneiensis subsp. nov.

(Fig. 3)

The present new subspecies differs from the nominotypical one from Sabah and Kalimantan by the following points: 1) body except elytra is entirely black without metallic luster,

whereas in the nominotypical subspecies, it is black to blackish brown, tinged with greenish or purplish luster; 2) in the male, head is more distinctly raised as a pair of slight swellings on vertex, whereas in the nominotypical subspecies, the head is almost simply formed on vertex; 3) in the female, head has two tubercles on vertex whose interspace is slightly shorter than that of the nominotypical subspecies in comparing almost the same sized individuals.

Length: 4.7–5.9 mm; width: 2.7–3.3 mm (n=6).

Type series. Holotype: ♂, Kuala Belalong FSC Dipterocarp forest, 4°34'N, 115°7'E, Ground FIT 4,270 m alt., Brunei, 17. VI. 1991, N. MAWDSLEY NM226, BM(NH)1991–173. Paratypes: 1 ♂, the same data as the holotype; 1 ♀, ditto, NM 226; 1 ♂, ditto, Ground FIT 1B, 260 m alt., 22. VI. 1991, NM 204; 1 ♀, ditto, Aerial FIT 1A, 260 m alt., 2. VI. 1991, NM176; 1 ♀, ditto, Ground FIT 6, 275 m alt., NM 246.

Distribution. Brunei.

Etymology. The subspeces is named after the type locality, Brunei.

Onthophagus* (*Indachorius*) *pseudoworoae sp. nov.

(Figs. 4, 18)

Length: 4.4–5.3 mm; width: 2.4–3.0 mm (n=27).

Body moderate-sized, slightly convex above; dorsal side shining, somewhat sparsely clothed with erect, fairly long, and yellowish brown hairs; ventral side shining, partly clothed similar hairs as those on dorsum. Color almost black; head and pronotum scarcely tinged with metallic luster; elytra black, each with a dark reddish round small patch on 6th and 7th intervals at base; legs, mouth parts and palpi somewhat reddish; antennae with foot-stalks reddish brown, club segments light brown.

Male. Head rather broad; clypeus distinctly produced forward and trapezoidal in outline, with clypeal margin distinctly bordered and slightly reflexed, apex shortly truncate or rounded; genae weakly produced laterad, gently rounded at the middle; frontoclypeal suture distinctly and sharply carinate and clearly curved forward; genal sutures also carinate before f-g junction, and not carinate behind the junction; vertex with a pair of slight tubercles; surface weakly micro-granulose, slightly wrinkled near clypeal margin, rather sparsely and finely punctate, with coarse setiferous punctures intermixed.

Pronotum simply formed, moderately convex, 1.4 times as wide as long (n=3), without a median longitudinal groove; anterior margin emarginate, finely bordered; lateral margins strongly produced laterad and rounded at the middle, almost straight or feebly sinuate in front, weakly sinuate behind, finely bordered; anterior angles strongly produced forward, rounded at tip, very slightly expanded externally; posterior angles distinctly obtuse; basal margin rounded, finely bordered; surface shining or very slightly micro-granulose, rather densely covered with strong punctures, which are becoming denser and stronger toward sides.

Elytra moderately convex, about 1.3–1.4 times as wide as long (n=2); striae strongly and rather shallowly grooved, finely ridged throughout on either side, with strial punctures sparse, small, and slightly invading either margin of intervals; 7th stria strongly curved near base; intervals slightly convex, with suture bearing a single longitudinal row of fine asperate punctures, 2nd to 7th intervals bearing two irregular longitudinal rows of strong asperate punctures, 8th bearing three or four irregular longitudinal rows of similar punctures, the punctures becoming

slightly denser and larger toward outer intervals.

Pygidium weakly convex, finely carinate at base, shining, densely covered with strong ocellate punctures. Prothorax with p-a excavation rather broad, p-a carina strong on the ventral side. Protibiae rather broad, weakly curved near the middle, with three sharp external teeth; three teeth almost the same width at base, 1st tooth slightly longer than 2nd, 3rd rather small; the remaining external margin finely and evenly denticulate. Metatarsi with basal segment about 3.0–3.4 times as long as 2nd segment.

Aedeagus. Phallobase rather robust, about 1.1 mm (n=1) in length, 0.5 mm in apical width. Parameres relatively large, about 0.7 mm (n=1) in length, somewhat quadrate in outline in lateral view; apices slightly produced downward and clothed with several hairs on either dorsal portion in lateral view, weakly produced laterad in dorsal view.

Female. Head with clypeus more strongly produced forward and more distinctly wrinkled, frontoclypeal suture more strongly catrinate, frons clearly depressed behind, vertex with a pair of tubercles stronger, surface more strongly shining and more coarsely punctate. Protibiae with four stronger external teeth.

Type series. Holotype: ♂, Busang, Rekut confl., 0°03'S, 113°59'E, Kalimantan, Indonesia, VIII. 2001, by [FIT], "Barit Ulu 2001", BRENDELL/ MENDEL leg., BMNH(E). Paratypes: 16♂♂, 10♀♀, the same data as the holotype.

Distribution. Borneo (Kalimantan).

Etymology. The name means the resemblance to *O. (I.) woroae*.

Notes. The present new species is somewhat similar to *Onthophagus* (*Indachorius*) *woroae* OCHI et KON from Sabah, but can be distinguishable from the latter by the following characters: 1) body is clearly smaller; 2) dorsal side is usually entirely black, scarcely tinged with metallic luster, whereas in *O. woroae*, it has distinct greenish or purplish luster; 3) in the male, head has a pair of slight tubercles on vertex, whereas in *O. woroae*, it does not have not such tubercles; 4) in the female, head is shining, rather densely and coarsely punctate, whereas in *O. woroae*, it is distinctly micro-granulose, with punctures sparser and smaller. The present new species is also similar to *O. mendeli* sp. nov., but can be distinguished from the latter by the following characters: 1) head is more closely and more coarsely punctate, especially in the middle, whereas in *O. mendeli*, it is sparsely and finely punctate in the middle; 2) head with the interspace between two tubercles on vertex is distinctly narrow instead of being clearly broad.

Onthophagus* (*Indachorius*) *semidanumensis sp. nov.

(Figs. 5, 19)

Length: 4.0–4.8 mm; width: 2.2–2.6mm (n=56).

Body small-sized, oblong-oval, moderately convex above; dorsal side shining, rather sparsely clothed with erect, conspicuously long and yellowish hairs; ventral side shining, partly clothed with similar hairs as those on the dorsum. Color dark brown to blackish brown except for reddish anterior portion of head; head and pronotum tinged with weak greenish or purplish or dark cupreous luster; elytra brown to blackish brown, sometimes wholly reddish, each with a vague, transverse and dark orange band at base, which is extending from 2nd to 7th intervals, and sometimes constricted or interrupted; legs, mouth parts and palpi somewhat reddish; antennae with foot-stalks reddish brown, club segments dark brown to light brown.

Male. Head broader than long; clypeus strongly produced forward, trapezoidal in outline, with margin weakly reflexed, apex shortly truncate or sometimes rounded; frontoclypeal suture distinctly carinate, the carina slightly procurved; genal sutures finely carinate before f-g junction, and not carinate behind the junction; genae weakly produced laterad, with margin broadly rounded at the middle; vertex with a pair of slight independent tubercles; surface weakly microgranulose, transversely wrinkled on anterior half of clypeus, somewhat densely covered with fairly coarse setiferous punctures except for impunctate anterior portion of frons.

Pronotum simply formed, moderately convex, about 1.4 times as wide as long (n=3), without a median longitudinal groove; anterior margin emarginate, finely bordered; sides strongly produced laterad; lateral margins rounded at the middle, straight or feebly sinuate in front, sinuate behind, finely bordered; anterior angles strongly and sharply produced forward; posterior angles obtuse; basal margin rounded, finely bordered in middle, unbordered laterally; surface somewhat sparsely covered with strong ocellate punctures which become slightly denser and larger toward sides, the interspaces between punctures smooth.

Elytra convex dorsally, about 1.3-1.4 times as wide as long (n=3); striae clearly grooved, with fine ridges throughout on either side, strial punctures small, slightly notching both margins of intervals; 7th stria very strongly curved near base; intervals almost flat or gently convex, with suture bearing a single longitudinal row of small punctures, 2nd to 7th intervals bearing two irregular longitudinal rows of rather small punctures, 8th bearing three or four irregular longitudinal rows of similar punctures.

Pygidium feebly convex, carinate at base, shining, densely covered with strong hairy punctures. Prothorax with p-a excavation clear and p-a carina strong on the ventral side. Protibiae short and stout, slightly curved near the middle, usually with three sharp external teeth; 1st tooth sharp, 2nd largest and 3rd smaller; the remaining external margin finely and regularly denticulate. Metatarsi with basal segment about 3.1-3.2 times as long as 2nd (n=2).

Aedeagus. Phallobase about 0.8 mm (n=2) in length, 0.3 mm in apical width (n=2). Parameres relatively large, about 0.5-0.6 mm (n=2) in length, very narrow and slender in dorsal view with dorso-apical portion forming a right angle at corner in lateral view; apices sharply produced downward and clothed with several short hairs in lateral view, each apex sharp and close mutually in dorsal view.

Female. Head more strongly produced forward than in male, more coarsely punctate, with clypeus strongly wrinkled. Protibiae with four external teeth larger.

Type series. Holotype: ♂, Busang, Rekut confl., 0°03'S, 113°59'E, Kalimantan, Indonesia, VIII. 2001, by [FIT], "Barit Ulu 2001", BRENDELL/ MENDEL leg., BMNH(E). Paratypes: 33 ♂♂, 22 ♀♀, the same data as the holotype. *Further specimens examined*: 4 ♂♂, 4 ♀♀, Kuala Belalong FSC Dipterocarp forest, 4°34'N, 115°7'E, Ground FIT 4,270 m alt., Brunei, 17. VI. 1991, N. MAWDSLEY NM226, BM(NH)1991–173.

Distribution. Borneo (Kalimantan, Sabah, Brunei).

Etymology. The name means the resemblance to *O. (I.) danumensis* sp. nov.

Notes. As for this species, sexual dimorphism is not developed as well as the preceding species. The present new species is closely related to *Onthophagus* (*Indachorius*) *danumensis* sp. nov. from Sabah, but can be distinguishable from the latter by the following characters: 1) head has a pair of independent tubercles on posterior portion of head, whereas in *O. danumensis*, it has a short transverse carina there; 2) in the male, protibiae usually arm with three external teeth instead of four; 3) in the male, parameres of genitalia are narrow, with apices very slender

and well visible in dorsal view, whereas in *O. danumensis*, they are distinctly wide, with apices invisible in dorsal view.

Onthophagus* (*Indachorius*) *paramasaoi sp. nov.

(Figs. 6, 20)

Length: 3.0–4.3 mm; width: 1.8–2.3 mm (n=80).

Body fairly small-sized, oblong-oval, rather strongly convex above; dorsal side shining, somewhat sparsely clothed with erect, conspicuously long and yellowish hairs; ventral side shining, partly clothed with similar hairs as those on dorsum. Color dark brown to blackish brown; head and pronotum tinged with purplish or greenish luster; elytra black, each with three small orange patches, basal inner one extending from 2nd to 4th intervals, the outer basal one extending from 6th to lateral margin which is constricted at 8th, the apical one on 2nd and 3rd; legs, mouth parts and palpi somewhat reddish; antennae with foot-stalks reddish brown.

Male. Head slightly broader than long; clypeus strongly produced forward, trapezoidal in outline, with margin slightly reflexed, apex shortly truncate or weakly emarginate; frontoclypeal suture distinctly and finely carinate, the carina weakly procurved; genal sutures also finely carinate before f-g junction, and not carinate behind the junction; genae narrow, weakly produced laterad, with margin broadly rounded at the middle; vertex almost simply formed; surface micro-granulose, slightly and transversely wrinkled on clypeus, finely and sparsely punctate, with sparse and coarse punctures intermixed. Eyes small, interspace between them more than 8-9 times as wide as the width of eye (n=3).

Pronotum simply formed, moderately convex, about 1.3–1.4 times as wide as long (n=3), without a median longitudinal groove; anterior margin emarginate, finely bordered; sides strongly produced outward, with lateral margins rounded at the middle, almost straight or feebly sinuate in front, sinuate behind, finely bordered; anterior angles strongly and sharply produced forward; posterior angles obtuse; basal margin rounded, finely bordered; surface somewhat sparsely and evenly covered with strong punctures, interspaces between punctures smooth.

Elytra convex above, about 1.4 times as wide as long (n=3); striae distinctly grooved, finely ridged throughout on either side, with strial punctures relatively strong, slightly notching both margins of intervals; 7th stria fairly strongly curved near base; intervals gently convex, with suture bearing a single longitudinal row of small punctures, 2nd to 7th intervals bearing two irregular longitudinal rows of small punctures, 8th bearing three or four irregular longitudinal rows of similar punctures.

Pygidium gently convex, carinate at base, shining and smooth, densely covered with strong hairy punctures. Prothorax with p-a excavation broad, p-a carina strong on the ventral side. Protibiae elongate, weakly curved near the middle, with three sharp external teeth; 1st tooth slightly longer than 2nd, 3rd slightly smaller; the remaining external margin finely and regularly denticulate. Metatarsi with basal segment about 3.2-3.3 times as long as 2nd (n=3).

Aedeagus. Phallobase about 0.7 mm (n=1) in length, 0.3 mm in apical width (n=1). Parameres about 0.4 mm (n=1) in length, somewhat quadrate in lateral view; apices simply formed, sharp and almost symmetrical in dorsal view, almost glabrous.

Female. Head with frontoclypeal suture more strongly carinate than in male; vertex with a pair of slight tubercles in middle; surface more strongly shining and scarcely micro-granulose.

Protibiae obviously short and broad, with four external teeth stronger, 4th tooth barely noticeable.

Type series. Holotype: ♂, Danum Valley, 4°58'N, 117°47'E, Sabah, Borneo, VI. 1999, by [FIT], BMNH{E}, 2005-177, H. MENDEL leg. Paratypes: 39♂♂, 40♀♀, the same data as the holotype.

Distribution. Borneo (Sabah).

Etymology. The name means the resemblance to *O. (I.) masaoi* closely.

Notes. The present new species is closely related to *Onthophagus* (*Indachorius*) *masaoi* OCHI from Sabah, but can be distinguishable form the latter by the following characters: 1) body is clearly smaller; 2) clypeus of head is distinctly truncate and mostly emarginate at apex, whereas in *O. masaoi*, it is entirely rounded or at most shortly truncate at apex; 3) male genitalia with parameres are utterly different in shape.

Onthophagus* (*Indachorius*) *masaoi OCHI

(Fig. 21)

Onthophagus (*Indachorius*) *masaoi* OCHI, 1992: 1.

Length: 4.5–4.9 mm; width: 2.5–2.7 mm (n=4).

Female. Head with clypeus nearly trapezoidal in outline, apex shortly truncate though corner clearly rounded; frontoclypeal suture stronger than that of male; vertex with a pair of small pointed tubercles; surface more strongly wrinkled on clypeus.

Type specimen examined. ♂, Crocker Range, 10 miles from Keningau, Sabah State, Malaysia, 29. III. 1991, T. OCHI leg. (holotype, OMNH).

Further specimens examined. 1♂, Kuala Belalong FSC Diptercarp forest, 4°34'N, 115°7'E, Ground FIT 4, 270 m alt., Brunei, 17. VI. 1991, N. MAWDSLEY NM226, BM(NH)1991-173; 2♀♀, Mt. Trus Madi, Sabah State, Malaysia, 5. V. 2008.

Distribution. Borneo (Sabah, Brunei [new record]).

Notes. This species was described based upon only one male specimen by the present first author. We additionally described the female characters herein.

Onthophagus* (*Indachorius*) *cheyi OCHI et KON

(Fig. 22)

Onthophagus (*Indachorius*) *cheyi* OCHI et KON, 2006: 174; OCHI, KON et KASHIZAKI, 2008: 355.

Length: 4.8–5.2 mm; width: 2.5–2.8 mm (n=3).

Type specimen examined. ♀, Gomanton, near Sandakan, Sabah State, Malaysia, 21–23. II. 2005, T. KIKUTA leg. (UMS). *Further specimens examined*. ♂, Sepilok, near Sandakan, Sabah State, Malaysia, 3-5. V. 2005, A. KASHIZAKI leg.

Distribution. Borneo (Sabah).

要　　約

越智 輝雄・近　雅博・V. L. BARCLAY：ボルネオ産エンマコガネ属ヤンバルエンマコガネ亜属 *Indachorius* の総説.———大英博物館 (The Natural History Museum, London) 及び筆者らの標本を基に，ボルネオより5新種及び1新亜種を記載し，亜属を再記載して，ボルネオ産13種の検索表及びシノニミックリストを掲載した．本亜属の多くの種において，♂交尾器交尾鈎末端に微毛を具える特徴が認められるが，この形質はエンマコガネ属において特異である．

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Three New Species of *Copris* (Coleoptera: Scarabaeidae) from China, with Description of A New Subgenus

Teruo OCHI
Kôhûdai 5–21–6, Toyono-cho, Toyono-gun, Osaka, 563–0104 Japan

Masahiro KON
School of Environmental Science, The University of Shiga Prefecture,
Hassaka-cho 2500, Hikone, Shiga, 522–8533 Japan

and

Ming BAI
Institute of Zoology, Chinese Academy of Sciences,
25 Beishuanxi Road, Haidian District, Beijing, 100080, People's Republic of China

Abstract Three new species of the genus *Copris* were described from China under the names of *C. barclayi* sp. nov., *C. manni* sp. nov. and *C. zhangi* sp. nov. Besides, we herein propose a new subgenus of the genus *Copris* from Asia under the name of *Sinocopris* subgen. nov., based on Thialand species, *Copris* (*Sinocopris*) *uenoi* HAMBOONSONG, OCHI et MASUMOTO as type species and assign 17 species to the new subgenus.

The first author (TO) has been studying the taxonomy of the Oriental species of the genus *Copris* (HANBOONSONG *et al.*, 2003; OCHI & KON, 2003, 2004a, b; OCHI *et al.*, 2005, 2007, 2008). In the course of studies, we found that *C. uenoi* MASUMOTO, OCHI et HAMBOONSONG and its related species are somewhat different from the other congeners in several characters. Thus, we establish a new subgenus in the genus *Copris* upon *C. uenoi* as the type species and assign 16 species to the new subgenus. In addition, we describe three new species of *Copris* from China, one of which is assigned to the new subgenus.

All the holotypes will be deposited in the collection of the Institute of Zoology, Chinese Academy of Sciences, People's Republic of China.

Sinocopris subgen. nov.

Type species: *Copris uenoi* HAMBOONSONG, OCHI et MASUMOTO.

Body moderate to large-sized, strongly convex dorsally, broadly oval to oblong–oval; dorsal side mostly shining, sometimes opaque, usually entirely glabrous though occasionally partly clothed with fine sparse hairs; ventral side shining or opaque, partly clothed with distinct hairs,

the hairy area, especially sides of metasternal shield, different in some species. Color always uniformly black, without metallic luster.

Head usually semicircular in front; clypeal margin more or less notched at the middle and sometimes bi-lobed; genae strongly produced laterad, with outer corner angled or rounded; in male median portion suddenly and strongly produced upward as a sharp horn except for one species which has a transverse carina as usually noticeable in female, baso-postero portion of horn usually without a pair of small teeth; in female disc strongly raised or elevated transverse carina located at the middle.

Pronotum strongly, sometimes very strongly, convex dorsally in male, moderately so in female; anterior margin distinctly to strongly bi-sinuate, broadly bordered; anterior angles truncate or angled or rounded; posterior angles obtuse or rounded; lateral margins evenly rounded or often sinuate near the middle, distinctly bordered; base shallowly furrowed along margin which is finely bordered; disc of male often steeply declivous in front, with upper portion of the declivous area mostly produced into four prominences, which are occasionally more developed or reduced or modified in some species; in female disc slightly declivous in front, with upper portion of the declivous area mostly more or less carinate or not carinate; surface punctate or rugose with punctures.

Elytra strongly convex; disc each with 10 striae and one strong lateral costa along 10th stria; 8th stria usually incomplete and interrupted near apex, rarely complete in some species; striae usually strongly, sometimes very finely, grooved, with strial punctures weak to distinct; intervals flat to convex, mostly simply punctate, sometimes densely micro-wrinkled.

Prothorax with anterior angles more or less, sometimes rather deeply, concave as a round or elongate oval shallow groove for receiving antennae, which is at least glabrous or impunctate at inner portion.

Protibiae short, broad, almost straight, and not distinctly curved inward, with three strong external teeth; terminal spur usually simply formed or spatulate, occasionally forked at apex in some species.

Male genitalia; phallobase often short and parameres relatively large and long. Parameres mostly robust, sometimes slender, often fairly high in lateral view; dorsal ornaments, e.g., dorsal lobes or dorsal membranes showing character states of specific differentiation; baso-lateral portions often strongly constricted on the ventral side; lateral portion sometimes with transverse wrinkles; basal sinus often strong or distinct; ventral side with sub-membraneous area distinct, mostly elongate oval in outline, and the length of this area stable and very useful for identifying species within this subgenus.

Sexual dimorphism usually well developed, though undeveloped in some species.

Distribution. Asia (Far East Russia, China, Korea, Japan, Indochina, Thailand, Myanmar, Nepal, India).

Notes. The present new subgenus is clearly distinguishable from the nominotypical subgenus by the following characters combined: 1) protibiae are short, broad and almost straight, with three strong external teeth; 2) Prothorax with each anterior angle is concaved as a shallow groove on the ventral side; 3) phallobase of male genitalia is in general relatively short, and parameres are large, often very high, with baso-lateral portion of parameres are often strongly constricted or clearly sinuous in lateral view.

This subgenus includes the following species: *Copris* (*Sinocopris*) *barclayi* sp. nov., *Copris basipunctatus* BALTHASAR, 1942, *Copris cheni* OCHI, KON et BAI, 2007, *Copris kiuchii*

MASUMOTO, 1989, *Copris kusakabei* OCHI, KON et KAWAHARA, 2005, *Copris laevigatus* GILLET, 1927, *Copris obenbergeri* BALTHASAR, 1933, *Copris ochus* MOTSCHULSKY, 1860, *Copris parapecuarius* OCHI, KON et KAWAHARA, 2008, *Copris pecuarius* LEWIS 1884, *Copris pseudochus* OCHI et KON, 2004, *Copris quasilaevigatus* OCHI, KON et BAI, 2007, *Copris sabinus* GILLET, 1910, *Copris sacontala* REDTENBACHER in HÜGEL, 1848, *Copris tsukamotoi* OCHI, KON et KAWAHARA, 2008, *Copris uenoi* HANBOONSONG, MASUMOTO et OCHI, 2003, and *Copris yangi* OCHI, KON et BAI, 2007.

Copris (*Sinocopris*) *barclayi* sp. nov.

(Figs. 1, 4–6)

Length: 15.2–7.6 mm; width: 8.1–9.2 mm (n=23).

Body moderate in size, oval, strongly convex dorsally; dorsal side shining, entirely glabrous; ventral side also shining, partly clothed with reddish hairs. Color unicolor black; mouth organs, palpi, antennae, and legs reddish brown.

Male. Head transverse, semicircular in front in outline; clypeal margin shallowly incised in widely V-shape at the middle, with either side of the incision only slightly lobed and reflexed, the remaining margin broadly bordered and weakly reflexed; genae strongly produced laterad, with genal corner just right angle or slightly more obtuse than a right angle, margin straight and broadly bordered in front and weakly sinuate and finely so behind; cephalic horn located in the middle, slender, about 1.5 mm in length in the largest individual, almost vertical, conical in cross-section at base, and entirely devoid of tooth or tubercle on posterior portion of base; surface smooth and impunctate around the horn, irregularly and weakly sculptured on anterior portion of clypeus, densely and strongly punctate on genae, and sparsely and finely punctate between eyes; in smaller males, the cephalic horn reduced to a short and transversely elevated carina just before the level of eyes and the punctures becoming denser and stronger.

Pronotum strongly convex, about 1.5–1.6 times as wide as long (n=3), with a weak median longitudinal groove in basal two-thirds; anterior margin strongly bisinuate, broadly bordered, especially so on both sinuses; lateral margins finely bordered, weakly sinuate near the middle, gently rounded in front and behind; anterior angles rather produced forward and entirely rounded; posterior angles obtuse; base with a fine transverse furrow along basal margin; basal margin finely bordered throughout, obtusely angled at the middle; disc shortly declivous in front, with the upper edge of the declivous area bearing four transversely arranged and very obtuse prominences, the interspaces between the four ones gently concaved; the inner two prominences slightly transverse and stronger than the rest, the outer two ones rounded; surface rather sparsely covered with small punctures in the middle, the puncture becoming denser, coarser and deeper toward sides, and also becoming coarser and annular toward base; in smaller males, the prothoracic prominences becoming indistinct or reduced to a transverse carina in front.

Elytra strongly convex, about 1.1 times as wide as long (n=3), with 10 striae on each elytron, 9th and 10th almost confluent in basal third, 8th incomplete, clearly obliterated halfway near apex, 1st and 10th, 2nd and 9th, 3rd and 8th distinctly or barely joined at apex, 4th, 5th, 6th and 7th mostly not distinctly joined at apex, though 7th occasionally joined 8th at apex; all striae fairly strongly and rather broadly grooved, finely ridged throughout on either side, clearly micro-sculptured in the groove; strial punctures distinct, each with a very small, round and shin-



Figs. 1-3. Habitus of *Copris* spp., scale 5 mm. — 1, *C.* (*Sinocopris*) *barclayi* sp. nov.; 2, *C.* (*Copris*) *manni* sp. nov.; 3, *C.* (*C.*) *zhangi* sp. nov.

ing granule in the middle, slightly notching both margins of intervals; intervals slightly convex, sparsely and evenly covered with small punctures.

Pygidium transverse, gently convex, somewhat irregularly covered with strong, round to transverse punctures. Prothorax with anterior angles distinctly excavated on the ventral side. Metasternum with a distinct fine median longitudinal groove along midline; metasternal shield sparsely and very finely punctate; lateral portions scattered with setiferous coarse punctures. Protibiae short, broad and staraight, with three external teeth; terminal spur elongate, somewhat spatulate, obliquely trunacated at apex. Metatibiae with two noticeably long external teeth, especially, basal one of which is obviously longer than those of the related species.

Aedeagus about 4.2–4.5 mm (n=2) in total length. Phallobase robust, about 2.6–2.8 mm (n=1) in length in lateral view, about 1.2 mm (n=2) in apical width in dorsal view. Parameres relatively short and stout, about 1.6–1.7 mm in lateral view; dorsal lobe distinct, slightly raised upward in lateral view; lateral portion finely and transversely wrinkled from middle to base; dorsal membranes fairly broadly developed; basal sinus strong in lateral view; ventral side with membranes broadly developed, about 1.4–1.5 mm in length and occupying 3/4 length of parameres (n=2).

Female. Head more strongly produced forward than in male; clypeal margin with median incision stronger and more broadly lobed; frons with a median short transverse carina in the middle, which is curved forward at the summit; surface more densely and more strongly punctuate, especially on posterior portion between eyes. Pronotum more simply formed and less convex dorsally than in male, shortly declivous in front, though not bearing distinct carina or tubercle on the upper edge of the declivity. Protibiae slightly broader, also with the same terminal spur as in the male. Metatibiae with two external teeth, though not noticeably long

Type series. Holotype: ♂, Yunnan, China, 1990. Paratypes: 14 ♂♂, 9 ♀♀, the same data as the holotype.

Type depository. The holotype will be deposited in the collection of the Institute of Zoolo-

gy, Chinese Academy of Sciences, People's Republic of China.

Distribution. China (Yunnan).

Etymology. The specific name is dedicated to Dr. Maxwell V. L. BARCLAY, Department of Entomology, The Natural History Museum, London, who has given us opportunities to examine many *Copris* specimens.

Notes. The present new species is closely related to *Copris* (*Sinocopris*) *obenbergeri* BALTHASAR from China, but can be easily distinguished from the latter by the following characters: 1) in the male, metatibiae with two external teeth are noticeably long, especially, the basal one is obviously longer, whereas in *O. obenbergeri*, they are ordinary, the basal one is also normal sized; 2) in the female, head is broadly impunctate before the transverse carina on frons, whereas in *O. obenbergeri*, it is wholly, densely and strongly punctate; 3) in the male genitalia, parameres are obviously short, about 1.7 mm in length (n=2), with ventral membranes are also shorter, occupying 3/4 length of parameres, whereas in *O. obenbergeri*, it is clearly longer than 2.0 mm with membranes occupying from 4/5 to 9/10 their length.

Copris* (*Copris*) *manni sp. nov.

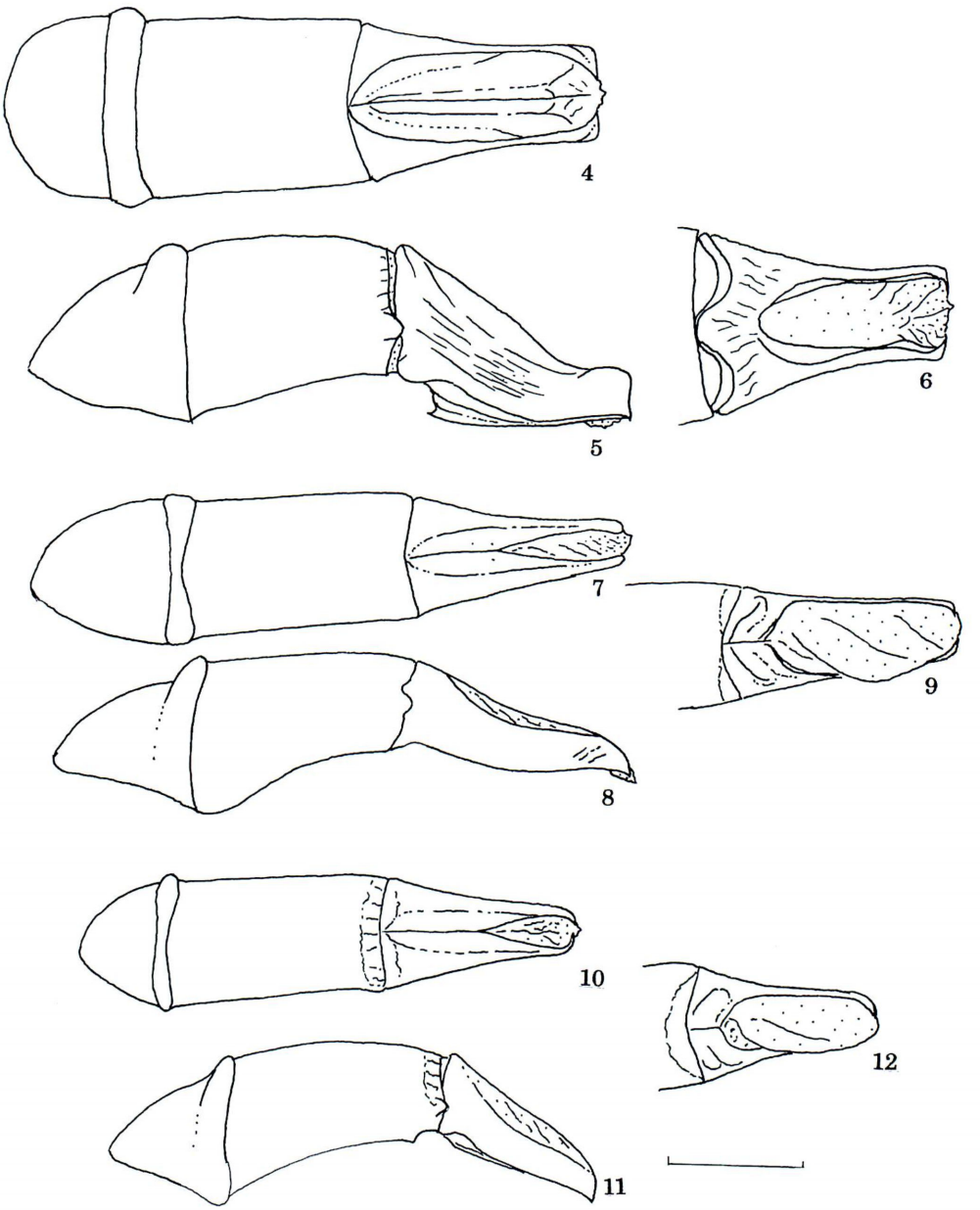
(Figs. 2, 7–9)

Length: 13.5–16.2 mm; width: 7.3–9.0 mm (n=11).

Body moderate in size, oblong oval, strongly convex above; dorsal side shining, entirely glabrous; ventral side also shining, partly clothed with reddish hairs. Color unicolor black; mouth organs, palpi, antennae, and legs reddish brown.

Male. Head fairly transverse, broadly semicircular in front in outline; clypeal margin shallowly and fairly widely incised at the middle, with either side of the incision only slightly lobed and reflexed, the remaining margin broadly bordered and weakly reflexed; genae strongly produced laterad, with genal corner slightly acuter than a right angle, margin gently curved and broadly bordered in front, almost straight and finely so behind; cephalic horn located in the middle, slender, about 2.0 mm in length in the largest individual, slightly curved backward, conical in cross-section at base, and with a pair of small teeth at basal third on the posterior face; punctures on surface dense with strong and transverse punctures on clypeus, rather dense and coarse on genae, sparse and fine on vertex and around the horn; in smaller males, the cephalic horn reduced to a short conical point.

Pronotum moderately strongly convex, about 1.5–1.6 times as wide as long (n=3), with a strong and rather broad median longitudinal groove in basal four-fifths; anterior margin strongly bisinuate, broadly bordered, especially so on both sinuses; lateral margins finely bordered, gently rounded in basal half, and then weakly sinuate anteriad, and again shortly constricted and strongly sinuate toward anterior angles; anterior angles obliquely truncate, with outer corner roundly angled; posterior angles obtuse; base with a fine transverse furrow along basal margin; basal margin obtusely angled at the middle, finely bordered though often interrupted by the coarse punctures near the middle; disc rather steeply declivous in front, with the upper edge of the declivous area bearing six transversely arranged prominences; the inner two prominences very obtuse and adjacent to each other, the medial two prominences slightly stronger and a little separated from the inner ones, the outer two prominences mostly fairly obtuse and broadly separated from the medial ones by a shallow groove on either side; surface densely and fairly coarse-



Figs. 4–12. *Copris* spp., scale 1 mm. —— 4–6, *C.* (*Sinocopris*) *barclayi* sp. nov. 4, aedeagus, dorsal view; 5, ditto, lateral view; 6, parameres, ventral view; 7–9, *C.* (*Copris*) *manni* sp. nov. 7, aedeagus, dorsal view; 8, ditto, lateral view; 9, parameres, ventral view; 10–12, *C.* (*C.*) *zhangi* sp. nov. 10, aedeagus, dorsal view; 11, ditto, lateral view; 12, parameres, ventral view.

ly, sometimes partly confluently punctate, on marginal portions, lateral two grooves between outer and medial prominences, median portion of anterior declivous area and median longitudinal groove, the punctures becoming sparser and clearly finer on the remaining portions, especially either side of median punctate area on declivous area; the punctate area of the median longitu-

dinal groove broadest in front and gradually narrowed posteriad and seemingly forming conversely acute triangle; in smaller males, the prothoracic prominences reduced to slight swellings.

Elytra strongly convex, about 1.0 times as wide as long (n=3), with 10 striae on each elytron, 9th and 10th almost confluent in basal third, 8th complete, not interrupted halfway, 1st and 10th, 2nd and 9th, 3rd and 8th distinctly joined at apex, 6th and 7th barely joined, 4th and 5th not distinctly joined at apex, though 6 th and 7 th sometimes isolated at apex; all striae fairly strongly and rather broadly grooved, finely ridged throughout on either side, clearly microsculptured in the grooves; strial punctures distinct, each with a small, round and shining granule in the middle, slightly but distinctly notching both margins of intervals; intervals weakly to distinctly convex, sparsely and very finely punctate.

Pygidium transverse, gently convex, densely covered with coarse punctures. Prothorax with anterior angles ordinary on the ventral side. Metasternum with a distinct fine median longitudinal groove along midline in apical two-thirds, which is mostly interrupted in the middle; metasternal shield sparsely and very finely punctate; lateral portions scattered with setiferous coarse punctures. Protibiae short and stout, with four external teeth; terminal spur rather elongate, somewhat spatulate, strongly incurved near apex.

Aedeagus about 4.1–4.2 mm (n=2) in total length. Phallobase rather slender, about 2.5–2.6 mm (n=2) in length in lateral view, about 1.0 mm (n=2) in apical width in dorsal view. Parameres slender, about 1.5–1.6 mm in lateral view; dorsal lobes narrow, almost parallel in front, not forming an elongate circle in dorsal view, not distinctly raised upward in lateral view; dorsal membranes rather elongate; basal sinus weak in lateral view; ventral side with membranes broadly developed, about 1.3–1.4 mm in length (n=2).

Female. Head more distinctly produced forward than in male; clypeal margin with median incision weaker; frons with a median short transverse carina in the middle, which is slightly elevated and emarginate at the summit; surface more densely and more strongly punctate. Pronotum more simply formed and less convex dorsally than in male, shortly declivous in front, with obtuse transverse carina on the upper edge of the declivous area. Protibiae with terminal spur slightly shorter than in the male.

Type series. Holotype: ♂, Sichuan, China, VII. 1986. Paratypes: 5 ♂♂, 1 ♀, the same data as the holotype; 3 ♂♂, Shanxi, China, VII. 1989; 1 ♀, Guanxi, China, 1989.

Type depository. The holotype will be deposited in the collection of the Institute of Zoology, Chinese Academy of Sciences, People's Republic of China.

Distribution. China (Sichuan, Shanxi, Guanxi).

Etymology. The specific name is dedicated to Dr. Darren J. MANN, Department of Entomology, Hope Entomological Collections, Oxford University Museum of Natural History, who gave us opportunities to examine many type specimens of *Copris* species.

Notes. The present new species is somewhat related to *Copris* (*Copris*) *carinicus* GILLET from Myanmar, but can be distinguished from the latter by the following characters: 1) head is more strongly produced laterad, with genal angle more strongly produced laterad and clearly acuter than a right angle, whereas in *C. carinicus*, it is less strongly produced forward with genal angle less produced laterad and nearly right angle or only slightly acuter than a right angle; 2) elytra with intervals are sparsely and very finely punctate, whereas in *C. carinicus*, they are sparsely intermixed with double punctuations, rather small and very fine; 3) in the male, dorsal lobes of parameres are narrow and almost parallel, whereas in *C. carinicus*, they are broad, seemingly somewhat circular in outline.

Copris (*Copris*) *zhangi* sp. nov.

(Figs. 3, 10–12)

Length: 12.5–15.5 mm; width: 7.0–8.0 mm (n=23).

Body somewhat small-sized, oblong oval, strongly convex dorsally; dorsal side shining, rather smooth and entirely glabrous; ventral side also shining, partly clothed with reddish hairs; metasternum sparsely covered with unnoticeable short hairs except for median narrow glabrous area. Color uniformly black; mouth organs, palpi, antennae, and legs reddish brown.

Male. Head fairly transverse, broadly semicircular in front in outline; clypeal margin shallowly and fairly widely incised at the middle, with either side of the incision only slightly lobed and reflexed, the remaining margin broadly bordered and weakly reflexed; genae strongly produced laterad, with genal corner usually slightly more acute than a right angle, margin almost straight and broadly bordered in front, usually almost straight, sometimes slightly sinuate and finely bordered behind; cephalic horn located in the middle, long and slender, about 3.7 mm in length in the largest individual, slightly curved backward, conical in cross-section at base, and with a pair of small teeth at basal fifth on the posterior face; punctures on surface dense with strong and transverse punctures on clypeus, dense and coarse on genae, sparse and fine on vertex and around the horn; in smaller males, the cephalic horn reduced to a short conical point, the punctures becoming noticeably sparser and finer in front of the horn.

Pronotum fairly strongly convex, about 1.5–1.6 times as wide as long (n=3), with a weak median longitudinal groove in basal two-thirds; anterior margin strongly bisinuate, broadly bordered, remarkably so on both sinus; lateral margins finely bordered, gently rounded in basal half, and then weakly sinuate anteriad, and again narrowed toward anterior angles; anterior angles somewhat obliquely truncate, with outer corner roundly angled; posterior angles obtuse; base with a fine transverse furrow along basal margin; basal margin obtusely angled or rounded at the middle, distinctly bordered; disc steeply declivous in front, with the upper edge of the declivous area bearing six transversely arranged prominences; the inner two prominences obtuse and adjacent to each other, the interspace between them about 0.7–1.0 mm; the medial two prominences stronger and slightly separated from the inner ones, the outer two porominences sharp and broadly separated from the medial ones by a deep groove on either side; in smaller males, the six prominences becoming indistinct and reduced to slight swellings; surface densely and coarsely punctate on marginal and lateral portions and also narrow midline, the punctures becoming sparser and clearly finer toward either side between midline and the lateral groove; in smaller individuals, the six prominences reduced to slight swellings.

Elytra strongly convex, about 1.0–1.1 times as wide as long (n=3), with 10 striae on each elytron, 9th and 10th almost confluent in basal third, 8th complete, not interrupted halfway, 2nd and 9th, 3rd and 8th, and 4th and 5th distinctly joined at apex, 1st and 10th, 6th and 7th barely joined or not joined at apex; all striae fairly strongly and rather broadly grooved, finely ridged throughout on either side, clearly micro-sculptured in the groove; strial punctures distinct, each with a small, round and shining granule in the middle, slightly but distinctly notching both margins of intervals; intervals more or less convex, sparsely and very finely punctate.

Pygidium transverse, gently convex, densely to fairly densely covered with coarse ocellate punctures. Prothorax with anterior angles ordinary on the ventral side. Metasternum with a weak fine median longitudinal groove, which is often interrupted in front; metasternal shield sparsely and finely punctate in the middle and rather larger laterad; lateral portions scattered with setifer-

ous coarse punctures. Meso- and metafemora with each ventral side fairly densely and coarsely covered with transverse punctures. Protibiae short and stout, with four external teeth; terminal spur rather short, broad, distinctly spatulate, clearly incurved near apex.

Aedeagus about 3.7-4.0 mm (n=2) in total length. Phallobase slightly elongate, about 2.4-2.5 mm (n=2) in length in lateral view, about 1.0 mm (n=2) in apical width in dorsal view. Parameres about 1.3-1.5 mm in lateral view; both dorsal lobes forming small elongate circle in front in dorsal view, not distinctly raised upward in lateral view; dorsal membranes distinct; basal sinus distinct in lateral view; ventral side with membranes elongate and well developed, about 1.1-1.2 mm in length (n=2).

Female. Head more strongly produced forward than in male; frons with a median short transverse carina in the middle, which is slightly elevated and emarginate at the summit; surface more densely and more strongly punctuate, though anterior portion of frontal transverse carina often remarkably sparsely and finely punctate. Pronotum more simply formed and less convex dorsally than in male, shortly declivous in front, with obtuse transverse carina on the upper edge of the declivous area. Protibiae with terminal spur slightly shorter than in the male.

Type series. Holotype: ♂, Quinghai, China, 1989. Paratypes: 8♂♂, 6♀♀, the same data as the holotype; 3♂♂, 2♀, Guizhou, China, VII. 1985; 3♂♂, Sichuan, China, 1988.

Type depository. The holotype will be deposited in the collection of the Institute of Zoology, Chinese Academy of Sciences, People's Republic of China.

Distribution. China (Quinghai, Sichuan, Guizhou).

Etymology. The specific name is dedicated to Dr. ZHANG Youwei, the great coleopterist at the Institute of Zoology, Chinese Academy of Sciences.

Notes. The present new species is very similar to *C.* (*Copris*) *kachinensis* OCHI, KON et KAWAHARA from Myanmar, but can be distinguished from the latter by the following characters: 1) head is more strongly produced forward and more transverse, with genal angle more acute than a right angle, whereas in *C. kachinensis*, it is less produced forward with genal angle less produced laterad and nearly in right angle; 2) body is generally smaller; 3) meso- and metafemora with each ventral side is more densely and more coarsely punctate, whereas in *C. kachinensis*, it is more sparsely and less coarsely punctate, especially so in basal half; 4) terminal spur of protibiae is rather spatulate and distinctly curved apicad, whereas in *C. kachinensis*, it is also more broadly spatulate and scarcely curved apicad; 6) in the male, parameres of genitalia are slightly robust, with dorsal lobes forming small elongate circle in outline, whereas in *C. kachinensis*, they are slender, with dorsal lobes parallel, and forming a very broad elongate circle.

要　　約

越智 輝雄・近　雅博・白　明：中国産ダイコクコガネ属の3新種および新亜属の記載．――東アジアからダイコクコガネの新亜属 *Sinocopris* 属を記載した．本新亜属は前脛節前方外縁に近接した3外歯を具え，前胸前角の下面が丸く大きく凹み，♂交尾器の交尾鈎が概して大きく発達し，しばしばその側面が強い皺状となること等により，原名亜属から区別できる．本新亜属の模式種として *Copris uenoi* HANBOONSONG, MASUMOTO et OCHI を指定し，17 種を本新亜属に含めた．また，併せて中国より3新種を記載した．

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Notes on the Coprophagous Scarab-beetles (Coleoptera: Scarabaeidae) from Southeast Asia (XXI)
Nine New Species and Two New Subspecies of *Onthophagus* from the Malay Peninsula, Sumatra and Borneo

Teruo OCHI
Kôhûdai 5–21–6, Toyono-cho, Toyono-gun, Osaka, 563–0104 Japan

Masahiro KON
School of Environmental Science, The University of Shiga Prefecture,
Hassaka-cho 2500, Hikone, Shiga, 522-8533 Japan

and

Yoshitaka TSUBAKI
Center for Ecological Research, Kyoto University, Hirano 2–509–3, Otsu, Shiga, 520–2113 Japan

Abstract Nine new species and two new subspecies of *Onthophagus* are described under the names of *O.* (*Gibbonthophagus*) *viridicervecapra* sp. nov., *O.* (*G.*) *rufiobscurior* sp. nov., *O.* (*G.*) *nigriobscurior* sp. nov., *O.* (*G.*) *semipersonatus* sp. nov., *O.* (*Pseudophanaeomorphus*) *parachandrai* sp. nov. and *O.* (*Onthophagus*) *horii* sp. nov. from the Malay Peninsula, *O.* (*Onthophagiellus*) *parafalculatus* sp. nov. and *O.* (*Onthophagiellus*) *opacifalculatus* sp. nov. from Sumatra, *O.* (*G.*) *parviobscurior* sp. nov., *O.* (*Onthophagiellus*) *deliensis bawangicus* ssp. nov. and *O.* (*Onthophagus*) *rutilans aborneensis* ssp. nov. from Borneo.

Since 1991, the National Institute for Environmental Studies, Japan has developed a program of rain forest research in collaboration with the Forest Research Institute Malaysia, one of whose field sites is Pasoh Forest Reserve, Negeri Sembilan, West Malaysia. In the course of the project, the last author (YT) conducted ecological researches on the dung beetle assemblages in Pasoh Forest Reserve and the first author (TO) examined samples and tentatively identified them.

Recently, we have started full-dress taxonomic studies on the dung beetle specimens collected from Pasoh Forest Reserve. In the present paper, we describe six new *Onthophagus* species from the Malay Peninsula including Pasoh Forest Reserve. In addition, we also describe two new *Onthophagus* species from Sumatra and one new species and two new subspecies from Borneo.

Onthophagus (*Gibbonthophagus*) *viridicervicapra* sp. nov.

(Figs. 1, 12)

Length: 8.1–9.5 mm; width: 4.3–4.8 mm (n=42).

Body large-sized, strongly convex above, oblong-oval; dorsal side almost opaque, with head and pronotum glabrous, elytra sparsely clothed with short yellowish white hairs except for glabrous inner intervals, basal two thirds of suture and 2nd interval, basal half of 3rd interval glabrous, the remaining portions hairy; pygidium distinctly hairy; ventral side partly clothed with yellowish brown hairs. Color black, always tinged with weak greenish luster, especially on head and pronotum; mouth parts, palpi, antennal foot-stalks and legs slightly reddish; club segments of antenna reddish brown to pale brown.

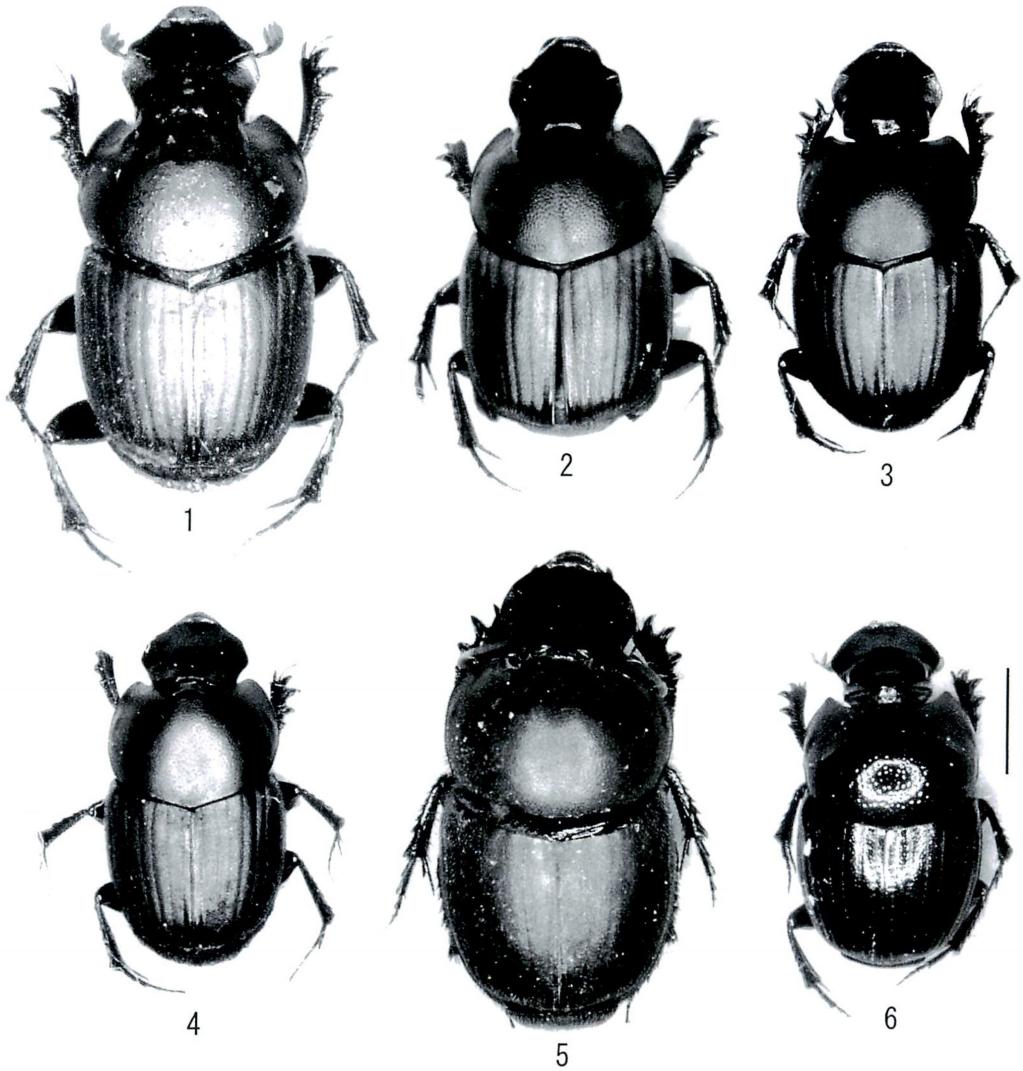
Male. Head octagonal in outline; clypeus trapezoidal, with sides strongly sinuate, apex strongly upturned, almost straight in dorsal view; frontoclypeal suture completely effaced; genal sutures clearly defined, not carinate, extended to mid-eye level on vertex; genae distinctly produced laterad, roundly angled at the middle; posterior portion of head armed with a pair of flat and simply-formed horns which are obliquely inclined backward, slightly curved inward, about 1.7 mm in length in large individuals; interspace between horns simply formed, without a carina or tubercle; in smaller individuals, the horns reduced to short triangular points; surface micro-granulose though mostly weakly lustrous, rather sparsely covered with small punctures, the punctures becoming very fine toward apex and horns.

Pronotum strongly convex above, about 1.4 times as wide as long (n=3), with an obtuse median longitudinal groove in basal half; anterior margin strongly bisinuate, broadly bordered in middle; lateral margins broadly and rather evenly rounded in front, slightly sinuate behind, finely bordered; anterior angles acutely produced forward; posterior angles obtuse; base obtusely angled at the middle, without a distinct marginal border except for briefly and finely bordered median angle; disc somewhat steeply declivous in apical third, with the upper edge of the declivous area obtusely bi-tuberculate at the middle; the declivous area with three faces, the narrow median longitudinal one flattened, and the broad lateral ones shallowly depressed for fitting cephalic horns; in smaller individuals, the anterior declivous area reduced to slight depressions; surface micro-granulose though weakly lustrous on the anterior declivous area, rather densely covered with distinct ocellate punctures, the punctures becoming sparser and finer toward apex.

Elytra strongly convex above, about 1.3–1.4 times as wide as long (n=3); all striae strongly and rather widely grooved, with strial punctures rather sparse, distinct, weakly notching both margins of intervals; 7th striae clearly curved in the middle and almost parallel to 6th near base; intervals almost flat, distinctly micro-granulose, densely and coarsely punctate except for apical two-thirds of suture and 2nd interval, basal half of 3rd one, where the punctures are clearly sparser and finer.

Pygidium convex near apex, carinate at base, obtusely and longitudinally depressed along midline, micro-granulose, densely covered with coarse shallow punctures, the punctures becoming sparser at the middle. Protibiae somewhat elongate, weakly curved, with four external teeth; terminal spur ordinary, but not so sharp apically.

Aedeagus relatively robust. Phallobase about 1.2 mm in length (n=1), about 0.6 mm in apical width (n=1). Parameres about 0.8 mm in length (n=1), with lateral portions simply formed and gradually narrowing toward apices in dorsal view; apices strongly prominent and sharp in lateral view, rounded and slightly expanded laterad in dorsal view.



Figs. 1–6. Habitus of *Onthophagus* spp., scale 2 mm. —— 1, *O.* (*Gibbonthophagus*) *viridicervicapra* sp. nov.; 2, *O.* (*G.*) *rufiobscurior* sp. nov.; 3, *O.* (*G.*) *nigriobscurior* sp. nov.; 4, *O.* (*G.*) *parviobscurior* sp. nov.; 5, *O.* (*G.*) *semipersonatus* sp. nov.; 6, *O.* (*Pseudophanaeomorphus*) *parachandrai* sp. nov.

Female. Head with clypeus less strongly produced forward than in male; clypeal margin broadly truncate and slightly reflexd in middle; frontoclypeal suture strongly and sharply carinate, the carina rather long, curved forward and obtuse on either side; vertex with a strongly raised transverse sharp carina between eyes, which is weakly procurved and slightly longer than frontoclypeal carina; surface strongly and transversely wrinkled along anterior margin, and more strongly and more densely punctate on clypeus. Pronotum with a shortly bi-arcuate and obtuse tubercle at the middle just behind anterior margin. Protibiae stouter than in male, with four external teeth stronger.

Type series. Holotype: ♂, Tanah Rata, Cameron Highlands, Pahang State, West Malaysia,

V. 2000. Paratypes: 21 ♂♂, 18 ♀♀, the same data as the holotype. *Further specimens examined*. 2 ♂♂, Templer Park, Selangor State, West Malaysia, 30. XII. 2007, M. KON leg.

Type depository. The holotype is deposited in the collection of the School of Environmental and Natural Resource Sciences, Universiti Kebangsaan Malaysia.

Distribution. Malay Peninsula.

Etymology. The specific name means "greenish *cervicapra*".

Notes. The present new species is closely related to *Onthophagus cervicapra* BOUCOMONT from Borneo, but can be distinguished from the latter by the following characters: 1) body is slightly larger; 2) body has weak but distinct greenish luster instead of being entirely unicolor black; 3) basal two-thirds of suture and 2nd interval, and 3rd one of elytra are sparsely and finely punctate, whereas in *O. cervicapra*, they are usually more densely and more strongly punctate there; 4) elytra are entirely opaque with micro-granules very fine, whereas in *O. cervicapra*, these are slightly lustrous with micro-granules coarser; 5) in the female, vertexal carina on head is stronger and slightly longer than that of *O. cervicapra*; 6) parameres of male genitalia are scarcely produced laterad at apices in dorsal view, whereas in *O. cervicapra*, they are usually clearly produced laterad at apices in dorsal view.

Onthophagus* (*Gibbonthophagus*) *rufiobscurior sp. nov.

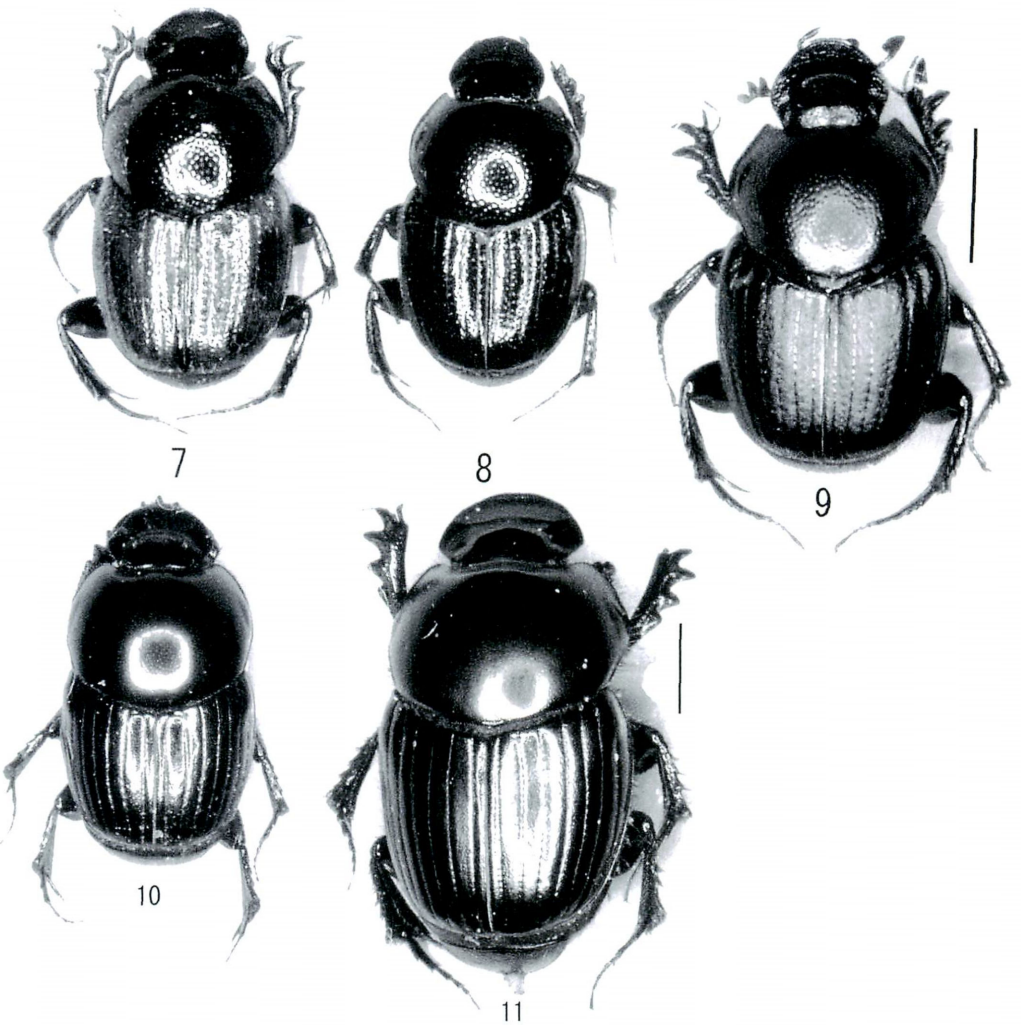
(Figs. 2, 13)

Length: 6.0–7.8 mm; width: 3.3–4.2 mm (n=99).

Body moderate-sized, strongly convex, oblong-oval; dorsal side almost opaque, with head glabrous, pronotum and elytra distinctly clothed with short yellowish brown erect hairs except for basal half of glabrous suture on elytra; pygidium distinctly hairy; ventral side partly clothed with yellowish brown hairs. Color reddish brown to pale brown, sometimes slightly darker; whole surface of head and median portion of pronotum blackish brown, elytra usually brown, often partly becoming darker, the blackish brown portions mostly tinged with weak to distinct greenish or purplish luster, especially on head of male; pronotal blackish brown portion forming usually three, sometimes one or two, large median vague spots which are always obviously smaller than those of *O. obscurior*; ventral surface including all femora reddish brown, though partly darker; antennal foot-stalks and legs somewhat reddish; club segments of antennae yellowish brown to pale reddish brown.

Male. Head polygonal in outline; clypeus strongly produced forward, with sides noticeably sinuate, apex strongly upturned as a transverse lobe at the middle which is seemingly almost straight in dorsal view; frontoclypeal suture completely effaced; genal sutures distinctly defined, though not carinate, and extended to near mid-eye level on vertex; genae less produced laterad than in the related species, with margin clearly rounded at the middle; vertex armed with a pair of flat horns which are obliquely inclined backward, distinctly toothed at basal third to fourth on either inner margin, and then sharply pointed apicad; two horns about 1.2 mm in large individuals, almost parallel-sided, and not clearly produced laterad beyond eyes; interspace between two horns simply formed, without a carina or tubercle; in smaller individuals, horns reduced to short points; surface weakly shining, densely and somewhat strongly punctate in the middle, the punctures becoming sparser and finer apicad and posteriad, especially on the horns.

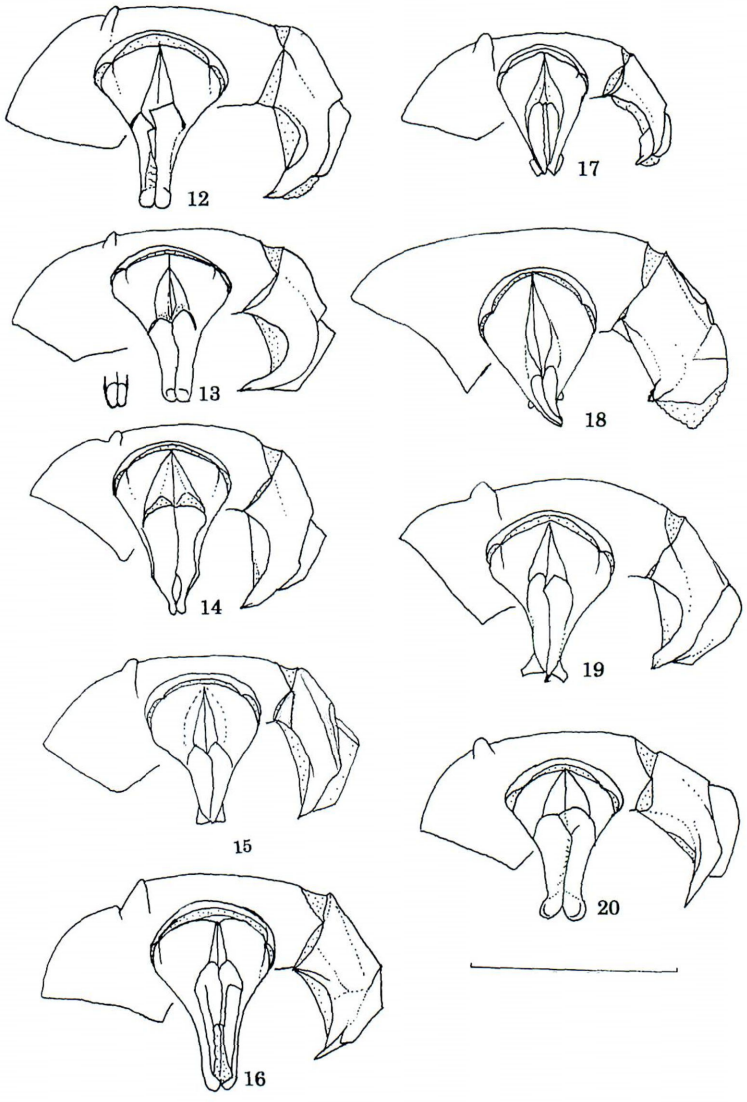
Pronotum strongly convex, about 1.3–1.4 times as wide as long (n=3), with a weak median



Figs. 7–11. Habitus of *Onthophagus* spp., scale 2 mm. —— 7, *O.* (*Onthophagiellus*) *deliensis bawangicus* subsp. nov.; 8, *O.* (*O.*) *parafalculatus* sp. nov.; 9, *O.* (*O.*) *opacifalculatus* sp. nov.; 10, *O.* (*Onthophagus*) *horii* sp. nov.; 11, *O.* (*O.*) *rutilans aborneensis* subsp. nov.

longitudinal groove in basal half; anterior margin strongly bisinuate, broadly bordered in the middle, finely so laterad; lateral margins gently rounded in front, slightly sinuate behind, clearly bordered; anterior angles sharply produced forward; posterior angles obtuse; base obtusely angled at the middle, without a distinct marginal line; disc steeply and rather narrowly declivous in apical third, with the upper edge of the declivous area transversely and shortly ridged; anterior declivous area slightly and roundly depressed; in smaller males, the anterior declivous area reduced to a slight depression; surface micro-granulose except for the slightly shining anterior declivous area, densely covered with strong punctures in the middle, the punctures clearly larger than those on median portion of head, and becoming sparser toward sides and very sparser and finer toward apex.

Elytra convex dorsally, about 1.4–1.5 times as wide as long (n=3); striae strongly grooved, finely ridged on both sides throughout, with strial punctures obvious, slightly notching both mar-



Figs. 12–20. Male genitalia of *Onthophagus* spp., dorsal and lateral views, scale 1 mm. —— 12, *O.* (*Gibbonthophagus*) *viridicervicapra* sp. nov.; 13, *O.* (*G.*) *rufiobscurior* sp. nov.; 14, *O.* (*G.*) *nigriobscurior* sp. nov.; 15, *O.* (*G.*) *parviobscurior* sp. nov.; 16, *O.* (*G.*) *semipersonatus* sp. nov.; 17, *O.* (*Pseudophanaeomorphus*) *parachandrai* sp. nov.; 18, *O.* (*Onthophagus*) *horii* sp. nov.; 19, *O.* (*G.*) *cervicapra* BOUCOMONT; 20, *O.* (*G.*) *obscurior* BOUCOMONT.

gins of intervals; 7th striae clearly curved in the middle and parallel to 6th near base; intervals almost flat or only slightly convex, micro-granulose, a little sparsely covered with distinct asperate punctures, which are slightly smaller than those of pronotum; the punctures becoming denser on 7th intervals.

Pygidium carinate at base, slightly convex, micro-granulose, rather sparsely covered with distinct punctures. Protibiae weakly incurved, with four external teeth; terminal spur sharp, slen-

der and slightly decurved.

Aedeagus rather elongate. Phallobase about 1.2 mm in length (n=1), about 0.5 mm in apical width (n=1). Parameres about 0.7 mm in length (n=1), fairly strongly curved downward in lateral view, with lateral portions simply formed and gradually narrowing toward apices which are parallel-sided and sometimes not well visible in dorsal view; apices strongly prominent and sharp in lateral view, shortly rounded and not expanded laterad in dorsal view.

Female. Head less produced forward than in male, with apex truncate in middle; frontoclypeal suture finely carinate at the middle, the carina rather long, only slightly curved backward and not reaching genal suture on either side; posterior portion of head with a long transverse carina between eyes, which is almost straight and clearly stronger than frontoclypeal one; genae slightly produced laterad than in male; surface transversely wrinkled along clypeal margin, densely and rather strongly punctate in the middle, the punctures becoming sparser and finer toward base. Pronotum less convex dorsally than in male, with a shortly bi-arcuate tubercle at the middle just behind anterior margin. Protibiae stouter than in male, with four external teeth stronger.

Type series. Holotype: ♂, Pasoh Forest Reserve, Negeri Sembilan State, West Malaysia, 16. X. 1993. Paratypes: 2♂♂, the same data as the holotype; 11♂♂, 7♀♀, ditto, 16. I. 1992; 10♂♂, 6♀♀, ditto, 18. II. 1992; 1♂, 1♀, ditto, 2. III. 1992; 3♂♂, 3♀♀, ditto, 14. VIII. 1992; 2♂♂, 4♀♀, ditto, 17. XI. 1992; 19♂♂, 19♀♀, ditto, 14. XII. 1992; 2♀♀, ditto, 16. IV. 1993; 2♂♂, 5♀♀, ditto, 18. XI. 1993; 1♂, ditto, 16. XII. 1993.

Type depository. The holotype is deposited in the collection of the School of Environmental and Natural Resource Sciences, Universiti Kebangsaan Malaysia.

Distribution. Malay Peninsula.

Etymology. The specific name means "brownish red *obcurior*".

Notes. The present new species is somewhat related to *Onthophagus* (*Gibbonthophagus*) *obscurior* BOUCOMONT, 1914 from Borneo, but can be distinguished from the latter by the following characters: 1) elytral intervals are almost wholly covered with distinct hairs, whereas in *O. obscurior*, they are sparsely covered with fine to very fine hairs on the lateral and apical portions, and glabrous on the remaining portions; 2) pronotum with either lateral margin is nearly straight in front, whereas in *O. obscurior*, it is gently and evenly rounded in front; 3) body is reddish brown on the ground color, partly with more strongly metallic luster, whereas in *O. obscurior*, it is bright reddish brown or yellowish brown, with metallic luster slightly weaker; 4) in large males, cephalic horns on posterior portion of head are narrowly separated to each other and slender, whereas in *O. obscurior*, they are broadly separated to each other and flattened; 5) in the female, a protuberance on the pronotum is shortly bi-arcuate on the anterior face, whereas in *O. obscurior*, it is simply formed; 6) male genitalia with parameres are fairly strongly curved downward in lateral view, with apices slightly widened laterad in dorsal view, whereas in *O. obscurior*, they are not strongly curved downward in lateral view, with apices more distinctly widened laterad in dorsal view.

Onthophagus* (*Gibbonthophagus*) *nigriobscurior sp. nov.

(Figs. 3, 14)

Length: 6.1–7.4 mm; width: 3.1–4.0 mm (n=34).

Body small-sized, rather strongly convex, oblong-oval; dorsal side almost mat, with head and pronotum glabrous, elytra clothed with short brown hairs on apico-lateral portions and glabrous on the baso-median portions; pygidium distinctly hairy; ventral side partly clothed with yellowish brown hairs. Color uniformly black without metallic luster on dorsal surface; ventral surface including legs brown to blackish brown and partly tinged with weak purplish luster; antennal foot-stalks reddish; club segments of antennae yellowish brown to pale reddish brown.

Male. Head polygonal in outline; clypeus strongly produced forward, with sides distinctly sinuate, apex strongly upturned as a somewhat triangular lobe at the middle; frontoclypeal suture completely effaced; genal sutures distinctly defined, not carinate and extended to near mid-eye level on vertex; genae distinctly produced laterad, with margin clearly rounded at the middle; posterior portion of head armed with a pair of fairly flat horns which are obliquely inclined backward, distinctly toothed at basal half of either inner margin, and then gradually pointed apicad; two horns about 1.0 mm in large individuals, almost parallel-sided, and not produced laterad beyond eyes; interspace between two horns simply formed, without a carina or tubercle; in smaller males, the horns reduced to short triangular prominences; surface micro-granulose except for shining apical portion of clypeus, slightly wrinkled along anterior margin, densely covered with small punctures in the middle, the punctures becoming sparser and finer apicad and posteriad, especially on the horns.

Pronotum rather strongly convex, about 1.4 times as wide as long (n=3), with a weak and obtuse median longitudinal groove in basal two-thirds; anterior margin strongly bisinuate, broadly bordered in the middle, finely so laterad; lateral margins evenly rounded in front, only slightly sinuate behind, clearly bordered; anterior angles sharply produced forward; posterior angles obtuse; base obtusely angled at the middle, unbordered; disc steeply declivous in apical third, with the upper edge of the declivous area forming a transverse and bi-arcuate ridge; anterior declivous area finely keeled along midline, and roundly and weakly depressed on either side of the keel; in smaller males, the anterior declivous area reduced to a slight depression; surface strongly micro-granulose except for the weakly shining anterior declivous area, densely covered with distinct but rather shallow ocellate punctures in the middle, the punctures becoming larger toward sides and very sparsely and finely so on declivous area.

Elytra convex above, about 1.4 times as wide as long (n=3); striae strongly and rather widely grooved, finely ridged on both sides throughout, with strial punctures distinct, slightly notching both margins of intervals; 7th striae distinctly curved in the middle, and almost parallel to 6th near base; intervals flat to slightly convex, strongly micro-granulose, sparsely covered with fine punctures, the punctures becoming coarser and slightly asperate toward outer intervals.

Pygidium carinate at base, strongly convex near apex, micro-granulose, densely covered with transverse coarse hairy punctures. Protibiae weakly curved inward, with four external teeth; terminal spur sharp, slender and slightly decurved.

Aedeagus rather robust. Phallobase about 1.2 mm in length (n=1), about 0.6 mm in apical width (n=1). Parameres about 0.8 mm in length (n=1), strongly curved downward in lateral view, with lateral portions gradually narrowing toward apices and slightly widened a little before apices in dorsal view; apices strongly prominent and sharp in lateral view, clearly narrowed apicad in dorsal view.

Female. Head less produced forward than in male; clypeus truncate at apex; frontoclypeal suture finely carinate in middle, the carina rather short, straight and not reaching genal suture on either side; vertex with a clearly raised transverse carina between eyes, which is procurved and

almost the same length as the frontclypeal one; surface more densely and more strongly punctate than in male, Pronotum almost simply formed except for antero-median portion which is very obtusely swelled.

Type series. Holotype: ♂, Pasoh Forest Reserve, Negeri Sembilan State, West Malaysia, 14. VIII. 1992. Paratypes: 1♀, the same data as the holotype; 1♀, ditto, 16. I. 1992; 2♂♂, 2♀♀, ditto, 16. X. 1992; 1♂, ditto, 17. XI. 1992; 4♂♂, 5♀♀, ditto, 14. XII. 1992; 4♀♀, ditto, 18. II. 1993; 2♂♂, 1♀, ditto, 16. XII. 1993; 2♀♀, ditto, 16. IV. 1993; 2♂♂, 5♀♀, ditto, 18. XI. 1993; 1♂, ditto, 16. XII. 1993.

Type depository. The holotype is deposited in the collection of the School of Environmental and Natural Resource Sciences, Universiti Kebangsaan Malaysia.

Distribution. Malay Peninsula.

Etymology. The specific name means "black *obcurior*".

Notes. The present new species is somewhat related to *Onthophagus* (*Gibbonthophagus*) *obscurior* BOUCOMONT, 1914 from Borneo, but can be distinguished from the latter by the following characters: 1) body is unicolor black, without metallic luster on the dorsal side, whereas in *O. obscurior*, it is not unicolor black but bi-colored, yellowish brown to brown with metallic luster in part; 2) elytra with striae are slightly broader than in *O. obscurior* and strial punctures are larger and stronger than those of *O. obscurior*; 3) in large males, cephalic horns on posterior portion of head are a little narrowly separated to each other, whereas in *O. obscurior*, they are broadly separated to each other; 4) in the female, pronotum is almost simply formed, whereas in *O. obscurior*, pronotum has an obtuse but distinct and transverse tubercle at the middle just behind anterior margin; 5) in the male genitalia, parameres with each apex is very slender and not expanded in dorsal view, whereas in *O. obscurior*, it is broad and strongly expanded into rounded lobe in dorsal view.

Onthophagus* (*Gibbonthophagus*) *parviobscurior sp. nov.

(Figs. 4, 15)

Length: 5.2–7.5 mm; width: 3.0–3.8 mm (n=52).

Body rather small-sized, strongly convex dorsally, oblong-oval; dorsal side opaque, with head glabrous, pronotum and elytra distinctly clothed with short white suberect hairs except for almost glabrous suture and 2nd interval of the latter; ventral side partly clothed with yellowish brown hairs. Color black to blackish brown though sides of pronotum, part of ventral side and femora yellowish brown, the blackish portions always tinged with weak greenish or purplish luster; elytra black, sometimes with small patch at base of each interval; mouth parts, palpi, antennal foot-stalks and legs somewhat reddish; club segments of antenna yellowish brown to pale reddish brown.

Male. Head somewhat octagonal in outline; clypeus strongly produced forward, with sides weakly sinuate, apex rounded and strongly upturned as a triangular lobe at the middle; frontoclypeal suture completely effaced; genal sutures distinctly defined, though not carinate, and extended to near mid-eye level on vertex; genae slightly produced laterad, with margin obtusely and roundly angled at the middle; vertex armed with a pair of flat horns which are obliquely inclined backward, rather short, about 0.9 mm in length in large individuals, distinctly toothed at the middle of each inner margin, and not connected; interspace between two horns simply

formed, without a carina or tubercle; surface usually subopaque or sometimes weakly shining, slightly wrinkled along anterior margin, sparsely to rather densely covered with small punctures, the punctures becoming coarser toward sides of clypeus.

Pronotum strongly convex, about 1.4 times as wide as long (n=3), slightly narrower than in *O. obscurior*, with an obtuse median longitudinal groove in basal half; anterior margin strongly bisinuate, clearly bordered; lateral margins gently rounded in front, weakly sinuate behind, clearly bordered; anterior angles sharply produced forward; posterior angles obtuse; base obtusely angled at the middle, without a distinct marginal line; disc steeply declivous in apical fourth, with the upper edge of the declivous area very obtusely ridged, anterior declivous area longitudinally and weakly carinate along midline, and slightly depressed on either side; surface micro-granulose except for the slightly shining anterior declivous area, rather densely covered with strong punctures, the punctures becoming stronger toward sides and also finer toward apex.

Elytra convex above, about 1.4 to 1.5 times as wide as long (n=3); striae strongly and somewhat widely grooved, finely ridged on both sides throughout, with strial punctures distinct, slightly notching both margins of intervals; 7th striae distinctly curved in the middle and almost parallel to 6th near base; intervals slightly convex though suture and 2nd interval flat, clearly micro-granulose, somewhat densely covered with distinct asperate punctures except for sparsely and finely punctate suture and basal four-fifths of 2nd interval.

Pygidium carinate at base, weakly convex, distinctly micro-granulose, fairly densely covered with coarse ocellate punctures. Protibiae weakly incurved, with four external teeth; terminal spur sharp, slender and somewhat decurved.

Aedeagus somewhat robust. Phallobase about 1.2 mm in length (n=2), about 0.5 mm in apical width (n=2). Parameres about 0.6–0.7 mm in length (n=2), with lateral portions simply formed, gradually narrowing toward each apex in dorsal view; apices less strongly prominent laterad and more obtuse than in *O. obscurior* in lateral view, distinctly expanded laterad as triangular lobes in dorsal view.

Female. Head with two transverse carinae on frontoclypeal suture and posterior portion of head, the former almost straight and fine, the posterior carina distinctly raised from either side to median portion, where is notched dorsally at the middle; surface micro-granulose except for shining and transversely wrinkled area along anterior margin of clypeus, sparsely covered with small punctures on basal half, densely and strongly punctate on apical half. Pronotum almost simply formed except for slightly produced antero-median tubercle just behind anterior margin. Protibiae stouter than in male, with four external teeth stronger.

Type series. Holotype: 1 ♂, Poring, Sabah State, East Malaysia (Northern Borneo), 12. IV. 1995, T. KIKUTA leg. Paratypes: 8 ♂♂, 8 ♀♀, the same data as the holotype; 2 ♂♂, 2 ♀♀, ditto, 9. I. 1995; 1 ♂, 1 ♀, ditto, 4. II. 1995; 5 ♂♂, 3 ♀♀, ditto, 16. III. 1995; 1 ♀, ditto, 18. III. 1995; 11 ♂♂, 9 ♀♀, ditto, 13. IV. 1995.

Type depository. The holotype is deposited in the collection of the Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah.

Distribution. Borneo.

Etymology. The specific name means "small *obscurior*".

Notes. The present new species is closely related to *Onthophagus* (*Gibbonthophagus*) *obscurior* BOUCOMONT 1914 from Borneo, but can be distinguished from the latter by the following characters: 1) body is clearly smaller and the body color is darker; 2) elytra are distinctly hairy in most intervals except for glabrous suture and the greater part of 2nd interval, whereas in

O. obscurior, the elytra are hairy on lateral and apical portions, and the remaining portions are almost glabrous; 3) pygidium is fairly densely and coarsely punctate instead of being rather sparsely punctate; 4) the yellowish brown areas are clearly narrow and usually restricted to near anterior angles of pronotum and femora, whereas in *O. obscurior*, the yellowish brown areas are broader, especially on the sides of pronotum and often on the elytral intervals; 5) in the female, posterior carina of head is distinctly raised toward median portion and notched dorsally, whereas in *O. obscurior*, it is entirely flat on the summit; 6) in the male, genitalia are slightly produced laterad at apices and quadrate in dorsal view, whereas in *O. obscurior*, they are clearly produced laterad and strongly rounded in dorsal view.

Onthophagus* (*Gibbonthophagus*) *semipersonatus sp. nov.

(Figs. 5, 16)

Length: 7.0–9.4 mm; width: 3.7–5.0 mm (n=25).

Body generally larger than in the related species, strongly convex, oblong-oval; dorsal side almost opaque except for weakly shining head and anterior portion of pronotum; head glabrous, pronotum and elytra distinctly clothed with short yellowish brown hairs except for basal half of glabrous suture of elytra; pygidium distinctly hairy; ventral side partly clothed with yellowish brown hairs. Color dark brown to blackish brown, sometimes with pronotum and basal portion of elytral intervals entirely or partly dark red; ventral side blackish brown, with anterior angles of prothorax, both sides of all thoraxes and abdominal sternites, femora yellowish brown to dark red; dorsal and ventral surface usually tinged with very slight cupreous luster; mouth parts, palpli, antennal foot-stalks and tibiae somewhat reddish; club segments of antenna yellowish brown to pale reddish brown.

Male. Head somewhat pentagonal in outline; clypeus strongly produced forward, with sides almost straight, apex rounded and strongly upturned as a triangular lobe at the middle; fronto-clypeal suture completely effaced; genal sutures distinctly defined, not carinate, and extended to near rear portion of eye; genae slightly produced laterad, with margin rounded at the middle; vertex armed with a pair of flat horns which are obliquely inclined backward, strongly produced laterad and then incurved near apices; each horn rather narrow at base and broadening toward the middle and narrowing apicad, with apices sharp; interspace between two horns simply formed; surface densely covered with distinct punctures, the punctures becoming sparser and finer toward median portion of clypeus and also horns.

Pronotum strongly convex above, about 1.3-1.4 times as wide as long (n=3), with a very obtuse median longitudinal groove in basal half; anterior margin strongly bi-sinuate, distinctly bordered; lateral margins broadly and evenly rounded in front, only slightly sinuate behind, finely bordered; anterior angles acutely produced forward; posterior angles obtuse; base obtusely angled at the middle, without a distinct marginal border; disc widely and steeply declivous in apical third, with the upper median portion of the declivous area obtusely produced as a pair of adjacent prominences; the declivous area with three faces, the narrow median longitudinal one strongly depressed, and the broad lateral ones shallowly depressed for fitting cephalic horns; in smaller individuals, the anterior declivous area reduced to slight depressions and two prominences more strongly produced; surface micro-granulose, rather densely covered with shallow ocellate punctures, which are larger than those of head, and becoming sparser and finer anteriad.

Elytra convex above, about 1.4 times as wide as long (n=3); striae strongly grooved, finely ridged on both sides throughout, with strial punctures distinct, slightly notching both margins of intervals; 7th striae distinctly curved in the middle, and almost parallel to 6th near base; intervals flat, strongly micro-granulose, sparsely covered with small asperate punctures, the punctures becoming denser and coarser toward outer intervals.

Pygidium carinate at base, weakly convex, distinctly micro-granulose, moderately densely covered with coarse punctures. Protibiae weakly incurved, with four external teeth; terminal spur sharp, slender and weakly decurved.

Aedeagus somewhat robust. Phallobase about 1.5 mm in length (n=1), about 0.7 mm in apical width (n=1). Parameres about 0.8 mm in length (n=1), with lateral portions simply formed, gradually narrowed toward apices in dorsal view; apices strongly prominent and sharp in lateral view, rounded and not entirely expanded laterad in dorsal view.

Female. Head less produced forward than in male; clypeus more or less trapezoidal in outline; frontoclypeal suture strongly and sharply carinate, the carina rather short, straight and effaced on either side; vertex with a strongly raised transverse sharp carina between eyes, which is almost straight and slightly longer than frontoclypeal carina; surface transversely wrinkled on clypeus, rather sparsely to densely covered with shallow indefinite punctures in the middle, which become fairly denser and coarser toward apex. Pronotum slightly declivous at the middle just behind anterior margin, with the upper edge of declivous area bearing a pair of somewhat adjacent tubercles. Protibiae shorter and stouter than in male, with four external teeth stronger.

Type series. Holotype: ♂, Pasoh Forest Reserve, Negeri Sembilan State, West Malaysia, 19. IX. 1994. Paratypes: 8♂♂, 6♀♀, the same data as the holotype; 5♂, 5♀♀ ditto, 16. I. 1992.

Type depository. The holotype is deposited in the collection of the School of Environmental and Natural Resource Sciences, Universiti Kebangsaan Malaysia.

Distribution. Malay Peninsula.

Etymology. The specific name means that this species is somewhat similar to *O. personatus*.

Notes. The present new species is somewhat related to *Onthophagus personatus* BOUCOMONT, 1914 from Java, but can be distinguished from the latter by the following characters: 1) pygidium rather closely and strongly punctate, whereas in *O. personatus*, it is sparsely and finely to somewhat finely punctate; 2) elytra with 2nd to 3rd intervals are somewhat densely covered with distinct and asperate punctures, whereas in *O. personatus*, they are sparsely covered with very fine to fine punctures; 3) in the male, pronotum is more densely and more strongly punctate instead of being more sparsely and more finely punctate on the median portion; 4) parameres of male genitalia are narrower and parallel-sided at apices, whereas in *O. personatus*, they are broader and slightly expanded laterad.

Onthophagus* (*Pseudophanaeomorphus*) *parachandrai sp. nov.

(Figs. 6, 17)

Length: 5.6–7.5 mm; width: 3.3–4.0 mm (n= 15).

Body moderate-sized though clearly larger than in *O. chandrai*, broadly oval, strongly convex dorsally; dorsal side strongly shining, smooth and glabrous; pygidium sparsely clothed with

short hairs; ventral side also shining, partly clothed with reddish-brown hairs. Color uniformly blackish brown to dark reddish brown, usually with very slight purplish to greenish tinge; mouth organs, palpi, legs more less reddish; antennae reddish brown with club segments yellowish brown.

Male. Head pentagonal in outline; clypeus strongly and triangularly produced forward, with apex strongly upturned as a small emarginate lobe at the middle; genae strongly produced laterad, with genal corner obtusely angled at the middle, rounded at tip; frontoclypeal suture shortly and weakly carinate in the middle, the carina occupying third width of the suture in large individuals though well developed and occupying half width of it in smaller individuals; genal sutures finely defined, not carinate; vertex with a fairly short transverse carina at the middle, the carina clearly raised and often seemingly small swelling; surface distinctly and transversely wrinkled on clypeus, densely and strongly punctate, the punctures partly uneven in size.

Pronotum fairly strongly convex, about 1.4 times as wide as long (n=3); median longitudinal impression indistinct; anterior margin bisinuate, rather broadly bordered; lateral margins obviously rounded at the middle, almost straight in front, clearly sinuate behind, and finely bordered; anterior angles strongly produced forward, rectangular, with tip rounded and a little expanded outside; posterior angles obtuse; basal margin obtusely angled in the middle, not distinctly bordered; disc declivous toward both anterior angles in front, leaving the posterior portion widely and triangularly elevated; the upper edge of the declivous area briefly carinate on either side, the carina becoming gradually obtuse toward the middle; median angle of the triangular disc obtuse; in small males, the triangular disc becoming almost simple; surface shining and smooth except for weakly micro-granulose on anterior declivous area, somewhat sparsely covered with shallow coarse annular punctures, the interspaces between punctures puncticulate, both punctures becoming smaller toward apex.

Elytra almost of the same length as pronotum (n=3), strongly convex, about 1.4–1.5 times as wide as long (n=3); each stria strongly and rather widely grooved, and finely ridged on either side throughout; strial punctures transverse, slightly notching both margins of intervals; each puncture separated into tow round bottoms which are close to each other; 7th stria almost parallel to 6th or slightly curved near base; intervals flat or very slightly convex, sparsely covered with fine punctures.

Pygidium gently convex, carinate at base, uneven, densely covered with very coarse ocellate punctures. Meso- and metafemora with each ventral side shining, smooth, very sparsely and finely punctae. Protibiae elongate, with four external sharp teeth; terminal spur ordinarily sharp, slightly decurved.

Aedeagus rather robust. Phallobase about 1.0 mm in length (n=3), about 0.5 mm in apical width (n=1). Parameres about 0.5 mm (n=1) in length, with each apex sharply produced in lateral view; in dorsal view, the apex weakly produced outward as a quadrate lobe, well visible.

Female. Head less produced forward than in male; clypeus with apex more broadly emarginate and weakly reflexed; frontoclypeal suture more strongly carinate at the middle, the carina clearly longer; transverse wrinkles stronger on clypeus and the punctures denser and stronger than in male. Pronotum with a pair of tubercles as well as in male, but the triangular disc more obtuse than in male. Protibiae with four external teeth stronger; terminal spur slenderer and more pointed.

Type series. Holotype: ♂, Pasoh Forest Reserve, Negeri Sembilan State, West Malaysia, 15. V. 1994. Paratypes: 5 ♂♂, 3 ♀, the same data as the holotype; 2 ♂, 1 ♀, ditto, 20. X. 1994;

3♀ ♀ ditto, 17. XI. 1994.

Type depository. The holotype is deposited in the collection of the School of Environmental and Natural Resource Sciences, Universiti Kebangsaan Malaysia.

Distribution. Malay Peninsula.

Etymology. The specific name means that it resembles *chandrai*.

Notes. The present new species is closely related to *Onthophagus* (*Pseudophanaeomorphus*) *chandrai* OCHI from East Kalimantan, but easily distinguishable from the latter by the following characters: 1) body is much larger; 2) elytra is obviously short, about 1.4–1.5 times as wide as long (n=3), whereas in *O. chandrai*, it is long, about 1.2–1.3 times as wide as long (n=3); 3) frontoclypeal suture of head is distinctly carinate in both sexes, whereas in *O. chandrai*, it is entirely effaced in the male, and more shortly and finely carinate in the female; 4) clypeus of head is distinctly wrinkled in the male and fairly strongly so in the female, whereas in *O. chandrai*, it is weakly wrinkled in the male and distinctly so in the female; 5) head is more densely punctate; 6) in the female, pronotum has a pair of well separated tubercles on disc, and then gently declivous toward either anterior angle instead of being entirely simply formed.

Onthophagus* (*Onthophagiellus*) *deliensis bawangicus subsp. nov.

(Fig. 7)

The present new subspecies differs from the nominotypical one from Sumatra Is., by the following points: 1) body is light colored, reddish brown to blackish brown with dorsal surface mostly tinged with stronger cupreous to greenish luster, whereas in the nominotypical subspecies, it is dark colored, black to blackish brown with dorsal surface tinged with weak greenish or purplish luster; 2) elytra are entirely or almost bright yellowish brown each with small vague black patches, whereas in the nominotypical subspecies, they are black each with yellowish transverse bands at base and apex; 3) in the male, apical inner portion of protibia is more broadly and more strongly swelled instead of being smaller; 4) in the female, transverse wrinkles on clypeus are weaker and finer, whereas in the nominotypical subspecies, they are more strong and rough.

Length: Length: 4.7–5.9 mm; width: 2.7–3.3 mm (n=43).

Type series. Holotype: ♂, Mt. Bawang, West Kalimantan, Indonesia, VIII. 1990; Paratypes: 17♂ ♂, 15♀ ♀, the same data as the holotype; 3♂ ♂, 3♀ ♀, ditto, VIII. 1991; 1♂, 1♀, ditto, VII, 1991; 1♂, 1♀, ditto, IX–X. 1990.

Type depository. The holotype is deposited in the collection of the Zoology Museum, Bogor, Indonesia.

Distribution. Borneo.

Etymology. The subspecies is named after the type locality, Mt. Bawang.

Onthophagus* (*Onthophagiellus*) *parafalculatus sp. nov.

(Fig. 8)

Length: 5.1–5.6 mm; width: 2.8–3.2 mm (n=2).

Female. Body moderate-sized, oblong-oval, strongly convex and distinctly constricted

between pronotum and elytra; dorsal side strongly shining and sparsely clothed with suberect yellowish white hairs except for almost glabrous head and disc of pronotum, the hairs reflexed near posterior angles of pronotum; ventral side also shining, partly, rather sparsely clothed with yellowish hairs. Color entirely black to blackish brown; head and pronotum tinged with very weak greenish luster; legs sometimes reddish; mouth parts, palpi and antennal foot-stalks reddish brown; antennal clubs yellowish brown.

Head slightly transverse, clearly smaller than in *O. falculatus*; clypeus somewhat strongly produced forward, trapezoidal in outline, with sides almost straight and reflexed, apex truncate or gently rounded and reflexed; frontoclypeal suture finely carinate, the carina slightly and evenly curved forward, and conjointed with weakly carinate genal suture far from either margin; genal sutures not carinate behind each junction of frontoclypeal and genal ones; genae moderately produced laterad with margin broadly rounded near the middle; surface densely, strongly and rather unevenly punctate in the middle and on genae, transversely wrinkled and strongly punctate on clypeus.

Pronotum strongly and evenly convex, about 1.4 times as wide as long (n=2), without a distinct longitudinal groove along midline; disc simply formed, sides strongly produced laterad in the middle; anterior margin emarginate and clearly bordered; lateral margins almost straight in front, slightly sinuate behind, finely bordered; basal margin obtusely angled at the middle, not distinctly bordered; anterior angles strongly and sharply produced forward; posterior angles obtuse; surface smooth, moderately densely, partly rather sparsely, covered with shallow strong ocellate punctures, the punctures becoming clearly larger toward sides and almost effaced toward base along margin and posterior angles.

Elytra about 1.4 times as wide as long (n=4); striae shallowly and rather widely grooved, finely ridged throughout on either side; 7th striae almost parallel with 6th, not clearly curved near base; strial punctures distinct, transverse, shallow and only slightly notching both margins of interval; intervals almost flat, smooth, with suture sparsely, very finely and indefinitely punctate, 2nd to 7th intervals bearing double rows of longitudinally arranged small punctures, 8th bearing three or four irregularly arranged and longitudinal rows of small punctures.

Pygidium distinctly convex in the middle, carinate at base, rather sparsely covered with coarse punctures, which partly become ocellate. Profemora with anterior edge obtusely toothed at basal two-thirds. Protibiae slender, weakly incurved, with four external teeth which are clearly smaller than in the related species, 1st tooth sharp, 2nd slightly broader than 1st, 3rd smaller than 2nd, 4th small; inner margin of protibia suddenly and strongly constricted basad at basal two-fifths; protarsi large and long, about 0.75 mm in holotype specimen; terminal spur spinose, elongate, slightly decurved. Mesotibiae short and almost straight; mesotarsi with basal segment strongly arcuate, about 0.6 to 0.7 mm in length (n=2), about 1.0 times as long as the remaining four segments combined; inner distal end of basal segment strongly produced backward into a sharp tooth which is slightly longer than the 1st segment; terminal spur with the lower one ordinary. Metatibiae elongate and almost straight, with distal inner end ordinary; metatarsi with basal segment elongate and strongly arcuate, about 0.9 to 1.0 mm in length (n=2), about 1.4 times as long as the remaining four segments combined (n=2); inner distal end of basal segment strongly produced backward into a sharp tooth which is as long as the following two segments combined or slightly longer.

Type series. Holotype: ♀, Gunun Leuser National Park, E. Sumatra, Indonesia, 19-20. IV. 1996, M. KASAGI leg. Paratype: ♀, Bandar Bar, Sumatra, Indonesia, V. 1986.

Type depository. The holotype is deposited in the collection of the National Museum Nature and Science, Tokyo.

Distribution. Sumatra.

Etymology. The specific name means that it resembles *falculatus*.

Notes. The present new species is closely related to *Onthophagus falculatus* BOUCOMONT, 1914 from Java, but can be distinguished from the latter by the following characters: 1) in the female, ptoribiae are slenderer, with inner margin suddenly and strongly constricted basad at basal two-fifths, whereas in *O. falculatus*, it is shorter, with inner margin ordinary, simply formed; 2) in the female, external four teeth of protibiae are clearly shorter and weaker, whereas in *O. falculatus*, they are elongate and stronger; 3) in the female, head is clearly smaller than in *O. falculatus*.

Onthophagus* (*Onthophagiellus*) *opacifalculatus sp. nov.

(Fig. 9)

Length: 6.3 mm; width: 3.5 mm (n=1).

Female. Body moderate in size, oblong-oval, strongly convex and distinctly constricted between pronotum and elytra; dorsal side strongly opaque except for weakly shining anterior half of head and narrow sides of both pronotum and elytra, sparsely clothed with suberect yellowish brown hairs except for almost glabrous head and median portion of pronotum, the hairs reflexed near posterior angles of pronotum; ventral side also almost opaque, partly, rather sparsely clothed with yellowish hairs. Color unifomly blackish brown; sides of pronotum and sides of metasternum tinged with weak greenish luster; protibiae and meso- and metatarsi somewhat reddish; mouth parts, palpi and antennal foot-stalks reddish brown; antennal clubs yellowish brown.

Head slightly transverse, relatively smaller than that of *O. falculatus*; clypeus somewhat strongly produced forward, trapezoidal in outline, with sides almost straight and reflexed, apex truncate and reflexed; frontoclypeal suture finely carinate, the carina clearly curved forward, and conjointed with weakly carinate genal suture distant from either margin; genal sutures not carinate behind each junction of frontoclypeal and genal ones; genae not strongly produced laterad with margin broadly rounded near the middle; vertex almost simply formed though weakly and transversely raised at the middle; surface densely, strongly and rather unevenly punctate in the middle and on genae, transversely wrinkled and strongly punctate on clypeus.

Pronotum strongly and evenly convex, about 1.4 times as wide as long (n=1), with an obtuse longitudinal groove in basal half along midline; disc simply formed, sides strongly produced outward in the middle; anterior margin emarginate and clearly bordered; lateral margins almost straight in front, slightly sinuate behind, finely bordered; basal margin obtusely angled at the middle, without distinct marginal line; anterior angles strongly and acutely produced forward; posterior angles obtuse; surface strongly micro-granulose, moderately densely, partly rather sparsely, covered with shallow strong ocellate punctures, the punctures becoming clearly larger toward sides and almost effaced toward base along margin and posterior angles.

Elytra about 1.4 times as wide as long (n=1); striae shallowly and distinctly grooved, finely ridged throughout on either side; 7th striae almost parallel with 6th, not clearly curved near base; strial punctures small and slightly notching both margins of interval; intervals almost flat,

strongly micro-granulose though the micro-granules seemingly melted into satiny surface on 8th interval, with suture sparsely and very finely punctate, 2nd to 7th intervals bearing double rows of longitudinally and rather irregularly arranged fine punctures, 8th bearing three or four irregularly arranged and longitudinal rows of small punctures.

Pygidium weakly convex in the middle, carinate at base, shining and smooth, sparsely covered with small to coarse ocellate punctures. Profemora with anterior edge obtusely angled at basal two-thirds. Protibiae slender, weakly incurved, with four strong external teeth, 1st tooth sharp and the longest, 2nd slightly shorter and broader than 1st, 3rd smaller than 2nd, 4th small; inner margin of protibiae ordinary; protarsi large and long, about 0.8 mm in holotype specimen; terminal spur spinose, elongate, slightly decurved. Mesotibiae short, almost straight and strongly dilated apicad at basal two-thirds; mesotarsi with basal segment strongly arcuate, about 0.8 mm in length (n=1), about 1.1 times as long as the remaining four segments combined; inner distal end of basal segment strongly produced backward into a sharp tooth which is slightly longer than the 1st segment; terminal spurs with the lower one ordinary. Metatibiae elongate and almost straight, with distal inner end ordinary; metatarsi with basal segment elongate and strongly arcuate, about 1.1 mm in length (n=1), about 1.4 times as long as the remaining four segments combined (n=1); inner distal end of basal segment distinctly produced backward into a sharp tooth which is slightly shorter than the 2nd segment.

Type series. Holotype: ♀, nr. Bukittingi, West Sumatra, Indonesia, IV. 1992.

Type depository. The holotype is deposited in the collection of the National Museum Nature and Science, Tokyo.

Distribution. Sumatra.

Etymology. The specific name means "opaque *falculatus*".

Notes. The present new species is closely related to *Onthophagus falculatus* BOUCOMONT, 1914 from Java, but can be easily distinguished from the latter by the following characters: 1) in the female, dorsal side is strongly opaque, whereas in *O. falculatus*, it is strongly shining; 2) in the female, head is relatively smaller than that of *O. falculatus*; 3) in the female, vertex of head is weakly and transversely raised in the middle instead of being entirely simply formed; 4) pronotum is more strongly produced laterad at sides.

Onthophagus* (*Onthophagus*) *horii sp. nov.

(Figs. 10, 18)

Length: 6.5–7.4 mm: width: 3.6–4.1 mm (n=12).

Body moderate-sized, oval, strongly convex dorsally; dorsal side shining to weakly shining, smooth, and entirely glabrous; pygidium glabrous except for narrow lateral hairy portions; ventral side weakly shining, partly clothed with yellowish brown hairs. Color uniformly black, without metallic luster though partly tinged with slight purplish luster on the ventral surface; abdomen with last sternites often reddish; legs more or less reddish; mouth parts and palpi reddish brown; antennae with foot-stalks reddish brown, club segments yellowish brown to pale brown.

Male. Head transverse, rather strongly produced forward, with anterior margin widely semicircular in outline; clypeal margin rather broadly bordered and weakly reflexed, with apex rounded or shortly truncate; genae strongly produced laterad, obtusely angled in the middle;

frontoclypeal suture completely effaced; frons with a slightly elevated sharp carina which is situated a little before anterior part of eyes and evenly curved; genal sutures scarcely carinate, conjointed with frontal carina far from margins; vertex only slightly depressed; surface shining in front and weakly micro-granulose behind, transversely, weakly and narrowly wrinkled along anterior margin, somewhat sparsely covered with small and partly indefinite punctures in the middle, the punctures becoming denser and coarser toward marginal portions. Antennae with club segments very compact; each segment short and robust.

Pronotum simply formed, strongly convex, 1.2–1.3 times as wide as long (n=3); median longitudinal impression very weak or indefinite; anterior margin emarginate or weakly bisinuate, broadly bordered; lateral margins gently rounded in front, clearly sinuate behind, finely bordered; anterior angles slightly produced forward, rectangular, and rounded at tip; posterior angles obtuse; basal margin obtusely angled at the middle, almost unbordered; disc evenly and more strongly convex than in *O. pacificus*; surface often weakly micro-granulose, sparsely covered with fine to small punctures, the punctures becoming denser and coarser laterad.

Elytra strongly convex, 1.4–1.5 times as wide as long (n=3); striae distinctly and rather widely grooved, finely ridged on both sides throughout; strial punctures distinct, transverse, somewhat sparse, slightly notching both margins of intervals; 7th stria not curved but almost parallel to 6th near base; intervals less shining than in *O. pacificus*, weakly convex, sparsely and finely punctate.

Pygidium slightly convex, carinate at base, rather densely covered with strong punctures, which are becoming smaller toward marginal portions. Protibiae rather stout, slightly curved, with four strong external teeth; terminal spur sharp and clearly decurved near apex. Meso- and metatibiae fairly short and stout.

Aedeagus rather robust. Phallobase about 1.4–1.5 mm in length (n=2), about 0.6 mm in apical width (n=2). Parameres about 0.7 mm in length (n=2), gradually narrowed apicad in dorsal view, with each apex weakly produced laterad and scarcely visible in dorsal view.

Female. Head more strongly produced forward than in male; clypeal margin more distinctly rounded; frontoclypeal suture weakly carinate though often partly interrupted; posterior carina slightly less elevated than in male; surface strongly transversely wrinkled and densely covered with strong punctures.

Type series. Holotype: ♂, Penan Hills, West Malaysia, 22. VII. 2005. Paratypes: 10 ♂♂, 4 ♀♀, the same data as the holotype. *Further specimens examined*. 2 ♂♂, 2 ♀♀, Pasoh Forest Reserve, Negeri Sembilan State, West Malaysia, 18. XI. 1993.

Type depository. The holotype is deposited in the collection of the School of Environmental and Natural Resource Sciences, Universiti Kebangsaan Malaysia.

Distribution. Malay Peninsula.

Etymology. The present new species is dedicated to Prof. M. HORI, Kyoto University, who gave the first author invaluable advice and encouragemets.

Notes. The present new species is closely related to *Onthophagus* (*Onthophagus*) *pacificus* LANSBERGE, 1885 from Java, but can be easily distinguished from the latter by the following characters: 1) club segments of each antenna are very compact and the 1st segment is short and not strongly bent outward in the middle, whereas in *O. pacificus*, they are not compact and the 1st segment is elongate and distinctly bent outward in the middle; 2) in the male, head has only one transverse carina instead of being two distinct transverse carinae; 3) in the female, head has two transverse carinae, with the posterior one situated before the level of eyes, whereas in *O.*

pacificus, it has also two transverse carinae, though the posterior one situated between eyes.

Onthophagus* (*Onthophagus*) *rutilans aborneensis subsp. nov.

(Fig. 11)

The present new subspecies differs from the nominotypical one from Malay Peninsula as follows: 1) body is usually unicolor black on the dorsal side, rarely tinged with weak dark purplish luster on head and pronotum, whereas in the nominotypical subspecies, it is always bi-colored, head and pronotum strongly cupreous and elytra black; 2) head has two strong transverse carinae, anterior and posterior ones, and the distance between apex of clypeus and anterior carina is clearly longer than the distance between anterior and posterior carinae, whereas in the nominotypical subspecies, they are almost the same distance or slightly different; 3) anterior carina of head is distinctly longer than the posterior one, whereas in the nominotypical subspecies, the anterior carina is slightly longer than the posterior one; 4) posterior carina of head is located a little before anterior parts of eyes and strongly procurved, whereas in the nominotypical subspecies, it is located nearly at the level of eyes; 5) transverse wrinkles on clypeus are less weaker than the nominotypical subspecies.

Length: 9.1–11.0 mm; width: 1.0–6.5 mm (n=12).

Type series. Holotype: ♂, Poring, 800 m alt., Sabah State, East Malaysia, 13. IV. 1995, T. KIKUTA leg. Paratypes: 4♂♂, 4♀♀, the same data as the holotype; 1♀, ditto, 15. III. 1995; 1♂, ditto, 17. III. 1995; 1♀, ditto, 1. IV. 1980, S. TAKEDA leg.

Type depository. The holotype is deposited in the collection of the Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah.

Distribution. Borneo.

Etymology. The present new subspecies is named after some similarity to *Onthophagus borneensis* at a glance.

要　　約

越智 輝雄・近 雅博・椿 宜高：東南アジア産コガネムシ科甲虫（第21報）．――スンダ列島（ボルネオ，スマトラ，マレー半島）よりエンマコガネ属の９新種２新亜種を記載した．

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Notes on the Coprophagous Scarab-beetles (Coleoptera: Scarabaeidae) from Southeast Asia (XXII)

A New Species of *Haroldius* and Four New Species of *Panelus* from Borneo

Teruo OCHI
Kôhûdai 5–21–6, Toyono-cho, Toyono-gun, Osaka, 563–0104 Japan

Masahiro KON
School of Environmental Science, The University of Shiga Prefecture,
Hassaka-cho 2500, Hikone, Shiga, 522–8533 Japan

and

Maxwell V. L. BARCLAY
Department of Entomology, The Natural History Museum, London SW7 5BD, England

Abstract A new species of *Haroldius* is described from Borneo under the name of *H. oharai* sp. nov., with a key to Bornean *Haroladinus*, and four species of *Panelus* from Borneo under the names of *P. kalimantanicus* sp. nov., *P. mendeli* sp. nov., *P. brendelli* sp. nov. and *P. danumensis* sp. nov.

Three species of *Haroldius*, *H. discoidalis* PAULIAN, *H. borneensis* PAULIAN, *H. pauliani* SCHEUERN, have been known from Borneo (PAULIAN, 1993; SCHEUERN, 1995). Recently, we have had opportunities to examine some *Haroldius* specimens collected in Borneo, and recognized three species in the collection. After close examinations, we identified two of them with *H. sumatranus* R. PAULIAN et SCHEUERN and *H. rugatulus* BOUCOMONT, both of which have not been recorded from Borneo, while we concluded that the remaining one is new to science. Thus, we describe a new species of *Haroldius* from Borneo and record *H. sumatranus* and *H. rugatulus* from Borneo for the first time. In addition, a key to the Bornean species of *Haroldius* is also Provided.

Meanwhile, three species of *Panelus*, *P. bakeri* BOUCOMONT, *P. sabahi* PAULIAN, *P. borneensis* PAULIAN, have been known from Borneo (BOUCOMONT, 1921; PAULIAN, 1992). When we examined *Panelus* specimens from Borneo in the collection of the Natural History Museum, London, we found four species that had not been known from Borneo. After close examinations, we concluded that all of them are new to science. Thus, we describe four new species of *Panelus* from Borneo.



Figs. 1–4. Habitus of *Haroldius* and *Panelus* spp., scale 1 mm. —— 1, *Haroldius oharai* sp. nov.; 2, *Panelus kalimantanicus* sp. nov.; 3, *Panelus mendeli* sp. nov.; 4, *Panelus brendelli* sp. nov.

Haroldius oharai sp. nov.

(Fig. 1)

Length: 2.1–2.4mm; width 1.5–1.8 mm (n=3). Body short, very wide, strongly convex, nearly circular in outline and seemingly globular in lateral view; dorsal side strongly shining and smooth, with head and pronotum entirely glabrous, elytra fairly sparsely clothed with distinct yellowish golden hairs; ventral side shining, almost glabrous. Color uniformly dark brown, with anterior portion of head and legs somewhat reddish; mouth parts, palpi and antennae reddish brown.

Male. Head distinctly transverse; clypeus clearly produced forward, with apex very deeply notched at the middle, the notch broadly U-shaped in outline and sharply bi-dentate on either side of the notch; sides of clypeal margin gently rounded laterad; genae strongly produced laterad, with genal corner obtusely angled and rounded at apex, anterior margin straight or feebly rounded, posterior margin deflexed; genal sutures traceable, extended to the level of eyes; frontclypeal suture entirely effaced; surface smooth, almost impunctate except for anterior narrow portion along margin where is sparsely and finely punctate.

Pronotum simply formed, evenly convex though only slightly depressed at anterior angles, about 2.1 times as wide as long (n=1), widest at base, with a weak median longitudinal groove in basal half; anterior margin bisinuate, finely bordered; lateral margins finely bordered, gently rounded, and gradually narrowed apicad; base simply formed, scarcely depressed, finely bordered, roundly produced in the middle; anterior angles rounded; posterior angles distinct, slightly pointed at apex; surface smooth, scarcely punctate except for basal portion where is sparsely arranged with fine oblique short striae or weak elongate puncture-like sculptures along basal margin.

Elytra simply formed, noticeably short, evenly and very strongly convex, widest at the middle, circular in outline, about 1.4 times as wide as long (n=1); basal portion without basal groove; striae completely effaced and invisible; intervals flat, smooth, almost impunctate.

Protibiae rather broad, weakly curved inward, with two external teeth, 1st tooth strong, 2nd small and weak. Mesotibiae short, broad, strongly widened apicad, weakly curved, with apico-lateral corner rounded. Metatibiae rather strongly widened apicad, weakly curved, with apico-lateral corner sharply angled and not rounded at apex.

Type series. Holotype: ♂, Bukit Bankirai, Kutai Kartanegara, East Kalimantan, Indonesia, 10. XI. 2007, by "FIT", M. OHARA leg. Paratypes: 1 ♂, 1 ♀, the same data as the holotype.

Type depository. The holotype is deposited in the collection of the Zoology Museum, Bogor, Indonesia.

Distribution. Borneo (East Kalimantan).

Etymology. The present new species is dedicated to Dr. Masahiro OHARA, Hokkaido University, who collected the holotype.

Notes. The present new species is closely related to *Haroldius borneensis* PAULIAN from Borneo, but can be distinguished from the latter by the following characters: 1) anterior angles of pronotum are entirely rounded, whereas in *H. borneensis*, they are sharp; 2) pronotum is widest at base and gradually broadened from anterior angle to posterior one, whereas in *H. borneensis*, the pronotum is widest at anterior 1/5, and then almost straight or parallel-sided toward base; 3) baso-median portion of pronotum is simply formed, whereas in *H. borneensis*, the pronotum has a very weak depression surrounded by the line, which is arranged with fairly large punctures, and the median basal depression which is defined by arched line.

Haroldius sumatranus R. PAULIAN et SCHEUERN

Haroldius sumatranus R. PAULIAN et SCHEUERN, 1994: 435; SCHEUERN, 1995: 764.

Specimens examined. 1 ex., Bukit Bankirai, near Balikpapan, East Kalimantan, Indonesia, 13–18. XII. 2005, A. UEDA leg.

Distribution. Sumatra, Borneo [new locality].

Haroldius rugatulus BOUCOMONT

Haroldius rugatulus BOUCOMONT, 1914: 253; BALTHASAR, 1963: 253; PAULIAN, 1993; 173; SCHEUERN, 1995: 765.

Specimens examined. 1 ex., Sabah, E. Malaysia, VII. 2004, JAIMI M., & JOHN L. Y., leg; 1 ex., Raub, Malay Peninsula, 19. VII. 1987, M. SATO leg.

Distribution. Malay Peninsula, Borneo [new locality].

Key to the Species of the genus *Haroldius* from Borneo

1(4) Elytra not simply formed, with base clearly grooved.

2(3) Pronotum not simply formed, with median portion broadly and longitudinally raised as a triangular protrusion. Elytra glabrous except for lateral and apical portions where are sparsely clothed with very short hairs. 3.0 mm ..... *H. pauliani* SCHEUERN

3(2)Pronotum entirely simply formed. Elytra very distinctly hairy; each interval bearing a single longitudinal row of erect long hairs. 2.7 mm ..... *H. sumatranus* R. PAULIAN et SCHEUERN

4(1) Elytra simply formed, regularly convex, with base not grooved.

5(8) Elytra with striae completely effaced, invisible.

6(7) Pronotum widest at anterior 1/5, and then almost straight or parallel-sided toward base; anterior angles sharp. Elytra with intervals densely clothed with long, erect, and yellowish hairs on the posterior portion. 2.0 mm. ..... H. *borneensis* PAULIAN

7(6) Pronotum widest at base and gradually broadened from anterior angles to posterior ones; anterior angles entirely rounded. Elytra with intervals fairly sparsely clothed with distinct yellowish golden hairs. 2.1–2.4 mm. ..... *H. oharai* sp. nov.

8(5) Elytra with striae distinct.

9(10) Pronotum with basal portion transversely depressed arranging crescent-shaped; longitudinal punctures. Elytra with intervals very sparsely clothed with fairly short hairs on the posterior portion. 2.0 mm. ..... *H. discoidalis* PAULIAN

10(9)Pronotum with basal portion only slightly depressed at the middle as a fairly small triangular depression, and transversely arranged with fine, fairly long and longitudinal striae. Elytra with intervals sparsely clothed with short hairs on the basal portion. 2.5–2.8 mm. ..... *H. rugatulus* BOUCOMONT

Panelus kalimantanicus sp. nov.

(Figs. 2, 5, 9–11)

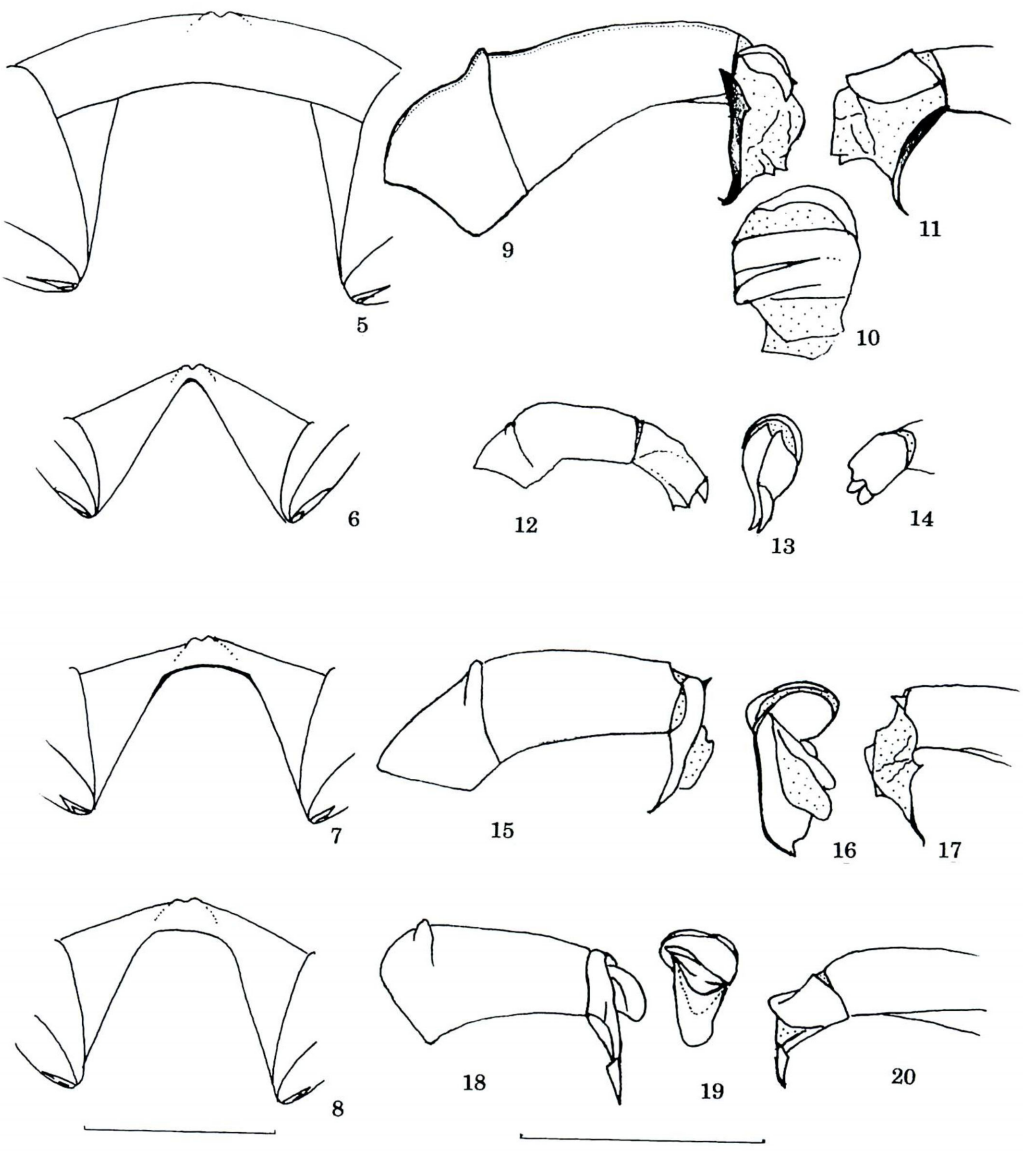
Length: 2.8–3.0 mm; width: 1.8–1.9 mm (n=7).

Body very wide, noticeably short-oval, strongly convex dorsally; dorsal side shining, entirely glabrous; ventral side shining and seemingly almost glabrous, only partly clothed with very minute recumbent hairs. Color blackish brown to dark reddish brown, except for slightly reddish anterior portion of head; mouth parts, palpi, antennae and legs reddish brown.

Male. Head fairly broad, clearly transverse; clypeus strongly produced anteriad and bidentate at the middle, the denticles sharply produced forward, the interspace between them deeply notched in a rather broad U-shape; genae narrow, weakly produced laterad, with genal corner obtusely and roundly angled; genal sutures indistinct, scarcely defined and effaced a little before eyes; frontoclypeal tooth at margin weak, not sharp; surface rather densely and microscorpically finely punctate.

Pronotum transverse, about 1.6 times as wide as long (n=1); anterior margin emarginate; sides angled at apical 1/5, and then straightly and slightly broadened posteriad; anterior angles slightly produced forward, sharp at apex; basal portion transversely and broadly depressed in middle along basal margin, the depression almost impunctate and defined by arcuate line which is slightly irregular; surface smooth, rather sparsely and microscorpically finely punctate in the middle except for either side of basal margin where is arranged with a single transverse row of shallow larger punctures, the punctures becoming finer or almost effaced posteriad.

Elytra fairly broad, strongly rounded in outline, about 1.2 times as wide as long (n=1); striae very finely impressed, with strial punctures barely noticeable though indistinct; intervals flat, smooth, almost impunctate.



Figs. 5–8. Thoraces of *Panelus* spp., ventral view, scale 0.5 mm. —— 5, *Panelus kalimantanicus* sp. nov.; 6, , *Panelus mendeli* sp. nov.; 7, *Panelus brendelli* sp. nov.; 8, *Panelus danumensis* sp. nov. Figs. 9–20. Male genitalia of *Panelus* spp., scale 0.5 mm. —— Figs. 9–20. Aedeagi of *Panelus* spp. *Panelus kalimantanicus* sp. nov.; 9, aedeagus, right lateral view; 10, parameres, dorsal view; 11, ditto, left lateral view; 12–14, *Panelus mendeli* sp. nov.; 12, aede-agus, right lateral view; 13, parameres, dorsal view; 14, ditto, left lateral view; 15–17, *Panelus brendelli* sp. nov.; 15, aedeagus, right lateral view; 16, parameres, dorsal view; 17, ditto, left lateral view; 18–-20, *Panelus danumensis* sp. nov.; 18, aedeagus, right lateral view; 19, parameres, dorsal view; 20, ditto, left lateral view.

Pygidium convex near apex, rather sparsely covered with distinct punctures. Metasternum: Metasternal shield somewhat quadrate in outline, impunctate in the middle, distinctly punctate on either lateral portion, with anterior margin remarkably broader than in the related species. Protibi-

ae elongate, weakly curved in middle, with three external teeth weak, almost same in length.

Aedeagus. Phallobase rather elongate, slightly twisted, 0.75 mm in length (n=1), 0.25 mm in apical width (n=1). Parameres clearly asymmetrical, 0.30 mm in length in lateral view (n=1); membraneous areas well developed on both lateral portions in lateral view, dorsal sclerotized plate-like part well visible in dorsal view.

Type series. Holotype: ♂, Busang, Rekut confl., 0°03'S, 113°59'E, Kalimantan, Indonesia, VIII. 2001, by [FIT], "Barit Ulu 2001", BRENDELL/ MENDEL leg., BMNH(E). Paratypes: 3 exs., ditto; 3♀♀, Balikpapan, Kalimantan, Indonesia, XII. 2005.

Type depository. BM (Natural History Museum, London).

Distribution. Borneo (Kalimantan).

Etymology. The specific name is taken from the locality, Kalimantan.

Notes. The present new species is very unique and easily distinguishable from the other known species in having the remarkably short-oval body, and the noticeably broad anterior margin of metasternal shield.

Panelus mendeli sp. nov.

(Figs. 3, 6, 12–14)

Length: 1.9–2.2 mm; width: 1.1–1.5 mm (n=55).

Body oval though rather elongate and distinctly narrower than Bornean related species, strongly convex dorsally; dorsal side strongly shining, sparsely clothed with recumbent minute hairs; ventral side shining and partly clothed with very minute recumbent hairs. Color dark reddish brown, occasionally light brown, partly a little darkened; mouth parts, palpi, antennae and legs reddish brown.

Head wider than long; clypeus strongly produced anteriad and bi-dentate at the middle, the denticles sharply produced forward, the interspace between them deeply notched in a broad U-shape; genae slightly produced laterad, with genal corners obtusely but clearly angled; genal sutures distinct, finely defined and effaced before the level of eyes; surface somewhat sparsely and fairly finely punctate.

Pronotum transverse and distinctly narrow, about 1.7 times as wide as long (n=1); anterior angles sharp; lateral margins gradually and straightly narrowed toward apex, and then obtusely angled at anterior 1/5; base clearly and broadly depressed in middle, the depression smooth, scarcely punctate and defined by a fine suture in front which is obtusely angled at the middle; surface somewhat sparsely covered with fine punctures.

Elytra oval in outline, about 1.1 times as wide as long (n=1), distinctly narrow, widest at basal fifth; striae weakly impressed; intervals flat, sparsely and microscorpically finely punctate.

Pygidium convex near apex, rather sparsely covered with distinct punctures. Metasternal shield clearly narrower than in the related species, impunctate in the middle, finely punctate along either lateral margin, with anterior margin acutely angled at apex in outline. Protibiae elongate, weakly curved in middle, with three weak external teeth.

Aedeagus. Phallobase elongate, slightly twisted, 0.40 mm in length (n=1), 0.15 mm in apical width (n=1). Parameres obviously asymmetrical, 0.20 mm in length in lateral view (n=1), with apices well visible and sharply projected downward in dorsal view.

Type series. Holotype: ♂, Busang, Rekut confl., 0°03'S, 113°59'E, Kalimantan, Indonesia,

VIII. 2001, by [FIT], "Barit Ulu 2001", BRENDELL/ MENDEL leg., BMNH(E). Paratypes: 54 exs., the same data as the holotype.

Type depository. BM (Natural History Museum, London).

Distribution. Borneo (Kalimantan).

Etymology. Name of the present species is dedicated to Mr. Howard MENDEL, the Natural History Museum, London, who collected the holotype.

Notes. The present new species is somewhat related to *Panelus sabahi* PAULIAN from Sabah State, Northern Borneo, but can be distinguished from the latter by the following characters: 1) anterior margin of metasternal shield is acutely angled at apex, whereas in *O. sabahi*, it is more broadly angled; 2) metasternal shield is distinctly punctate in the middle, whereas in *O. sabahi*, it is almost impunctate in the middle; 3) basal transverse depression of pronotum is distinctly defined by suture in front, whereas in *O. sabahi*, it is not defined by distinct suture in front.

Panelus brendelli sp. nov.

(Figs. 4, 7, 15–17)

Length: 2.1–2.7 mm; width: 1.4–1.1.5 mm (n=9).

Body rather broadly oval, slightly broader than the preceding species, strongly convex dorsally; dorsal side strongly shining, sparsely clothed with recumbent minute hairs; ventral side shining and partly clothed with very minute recumbent hairs. Color dark brown to reddish black, sometimes slightly more reddish; mouth parts, palpi, antennae and legs reddish brown.

Head slightly wider than the preceding species; clypeus strongly produced anteriad and bidentate at the middle, the denticles sharp, the interspace between them deeply and broadly notched in an opened U-shape; genae weakly produced laterad, with genal corner obtusely but clearly angled; genal sutures distinct, finely defined and effaced before the level of eyes; surface sparsely and finely punctate.

Pronotum transverse, about 1.7 times as wide as long (n=1); anterior angles sharp; lateral margins gradually and straightly narrow toward apex, and then obtusely angled at apical 1/5; base distinctly and broadly depressed, the depression narrower than the preceding two species, smooth and scarcely punctate in the middle, and defined by a fine suture or several duplicate and very fine transverse lines in front; surface moderately covered with fine punctures.

Elytra rather broadly oval in outline, about 1.1 times as wide as long (n=1), widest at basal third; striae feebly impressed; intervals flat, sparsely and finely punctate.

Pygidium convex near apex, rather sparsely covered with small punctures. Metasternum: metasternal shield sparsely and finely punctate in the middle, impunctate in front, with anterior margin broadly arched. Protibiae elongate, weakly curved in middle, with three weak external teeth; 1st tooth larger than the remaining teeth.

Aedeagus. Phallobase elongate, slightly twisted, 0.55 mm in length (n=1), 0.20 mm in apical width (n=1). Parameres entirely asymmetrical, 0.30 mm in length in lateral view (n=1); right side with sclerotized area broadly developed in right lateral view and left side almost membraneous in left lateral view, apex sharply projected in lateral view.

Type series. Holotype: ♂, Busang, Rekut confl., 0°03'S, 113°59'E, Kalimantan, Indonesia, VIII. 2001, by [FIT], "Barit Ulu 2001", BRENDELL/ MENDEL leg., BMNH(E). Paratypes: 8 exs.,

the same data as the holotype.

Type depository. BM (Natural History Museum, London).

Distribution. Borneo (Kalimantan).

Etymology. The present species is dedicated to Mr. M. J. D. BRENDELL, former Collections Manager at BMNH for his warm companionship.

Notes. The present new species is closely related to the preceding species, but can be distinguished from the latter by the following characters: 1) body is clearly larger and broadly oval in outline; 2) anterior margin of metasternal shield is broadly arched, whereas in the preceding species, it is very narrow and acutely angled at apex in outline; 3) male genitalia are obviously different in shape.

Panelus danumensis sp. nov.

(Figs. 8, 18–20)

Length: 2.1–2.6 mm; width: 1.4–1.7 mm (n=5).

Very similar to the preceding species. Body fairly broadly oval, strongly convex above; dorsal side strongly shining and smooth, sparsely clothed with recumbent unnoticeable minute hairs; ventral side shining and partly clothed with very minute similar hairs as those on dorsum. Color reddish black to brownish black, sometimes slightly more reddish in part; mouth parts, palpi, antennae and legs reddish brown.

Head wider than long; clypeus strongly produced forward and bi-dentate at the middle, the denticles distinctly sharp, the interspace between them deeply and broadly notched in open U-shape; genae weakly produced laterad, with genal corner rounded; genal sutures distinct, finely defined and effaced before the level of eyes; surface sparsely and fairly finely punctate.

Pronotum transverse, distinctly wide, about 1.6 times as wide as long (n=1); anterior angles sharp; lateral margins gradually and straightly narrowed anteriad, and then obtusely angled at anterior 1/5; base distinctly and broadly depressed in middle, the depression slightly broader than the preceding species, smooth and impunctate in the middle, very weakly or vaguely punctate as a transversely arranged punctures row on either side, and defined by a fine arched suture in front; surface sparsely and very finely punctate.

Elytra broadly oval in outline, about 1.1 times as wide as long (n=1), widest at the middle; striae shallowly but distinctly impressed; intervals flat, sparsely and microscorpically finely punctate.

Pygidium convex near apex, somewhat sparsely covered with small punctures. Metasternal shield almost impunctate except for baso-lateral portions where are sparsely and finely punctate, with anterior margin broadly arched as well as in the preceding species. Protibiae elongate, weakly curved in middle, with three weak external teeth; 1st tooth fairly sharp.

Aedeagus. Phallobase rather robust, slightly twisted, 0.45 mm in length (n=1), 0.18 mm in apical width (n=1). Parameres completely asymmetrical, 0.28 mm in length in lateral view (n=1); right side with sclerotized area broadly developed in right lateral view and left side with membraneous area slightly visible in left lateral view, apex sharply projected in lateral view.

Type series. Holotype: ♂, Danum Valley, 4°58'N, 117°47'E, Sabah, Borneo, VI. 1999, by [FIT], BMNH{E}, 2005-177, H. MENDEL leg. Paratypes: 4 exs., the same data as the holotype.

Type depository. BM (Natural History Museum, London).

Distribution. Borneo (Sabah).

Etymology. The species is named after the type locality, Danum Valley.

Notes. The present new species is closely related to the preceding species, but can be distinguished from the latter by the following points: 1) head and pronotum are very finely punctate, whereas in the preceding species, they are finely but distinctly punctate; 2) the baso-median portion of pronotum is clearly broader than in the preceding species; 3) male genitalia are shorter with parameres entirely different in shape.

Acknowledgments

We wish to express our cordial thanks to Drs. A. UEDA and M. OHARA for giving us opportunities to examine invaluable specimens.

要　　約

越智 輝雄・近 雅博・V. L. BARCLAY：ボルネオ産 *Haroldius* 属の1新種と *Panelus* 属の4新種の記載．——ボルネオより *Haroldius* 属の1新種を記載し，ボルネオ産 *Haroldius* 属の種の検索表も加えた．また，ロンドンの自然史博物館の標本に基づき *Panelus* 属の4新種の記載をした．

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New or Little-known Tenebrionid Species (Coleoptera) from Japan (9)

Two New Species and a New Distribution Record from Japan

Katsumi AKITA
Hisai-iba-chô 66, D–304, Tsu City, Mie Pref., 514–1108 Japan

and

Kimio MASUMOTO
Institute of Human Culture Studies, Otsuma Women's University,
Tokyo, 102–8357 Japan

Abstract Two new tenebrionid species are described from Japan under the names *Arthromacra arimotoi* sp. nov. and *Corticeus* (*Tylophloeus*) *inadai* sp. nov. *Corticeus* (*Pogonophloeus*) *exiguus* BREMER, 1998 is newly recorded from Japan. Correction of the synonymic lists by AKITA and MASUMOTO (2007) concerning *Arthromacra sumptuosa* LEWIS, 1895 and *A. higoniae* LEWIS, 1895 is also given.

In the continuous study on the Japanese tenebrionid species, we had an opportunity of examining three unknown species. One of them, from the Oomine Mountains of Nara Prefecture, belongs to the genus *Arthromacra* of the subfamily Lagriinae. Another species from Okinawa-jima Island, Ryukyu Islands is a *Corticeus* species of the subfamily Diaperinae. After a careful study, we have concluded that they are new to science. The other species from Kagoshima Prefecture, Kyushu, also belongs to *Corticeus*. We asked Dr. Hans J. BREMER in Germany for his opinion concerning these two *Corticeus*. He kindly suggested that one of them is a named species collected from Thailand.

In this paper, we are going to describe two new species and report one new record, all of which are new members to the fauna of Japan. Additionally, we are going to correct synonymic lists by AKITA and MASUMOTO (2007) of *Arthromacra sumptuosa* LEWIS, 1895 and *A. higoniae* LEWIS, 1895.

Before going further in details, we wish to express cordial thanks to Messrs. Yukihiko HIRANO (Kanagawa), Hisayuki ARIMOTO (Osaka), Satoshi INADA (Okinawa), Nobuo SANO (Kagawa), Takashi OGASAWARA (Kanagawa), Akihiro SEKI (Tokyo), Yoshiyuki ITÔ (Kôchi) and Dr. Syôzô ÔSAWA (Hiroshima) for offering the materials. Special thanks should be expressed to Dr. Hans J. BREMER, Melle, Germany, for giving invaluable information about unknown *Corticeus*. We also appreciate Dr. Makoto KIUCHI, Tsukuba City, for taking photographs inserted in the present paper.

The holotypes to be described and the material determined as a newly recorded species from

Japan will be deposited in the collection of the National Museum of Nature and Science, Tokyo (NSMT).

Subfamily Lagriinae

Arthromacra arimotoi sp. nov.

[Japanese name: Oomine-oo-aohamushidamashi]

(Figs. 1, 2, 6, 10 & 11)

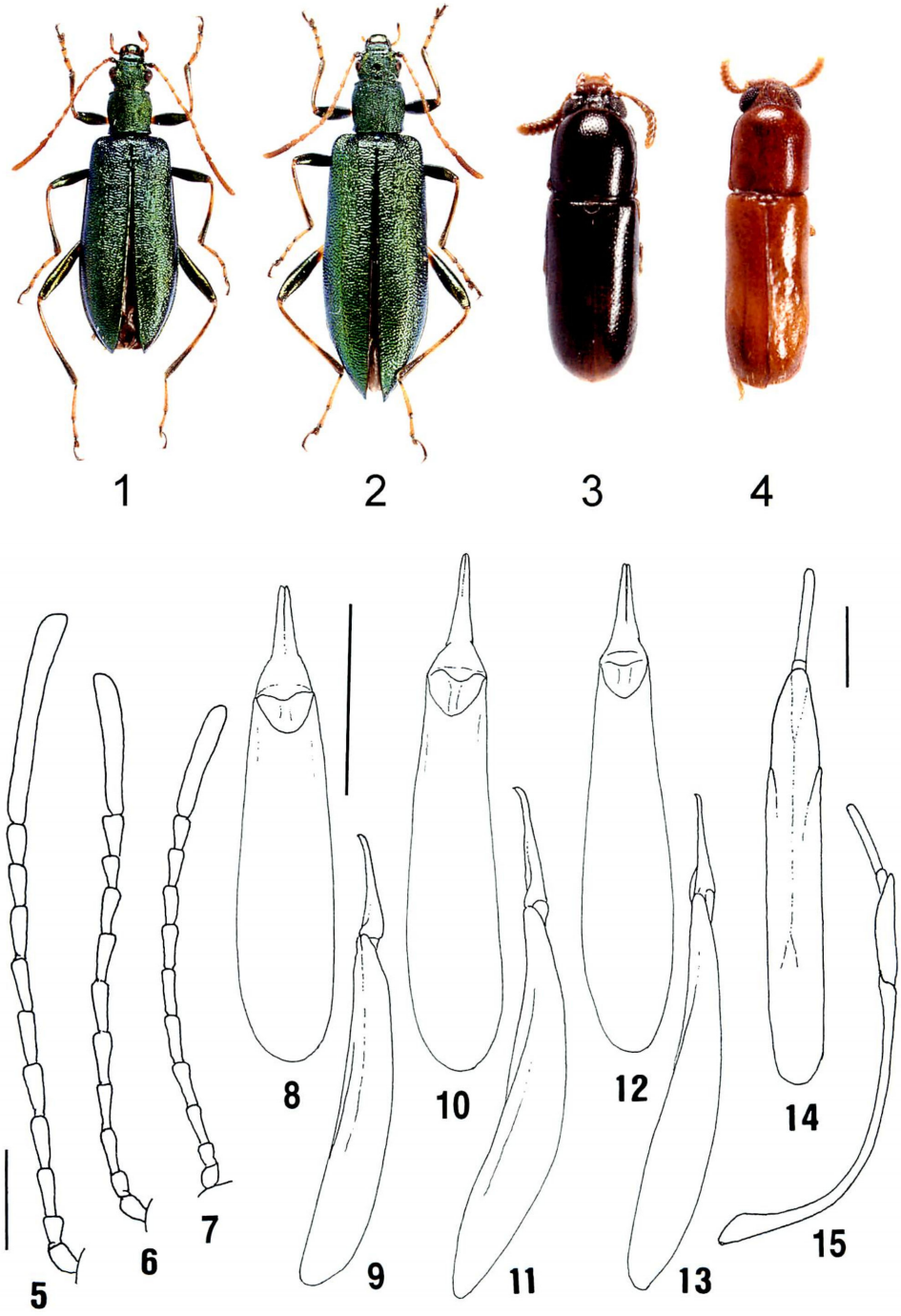
Dark metallic green with partly dark brown, labrum, head, pronotum, scutellum and elytra bright metallic green, antennae, basal halves of tibiae, and tarsi testaceous, claw brownish black, major parts of femora, apical halves of tibiae dark green with feeble brassy reflexion; body coloration varies by individuals, e.g. dorsal surface wholly reddish coppery in some individuals, posterior part of head and pronotum weakly reddish purple, and scutellum and elytra light green with feeble reddish purple in other individual; dorsal surface sparsely haired, antennae and legs rather densely, finely haired, ventral surface more densely haired than dorsal surface. Body elongate, subparallel-sided, gently convex and weakly flattened longitudinally.

Head subdecagonal, covered with isodiametric microsculpture; clypeus transversely oblong, gently convex in middle, rather closely punctate, fronto-clypeal border rather strongly impressed and curved; genae subrhombic, strongly raised and forming short ridges, rugoso-punctate, posterior parts before eyes depressed; frons rather widely flattened in middle, gently declined to fronto-clypeal border, rather strongly, closely punctate, diatone (=distance between eyes) about 4 times the width of transverse diameter of an eye, areas behind eyes with rather long, erect hairs. Eyes somewhat transversely comma-shaped, rather strongly convex laterad, noticeably raised dorsad in interior parts, which are gently inlaid into head. Antennae subfiliform, reaching basal 1/3 of elytra, 10th segment the widest, ratio of the length of each segment from base to apex: 0.30, 0.17, 0.38, 0.41, 0.41, 0.42, 0.39, 0.38, 0.29, 0.31, 1.34.

Pronotum subquadrate with rounded sides, slightly wider than long, widest before the middle and at the base; apex sublinear widely in middle, gently curved in lateral parts, finely, clearly ridged; base sublinear, very slightly sinuous on both sides, gently ridged; front angles roundly produced laterad and hind angles acutely, more strongly produced than the front angles; sides steeply inclined and roundly produced laterad, noticeably sinuous before base, weakly narrowed behind apex, the border of ventral parts not defined; disc gently convex, covered with isodiametric microsculpture, closely rugoso-punctate, impressed at the middle on both sides. Scutellum sublinguiform, weakly raised, feebly covered with isodiametric microsculpture in basal part, sparsely scattered with minute punctures and slightly aciculate.

Elytra subparallel-sided, about 2.2 times as long as wide, 5.2 times the length and 2.1 times the width of pronotum, widest at apical 3/7; dorsum moderately convex, feebly flattened medially, very weakly depressed in medio-basal and medio-posterior parts, highest at basal 2/7; disc gently, rather longitudinally convex, weakly covered with isodiametric microsculpture, rather transversely, finely ruguloso-punctate, sparsely clothed with fine, long hairs; humeri weakly swollen; apices feebly, roundly produced.

Prosternum medium-sized, rather sparsely, irregularly punctate, transversely aciculate, raised posteriad, inter-procoxal area narrow, prosternal process depressed and rather spatulate; mesosternum short, rather transversely wrinkled, depressed in area before and mesocoxal cavities, which are gently raised and weakly, rather longitudinally wrinkled; metasternum mediun-



Figs. 1–15. *Arthromacra* spp. and *Corticeus* spp.; 1–4, habitus; 5–7, antennae; 8, 10, 12 & 14, male genitalia (dorsal view); 9, 11, 13 & 15, same (lateral view).—— 1, 6, 10 & 11, *Arthromacra arimotoi* sp. nov., holotype, ♂; 2, same, paratype, ♀; 3, 14 & 15, *Corticeus* (*Tylophloeus*) *inadai* sp. nov., holotype, ♂; 4, *C.* (*Pogonophloeus*) *exiguus* BREMER, ♀; 5, 8 & 9, *A. majuscula* NAKANE, ♂; 7, 12 & 13, *A. shiraishii* IMASAKA, ♂. Scales: 1.0 mm for 5–13, 0.1 mm for 14 &15.

sized, weakly convex in medio-posterior part, scattered with small punctures, transversely wrinkled, covered with rather long fine hairs, closely punctate in lateral parts, with a medial groove in posterior 4/5. Abdomen rather long, very weakly covered with isodiametric microsculpture, gently covered with punctures and rather long hairs, the former often with transverse aciculations; anal sternite feebly emarginate at apex.

Legs rather slender; each femur gently becoming bolder behind the middle, each tibiae weakly becoming bolder apicad, male protibia feebly curved ventrad, with ventral face haired, the hairs becoming longer apicad; male mesotibia gently curved, with intero-ventral face haired, the hairs becoming denser apicad; male metatibia weakly curved interad and dorsad, with interior face haired, the hairs becoming denser apicad; tarsi rather long and large, the penultimate segments inversed subcordate, ratios of the lengths of pro-, meso- and metatarsal segments: 0.53, 0.39, 0.35, 0.31, 0.56; 0.68, 0.37, 0.28, 0.26, 0.46; 1.23, 0.53, 0.27, 0.52.

Male genitalia elongated subfusiform, weakly curved in lateral view, 2.65 mm in length and 0.48 mm in width; basal piece elongated subovate, 2.28 mm, widest at basal 2/5 in dorsal view; fused lateral lobes small, elongated triangular, 0.60 mm in length, finely punctate in apical parts, with apices acutely prolonged.

Body length: 10.1 - 12.3mm.

Holotype. ♂, "Mt. Misen 1,895m alt. / Mts. Ômine Tenkawa-mura / Yoshino-gun / Nara Pref. Japan / 8. VII. 2007, Hisayuki ARIMOTO leg. // K. AKITA / Collection / KAC 35871" (NSMT). Paratypes: 10♂♂, 2♀♀, Mt. Misen, Okukakemichi, 1,600–1,800m alt., 8. VII. 2007, Hisayuki ARIMOTO leg.; 2♀♀, Mt. Misen, 1,100–1,800m, 12. VII. 1988, Katsumi AKITA leg.; 2♂♂, Mt. Misen, 1,800–1,900m, 16. VII. 2007, Hisayuki ARIMOTO leg.; 26♂♂, 8♀♀, Ôkamidaira–Mt. Misen, 1,700–1,890m, 1. VII. 2008, Hisayuki ARIMOTO leg.; 7♂♂, 5♀♀, Mt. Misen, 1,895m, 6. VII. 2008, Hisayuki ARIMOTO leg.; 80♂♂, 19♀♀, Mt. Misen~Mt. Hakkyôga-take, 1,800–1,915m, 5–6. VII. 2008, Katsumi AKITA leg.

Distribution. Honshu: Kii Peninsula (Oomine Mts.)

Notes. This new species closely resembles *Arthromacra majuscula* NAKANE, 1994, distributed in Honshu (Kantô to Chûbu Districts), and *A. shiraishii* IMASAKA, 2005, distributed in Shikoku (Tsurugi-san and Ishizuchi-san Mountain Ranges), but can be distinguished from *A. majuscula* by the body smaller and slenderer, and the terminal segment of antenna shorter, 1.04–1.37 times in male and 0.92–0.96 times in female the lengths of three preceding segments combined. From *A. shiraishii*, this new species can be distinguished by the body larger, the head and pronotum more closely and strongly punctate, and the male genitalia different in shape.

This species is endemic on summits of the Oomine Mountains in the Kii Peninsula, and the adults are found on the flowers of *Sorbus commixta* HEDL.

IMASAKA (2005, p. 116) mentioned a population of *A. majuscula* in the Kii Peninsula and showed the habitus in Figs. 17 and 18 of the plate 19, which should be the present new species.

The specific name is given in honor of Mr. Hisayuki ARIMOTO, who collected the type specimens.

Arthromacra sumptuosa LEWIS, 1895

Arthromacra sumptuosa LEWIS, 1895, Ann. Mag. nat. Hist., (6), 15: 277, (Chiuzenji).

Arthromacra decora: MASUMOTO, 1987, Ent. Rev. Japan, Osaka, 42 (suppl.): 46. [partim, nec MARSEUL,

1876].

Arthromacra sumptosa: IMASAKA, 2005, Misc. Rept. Hiwa Mus. nat Hist., (44): 94. [nec LEWIS, 1895].

Arthromacra higoniae: IMASAKA, 2005, Misc. Rept. Hiwa Mus. nat Hist., (44): 95 [nec LEWIS, 1895]

Notes. In our previous paper (2007, p. 542), we made some errors in the synonymic lists of "*Arthromacra sumptuosa* LEWIS, 1895", and "*A. higoniae* LEWIS, 1895". We herewith correct them as follows: "*Arthromacra viridissima*" (2nd line of p. 542) to "*A. sumptosa*", and newly insert "*Arthromacra higoniae*: IMASAKA, 2005, Misc. Rept. Hiwa Mus. nat. Hist., (44): 95 [nec LEWIS, 1895]" in the next line.

We also have to omit the part of "*Arthromacra higoniae* LEWIS, 1895" from 21st to 30th lines. *Arthromacra higoniae* was downgraded to a junior synonym of *A. sumptuosa* by IMASAKA (2005) and we fully agreed with his treatment.

Subfamily Diaperinae

Corticeus* (*Tylophloeus*) *inadai sp. nov.

[Japanese name: Kurochibi-hoso-gomimushidamashi]

(Figs. 3, 14 & 15)

Blackish brown, apical parts of elytra lighter in colour, antennae dark reddish yellow, tarsi pale brown; dorsal surface moderately and feebly vitreously shining, antennae mat, pro-, and mesosterna and anterior parts of metasterunum weakly shining, posterior part of metasternum and abdomen gently shining; each surface, except for antennae, tibiae and tarsi, almost glabrous. Body robust, subcylindrical.

Head somewhat trapezoidal, very weakly covered with isodiametric microsculpture; clypeus transversely oblong, rather closely punctate, longitudinally raised in middle, ridged along lateral margins, feebly roundly produced apicad, with fronto-clypeal border weakly, roundly sulcate; genae (areas before eyes) small, very sparsely scattered with minute punctures, with outer margins obliquely rounded; frons somewhat transversely X-shaped, steeply inclined anteriad, scattered with small punctures, with a swelling at the middle, which is closely punctulate; diatone about twice the width of the transverse diameter of an eye, areas behind eyes depressed. Eyes rather large, oblique and subovate, strongly convex antero-laterad, sharrowly inlaid into head. Antennae subclavate, reaching basal 1/4 of pronotum, 5th to 10th segments widened to each apex, 11th subovate, 6th the widest, ratio of the length of each segment from base to apex: 0.05, 0.04, 0.05, 0.03, 0.06, 0.06, 0.07, 0.06, 0.07, 0.06, 0.09.

Pronotum subquadrate, very slightly longer than wide; apex produced anteriad, very slightly sinuous and finely rimmed in lateral parts; base very feebly produced widely in middle, slightly bisinuous in lateral parts, clearly bordered and rimmed; sides steeply inclined and gently convex laterad, widest at the middle, clearly bordered and finely rimmed, the rims invisible from above in middle due to lateral convexities; front and hind angles obtusely angular; disc strongly convex, very weakly covered with isodiametric microsculputure, rather closely punctate, the punctures somewhat longitudinally ovate. Scutellum rather transversely subpentagonal, weakly depressed, scattered with fine punctures in basal part.

Elytra subparallel-sided, about 1.9 times as long as wide, slightly less than twice the length

and feebly narrower than the width of pronotum, widest at apical 1/3, very feebly narrowed at basal 1/3; dorsum strongly convex longitudinally, highest in the middle, very weakly depressed at basal 1/3; disc with rows of small punctures, which are rather closely set and partly connected with one another by fine striae; intervals very feebly convex, scattered with small punctures, which are similar in size of the punctures in rows; humeri gently swollen; apices simply rounded.

Prosternum rather wide, raised in medial part from near apex to intercoxal space, very weakly covered with isodiametric microsculpture, scattered with minute punctures, which are often involved in weak rugulosities in anterior part, apex widely emarginate, prosternal process steeply declined to widened and subtruncate apex; mesosternum rather short, weakly depressed and closely punctate in anterior part, the punctures often longitudinally fused with one another in posterior part, posterior part (anterior area between mesocoxal cavities) gently raised, almost impunctate; metasternum medium-sized, gently convex widely in middle, very weakly covered with isodiametric microsculpture, sparsely scattered with minute punctures, sparsely transversely micro-aciculate, longitudinally impressed along median line in posterior half, strongly, rather triangularly depressed close to posterior margin, with anterior part (posterior area between mesocoxal cavities) weakly depressed, coarsely rugoso-punctate. Abdomen medium-sized, weakly covered with isodiametric microsculpture, scattered with fine punctures, which are somewhat transverse and becoming larger and stronger in two apical sternites, 3rd sternite with lateral margin produced laterad, 4th and anal sternites depressed in lateral parts with raised lateral margins; anal sternite with rounded apex.

Legs rather short; femora becoming bolder anteriad; protibia nearly straight, with exterior margin rather noticeably widened apicad, apico-external corner acutely toothed; mesotibia rather simply becoming bolder apicad and densely haired; metatibia more noticeably becoming bolder than mesotibia, densely haired, weakly curved interad near base, and very weakly curved exteriad in posterior part; ratios of the lengths of pro-, meso- and metatarsal segments: 0.06, 0.04, 0.03, 0.5, 0.10; 0.4, 0.03, 0.03, 0.3, 0.10; -, -, -, - (metatarsi lost in the holotype).

Male genitalia elongate, 0.54 mm in length, 0.08 mm in width; basal piece very strongly flattened, strongly curved at posterior 1/3 in lateral view; lateral lobes elongated linguiform, flattened, 0.14 mm in length, with penis constantly exposed from apices.

Body length: 2.2 mm.

Holotype. ♂, "JAPAN; Ryukyus / Okinawa-jima Is. / Okinawa-shi / Kurashiki, 15. V. 1998 / Satoshi INADA leg. // Katsumi AKITA / Collection / KAC 13212" (NSMT).

Distribution. Ryukyu Islands: Okinawa-jima Is.

Notes. This new species closely resembles *Corticeus gentilis* (LEWIS, 1894), originally described from "Yokohama", but can be distinguished from it by the body obviously smaller and darker in colour, 5th to 10th segments of antenna more strongly widened to each apex, the pronotum very slightly longer than wide (wider than long in *C. gentilis*), and male genitalia different in shape.

The specific name is given in honor of Mr. Satoshi INADA, who collected the type material.

Corticeus (*Pogonophloeus*) *exiguus* BREMER, 1998

[Japanese name: Satsuma-hoso-gomimushidamashi]

(Fig. 4)

Corticeus (*Pogonophloeus*) *exiguus* BREMER, 1998, Acta Coleopterologica 14: 13. (Thailand, Huay Yang Natn. Park, Huang Yang Waterfall, Thap Sake Dist.)

Notes. The specimen was collected by Mr. Yukihiko HIRANO from Kagoshima Pref. It is about 2.5 mm in length, and the head and posterior parts of the elytra are covered with fine hairs. Dr. H. J. BREMER suggested us it is presumably *Corticeus exiguus* BREMER, 1998, originally described from Thailand. He (1998) erected the subgenus *Pogonophloeus* for *C. exiguus*. The most important characteristic of the member of this genus is the haired dorsal surface.

Specimen examined: 1♀; "Kusamichi / Satsuma-Sendai / Kagoshima Pref. / 18. VII. 2008. / Y. HIRANO leg."

要　　約

秋田 勝己・益本 仁雄：日本産ゴミムシダマシ科甲虫の新種・稀少種（第９報）・２新種と１日本新記録種. ——— 紀伊半島大峰山脈の亜高山帯から，ハムシダマシ亜科ハムシダマシ族の新種 *Arthromacra arimotoi* sp. nov. オオミネオオアオハムシダマシ，沖縄島からキノコゴミムシダマシ亜科ホソゴミムシダマシ族の新種 *Corticeus* (*Tylophloeus*) *inadai* sp. nov. クロチビホソゴミムシダマシを命名記載した．また，鹿児島県薩摩川内市で採集された *Corticeus* ホソゴミムシダマシ属の不明種は，日本から未記録の種で，タイから記載された *Corticeus* (*Pogonophloeus*) *exiguus* BREMER, 1998であることが判明したのでサツマホソゴミムシダマシの和名をつけて記録した．さらに AKITA & MASUMOTO (2007)の *Arthromacra sumptuosa* LEWIS, 1895アカハムシダマシおよび *Arthromacra higoniae* LEWIS, 1895ヒゴアオハムシダマシのシノニミックリストの誤りの訂正と削除を行った．なお，大峰山脈では，環境省近畿地方環境事務所から採集許可を取ったうえで採集を行った．

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Entomological Review of Japan, **64** (2): 255–257, Nov. 30, 2009

A New *Strongylium* (Tenebrionidae: Stenochiini) Species from Bhutan

Katsumi AKITA
Hisai-iba-chô 66, D-304, Tsu City, Mie Pref., 514–1108 Japan

and

Kimio MASUMOTO
Institute of Human Culture Studies, Otsuma Women's University,
Tokyo, 102–8357 Japan

Abstract *Strongylium yoroi* sp. nov. is described from near Tashigan, Bhutan.

Dr. Takeshi YORO is one of the old entomological friends of us. One day he handed us an unknown *Strongylium* species collected from Bhutan. Since then, we have been examining it and just concluded that it is new to science. In this paper we are going to describe it as a new species.

Before going further in details, we wish to express cordial thanks to Dr. Takeshi YORO, Kamakura City. We also appreciate Dr. Makoto KIUCHI, Tsukuba City, for taking the photographs inserted in the present paper.

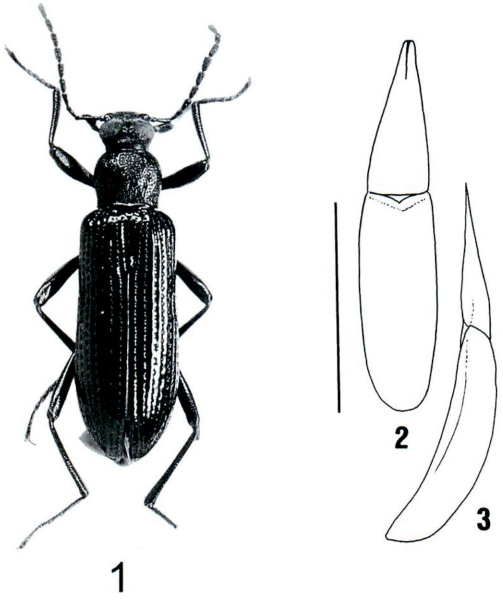
The holotype will be deposited in the collection of the National Museum of Nature and Science, Tokyo (NSMT).

Strongylium yoroi sp. nov.

(Figs. 1–3)

Brownish black, posterior part of clypeus, terminal segments of antennae and tarsi lighter in colour; head and antennae almost mat, pronotum moderately, somewhat vitreously shining, scutellum and elytra rather strongly, vitreously shining, ventral sides weakly, somewhat alutaceously shining; dorsal surface almost glabrous, ventral surface partly, sparsely covered with minute hairs. Body elongated fusiform, subparallel-sided, convex longitudinally.

Head subdecagonal; clypeus semicircular, inclined apicad, bent ventrad in apical part, and truncate in front, closely punctate, the punctures often fused with one another, fronto-clypeal border curved and defined from frons and genae; genae strongly raised antero-exteriad, irregularly punctulate, with outer margins roundly produced; frons somewhat Y-shaped, steeply inclined anteriad, rugoso-punctate, longitudinally impressed between eyes; diatone about 1/5 of



Figs. 1–3. *Strongylium yoroi* sp. nov., holotype, ♂. 1, Habitus; 2, male genitalia (dorsal view); 3, same (lateral view). Scale: 1.0 mm.

the transverse diameter of an eye. Eyes large and transversely subreniform in dorsal view, strongly convex laterad, roundly inlaid into head. Antennae subfiliform, reaching basal 1/3 of elytra, each segment narrow at base and gently widened towards apex, ratio of the length of each segment from base to apex: 0.30, 0.12, 0.41, 0.32, 0.30, 0.31, 0.32, 0.32, 0.31, 0.30, 0.45.

Pronotum subquadrate with rounded sides, about 1.2 times as wide as long, widest slightly before the middle; apex sublinearly rimmed, the rim tapering laterad, scattered with fine punctures; base very weakly bisinuous, rather strongly bordered, boldly ridged, the ridge irregularly scattered with minute punctures; sides steeply inclined and roundly produced laterad, gently sinuous before base, bordered from ventral parts by fine rims, which are invisible from above; front angles rounded in dorsal view, hind angles subrectangular; disc rather strongly convex, rather closely, coarsely and irregularly punctate (the punctures with minute scales, often connected with one another and rugose), depressed in postero-medial part and also depressed in lateral parts close to base, with a pair of somewhat round impressions at the middle. Scutellum subcordate, sparsely and irregularly scattered with punctures in lateral parts.

Elytra elongated subfusiform, about 2.5 times as long as wide, 4.1 times the length and 1.5 times the width of pronotum, widest at apical 2/5, feebly sinuous at basal 3/10; dorsum rather strongly convex, gently and longitudinally flattened in medial part, highest at basal 4/9, weakly depressed along scutellar strioles and first striae in basal 4/9; disc with shallowly grooved rows of punctures, which are deep, subovate, and each with a granule on interior edge and two granules on exterior edge; intervals weakly convex in interior part, rather strongly so and forming ridges in exterior parts (particularly so in 3rd and 5th intervals), often transversely, weakly connected with one another, sparsely scattered with minute punctures; humeri gently swollen; apices feebly, roundly produced.

Prosternum rather short and narrow, finely rimmed and rugulose along apex, rugulosopunctate in anterior part, strongly raised among procoxal cavities, prosternal process triangular and strongly depressed, microscopically wrinkled; mesosternum short and narrow, depressed and ruguloso-punctate in anteror part, rather strongly convex and finely punctate in antero-interior parts around mesocoxal cavities, intercoxal space triangularly depressed; metasternum moderate in size, gently convex, finely punctate and haired in middle, depressed and rugulose in anterior part, coarsely punctate in antero-lateral parts, longitudinally impressed along median line in posterior half. Abdomen closely, finely punctate and haired, lateral margins of each sternite bor-

dered, anal sternite with apex rounded, not bordered, and sparsely pubescent in lateral parts.

Legs rather slender; profemur subclavate, protibia feebly curved ventro-exterad, finely haired in apical 1/3 of ventral face, mesofemur slightly clavate and obviously longer than profemur, mesotibia almost straight and feebly becoming bolder apicad, finely haired in apical half of intero-ventral face, metafemur subclavate and slightly longer than mesofemur, metatibia slightly curved dorsad, finely haired in apical half of interior face; tarsi slender, ratios of the lengths of pro-, meso- and metatarsal segments: 0.30, 0.22, 0.23, 0.21, 0.64; 0.66, 0.30, 0.24, 0.20, 0.68; 0.45, 0.28, 0.24, 0.74.

Male genitalia subfusiform, 1.76 mm in length and 0.39 mm in width, gently curved in lateral view; basal piece elongated ovate in dorsal view, weakly curved in lateral view; fused lateral lobes elongated triangular, 0.80 mm in length, finely punctate in anterior part, with prolonged apices.

Body length: 8.6 mm.

Holotype. ♂, "near Tashigan / Bhutan / alt. 1,400–2,000m / July 2–4. 2005 / Takeshi YORO leg. // Katsumi AKITA / Collection / KAC 14194" (NSMT).

Notes. This new species resembles *Strongylium metallescens* DOHRN, 1880, in having elytral punctures subovates, with tubercles on upper edges, but can be distinguished from the latter by the slightly slenderer body, with the head longitudinally impressed medially, the eyes larger and approximate with each other, more convex laterad, the pronotum more irregularly, often rugoso-punctate, and the elytra noticeably depressed medially, more strongly grooved, punctures more closely set, and intervals more strongly convex.

The specific name is given in honor of Dr. Takeshi YORO, who collected the type material.

要　　約

秋田勝己・益本仁雄：ブータン産ナガキマワリ属の１新種．――養老孟司博士によってブータン高地で採集されたゴミムシダマシ科ナガキマワリ属の種が，新種であったので，*Strongylium yoroi* sp. nov. として命名記載した．

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Revision of the Genus *Foochounus* PIC, 1921 (Coleoptera: Tenebrionidae) from the Oriental Region

Wolfgang SCHAWALLER*
Staatliches Museum für Naturkunde, Rosenstein 1, D–70191 Stuttgart, Germany

and

Kiyoshi ANDO
Entomological Laboratory, Faculty of Agriculture, Ehime University,
5–7, Tarumi 3–chome, Matsuyama, 790–8566 Japan

* Contributions to Tenebrionidae no. 79: For no.78 see: *Annals of the Transvaal Museum*, **46**, 2009.

Abstract The genus *Foochounus* PIC, 1921 (syn. *Anobriomaia* KASZAB, 1941; syn. *Microcameria* REN, 1998) (subfamily Stenochiinae KIRBY, 1837; tribe Cnodalonini GISTEL, 1856) from the Oriental Region is revised. The genus *Chariophenus* BLAIR, 1929 is recognized as a new synonym, and all species are transferred herein to *Foochounus*. Six new species are described: *Foochounus abditus* sp. nov. (Vietnam), *F. confusus* sp. nov. (Sikkim, Bhutan), *F. laoticus* sp. nov. (Laos), *F. niger* sp. nov. (Borneo/Sabah), *F. thailandicus* sp. nov. (Thailand), *F. yamasakoi* sp. nov. (Thailand, Laos, Vietnam). New synonyms are proposed, lectotypes are designated and new records are listed. Two taxa described by PIC remain doubtful.

Key words: Coleoptera, Tenebrionidae, *Foochounus*, *Chariophenus*, new species, new synonyms, new combinations.

Introduction

Since years we have at hands a large series of a blackish species of the genus *Foochounus* PIC, 1921 from Borneo, being undescribed so far. This taxon induced us to revise the complete genus (subfamily Stenochiinae KIRBY, 1837; tribe Cnodalonini GISTEL, 1856), distributed in the Oriental Region. The corresponding taxa have been described in different publications (PIC 1921; BLAIR 1929, 1930; KASZAB 1965a, 1965b; REN 1998; SCHAWALLER 2000; MASUMOTO, AKITA & LEE 2008). In the course of the present study, we describe 6 new species and establish new combinations and synonymies. Now, 16 species are considered as valid within the genus

Foochounus, 2 additional taxa described by PIC still remain doubtful.

CEVB	Collection Dr. Eduard VIVES, Museu Zoologia, Barcelona / Spain
CKAO	Collection Dr. Kiyoshi ANDO, Osaka / Japan
CRGT	Collection Dr. Roland GRIMM, Tübingen / Germany
CTSO	Collection T. SHIBATA, Kashihara City Museum of Insect, Nara / Japan
EUMJ	Faculty of Agriculture, Ehime University / Japan
HNHM	Hungarian Natural History Museum, Budapest / Hungary
MHNG	Muséum d'Histoire Naturelle, Genève / Switzerland
MHNL	Muséum d'Histoire Naturelle, Lyon / France
MHU	Museum Hebei University, Hebei / China
NHMB	Naturhistorisches Museum, Basel / Switzerland
NME	Naturkundemuseum, Erfurt / Germany
NSMT	National Science Museum, Tokyo / Japan
SMNS	Staatliches Museum für Naturkunde, Stuttgart / Germany
ZSM	Zoologische Staatssammlung, München / Germany

The genus ***Foochounus*** PIC

The genus *Foochounus* (type species *F. convexipennis* PIC, 1921) was described from "China". The genera *Anobriomaia* KASZAB, 1941 (type species *A. sulcata* KASZAB, 1941) and *Microcameria* REN, 1998 (type species *M. pygmaea* REN, 1998) were considered already as junior synonyms (ANDO, 2008). Our present study reveals that *Chariophenus* BLAIR, 1929 (type species *C. wasmanni* BLAIR, 1929) is also a junior synonym of *Foochounus*. Thus, we transfer herein all species of *Chariophenus* to *Foochounus*.

The genus *Foochounus* is characterized within the tribe Cnodalonini (subfamily Stenochiinae) by distinct supraorbital furrows, by short and slender antennae without distinct club (see Fig. 49), by a pronotum considerably narrower than elytra, by a more or less crenulated lateral margins of pronotum, by elytra with punctural rows with or without striae, by a conical prosternal process and a metasternum deeply cleft for its reception, and particularly by an extremely long basale of the aedeagus.

Labrum (Fig. 37) short, well transverse, sloping in anterior 1/3. Mandibles (Figs. 31–34) rather elongate, bearing distinct insertional sulci for antennae dorsally, constantly subtruncate at apex, without apical teeth, some species with dorso-basal tooth in right mandible, prostheca present, carina on scrobe distinct, sometimes present a membranous appendage. Maxilla (Figs. 36, 39) with terminal segment constantly securiform, stipes separated or fused together, palpifer narrow cylindrical, lacinia stick-shaped as a constant characteristic, densely setous only along external margin, without apical teeth, galea transverse-oblong, distinctly constricted at base, and densely setous at apex as a corona. Labium (Figs. 35, 38) short and quadrate, rather similar to that of *Tetragonomenes*.

Hind wings (Figs. 47–48) with veins same in manner of the typical Cnodalonini genera,

especially in well developed Rc, RP, AA, and MP.

Defensive glands (Figs. 40–41) consisting of dense and well-developed annulations, these conformations exactly similar to a typical Cnodalonini form, with terminal collecting ducts different in shape individually.

Ovipositor of *Foochounus* with coxital lobe 1 extremely prolonged, and with rudimental paraprocts; coxital lobes 3 and 4 entirely fused with one another, and distinctly shorter than lobe 2, bearing some long setae before and behind gonostyle; gonostyle stout and lateral, with two long setae at apex; proctiger reduced, and proctigeral baculus distinctly sclerotized; vagina short, without distinct bursa copulatrix. Spermatheca attached at the apex of obliterated bursa copulatrix, distinctly coiled with the exception of *Foochounus niger* sp. nov. whose spermatheca is also coiled but covered with delicate membranous envelope; spermathecal accessory gland short.

The character state of reproductive organs of *Foochounus* mentioned above (Figs. 45–46) seems to be primitive in Cnodalonini. The construction is similar to that of *Psydus* (Fig. 44), *Cleomis* (Fig. 43) and *Tetragonomenes*, but different from *Psydus* and *Cleomis* in having the coiled spermatheca and short fused coxital lobes 3–4 (In *Psydus* and *Cleomis*, spermatheca is not coiled, but membranously enveloped, and the fused coxital lobes 3–4 are longer than lobe 2.), and also different from *Tetragonomenes* in having obliterated bursa copulatrix and not enveloped spermatheca except for *F. niger* sp. nov.

The original description of the genus by PIC (1921: 22) is of less value: "***Foochounus*** n. gen. *Antennis gracilibus, articulo 3° longissimo; capite parum breve, oculus satis magnis; thorace transverso, lateraliter sinuato, angulis anticis parum prominulis; elytris thorace paulo latioribus, marginatis, ante spicem subsinuiatis; pedibus parum brevibus, tarsis simplicibus, elongatis.* – Ce genre a un faciès de *Epicalla* Chp. avec les antennes plus grêles, le prothorax à angles antérieurs marqués, etc. Peut se placer près de *Tearchus* Kr."

As yet, the genera within Cnodalonini are not characterized by strong arguments. The genus *Foochounus* PIC, 1921 may be placed into the tribe preliminary next to *Psydus* PASCOE, 1868, which differs in having the pronotum widest near the anterior border, the prosternum very wide between the coxae, and the base of the elytra strongly bordered (BLAIR 1930). The status of the genus *Tearchus* KRAATZ, 1880, mentioned by PIC (1921), is unclear so far, he (1921) established the genus *Heteromerotylus*, which is junior synonym of the genus *Tearchus* (see ANDO, 1998), therefore, PIC's "*Tearchus*" is entirely unexplained.

At hands is also a small series of a species from New Guinea (SMNS) with rows of tubercles on the elytra, but coinciding in other external characters with *Foochounus*. However, this species has the basale of the aedeagus short and not so extraordinary long as all Oriental species, therefore and because of zoogeographical reasons we do not include this unknown taxon here. The collection of the SMNS contains a single male of a further species from Laos with external characters as in *Foochounus*, but also with a short (normal) basale of the aedeagus and additionally with distinct dorsal setation. This species, probably undescribed, is also not treated here because of uncertain taxonomic assignment.

The species of *Foochounus* PIC, 1921

Foochounus abditus sp. nov.

(Figs. 1, 16)

Type series. Holotype: ♂, S Vietnam, Bao Loc, 29.VIII~1. IX. 1988, K. ANDO leg., EUMJ. Paratypes: 2 exs., S Vietnam, Bao Loc, 25~28. VIII. 1998, M. ITOH leg., (1 ex. CKAO, 1 ex. SMNS).

Etymology: Named after the Latin abditus = hidden, because this species is not to recognize by external characters but only by the structure of the aedeagus.

Description: Body length 8.0 mm. Body (Fig. 1) and appendages dark brown, dorsal surface shining and without setation, elytra without metallic shine.

Head with similar distinct punctation as on pronotum, but the punctures a little larger, surface between punctures uneven and shining; eyes transverse-oblong, with small angle between eyes and genae, supraorbital furrow deep; clypeal suture complete and distinct; shape of antennomeres see Fig. 1, distal antennomeres weakly broadened; mentum linguiform, shallowly and irregularly depressed, with coarse punctures, sparsely covered with large setae.

Pronotum (Fig. 1) 1.9 times as wide as long, widest at the middle, lateral margins irregularly crenulate, with distinct but narrow borders, basal and distal margins unbordered in the middle; distal angles weakly produced, rectangular, rounded at the tip; disc minutely and densely punctured, scarcely depressed along lateral margins; propleura with feeble longitudinal wrinkles and without distinct punctures; prosternal process conical, protruding posteriorly.

Elytra (Fig. 1) distinctly wider at the base than pronotum, moderately divergent posteriad, with distinct shoulders, with 9 punctural rows without striae, and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral rows larger than those in medial rows, those in all rows diminishing in width posteriorly; intervals flat, only with sparse micropunctures and shining, interval 3 somewhat broader distally; epipleura shortened before apex, with longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered.

Tibiae without spines on lateral side, roughly punctured, inner margins of the male tibiae with soft adhesive setae at the tip, particularly in middle tibiae.

Aedeagus (Fig. 16) with long basale constricted before apex, distale ogival, sinuated laterally with rounded tip.

Diagnosis: *Foochounus abditus* sp. nov. can not be separated from *F. laoticus* sp. nov. by the external characters, but easily by the completely different shape of the aedeagus (Figs. 16, 20). Both new species are similar to *F. thoracicus*, but in this species the punctures of the elytral rows are denser and the aedeagus is also different (Fig. 27). See also under *F. confusus* sp. nov.

Foochounus apicalis (BLAIR, 1929) comb. nov.

(Figs. 2, 17)

Chariophenus apicalis BLAIR, 1929: 241.

Type material examined: 1 ♂, N Burma, Seinghku Valley, 4,500 ft., 12. V. 1926, F. Kingdon Ward leg., syntype, BMNH, designated herein as lectotype. – 1 ex., N Burma, Seinghku Valley, Nam Tamai, 4,000 ft., 15. VIII. 1926, F. Kingdon Ward leg., syntype BMNH, sex not examined, designated herein as paralectotype.

Material examined: 1 ♀, N Burma, 35 km NW Putao (near Indian border), 2,200 m, 10. VIII. 2006, C. REUTER leg., SMNS.

New combination: See under *F. wasmanni*.

Lectotype designation: The original descriptions is based on 2 syntypes, so a lectotype is designated herein in order to fix a single name-bearing type and thus to define the species.

Redescription: Body length 8.5–9.0 mm. Body (Fig. 2) and appendages blackish, dorsal surface shining and without setation, elytra with a feeble greenish shine.

Head with similar distinct punctation as on pronotum, but the punctures a little smaller; surface between punctures uneven and shining; eyes rounded, with small angle between eyes and genae, supraorbital furrow deep; clypeal suture complete and distinct; shape of antennomeres see Fig. 2, distal antennomeres only slightly broadened.

Pronotum (Fig. 2) 1.7 times as wide as long, widest at anterior third; lateral margin irregularly crenulate, with distinct but narrow border, basal and distal margins unbordered in the middle; distal angles obtusely rounded, hardly produced forwards; disc neither depressed nor sulcate along lateral margins, with punctures large, coarse and irregularly arranged, somewhat denser laterad; propleura with feeble longitudinal wrinkles and without distinct punctures; prosternal process conical, protruding posteriorly.

Elytra (Fig. 2) distinctly wider at the base than pronotum, slightly divergent posteriad, with distinct shoulders, with 9 punctural rows without striae and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral rows somewhat foveolate, larger than those in medial rows, those in all rows diminishing in size posteriorly; intervals flat, only with micropunctures and shining, interval 3 distally somewhat broader; epipleura shortened before apex, distally with longitudinal furrow. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered.

Tibiae roughly punctured, without spines on lateral side, unmodified in both sexes.

Aedeagus (Fig. 17) with long basale characteristic for the genus, distale triangular with rounded tip.

Distribution: N Myanmar (N Burma).

Foochounus confusus sp. nov.

(Figs. 3, 18)

Type series. Holotype: ♂, India, Sikkim, Lagyap, 1,800 m, 29. X. 1985, C. RAI leg., NHMB. Paratype: 1 ♀, Bhutan, Nobding, 41 km E Wangdi Phodrang, 2,800 m, 17~18. VI. 1972, W. WITTMER leg., SMNS.

Etymology: These specimens have been previously confused by the senior author with *F. tibialis* (SCHAWALLER, 2000).

Description: Body length 9.0–10.0 mm. Body (Fig. 3) and appendages dark brown to black, elytra with dark greenish shine.

Head with same punctation as on pronotum, punctures fine and separated, surface among punctures shining in males, dull and shagreened in females; eyes rounded together with temples, with small angle between eyes and genae, supraorbital furrow deep; clypeal suture complete and distinct; shape of antennomeres see Fig. 3, distal antennomeres slender, neither distinctly broadened nor clubbed.

Pronotum (Fig. 3) narrow, only 1.6 times as wide as long, widest near middle; lateral margin distinctly and narrowly bordered, a with weak angle, basal and distal margins unbordered in the middle; distal angles slightly obtuse than rectangle, not produced; disc finely sulcate along lateral margins but not depressed there, moderately and rather densely punctured; propleura somewhat uneven and punctured as on pronotum; prosternal process flat but protruding posteriorly in a finger-shape.

Elytra (Fig. 3) distinctly wider at the base than pronotum, subparallel at sides, with distinct shoulders, with 9 rows of punctures without striae, row 9 abreast with lateral margin, punctures somewhat larger laterally, with a short scutellar striple; intervals flat, impunctate and shining in both sexes, distal part of elytra even and not wrinkled by the punctation; epipleura terminated before apex. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, first ventrite anteriorly with triangular process between posterior coxae, last ventrite unbordered.

Tibiae on lateral sides without spines, on medial side with dense soft adhesive setae distally, middle tibia of males weakly dilated behind the middle, with a tooth just before the tip.

Aedeagus (Fig. 18) with long basale, distale short and somewhat pentagonal.

Diagnosis: *Foochounus confusus* sp. nov. shares with *F. tibialis* the larger body size, the elongate elytra and the modified male middle tibiae with medial dilatation, but in *F. confusus* sp. nov. the dorsal surface is shining (shagreened in *F. tibialis*), the elytral punctural rows are finer (roughened in *F. tibialis*), and the aedeagus is completely different (Figs. 18, 28). *F. abditus* sp. nov. has a similar but not identical structure of the aedeagus (Fig. 16), the body size is smaller (8.0 mm), the elytra are shorter, and the elytral punctural rows are finer.

Foochounus convexipennis PIC, 1921

(Figs. 4, 19)

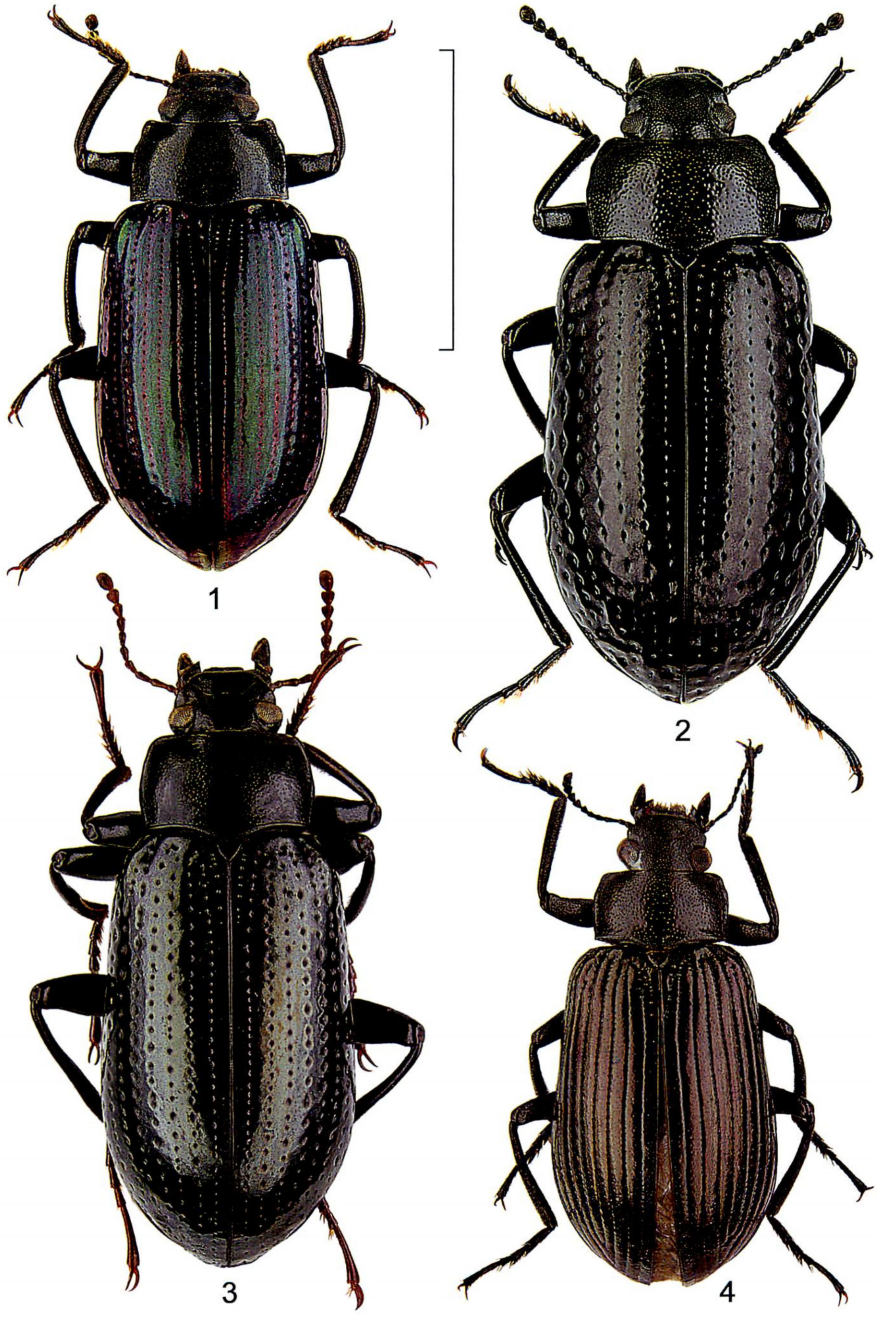
Foochounus convexipennis PIC, 1921: 22.

Type material examined: None. Type locality "China".

Material examined: 5 exs., China, Sichuan, Wanyuan, Hua-e-shan, 1,500–2,300 m, 24–28. VII. 1998, LI Jing Ke leg., SMNS; 1 ex., China, Chekiang (= Zhejiang), Tienmushan, without further data, HNHM; 1 ex., China, SW Hunan, 100 km S Huaihua, Huitong, 500 m, 7–12. VII. 1992, C. HOLZSCHUH leg., NME; 2 exs., China, N Guangxi, Miao Autonomous County, Rongshui, Yuan Bao Mts., 1,510 m, V. 2007, M. HACKEL & R. SEHNAL leg., SMNS; 14 exs., China, Fujian, Kuatun, VI–VII. 1946, TSUNG-SEN leg., HNHM; 2 exs., ditto, SMNS; 1 ex., China, Fujian, Wuyi Shan, Tongmu, 820 m, without date, J. COOTER leg., SMNS.

Original description: "***Foochounus convexipennis*** n. sp. Oblongus, nigro-piceus, elytris aeneis, pro parte purpureo-lineatis; capite thoraceque fortiter et diverse punctatis; elytris fortiter punctato-striatis; intervallis subconvexis, parum et minute punctatis. Long. 9 mill. Chine."

Redescription: Body length 6.0–11.5 mm. Body (Fig. 4) and appendages dark brown to



Figs. 1–4. Dorsal view of *Foochounus* spp. — 1, *F. abditus* sp. nov., ♂ holotype, EUMJ; 2, *F. apicalis*, ♀ non-type, SMNS; 3, *F. confusus* sp. nov., ♂ holotype, SMNS; 4, *F. convexipennis*, ♂ non-type, SMNS. Scale: 5.0 mm.

black, dorsal surface shining and without setation, elytra with a feeble bronze lustre.

Head with similar not confluent punctation as on pronotum, surface between punctures shining; eyes rounded, with small angle between eyes and genae, supraorbital furrow feeble; clypeal suture complete and distinct; shape of antennomeres see Fig. 4, distal antennomeres only slightly broadened.

Pronotum (Fig. 4) 1.7 times as wide as long, widest at the anterior third; lateral margin irregularly crenulate, with distinct but narrow border, basal and distal margins unbordered in the middle; distal angles obtuse, never produced forwards; disc distinctly and broadly flattened along lateral margins, coarsely and densely punctured; propleura somewhat uneven and with larger punctures than on pronotum; prosternal process conical, protruding posteriorly.

Elytra (Fig. 4) distinctly wider at the base than pronotum, slightly widened posteriorly, with distinct shoulders, with 9 punctural rows in distinct striae, and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral striae not distinctly larger than those in medial striae; intervals feebly convex, finely punctured and shining; epipleura shortened before apex, distally with longitudinal furrow. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered.

Tibiae roughly punctured, without spines on lateral side, unmodified in both sexes.

Aedeagus (Fig. 19) with distale short triangular, rounded at the tip.

Remarks: In the collection of the HNHM is deposited a single specimen from China (with Chinese locality label), identified by the late Dr. KASZAB, very probably compared by him in Paris with the type of *Foochounus convexipennis*. The above listed specimens (with unusual high variation of body length: 6.0–11.5 mm) are conspecific with this specimen. In the GEBIEN's catalogue, this species is erronously listed as "*compressipennis*".

Distribution: China (no detailed information about the type locality): Sichuan, Zhejiang, Hunan, Guangxi, Fujian.

Foochounus laoticus sp. nov.

(Figs. 5, 20)

Holotype: ♂, Laos, Phongsaly Prov., Phongsaly, 1,500 m, 28. V~20. VI. 2003, P. PACHOLÁTKO leg., NHMB.

Etymology: Named after Laos, where the type was collected.

Description: Body length 8.5 mm. Body (Fig. 5) and appendages dark brown, dorsal surface shining and without setation, elytra without metallic shine.

Head with similar distinct punctation as on pronotum, surface among punctures uneven and shining; eyes rounded, with small angle between eyes and genae, supraorbital furrow deep; clypeal suture complete and distinct; shape of antennomeres see Fig. 5, distal antennomeres only slightly broadened.

Pronotum (Fig. 5) 1.9 times as wide as long, widest at anterior third; lateral margins irregularly crenulate, with distinct but narrow border, basal and distal margins unbordered in each middle; distal angles obtusely rounded, entirely not produced; disc broadly and strongly sulcate along lateral margins, coarsely and densely punctured; propleura with feeble longitudinal wrinkles and without distinct punctures; prosternal process conical, protruding posteriorly.

Elytra (Fig. 5) distinctly wider at the base than pronotum, gently divergent posteriad, with distinct shoulders, with 9 punctural rows without striae, and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral rows somewhat foveolate, larger than those in medial rows, those in all rows diminishing in size posteriorly; intervals flat, only with micropunctures and shining, interval 3 distally somewhat broader; epipleura shortened before apex, with longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered.

Tibiae roughly punctured, without spines on lateral side, roughly punctured, inner margins of male tibiae with soft adhesive setae at the tip, particularly in middle tibiae.

Aedeagus (Fig. 20) with distale spade-like, blunt at the tip.

Diagnosis: *Foochounus laoticus* sp. nov. can not be separated from *F. abditus* by external characters, but easily by the completely different shape of the aedeagus (Figs. 16, 20). *F. laoticus* sp. nov. is also similar to *F. apicalis* and shares with this species the larger body size and the posteriorly diminishing elytral punctural rows in size. However, in *F. laoticus* the male tibia possess a distinct brush of adhesive setae at inner side of the tip (unmodified in *F. apicalis*), and the distale of the aedeagus is broad with a blunt tip (long triangular with rounded tip in *F. apicalis*). *F. thailandicus* sp. nov. possesses also diminished elytral rows in size, but this species is smaller (6.2–7.5 mm) and has a completely different shape of the aedeagus with a long triangular distale with acute tip (Fig. 26).

Foochounus laticollis PIC, 1929

Foochounus laticollis PIC, 1929: 28.

Type material examined: None. Type locality "Indes".

Material examined: None.

Original description: " ***F. laticollis*** n. sp. Oblongus, nitidus, rufo-brunneus, supra piceo-aeneus, membris rufis; capite thorceque diverse, pro parte dense, rugulose-punctatis, illo breve et lato, lateraliter simplice et late marginato; elytris thorace sat latioribus, postice Paulo dilatatis, apice attenuatis et subacuminatis, fortiter striates et minute punctatis, intervallis convexis. Long. 10 mill. Indes."

Remarks: According to the poor description, this taxon has a shorter body shape as *F. convexipennis*, and a broader pronotum. Body length 10.0 mm, elytra with feeble metallic shine ("piceo-aeneus"), elytral rows in striae, elytral intervals strongly convex.

Distribution: India.

Foochounus manmiaoae MASUMOTO, AKITA et LEE, 2008

Foochounus manmiaoae MASUMOTO, AKITA et LEE, 2008: 216.

Type material examined: 1 ex. (paratype), 双流, 屏東県 (in Chinese, read Shuanliu, Pingtung Hsien), 4. V. 2005, K. MASUMOTO, J.-F. TSAU & W.-Z. CHEN leg. with a pink label of "Paratype / *Foochounus manmiaoae* Mas., Aki. & Lee". (NSMT)

Type locality "Taiwan, Shuanliu, Pingtung Hsien".

Material examined: 1 ♂, Taiwan, Kenting Park, 29. IV. 1973, Y. KIYOYAMA leg., CKAO.

Remarks: In our examination of a paratype, pronotum with lateral margins hardly crenulated, distal angles with "rounded corners" gently produced not only apicad but also laterad. This species is sufficiently described and figured recently, and it is not necessary to repeat description and figures here. *Foochounus manmiaoae* can be separated from *F. sulcatus* by a smaller and slender body shape, a different shape of the pronotum, different shape and setation of the male tibiae, and a different shape of the aedeagus.

Distribution: Taiwan.

Foochounus niger sp. nov.

(Figs. 6, 21, 33–34, 37–39, 46, 48–49)

Type series. Holotype: ♂, Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,500–1,600 m, 11~15. XI. 1996, W. SCHAWALLER leg., SMNS. Paratypes: 12 exs., same data as the holotype, SMNS; 1 ex., Borneo, Sabah, Mt. Kinabalu, western slope, 1,900 m, 5. III. 1969, H. LÖFFLER leg., HNHM; 1 ex., Borneo, Sabah, Mt. Kinabalu, 1,650 m, 23. IV. 1987, D. BURCKHARDT & I. LÖBL leg., MHNG; 1 ex., Borneo, Sabah, Mt. Kinabalu, 1,600 m, 21–23. V. 1987, D. BURCKHARDT & I. LÖBL leg., MHNG; 1 ex., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 30. V. 1976, R. FUJIMOTO leg., CKAO; 1 ex., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1–5. VII. 1976, R. FUJIMOTO leg., CKAO; 7 exs., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,550 m, 27. VII–27. VIII. 1977, K. OHKUBO leg., CTSO; 4 exs., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 27–30. IV. 1981, M. TAO leg., CKAO; 30 exs., Borneo, Sabah, Mt. Kinabalu, 18~21. VIII. 1981, K. MORIMOTO leg., CKAO; 1 ex., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,200–1,500 m, 25. II. 1994, C. HÄUSER leg., SMNS; 1 ex., Borneo, Sabah, Mt. Kinabalu NP, 11. VII. 1999, M. HÄUSER leg., SMNS; 2 exs., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,560 m, 24–30. IV. 1987, A. SMETANA leg., MHNG; 4 ex., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,560 m, 15–24. V. 1987, A. SMETANA leg., MHNG; 5 ex., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,560 m, 3~13. VIII. 1988, A. SMETANA leg., MHNG; 4 ex., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,560 m, 1~5. IX. 1988, A. SMETANA leg., MHNG; 2 exs., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,600 m, 8–10. VII. 1992, HEISS leg., CRGT; 2 exs., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,500–1,600 m, 11~13. XI. 1996, D. GRIMM leg., SMNS; 6 exs., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,550 m, 22–25. V. 2005, R. GRIMM leg., CRGT; 1 ex., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,550 m, 22–24. V. 2005, H.-J. BREMER leg., CRGT; 1 ex., Borneo, Sabah, Mt. Kinabalu NP, Headquarters, 1,550 m, 27. III. 2007, R. GRIMM leg., CRGT; 1 ex., Borneo, Sabah, Mt. Kinabalu NP, 1,550–1,700 m, 7–9. IV. 2000, R. GERSTMEIER leg., CRGT; 12 exs., Borneo, Sabah, Crocker Range, Gunung Alab, 1,700 m, 23–29. V. 1998, J. KODADA & F. CIAMPOR leg., SMNS; 4 exs., Borneo, Sabah, Crocker Range, Gunung Alab, 1,350 m, 20. XI. 2006, R. GRIMM leg., CRGT; 2 exs., Borneo, Sabah, Crocker Range, Gunung Alab, 1,350 m, 1–2. XII. 2006, R. GRIMM leg., CRGT; 1 ex., Borneo, Sabah, Crocker Range, Gunung Alab, 1,350 m, VI. 2007, S. CHEW leg., CRGT; 30 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 15–27. IV. 1993, I. JENIŠ & STRBA leg., ZSM; 26 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 500–1,900 m, 6–21. V. 1995, I. JENIŠ leg., ZSM; 41 exs.,

Borneo, Sabah, Crocker Range, Gunung Emas, 1,700 m, 21. III–20. IV. 1996, J. KADLEC leg., (33 exs. ZSM, 8 exs., NHMB); 28 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,600 m, 6–18. VI. 1996, J. J. KODADA leg., (20 exs. SMNS, 4 exs. BMNH, 4 exs. HNHM); 3 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 23–29. V. 1998, P. HLAVÁČ leg., HNHM; 2 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,600–1,700 m, 17~19. III. 2000, M. HIERMEIER leg., CRGT; Borneo, Sabah, Crocker Range, Gunung Emas, 1,650 m, 17. III. 2000, R. GERSTMEIER leg., 1 ex. CRGT; 2 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,600 m, 8. V. 2005, R. GRIMM leg., CRGT; 3 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,400 m, 4. II. 2006, R. GRIMM leg., CRGT; 3 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,400 m, 21. II. 2006, R. GRIMM leg., HNHM; 5 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,500 m, 16–21. III. 2007, R. GRIMM leg., CRGT; 5 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,650 m, 16–17. III. 2007, W. SCHAWALLER leg., SMNS; 2 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,500 m, 23. III. 2007, R. GRIMM leg., CRGT; 3 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,650 m, 23. III. 2007, W. SCHAWALLER leg., SMNS; 2 exs., Borneo, Sabah, Crocker Range, Gunung Emas, 1,500 m, 1. IV. 2007, R. GRIMM leg., CRGT; 1 ex., Borneo, Sabah, Sepilok, 17. V. 1981, M. YAMAMOTO leg., CKAO; 7 exs., Borneo, Sabah, Sapulut, 23. VI. 1998, J. KODADA & F. CIAMPOR leg., SMNS; 1 ex., Borneo, Sabah, Tawau Hills Park, Tawau River, 8. VI. 1998, J. KODADA & F. CIAMPOR leg., SMNS; 1 ex., Borneo, Sabah, Mt. Kinabalu, XI. 1983, G. SAMA leg., SMNS; 1 ex., Borneo, Sabah, Sukau, 17. VII. 1999, M. HAUSER leg., SMNS; 2 exs., Malaysia-SE, Sabah Estate, Mt. Kinabalu, 20. VII. 2002, E. VIVES leg., CEVB.

Etymology: Named after the dull black surface without any metallic shine.

Description: Body length 7.5–10.0 mm. Body (Fig. 6) and appendages black, dorsal surface including elytra dull and without setation, without metallic shine.

Head with similar, rough and confluent punctation as on pronotum, surface between punctures dull; eyes rounded, with small angle between eyes and genae, supraorbital furrow deep; clypeal suture complete and distinct; mentum obtrapezoidal, convex medially, depressed at sides, and devoid of sulci; shape of antennomeres see Fig. 49, distal antennomeres only slightly broadened.

Pronotum (Fig. 6) 2.0–2.2 times as wide as long, widest behind the middle, lateral margin irregularly crenulate, with distinct but narrow border, basal and distal margins unbordered in the middle; distal angles acute, very strongly produced; disc coarsely, densely and irregularly punctured, depressed and rugosed along lateral margins; propleura somewhat uneven and punctured as on pronotum; prosternal process conical, protruding posteriorly.

Elytra (Fig. 6) distinctly wider at the base than pronotum, divergent posteriad, with distinct shoulders, with 9 punctural rows in distinct striae, and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral striae similar in size to those of medial striae; intervals strongly convex, particularly so laterally and distally, densely covered with fine transverse wrinkles, finely punctured and surface dull; epipleura terminated before apex, with longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and fine punctation, last ventrite unbordered.

Tibiae roughly punctured, without spines laterally, inner margins of all male tibiae with a fringe of dense hairs medially about in each basal two-thirds.

Aedeagus (Fig. 21) with distale short triangular, rounded at the tip.

Diagnosis: *Foochounus niger* sp. nov. can be recognized by the dull black dorsal surface without any metallic lustre, strongly produced distal angles of pronotum, distinct elytral striae, the shape of the aedeagus and the fringe of dense hairs on male tibiae medially. By these characteristics, this species is quite isolated within the genus (also zoogeographically restricted in Borneo and isolated from the other species in continental southeastern Asia).

Foochounus parkeri (BLAIR, 1929) comb. nov.

(Figs. 7, 22)

Chariophenus parkeri BLAIR, 1929: 241.

Type material examined: 1♀, Burma, Kalcinaung Res., Tavoy Dt., XI. 1924, R. N. PARKER leg., syntype, BMNH, designated herein as a lectotype.

Material examined: 1 ex., NW Thailand, Nan – Pha Knab, 11–15. VI. 1993, P. PACHOLÁTKO & L. DEMBICKÝ leg., SMNS; 1 ex., C Thailand, Prov. Nakom Rajasrima, Kao Yai, 2. IX. 1983, W. KAEWMANI leg., ZSM.

New combination: See under *F. wasmanni*.

Lectotype designation: The original descriptions is based on 2 syntypes, so a lectotype is designated herein in order to fix a single name-bearing type and thus to define the species.

Redescription: Body length 6.0–6.5 mm. Body (Fig. 7) and appendages dark brown, dorsal surface shining and without setation, elytra without metallic shine.

Head with similar but denser punctation as on pronotum, punctures large and somewhat confluent, surface between punctures shining; eyes widely separated to each other and rounded, with small angle between eyes and genae, supraorbital furrow weak; clypeal suture complete and distinct; shape of antennomeres see Fig. 7, distal antennomeres only slightly broadened.

Pronotum (Fig. 7) 1.8 times as wide as long, widest near the middle; lateral margin irregularly crenulate, with distinct but narrow border, basal and distal margins unbordered in the middle; distal angles obtuse, a little produced; disc broadly depressed along lateral margins, densely and very coarsely punctured; propleura somewhat uneven and punctured as on pronotum; prosternal process conical, protruding posteriorly.

Elytra (Fig. 7) distinctly wider at the base than pronotum, subparallel-sided, with distinct shoulders, with 9 punctural rows in feeble striae, and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral striae larger than those in medial striae; intervals nearly flat, impunctate and shagreened; epipleura terminated before apex, with longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered. Tibiae roughly punctured, without spines on lateral side, unmodified in both sexes.

Aedeagus (Fig. 22) with distale elongate-triangular, rounded at the tip.

Distribution: Myanmar (Burma), Thailand.

Foochounus pygmaeus (REN, 1998)

(Figs. 8, 23)

Microcameria (sic!) *pygmaea* REN, 1998: 108 (113 in English).

Type material examined: 1 ♀ holotype, China, Zhejiang, Longwangshan, 490 m, 13. VI. 1996, leg. W. U. HONG, MHU.

Material examined: 1 ex., China, Zhejiang, Tienmushan, without further data, HNHM; 1 ex., China, Zhejiang, Mt. Xi-Tianmu, Lin-An, 1,000–1,500 m, 16. VII. 2000, N. OHBAYASHI & Li-Zhen LI leg., CKAO; 4 exs., China, Shaanxi, Qinling Shan, 6 km E Xun Yangba, 1,000–1,300 m, 23. V–13. VI. 2000, C. HOLZSCHUH leg., (3 ex., CKAO, 1 ex., SMNS).

Redescription: Body length 7.5–8.5 mm. Body (Fig. 8) and appendages dark brown to black, dorsal surface shining and without setation, elytra cupreous.

Head with similar and not confluent punctation as on pronotum, but the punctures smaller than those on pronotum, surface between punctures shining; eyes transverse-oblong, with small angle between eyes and genae, supraorbital furrow deep; clypeal suture complete and distinct; mentum short linguiform, flat, neither sulcate nor depressed, with some long setae; shape of antennomeres see Fig. 8, distal antennomeres slender, only slightly broadened.

Pronotum (Fig. 8) 1.7 times as wide as long, widest at the middle, lateral margins irregularly crenulated, with distinct but narrow border, basal and distal margins unbordered in the middle; distal angles obtusely rounded, hardly produced; disc broadly and moderately sulcate along lateral margins, with punctures coarse and dense, becoming denser laterally, lateral sulci coarsely punctured and winkled; propleura somewhat uneven and punctured as on pronotum; prosternal process conical protruding posteriorly.

Elytra (Fig. 8) distinctly wider at the base than pronotum, moderately divergent posteriad, with distinct shoulders, with 9 punctural rows in distinct striae, and with a short additional scutellar striole, stria 9 abreast with lateral margin, punctures dense, those in lateral striae larger than those in medial striae; intervals convex, finely punctured and shining; epipleura shortened before apex, with longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered.

Tibiae roughly punctured, without any spines on lateral side, male middle and hind tibiae incurved at each apex.

Aedeagus (Fig. 23) with distale elongate triangular, rounded at the tip.

Remarks: The female holotype was examined by the junior author, and the synonymy of *Microcameria* REN, 1998 with *Foochounus* PIC, 1921 was recently published (ANDO, 2008).

Distribution: Zhejiang (type locality Longwangshan NR), Shaanxi.

Foochounus rectus PIC, 1924

Foochounus rectus PIC, 1924: 26.

Type material examined: None. Type locality "Tonkin".

Material examined: None.

Original description: "***Foochounus rectus*** n. sp. Oblong-elongatus, nitidus, niger, elytris viridi-aeneis, vage purpureo tinctis; capite dense punctato; thorace breve, fortiter et diverse punctato, angulis anticis non prominulis; elytris striato-punctatis, intervallis subconvexis, parum punctatis. Long 9 mill. Tonkin."

Remarks: According to the poor description, this taxon differs from *F. convexipennis* by straight anterior margin of pronotum with anterior corners not protruding, and by dense confluent punctation of the head. Body length 9.0 mm, pronotum short and with large diverse punctation, elytra with metallic shine, elytral rows in striae, elytral intervals weakly convex.

Distribution: Vietnam (Tonkin).

Foochounus robustus PIC, 1929

(Figs. 9, 24, 31–32, 35–36, 40, 45, 47)

Foochounus robustus PIC, 1929: 27.

Type material examined: None. Type locality "Tonkin".

Material examined: 19 exs., CE Laos, Boli Kham Xai Prov., 8 km NE Ban Nape, 600 m, 1–18. V. 2001, L. DEMBICKÝ leg., (13 exs., SMNS, 2 exs., BMNH, 2 exs., CKAO, 2 exs., HNHM).

Original description: "***Foochounus robustus*** n. sp. Oblongus, robustus, nitidus, non metallicus, nigro piceus, elytris castaneis, antennis ad basim femoribusque pro parte rufis; capite parum breve, minute et dense, antice sparse, ruguloso-punctato; thrace breve et lato, lateraliter undulato, postice transverse depresso, fortiter, externe densiore, ruguloso-punctato; elytris thorace sat latioribus, sat brevibus, apice attenuates et ad suturam sub-acuminatis, medio convexis, fortiter striato-punctatis, intervallis convexis, minute punctatis; pedibus valdis, deplanatis, fortiter et dense ruguloso-punctatis. Long 8 mill. Tonkin."

Redescription: Body length 8.0–13.0 (!) mm. Body (Fig. 9) and appendages dark brown to black, dorsal surface shining and without setation, elytra with distinct metallic lustre.

Head weakly convex, with similar rough and partly confluent punctation as on pronotum, but more or less rugulose, surface between punctures shining; eyes rounded, with small angle between eyes and genae, supraorbital furrow very weak; clypeal suture complete and very fine; shape of antennomeres see Fig. 9, distal antennomeres only slightly broadened.

Pronotum (Fig. 9) 1.6–1.7 times as wide as long, widest at the middle, lateral margin irregularly crenulate, with distinct but narrow border, basal and distal margins unbordered in the middle; distal angles rectangular, weakly produced; disc broadly depressed along lateral margins, with punctures large, coarse and dense; propleura wrinkled and punctured as on pronotum; prosternal process flat but finger-like, protruding posteriorly.

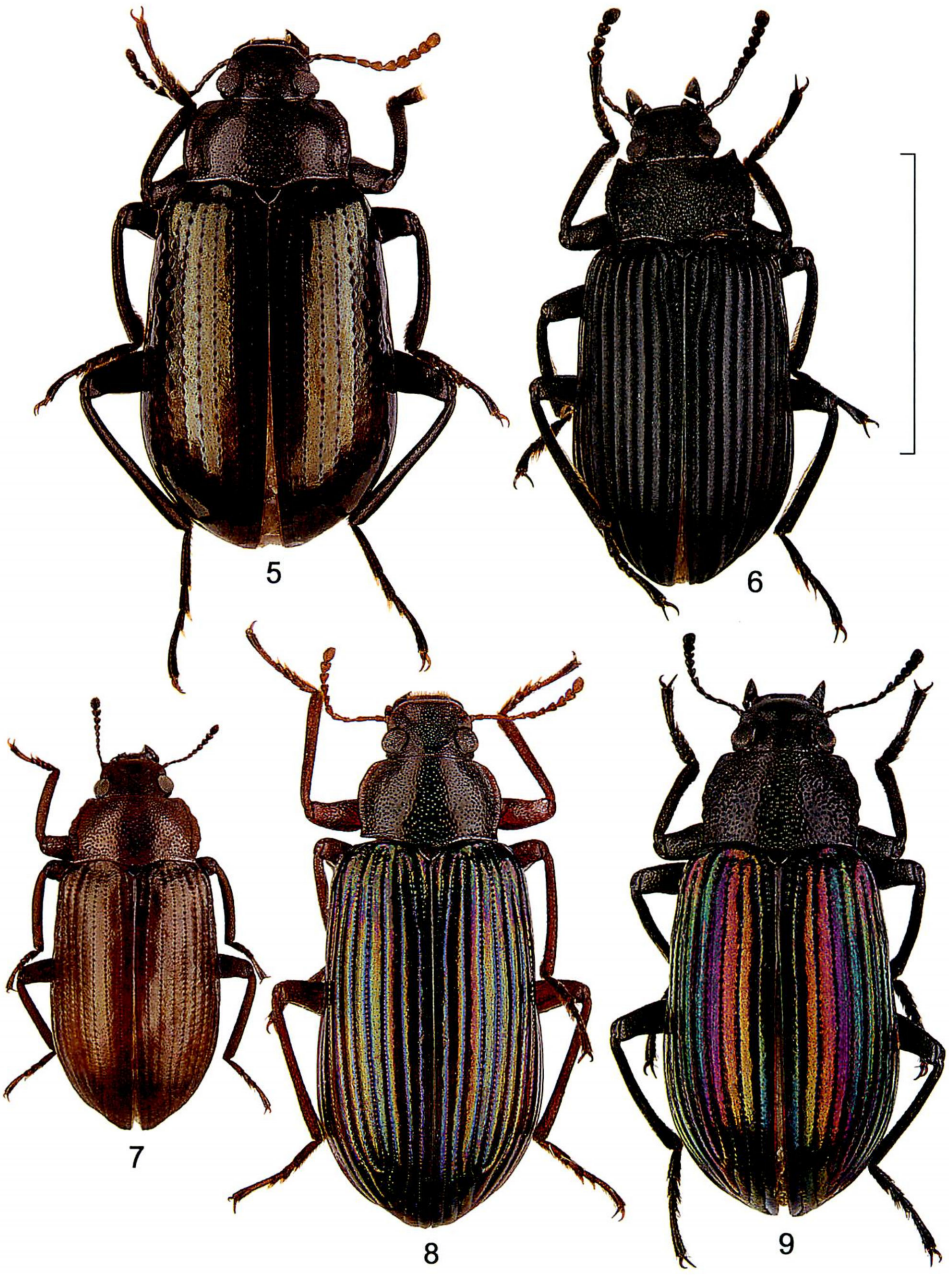
Elytra (Fig. 9) distinctly wider at the base than pronotum, distinctly divergent posteriad, with distinct shoulders, with 9 punctural rows in distinct striae, and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral striae of similar size as in medial striae; intervals feebly convex in male or nearly flat in female, finely punctured and shining; epipleura terminated before apex, with longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered.

Tibiae roughly punctured, without spines on lateral side, unmodified in both sexes.

Aedeagus (Fig. 24) with distale long triangular with nearly acute tip.

Remarks: We hope not to fail in assigning this series from Laos to *Foochounus robustus* according to the poor description of PIC, although he described this species as "*non metallicus*". Pic (1929) separated this taxon from *F. convexipennis* by a shorter and broader body shape, by distinctly crenulated lateral margin of the pronotum, and by the averagely larger body size of



Figs. 5–9. Dorsal view of *Foochounus* species. — 5, *F. laoticus* sp. nov., ♂ holotype, NHMB; 6, *F. niger* sp. nov., ♂ holotype, SMNS; 7, *F. parkeri*, ♂ non-type, SMNS; 8, *F. pygmaeus*, ♂ non-type, SMNS; 9, *F. robustus*, ♂ non-type, SMNS. Scale: 5.0 mm.

8.0–13.0 mm (however 6.0–11.5 mm in *F. convexipennis*).

Distribution: Indochina.

Foochounus sulcatus (KASZAB, 1941)

(Figs. 10, 25)

Anobriomaia sulcata KASZAB, 1941: 68.

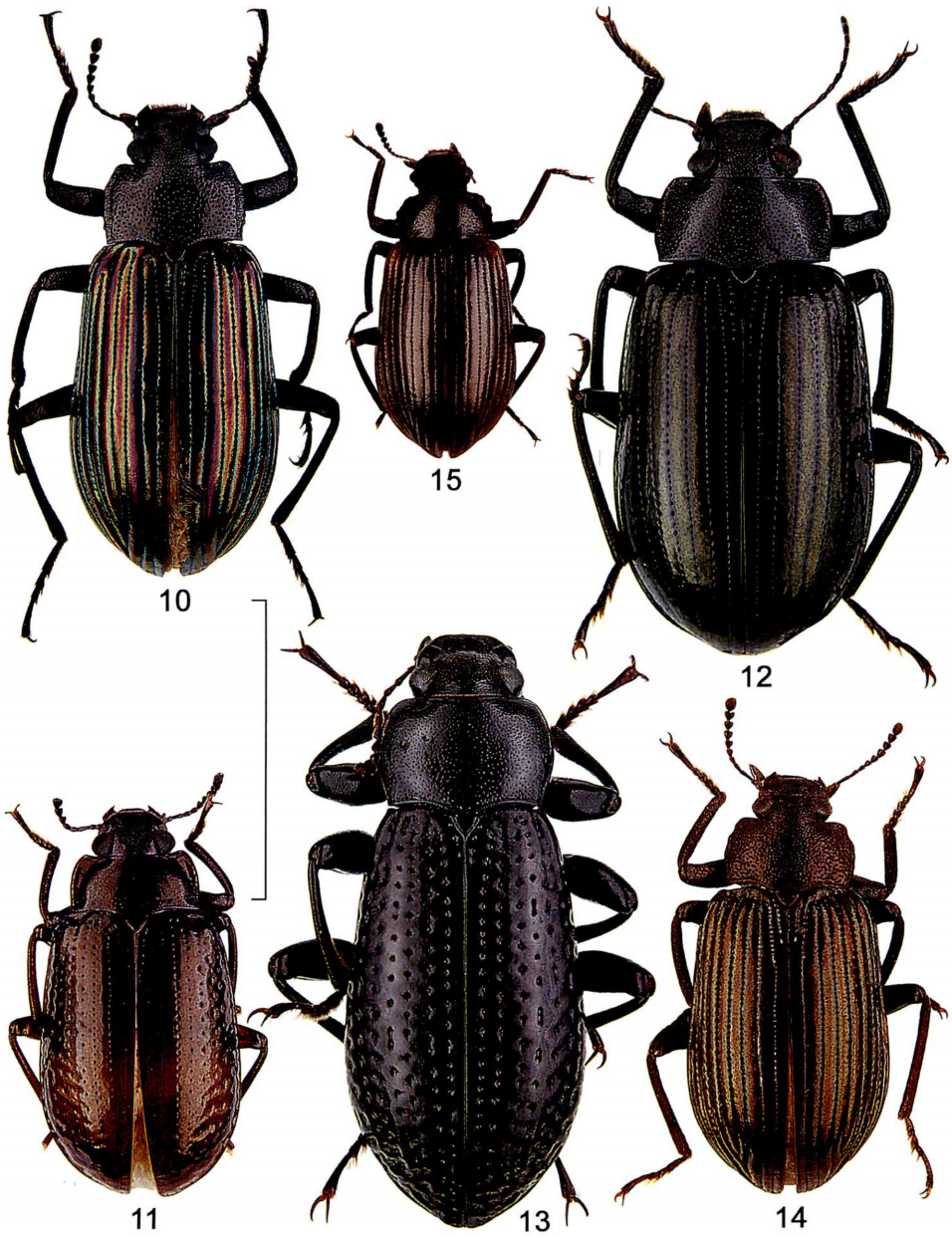
Type material examined: None. Type locality "Taiwan, Kosempo".

Material examined: 1 ex., Taiwan, Mt. Lalashan, 11. VIII. 1974, Y. KIYOYAMA leg., CKAO; 1 ex., Taiwan, Kenting Park, 24. III. 1973, Y. KIYOYAMA leg., CKAO; 1 ex., Taiwan, Mt. Lushan, 25. VIII. 1984, F. KIMURA leg., CKAO; 1 ex., Taiwan, Lushan, 18. VI. 1980, leg. K. KUZUGAMI, CKAO; 1 ex., Mt. Lishan, 22. VIII. 1984, F. KIMURA leg., CKAO; 2 exs., Taiwan, Nanshanchi, 26. VI. 1972, Y. KIYOYAMA leg., CKAO; 3 exs., Taiwan, Nanshanchi, 1. VIII. 1981, K. WADA leg., (2 ex., CKAO, 1 ex. SMNS); 2 exs., S Taiwan, Tou Noo, near Mao Ling, 3. VI. 1989, K. BABA leg., CKAO; 3 exs., S Taiwan, Tsai Tie Ku, near Liu Kui, 6. X. 1986, K. BABA leg., (1 ex. CKAO, 2 ex. SMNS); 3 exs., S Taiwan, Nan Fen Shan, near Liu Kui, 1,500 m, 1. X. 1986, K. BABA leg., (2 exs., CKAO, 1 ex. SMNS); SE Taiwan, Pi Shan Spa, Tai Tung Hsien, 700–800 m, 3. X. 1986, K. BABA leg., 1 ex. CKAO; 2 exs., C Taiwan, Chun Yan, near Lo Shan Spa, Nan Tow Hsien, 1,200 m, 7. X. 1986, K. BABA leg., CKAO; 2 exs., C Taiwan, Shun Yang Spa, near Wu She, 12. VIII. 1987, K. BABA leg., CKAO; 2 exs., C Taiwan, Tsao Ling, Yun Lin Hsien, 3. VII. 1986, K. BABA leg., CKAO; 1 ex., N Taiwan, Pa Lon, Tao Yuan Hsien, 3. VIII. 1986, K. BABA leg., CKAO; 1 ex., Taiwan, Ku-lai, Tai-pei Hsien, 1. VI. 1976, H. MAKIHARA leg., CKAO; 1 ex., Taiwan, Wulai, Taipei Hsien, 6. V. 1994, T. KISHIMOTO leg., CKAO; 1 ex., Taiwan, Kaofeng, Nantou Hsien, 7~8. VII. 2007, N. OHBAYASHI leg., CKAO; 1 ex., N Vietnam, Prov. Vinh-phu, Tam Dao, 11–13. V. 1975, L. MEDVEDEV leg., SMNS; 1 ex., N Vietnam, Prov. Vinh-phu, Tam Dao, 900 m, 20–27. V. 1985, L. MEDVEDEV leg., SMNS; 1 ex., N Vietnam, Prov. Vinh-phu, Tam Dao, 900 m, 13~24. V. 1989, A. OLEXA leg., SMNS; 38 exs., N Vietnam, Prov. Vinh-phu, Tam Dao, 1990–1991, M. ITOH leg., (34 exs. CKAO, 4 exs. SMNS); 36 exs., N Vietnam, Prov. Vinh-phu, Tam Dao, 3–11. VI. 1985, J. PÍCKA leg., (30 exs., MHNL, 6 exs., CKAO); 2 exs., N Vietnam, Prov. Vinh-phu, Tam Dao, 27. V~2. VI. 1986, V. ŠVIHLA leg., SMNS; 1 ex., N Vietnam, Prov. Vinh-phu, Tam Dao, 21. IV. 1995, M. SATÔ leg., CKAO; 1 ex., N Vietnam, Prov. Lao-cai, Sa-pa, 15–27. V. 1992, collector unknown, CKAO; 1 ex., N Vietnam, Prov. Son La, 36 km S Mac Chau, 1,100 m, 25–26. VI. 1997, C.-F. LEE leg., CKAO; 7 exs., S Vietnam, Dalat, 20. V. 1995, M. ITOH leg., (6 exs., CKAO, 1 ex. SMNS).

Redescription: Body length 7.5–9.0 mm. Body (Fig. 10) and appendages dark brown to black, dorsal surface shining and without setation, elytra cupreous.

Head with similar large but not confluent punctation as on pronotum, surface between punctures shining; eyes rounded, with small angle between eyes and genae, supraorbital furrow weak; clypeal suture complete and distinct; mentum linguiform, minutely punctured; shape of antennomeres see Fig. 10, distal antennomeres only slightly broadened.

Pronotum (Fig. 10) 1.6–1.7 times as wide as long, widest at the middle, lateral margins irregularly crenulate, with distinct but narrow border, basal and distal margins unbordered in the middle; distal angles obtusely rounded, scarcely produced; disc coarsely and densely punctured, distinctly sulcate along lateral margins, and the sulci with dense and fine transverse winkles; propleura somewhat uneven and punctured as on pronotum; prosternal process flat but protrud-



Figs. 10–15. Dorsal view of *Foochounus* spp. — 10, *F. sulcatus*, ♂ non-type, SMNS; 11, *F. thailandicus* sp. nov., ♂ holotype, SMNS; 12, *F. thoracicus*, ♂ non-type, SMNS; 13, *F. tibialis*, ♂ non-type, SMNS; 14, *F. wasmanni*, ♂ non-type, SMNS; 15, *F. yamasakoi* sp. nov., ♂ holotype, EUMJ. Scale: 5.0 mm.

ing posteriorly in a finger-shape.

Elytra (Fig. 10) distinctly wider at the base than pronotum, weakly divergent posteriad, with shoulders distinctly humped, with 9 punctural rows in distinct striae, and with a short additional scutellar striole, stria 9 abreast with lateral margin, punctures in lateral striae similar in size to those of medial striae; intervals convex or weakly so, finely punctured and shining, interval 3 broader and elevated distally; epipleura shortened before apex, with longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered. Tibiae roughly punctured, without spines on lateral sides, male anterior and middle tibiae slightly bent inwards at apex.

Distale of aedeagus (Fig. 25) elongate triangular, with tip nearly acute.

Distribution: Taiwan, Vietnam.

Foochounus thailandicus sp. nov.

(Figs. 11, 26)

Type series. Holotype: ♂, N Thailand, Doi Phu Kha NP, 50 km NE Nan, 28. VI–1. VII. 1997, J. REJSEK leg., SMNS. Paratypes: 2 ♀♀, N Thailand, near Chiang Rai, Doi Mae Salong, 24. IX. 1990, K. MASUMOTO leg., (1 ex. NSMT, 1 ex. CKAO).

Etymology: Named after Thailand, where the type series was collected.

Description: Body length 6.2–7.5 mm. Body (Fig. 11) and appendages blackish (holotype light brown, immature), elytra with dark greenish shine.

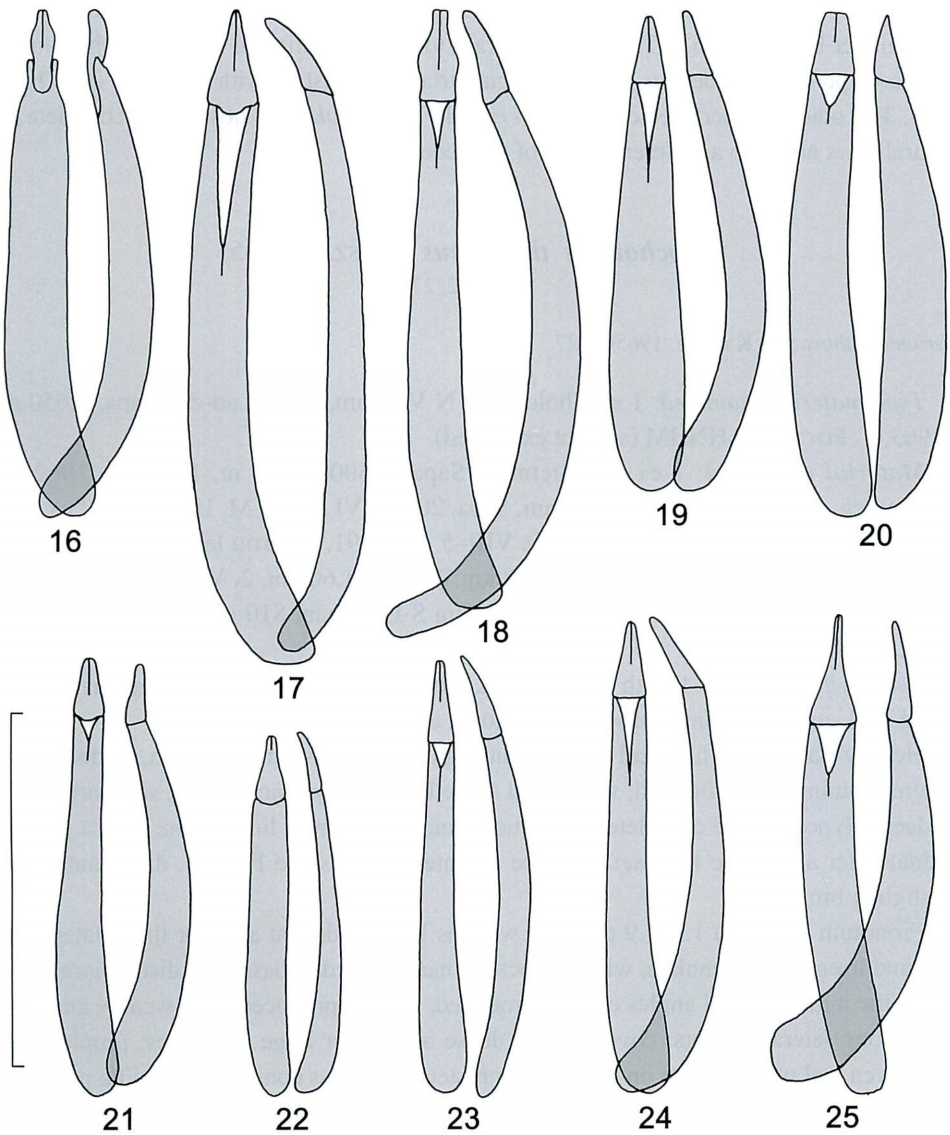
Head depressed at frons, with somewhat larger punctation than on pronotum, punctures fine and separated, surface between punctures shining in both sexes; eyes rounded together with temples, with small angle between eyes and genae, supraorbital furrow deep; clypeal suture complete and distinct; mentum narrow linguiform, deeply excavate at sides in a parenthesis-shape; shape of antennomeres see Fig. 11, distal antennomeres slender and not distinctly broadened.

Pronotum (Fig. 11) 2 times as wide as long, widest before middle, lateral margin feebly crenulate in anterior half and with distinct but narrow border, basal and distal margins unbordered in the middle; distal angles moderately produced, rectangular, but the corners rounded; disc narrowly and feebly sulcate along lateral margins, finely and moderately punctured; propleura with feeble longitudinal wrinkles and punctured as on pronotum; prosternal process flat but protruding posteriorly in a finger-shape.

Elytra (Fig. 11) distinctly wider at the base than pronotum, moderately divergent posteriad, with distinct shoulders, with 9 rows of punctures without striae, row 9 abreast with lateral margin, rows diminishing in size posteriorly, punctures distinctly separated laterally, with a short scutellar striole; intervals flat, impunctate and shining in both sexes, distal part of elytra uneven by the punctation; epipleura shortened before apex, distally with longitudinal furrow. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, first ventrite anteriorly with triangular process between posterior coxae, last ventrite unbordered.

Tibiae without spines on lateral side, with denser setation distally, unmodified in both sexes.



Figs. 16–25. Aedeagus of *Foochounus* species. — 16, *F. abditus* sp. nov., holotype, EUMJ; 17, *F. apicalis*, lectotype, BMNH; 18, *F. confusus* sp. nov., holotype, SMNS; 19, *F. convexipennis*, non-type, SMNS; 20, *F. laoticus* sp. nov., holotype, NHMB; 21, *F. niger* sp. nov., holotype, SMNS; 22, *F. parkeri*, non-type, SMNS; 23, *F. pygmaeus*, non-type, SMNS; 24, *F. robustus*, non-type, SMNS; 25, *F. sulcatus*, non-type, SMNS. Scale: 2.0 mm.

Aedeagus (Fig. 26) with long basale, distale elongate triangular with acute tip.

Diagnosis: *Foochounus thailandicus* sp. nov. shares with *F. apicalis* and *F. laoticus* sp. nov. in having the posteriorly diminishing elytral punctural rows in size, but can be recognized by the smaller body size (6.2–7.5 mm in contrary to 8.5–9.0 mm) and mainly by the completely different shape of the aedeagus with a elongate triangular distale with acute tip (vid. Figs. 17, 20, 26). The other smaller species (*F. parkeri* and *F. yamasakoi* sp. nov.) have complete elytral punctural rows and also a different shape of the aedeagus.

Foochounus thoracicus (KASZAB, 1965)

(Figs. 12, 27)

Anobriomaia thoracica KASZAB, 1965b: 127.

Type material examined: 1 ex. (holotype), N Vietnam, Prov. Lao-cai, Sapa, 1,650 m, 23. IX. 1963, T. PÓCS leg., HNHM (sex not examined).

Material examined: 1 ex., N Vietnam, Sapa, 1,600–2,000 m, 11. VIII. 1962, O. N. KABAKOV leg., HNHM; 3 exs., N Vietnam, Sapa, 20–25. VI. 1991, M. ITOH leg., (2 ex. CKAO, 1 ex. SMNS); 6 exs., N Vietnam, Sapa, 30. VIII–5. IX. 1991, M. ITOH leg., (5 exs. CKAO, 1 ex. SMNS); 1 ex., N Vietnam, Prov. Lai Cai, 28 km W Sapa, 1,600 m, 2. VII. 1997, C.-F. LEE leg., CKAO; 1 ex., N Vietnam, Prov. Lai Chau, 10 km S Lai Chau, 810 m, 29–30. VI. 1997, C.-F. LEE leg., CKAO.

Redescription: Body length 8.0–8.5 mm. Body (Fig. 12) and appendages dark brown to black, dorsal surface shining and without setation, elytra cupreous.

Head with similar fine and not confluent punctation as on pronotum, surface between punctures shining; eyes rounded, with small angle between eyes and genae, supraorbital furrow very deep; clypeal suture complete and tenuous; mentum narrow linguiform, with a pair of longitudinal sulci and some long setae; shape of antennomeres see Fig. 12, distal antennomeres only slightly broadened.

Pronotum (Fig. 12) 1.8–1.9 times as wide as long, widest at anterior third, lateral margin feebly and irregularly crenulate, with distinct but narrow border, basal and distal margins unbordered in the middle; distal angles obtusely rounded, weakly produced; disc weakly and rugosely sulcate along lateral borders, covered with dense and rather large punctures; propleura somewhat uneven and punctured as on pronotum; prosternal process conical, protruding posteriorly.

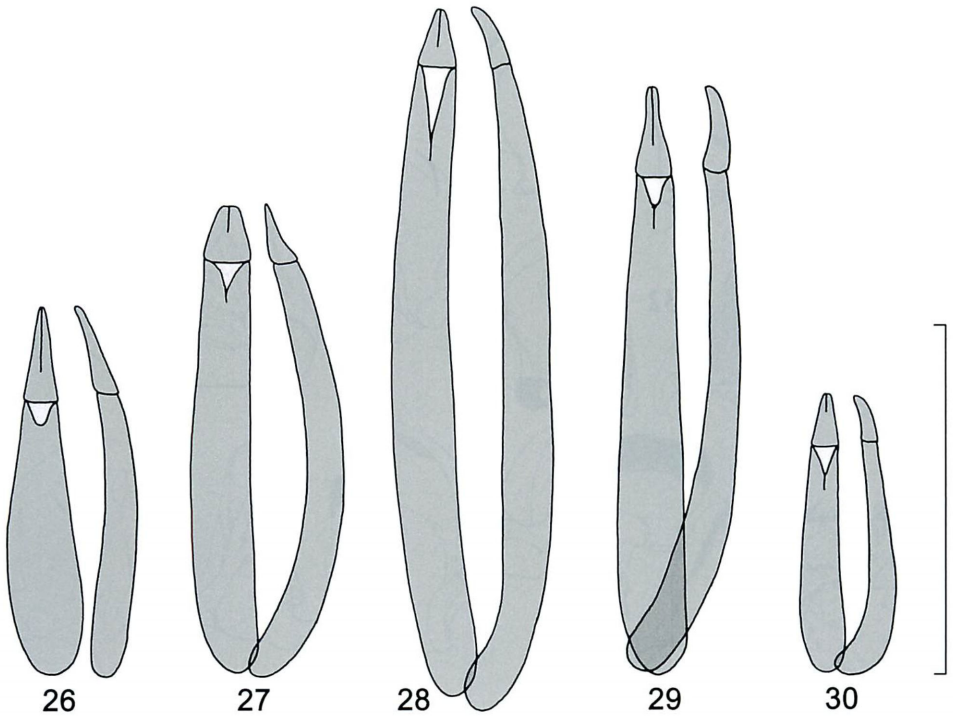
Elytra (Fig. 12) distinctly wider at the base than pronotum, moderately divergent posteriad, with distinct shoulders, with 9 punctural rows without striae, and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral rows larger than those in medial rows, those in all rows diminishing in size posteriorly; intervals flat and shining, only with micropunctures, interval 3 somewhat broader distally; epipleura shortened before apex, with feeble longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered.

Tibiae roughly punctured, without spines at sides, unmodified in both sexes.

Aedeagus (Fig. 27) with distale short and broad, blunt at the tip.

Distribution: Vietnam.



Figs. 26–30. Aedeagus of *Foochounus* spp. — 26, *F. thailandicus* sp. nov., holotype, SMNS; 27, *F. thoracicus*, non-type, SMNS; 28, *F. tibialis*, non-type, SMNS; 29, *F. wasmanni*, non-type, SMNS; 30, *F. yamasakoi* sp. nov., holotype, EUMJ. Scale: 2.0 mm.

Foochounus tibialis (BLAIR, 1930) comb. nov.

(Figs. 13, 28)

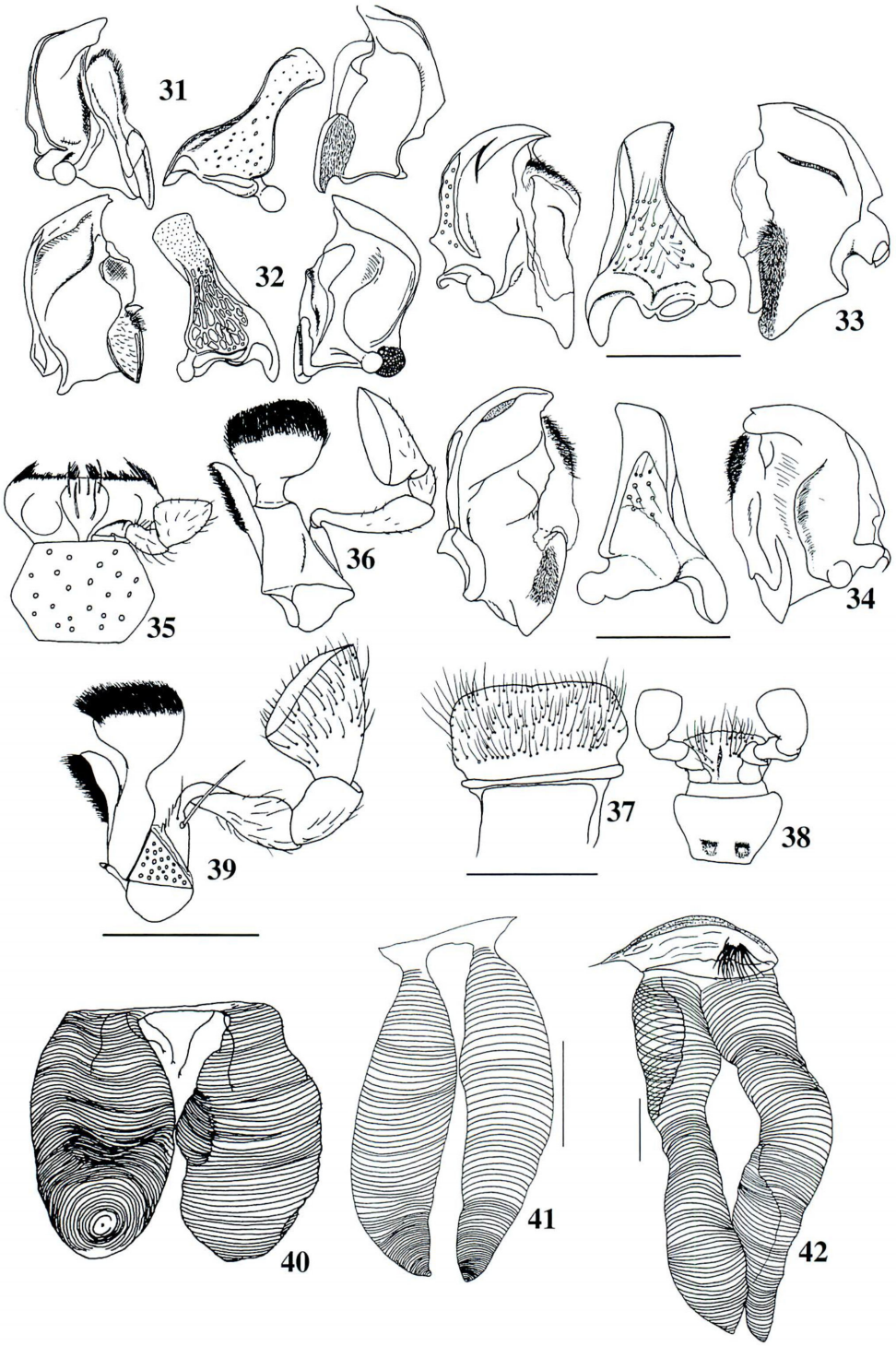
Chariophenus tibialis BLAIR, 1930: 178.
Chariophenus schmidti SCHAWALLER, 2000: 354. **syn. nov.**

Type material examined: 1 ♂, India, Darjeeling, Lepchajagat, 7,000 ft., 12. IX. 1929, leg. J. C. M. GARDNER, holotype (by monotypy) of *tibialis* BMNH; 1 ♀, Nepal, Annapurna, Temang, northern slope of pass Namun La, 2,600–3,100 m, 26. V. 1994, J. SCHMIDT leg., holotype of *schmidti*, SMNS.

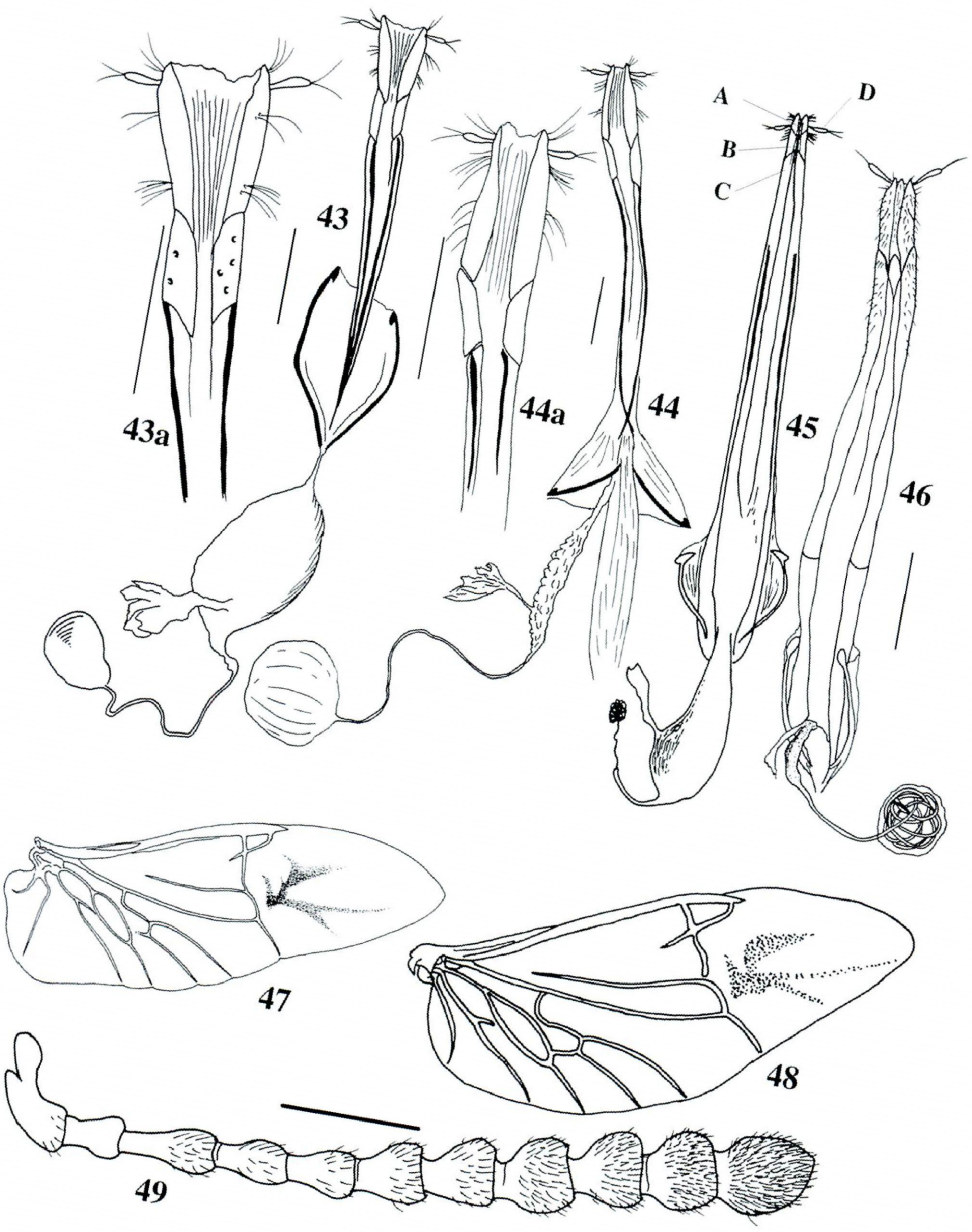
Material examined: 5 exs., Nepal, Manang, Temang, 2,500–2,600 m, 10–12. V. 2007, R. & H. FOUQUÉ leg., SMNS.

Synonymy: Re-examination of the types and the newly collected material including males reveals that *Chariophenus schmidti* SCHAWALLER, 2000 is a junior synonym of *Chariophenus tibialis* BLAIR, 1930. The specimens erroneously listed under *Chariophenus tibialis* in SCHAWALLER (2000) belong to *Foochounus confusus* sp. nov.

New combination: See under *F. wasmanni*.



Figs. 31–42, Cnodalonini spp. — 31, 33, right mandibles, right: dorsal view, middle: lateral view, left: ventral view; 32, 34, left mandibles (right: ventral view, middle: lateral view, left: dorsal view); 35, 38, labium; 36, 39, maxilla; 37, labrum; 40–42, defensive glands; 31, 32, 35, 36, 40, *Foochounus robustus* PIC (quoted from ANDO, 2003); 33–34, 37–39, 41, *F. niger* sp. nov.; 42, *Psydus sinuaticollis* PIC. Scales. 0.5 mm for 33, 34, 39, 1.0 mm for 40–42.



Figs. 43–49, Cnodalonini spp. — 43–46, female inner reproductive organs in ventral view (43a & 44a: show apical parts of ovipositors; A–D, Coxite, A, fused lobes 3 & 4, B, lobe 2, C, lobe 1, D, gonostyle); 47–48, Right hind wings; 49, right antenna; 43, *Cleomis marginicollis* Gebien; 44, *Psydus sinuaticollis* Pic; 45, 47, *Foochounus robustus* Pic (quoted from Ando, 2003); 46, 48, 49, *F. niger* sp. nov. Scales. 1.0 mm.

Redescription: Body length 12.3–12.6 mm. Body (Fig. 13) and appendages dark brown to black, elytra without metallic shine.

Head with same but a little denser punctation than on pronotum, punctures fine and separated, surface between punctures dull and shagreened; eyes rounded together with temples, with small angle between eyes and genae, without supraorbital furrow; clypeal suture complete and distinct; shape of antennomeres see Fig. 13, distal antennomeres slender and not distinctly broadened.

Pronotum (Fig. 13) narrow, only 1.6 times as wide as long, widest near middle; lateral margins rounded, lateral and basal margins with distinct but narrow borders, distal margin unbordered in the middle; distal angles obtuse and entirely rounded, not produced; disc narrowly sulcate along lateral margins, punctures rather dense, denser laterad; propleura somewhat uneven and punctured as on pronotum; prosternal process flat but protruding posteriorly in a finger-shape.

Elytra (Fig. 13) as wide at the base as pronotum, distinctly widened posteriorly at sides and widest at 2/3 of their length, without distinct shoulders, not striate but with 9 rows of punctures, row 9 abreast with lateral margin, punctures somewhat larger laterally, with a short scutellar striole; intervals flat, impunctate and shagreened, distal part of elytra uneven and wrinkled by the punctation; epipleura shortened before apex. Wings reduced.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, first ventrite anteriorly with triangular process between posterior coxae, last ventrite unbordered.

Tibiae without spines on lateral side, distally on medial side with dense and fine adhesive setae, middle tibia of males with weak dilatation behind the middle and a tooth just before the tip.

Aedeagus (Fig. 28) with extremely long basale, distale broad triangular.

Remarks: This species is somewhat "unusual" in the genus not only because of reduced wings but also because of the different body shape and dorsal structure (without supraorbital furrow, pronotum narrow, lateral margins of pronotum not crenulated, elytral punctural rows without striae, extremely long basale of aedeagus, etc.). These differences might be generic. If so, a new genus must be created for this taxon, because it does not fit in any other genus of Cnodalonini as well.

Distribution: Darjeeling, Nepal.

Foochounus wasmanni (BLAIR, 1929) comb. nov.

(Figs. 14, 29)

Chariophenus wasmanni BLAIR, 1929: 240.
Foochounus assamicus (KASZAB, 1965); Kaszab, 1983: 134. **syn. nov.**
Anobriomaia assamica KASZAB, 1965a: 127.

Type material examined: 4 exs., India, Nilgiri Hills, 3500 ft., X. 1907, H. L. ANDREWES leg., 4 syntypes of *wasmanni* BMNH (sex not examined), 1 specimen designated herein as a lectotype, 3 specimens as paralectotypes. – India, Assam, Ratu, 3000 ft., 11. IX. 1960, F. SCHMID leg., holotype of *assamicus* HNHM (sex not examined).

Material examined: 6 exs., India, Fraserpet, VIII./IX.1930, F. R. I. SANDAL leg., BMNH (det. BLAIR); 1 ex., Nepal, Arun Valley, Lamobagar Gola, 1400 m, 8–14. VI. 1983, M. BRANCUCCI

leg., SMNS (duplicate from NHMB); 1 ex., Nepal, Annapurna, Marsyandi Khola Valley, between Chamje and Tal, 1,400–1,700 m, 11. VI. 1994 J. SCHMIDT leg., SMNS; 1 ex., Nepal, Annapurna, Madi Khola Valley below Sikles, 1,500 m, 4. VIII. 1995, J. SCHMIDT leg., SMNS.

New combination and synonymy: The type species *wasmanni* BLAIR, 1929 of *Chariophenus* BLAIR, 1929 fully coincides with all characters of *Foochounus* PIC, 1921, thus we consider the genus *Chariophenus* as a junior synonym and transfer the species *apicalis* BLAIR, 1929, *parkeri* BLAIR, 1929, *wasmanni* BLAIR, 1929 and *tibialis* BLAIR, 1930 to *Foochounus*. On the species level, the types of *Chariophenus wasmanni* BLAIR, 1929 and *Foochounus assamicus* KASZAB, 1965 show no differences, thus the latter is considered as a junior synonym of the former.

Lectotype designation: The original descriptions is based on an unspecified number of syntypes, so a lectotype is designated herein in order to fix a single name-bearing type and thus to define the species.

Redescription: Body length 7.5–8.5 mm. Body (Fig. 14) and appendages dark brown to black, dorsal surface shining and without setation, elytra cupreous.

Head with smaller and denser punctation than on pronotum, punctures fine and separated, surface between punctures shining; eyes rounded, with small angle between eyes and genae, supraorbital furrow weak; clypeal suture complete and distinct; shape of antennomeres see Fig. 14, distal antennomeres only slightly broadened and without distinct club.

Pronotum (Fig. 14) 1.6 times as wide as long, widest behind the middle; lateral margin irregularly crenulate, with distinct but narrow borders, basal and distal margins unbordered in the middle; distal angles obtusely rounded, slightly produced; disc moderately flattened along lateral margins, coarsely covered with large, coarse and dense punctures, which are also distributed in flattened areas; propleura somewhat uneven and punctured as on pronotum; prosternal process conical, protruding posteriorly.

Elytra (Fig. 14) distinctly wider at the base than pronotum, moderately divergent posteriad, with distinct shoulders, with 9 punctural rows in distinct striae, and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral striae larger than those in medial striae; intervals convex, finely punctured and shining, interval 3 broader and elevated distally; epipleura shortened before apex, with longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, last ventrite unbordered.

Tibiae roughly punctured, without spines on lateral side, unmodified in both sexes.

Aedeagus (Fig. 29) with distale elongate triangular, rounded at the tip.

Distribution: India (Nilgiri, Assam), Nepal.

Foochounus yamasakoi sp. nov.

(Figs. 15, 30)

Type series. Holotype: ♂, Laos, Nong Het, Xieng Khouang Prov., 20. VI. 2006, J. YAMASAKO leg., EUMJ. Paratypes: CE Laos, Boli Kham Xai Prov., 8 km NE Ban Nape, 600 m, 1–18. V. 2001, L. DEMBICKÝ leg., 1 ex. SMNS; 1 ex., Laos, Phongsaly Prov., Phongsaly, 1,500 m, 28. V–30. VI. 2003, P. PACHOLÁTKO leg., NHMB; 1 ex., N Thailand, Doi Mae Salong, near Chiang Rai, 24. IX. 1990, K. MASUMOTO leg., NSMT; 3 exs., N Vietnam, Hoang Lien Son Distr., Sa Pa, 1,600 m, 11–16. V. 1990, J. HORÁK leg., MHNL.

Etymology: Named in honor of Jun'suke YAMASAKO, Ehime University, who is one of specialists of Mesosini (Cerambycidae) in Japan, and collector of the holotype.

Description: Body length 4.8–5.5 mm. Body (Fig. 15) and appendages dark brown to black, shoulders of elytra somewhat lighter, dorsal surface shining and without setation, elytra cupreous.

Head with somewhat denser but not confluent punctation as on pronotum, surface between punctures microsculptured; eyes produced laterad in dorsal view, with small angle between eyes and genae, devoid of supraorbital furrow; clypeal suture obscured by microsculpture; mentum transverse-oval, shallowly concave at sides of median longitudinal costa, with some long setae; shape of antennomeres see Fig. 15, distal antennomeres only weakly broadened.

Pronotum (Fig. 15) 1.6–1.8 times as wide as long, widest before the middle, lateral margins strongly and irregularly crenulate, with indistinct and very narrow borders, basal and distal margins unbordered in the middle; distal angles obtusely rounded, weakly produced; disc slightly depressed along lateral margins, with punctures coarse and dense, becoming denser and confluent laterally; propleura somewhat uneven and punctured as on pronotum; prosternal process conical, protruding posteriorly.

Elytra (Fig. 15) distinctly wider at the base than pronotum, distinctly divergent posteriad, with distinct shoulders, with 9 punctural rows in feeble striae, and with a short scutellar striole, stria 9 abreast with lateral margin, punctures in lateral striae larger than those in medial striae; intervals convex, particularly so laterally and distally, finely punctured and shining; epipleura shortened before apex, with longitudinal furrow distally. Wings fully developed.

Abdominal ventrites with feeble longitudinal wrinkles and indistinct punctation, finely microsculptured, last ventrite unbordered. Tibiae roughly punctured, without spines on lateral side, unmodified in both sexes.

Aedeagus (Fig. 30) with distale short triangular, rounded at the tip.

Diagnosis: *Foochounus yamasakoi* sp. nov. is quite similar to *F. parkeri* and both species share the small body size. However, in *F. yamasakoi* sp. nov. the eyes are not so widely separated (vid. Figs. 7, 30), the elytral intervals are shining and with fine punctation (in *F. parkeri* shagreened and without punctation), and the aedeagus is different in a longer and sinuated apicale (Figs. 22, 30).

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not least we thank Takashi ICHIYANAGI, Ehime University, for his aid to prepare the female inner reproductive organs.

要　　約

Wolfgang SCHAWALLER・安藤 清志：東洋区に産する *Foochounus* PIC 属の再検討．――― 中国，台湾からボルネオにかけて広く分布する Stenochiinae 亜科 Cnodalonini族 *Foochounus* 属について再検討を行った．本属の種は中国からインドシナにかけて最も繁栄していると考えられ，本研究では雌内胎などの特徴によって，本属が *Tetragonomenes, Psydus, Cleomis* の諸属にきわめて近縁のものとして位置付けられることがわかった．BLAIR によって1929年に創設された *Chariophenus* 属を本属の異名同物と認め，この属の全種を *Foochounus* 属に移行した．また，6種の未記載種を認め，これらを新種として次のように命名記載した．*Foochounus abditus* sp. nov. (ベトナム産), *F. confusus* sp. nov. (シッキム，ブータン産), *F. laoticus* sp. nov. (ラオス産), *F. niger* sp. nov. (ボルネオ，サバ州産), *F. thailandicus* sp. nov. (タイ産), *F. yamasakoi* sp. nov. (タイ，ラオス，ベトナム産). SCHAWALLER (2000) が記載した *Chariophenus schmidti* を *C. tibialis* BLAIR, 1930 (= *Foochounus tibialis* (BLAIR, 1930)) の異名同物として，*Anobriomaia assamica* KASZAB, 1965 (= *Foochounus assamicus* (KASZAB, 1965)) を *Chariophenus wasmanni* BLAIR, 1929 (= *Foochounus wasmanni* (BLAIR, 1929))の異名同物としてそれぞれ処理を行った．BLAIRによって記載された種 (*F. apicalis, F. parkeri, F. wasmanni*) はそれぞれのタイプ標本を実検し，Lectotype, Paralectotype を指定した．

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A New Species of *Cobalocephalus* (Coleoptera: Brentidae) from Japan

Katsura MORIMOTO

20–101 Nata-danchi, Higashi-ku, Fukuoka, 811–0205 Japan

Abstract: *Cobalocephalus mizobei* sp. nov. is described based on a male from Iriomote I., Japan, as the second species of the genus. This is easily distinguished from *C. gyotokui* (NAKANE, 1963) by the longer and serrulate mandibles, narrower pronotum, narrower tibiae, and less transverse segments of antennae.

Cobalocephalus was established upon *Amorphocephalus gyotokui* NAKANE, 1963, in the tribe Eremoxenini (=Amorphocephalini) (MORIMOTO, 1982), and *C. mizobei* is newly described in this paper from Iriomote I., the Ryukyus, Japan as the second species of the genus through the courtesy of Mr. Tadashi MIZOBE, an eager hobby entomologist in Fukuoka. To whom I wish to express my cordial thanks for his favor giving me the interesting and rare weevil for the present study.

Cobalocephalus is apparently a member of the *Symmorphocerus-Cordus* group in the tribe Eremoxenini of DAMOISEAU, 1979. In this group, DAMOISEAU, 1980, employed such characters of tibiae as "foliaces, larges et aplatis" or "normax" for separating genera in the key (also by KLEINE, 1937 and 1938), but these two conditions are present in *Cobalocephalus* and the tarsi are apparently foliate in *C. gyotokui*, whereas these are normal in *C. mizobei*. The foliate condition of the tibiae is confirmed by comparing them with *Myrmecobrenthus wasmanni* from Ivory Coast. Those two species are, however, classified in the same genus *Cobalocephalus* because of the similarity of head and rostral structures.

Cobalocephalus mizobei MORIMOTO, sp. nov.

(Figs. 1–2)

Male. Chocolate brown, swollen parts of femora and median parts of tibiae reddish brown, bare.

Head transverse, parallel-sided behind eyes to basal constriction, with a broad and deep median sulcus continuous from prorostrum to basal constriction of vertex, this sulcus open posteriorly and shortly divergent to constriction, with a faint narrow transverse depression across sulcus between eyes, with thin punctures on flat dorsum. Rostrum about as long as wide, as long as head to basal constriction, dorsum flat from prorostrum to vertex, with broad median sulcus; prorostrum as wide as metarostrum, transversely raised along anterior margin, epistome cordiform, small; mesorostrum semicircularly expanded laterally, metarostrum deeply concave laterally, this concavity filled with rostral apophysis on each side; underside of rostrum strongly

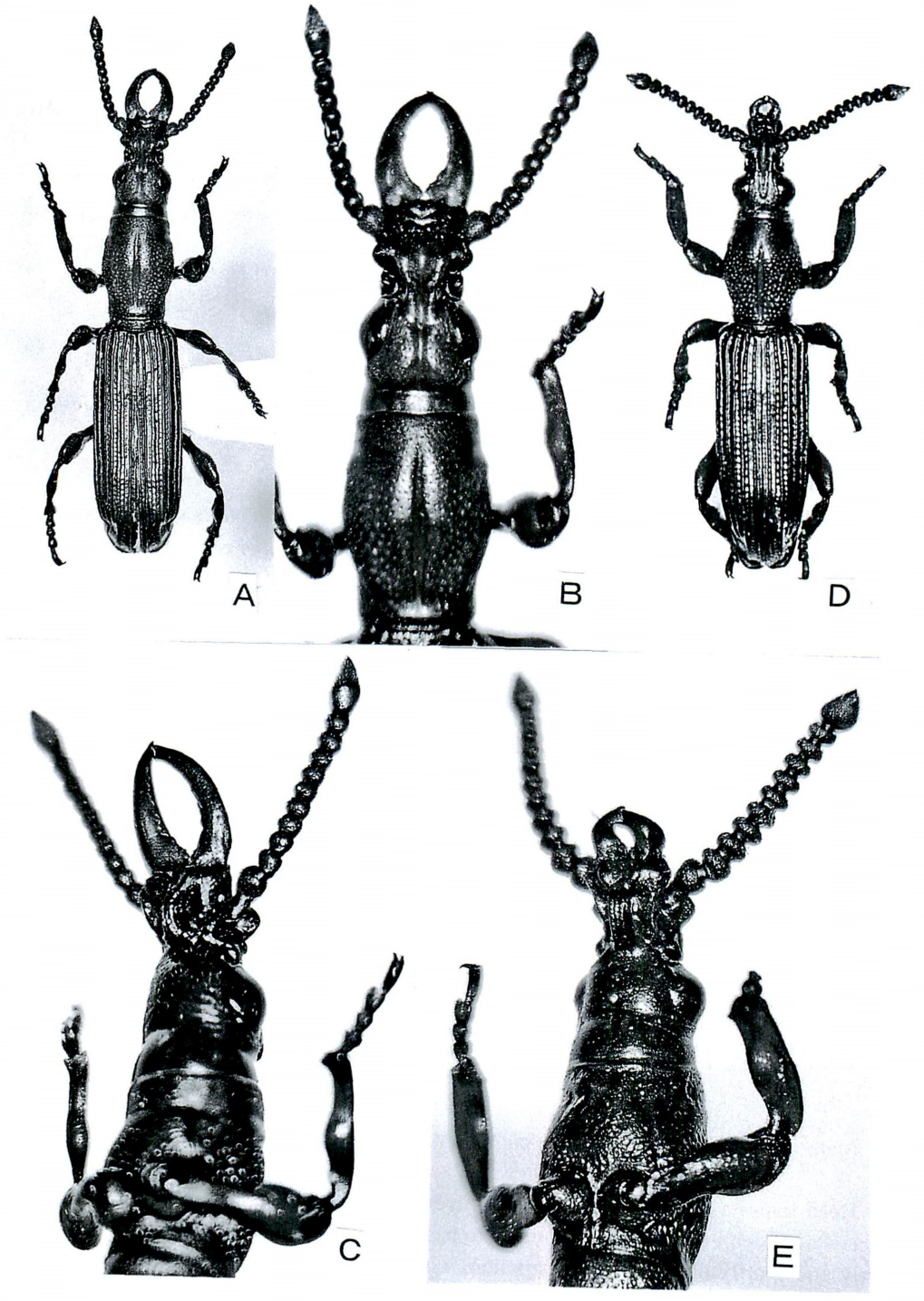

Fig. 1. *Cobalocephalus* spp. —— A–C: *C. mizobei* sp. nov., male. D, E: *C. gyotokui* (NAKANE), male. (A: holotype; B: head and prothorax, enlarged; C & E: ventrolateral aspects of head and prothorax showing costa and depressions on the underside of rostrum in male, also notice the difference of antennae and fore tibiae between two species).

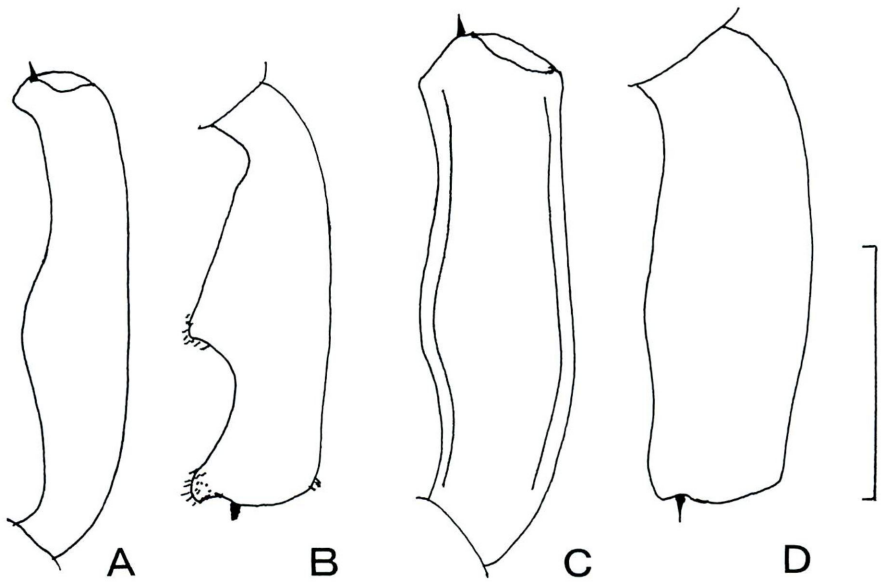

Fig. 2. Fore and hind tibiae of *Cobalocephalus* spp., male. —— A, B : *C. mizobei* sp. nov. C, D: *C. gyotokui* (NAKANE). (A, C: fore tibia; B, D: hind tibia). Scale: 1 mm.

compressed on each side of median costa, the costa well produced and arcuate ventrally, bearing a pair of narrow sulci from base to hypostomal sinus, with a semicircular deep and large depression on each side of the median costa. Mandibles 1.3 times as long as rostrum, evenly arcuate, gradually attenuate apically, with about ten obtuse serrulae along inner margin, with a robust tooth behind apex. Antennae robust, 11-segmented, first and second segments asymmetrical, third segment dilated apically, 1.2 times as wide as long, fourth to eighth almost equal in shape, subquadrangular with arcuate side margins, about 1.2 times as wide as long, ninth and tenth similar to precedings in shape, but slightly larger, terminal segment 1.7 times as long as wide, tomentose on apical half.

Pronotum 1.4 times as long as wide, widest at middle, weakly arcuate at sides, basal margin marginate by fine transverse sulcus, faintly narrower than anterior margin, median sulcus deep, but not reaching anterior and basal margins, punctures reticulate at sides, becoming sparser and smaller medianly and anteriorly, and very fine on the anterodorsal areas, not punctate on collar. Scutellum punctiform.

Elytra 2.6 times as long as wide, parallel-sided on basal three quarters behind humeri, striae very narrow; intervals flat, with a row of indefinite punctures on first and second intervals, depressed to declivity and with a row of definite punctures on the other intervals, thus intervals exterior from fourth narrowly costate on each margin of interval; apical area on declivity with first and third intervals costate, seventh weakly so and short behind declivity, and the other intervals and striae obsolete and flat.

Legs robust, femora with almost parallel-sided stalk on basal third, tibiae bisinuate internally, widest at basal third on fore legs, at the middle on middle and hind legs, hind tibiae almost straight to the widest point at inner margin, angulate and scooped thence to apex.

Prosternum linear between coxae, punctate around coxae.

Female: Unknown.

Length including occluded mandibles: 12.8 mm.

Holotype ♂ (Type ELKU no. 3299, Kyushu Univ.), Mahreh-River., Funaura, Iriomote I., the Ryukyus, Japan, 4-5. V. 2008, T. MIZOBE leg. at light.

Distribution: Japan (Iriomote I. in the Ryukyus).

Etymology: The name is dedicated to Mr. Tadashi MIZOBE, who collected this interesting weevil for the first time by a light trap.

Note. This species is easily distinguished from *Cobalocephalus gyotokui* (NAKANE, 1963) by the following points (characters of *C. gotokui* in parentheses): mandibles longer than rostrum (shorter), serrulate along inner margin (smooth); temples parallel-sided (narrowing posteriorly, shorter); median sulcus reaching the basal constriction (not reaching); antennal segments about 1.2 times as wide as long from fourth to eighth each (twice as wide as long excepting neck); pronotum less rounded at sides (more rounded at sides), slightly wider at anterior margin than basal margin (almost of the same width); fore and middle tibiae narrow (wider), distinctly bisinuate internally (hardly bisinuate), inner surface not marginated by sulci (flattened, marginated by sulci along dorsal and ventral margins); hind tibiae angulate internally at widest point, thence scooped to apex (faintly bisinuate, not scooped).

要　　約

森本　桂：日本産アカオニミツギリゾウムシ属の新種．——*Cobalocephalus* アカオニミツギリゾウムシ属は *C. gyotokui* (NAKANE, 1963) アカオニミツギリゾウムシをタイプとして創設されたが，溝部忠志氏が西表島から２種目の雄を採集されたので，新種として *C. mizobei* n. sp. キバナガオニミツギリゾウムシ（新称）を記載した．両種は次の特徴で区別できる．（　）内はアカオニの特徴．

（１）大顎が吻より長く（短く）、内縁に鋸歯列をもつ(鋸歯はない)，（２）複眼後方の側頭部がより長くて平行(短く，後方へ狭まる)，（３）吻から頭部に続く中央溝は後頭の括れに達し，後方で開く（括れに達しない）．（４）触角の４－８節は，幅が長さの 1.2 倍（約２倍），（５）前胸の膨らみは弱い（やや強い），（６）前・中脛節はより狭く，内縁は明らかな二湾状（広く，わずかな二湾状），（７）後脛節は中央後方で内側へ三角状に広がり，そこから先端までややえぐられる．

この雄標本は，溝部氏が西表島船浦マーレー川畔に２日間設置したライト・トラップで採集したもので，雌は未知であるが，吻前部は円筒状をしていると思われる．オニミツギリゾウムシ族 Eremoxenini (=Amorphocephalini) の仲間は，成虫がいずれも朽木や石下などに営巣するアリの巣から採集されているが，幼虫に関する知見は全くない（KLEINE, 1924; SFOLZI & BARTOLOZZI, 2004）．

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A New Species of the Genus *Sciodrepoides* (Coleoptera: Leiodidae: Cholevinae) from Japan

Hideto HOSHINA
Department of Regional Environment, Faculty of Education & Regional Studies,
Fukui University, Fukui City, 910–8507 Japan

Abstract A new species, *Sciodrepoides fujitanii* HOSHINA, sp. nov., is described from Honshu, Japan as the eighth species of *Sciodrepoides* in Japan. The sclerites of inner sac of median lobe are elucidated to have important value for the taxonomy of *Sciodrepoides* at the specific level.

Introduction

The genus *Sciodrepoides* was established by HATCH (1933) as a subgenus of the genus *Catops* PAYKULL, 1798. Later, JEANNEL (1936) upgraded it to a full genus. At present, 10 species and three subspecies have been known to occur worldwide (PERREAU, 2000) and seven species in Japan until now (JEANNEL, 1936, 1950; NAKANE, 1956; KAMIMURA *et al.*, 1964; SZYMCZAKOWSKI, 1965; HAYASHI, 1969; NISHIKAWA, 1992; PERREAU, 2000 and 2004). Japanese species of *Sciodrepoides* can be caught easily by using bait traps.

Recently, I had an opportunity to examine 15 specimens of *Sciodrepoides* collected in Honshu, Japan. They are clarified to belong to a new species after my careful examination, and thus this species is described as *S. fujitanii* in this paper.

The holotype designated in this study is deposited in the collections of the Museum of Nature and Human Activities, Hyôgo (MNHAH). The paratypes are preserved in my collection.

Before going further, I wish to express my sincere gratitude to Mr. Yoshifumi FUJITANI (Okayama Pref.) who kindly offered me the valuable specimens to the present study.

Sciodrepoides fujitanii HOSHINA, sp. nov.

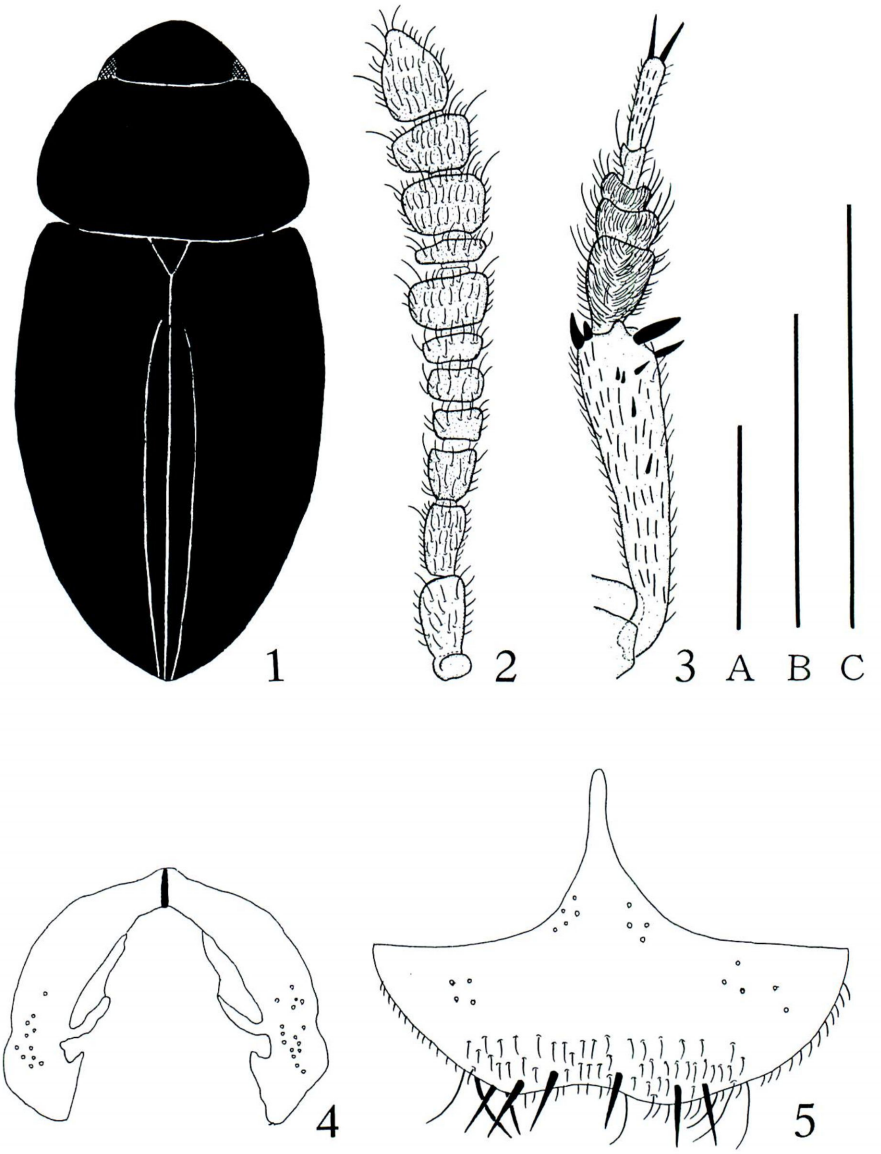
(Japanese name: Inaba-ko-chibishidemushi)

(Figs. 1–8)

The present new species is very similar to the other Japanese congeners.

Measurement of holotype: Body 3.3 mm in length; head 0.48 mm in length and 0.84 mm in width; pronotum 0.80 mm in length and 1.4 mm in width; elytra 2.2 mm in length and 1.6 mm in width.

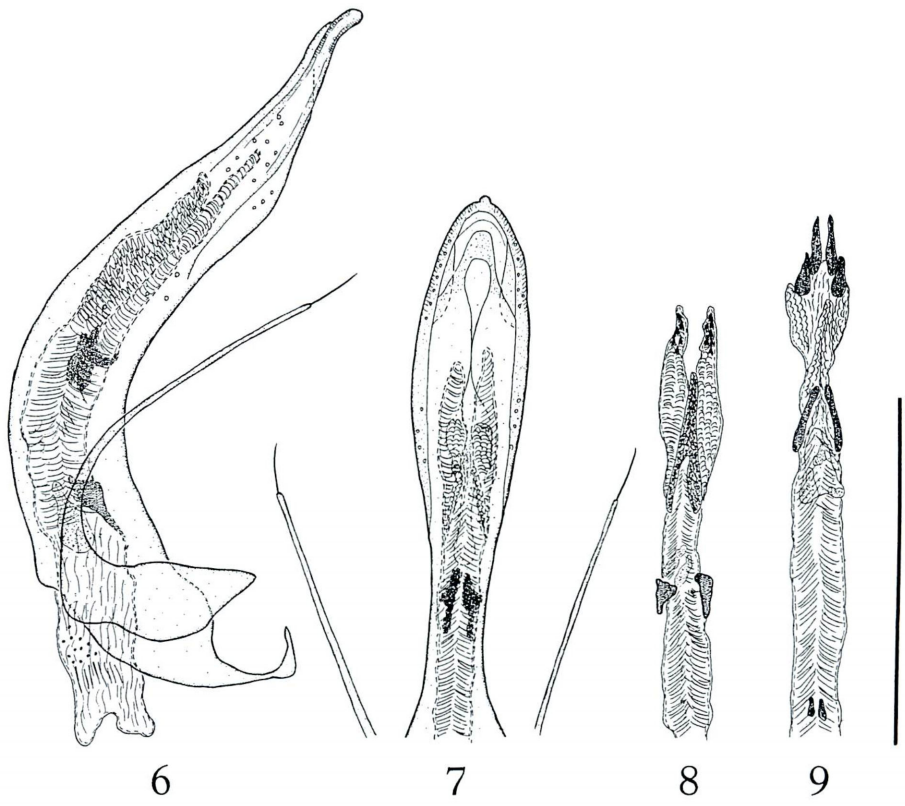
Male and female. Coloration: Dorsum almost bicolorous; head and pronotum black; antennae brownish, 1st–2nd segments brown, apical half of 11th segment light brown, other seg-



Figs. 1–5. *Sciodrepoides fujitanii* HOSHINA, sp. nov. —— 1, body. 2, antenna. 3, male left fore leg, ventral view. 4, male abdominal segment VI. 5, female abdominal segment VI. Scale A: 1 mm for Fig. 1. Scale B: 0.5 mm for Figs. 2 and 3. Scale C: 0.5 mm for Figs. 4 and 5.

ments dark brown; basal half or 3/5 of elytra reddish dark brown and other areas black, rarely dark brown, legs brownish, coxae, dorsal sides of profemora, and ventral sides of meso- and metafemora dark brown; trochanter, tibiae, tarsi, ventral sides of profemora, and dorsal sides of meso- and metafemora brown; meso- and metasterna and venter dark brown.

Body less shining, pubescent on dorsum as the other congeners, and about 2.1 times as long as wide (Fig. 1).



Figs. 6–8. *Sciodrepoides fujitanii* HOSHINA, sp. nov. Fig. 9, *S. watsoni watsoni* (SPENCE).—— 6, aedeagus, lateral view. 7, ditto, ventral view. 8 and 9, inner sac of median lobe, dorsal views. Scale 0.5 mm for Figs. 6–9.

Head about 1.7 times as wide as long, about 0.60 times as long as and about 0.61 times as wide as pronotum (Fig. 1), almost smooth, punctures minute, distinct, and dense; antennae about 1.4 times as long as width of head; 1st-3rd and 11th segments of antennae longer than wide; other segments wider than long (Fig. 2); relative lengths of 1st to 11th antennal segments as follows: 4.6 : 3.3 : 2.3 : 1.5 : 1.5 : 1.2 : 2.5 : 1.0 : 2.7 : 2.5 : 4.2; 11th segment oval.

Pronotum about 1.7 times as wide as long (Fig. 1), about 0.37 times as long as and about 0.84 times as wide as elytra, widest at about basal 1/5 of lateral margins, almost smooth and punctate as on head, simply narrowed in a weak curve at sides towards apex from about basal 1/5.

Elytra widest at about basal 3/10 of lateral margins, about 1.4 times as long as wide (Fig. 1), microreticulate, and densely and distinctly punctate, but a little more minutely so than head and pronotum; sutural stria long and distinct, reaching basally near scutellum.

Legs with typical characteristics of the genus.

Male. Protarsi dilated in 1st–3rd segments as the other congeners; 1st segment almost as wide as 2nd, and about twice as wide at 4th (Fig. 3); protibiae relatively robust, about 3.5 times as long as wide, curved at about basal 1/6 to 1/5 of inner margins, and gradually expanded from base towards apex (Fig. 3); abdominal segment VI as shown in Fig. 4. Aedeagus relatively robust; median lobe curved in an arc, sharply narrowed from apical 1/4 towards apex, bluntly

pointed at apex in lateral view (Fig. 6), laterally expanded at lateral margins and a little projected at apex in ventral view (Fig. 7); each paramere very slender, bearing an apical seta, and clearly shorter than median lobe (Figs. 6 and 7); inner sac relatively simple (Fig. 8).

Female. Protibiae relatively slender, about 5.5 times as long as wide, weakly curved at about basal 1/6 of inner margins and slightly expanded from base towards apex; abdominal segment VI almost straight at latero-basal margins (Fig. 5).

Body length: 3.0–3.4 mm.

Distribution. Japan: Honshu (Tottori Pref.).

Type series. Holotype: ♂, Yakô-dani, Chidu-chô, Yazu-gun, Tottori Pref., Honshu, 27. VI. 2007, Y. FUJITANI leg. (collected by bait traps) (MNHAH). Paratypes, 4 ♂♂, 4 ♀♀, same data as holotype; 4 ♂♂, 2 ♀♀, 9. V. 2007, same data as holotype except for the date.

Remarks. The present new species is similar to *S. fumatus fumatus* (SPENCE, 1815) in appearance, but the dorsum is relatively dark, whereas in *S. fumatus fumatus* a little bright in dorsum. Moreover, *S. fujitanii* HOSHINA, sp. nov. is also similar to *S. watsoni watsoni* (SPENCE, 1815), but can be distinguished from it by having the relatively robuster aedeagus (Fig. 6) and inner sac without distinct sclerites near apex (Fig. 8), whereas in *S. watsoni watsoni*, the aedeagus is slender and inner sac has the four sclerites near apex (Fig. 9).

Discussion. Most of species of the genus *Sciodrepoides* have the brownish or blackish head and pronotum and bicolorous elytra, and they resemble closely in appearance each other. The features of male protibiae and the outlines of aedeagus have been used mainly in the taxonomy of *Sciodrepoides* at the specific level. I consider that the sclerites of inner sac of median lobe are also important in some taxonomic characters at the specific level of *Sciodrepoides*, as in the subfamily Anemadinae (GIACHINO & VAILATI, 1993) though their morphological features have not been described in the taxonomic studies of *Sciodrepoides* until now.

Etymology. The specific name is dedicated to Mr. Y. FUJITANI who gave me an opportunity to examine specimens in the type series.

要　　約

保科 英人：日本からの *Sciodrepoides* 属（和名：コチビシデムシ属）の１新種の記載．――鳥取県から，コチビシデムシ属の未記載種が発見され，筆者は，本稿にて，*S. fujitanii* HOSHINA, sp. nov. (和名：イナバコチビシデムシ)と，命名・記載した．今まで，本属の種レベルの分類は，雄前脚脛節や雄交尾器中央片の形状が重要視されてきたが，交尾器内の内袋も，近縁種間で明瞭な差が見られ，重要な分類形質の１つであることがわかった．

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   Blackwelder, R. E., 1936. Morphology of the coleopterous family Staphylinidae. Smithsonian miscellaneous Collections, **94** (13): 1–102

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