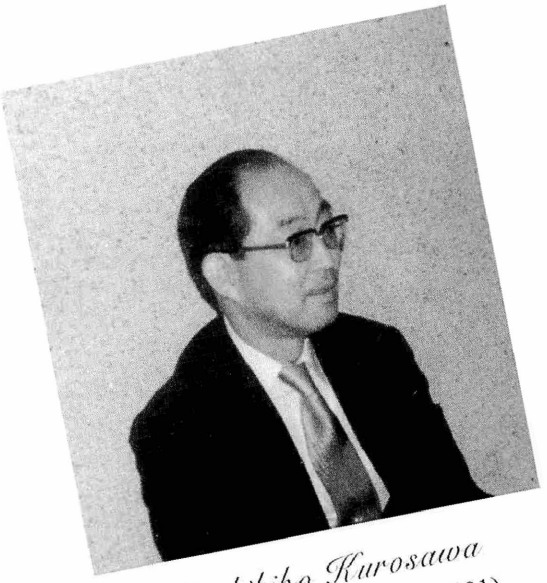
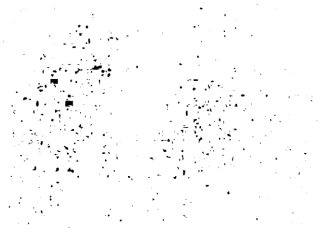


Yoshihiko Kurosawa
(Aug. 1, 1921 – Feb. 27, 2001)

At Yunoyama; Dec. 18, 1984.



Elytra, *Tokyo*, **29** (2): 265–283, November 15, 2001

Isopterina, a New Subtribe of the Tribe Celeuthetini, with Notes on the Related Taxa (Coleoptera, Curculionidae)

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Abstract Weevil genera *Arrhaphogaster*, *Borodinophilus*, *Isopterus*, *Kotoshozo*, *Neasphalmus* and *Pseudottistira* have been variously classified in the tribes Polydrusini, Celeuthetini, Pachyrhynchini or Otiorhynchini, but are newly combined together into the new subtribe Isopterina of the tribe Celeuthetini in this paper. Main features of Isopterina are the absence of the transverse sulcus at the base of rostrum, lack of the spiculum ventrale of the 8th sternite in female, and subdivided 9th sternite in male in Celeuthetini. New synonymies of genera and new combinations of species proposed in this paper are as follows: *Isopterus* FAUST, 1895 (=*Kotoshozo* KÔNO, 1942, syn. nov.), *Neasphalmus* NAKANE, 1963 (=*Borodinophilus* VOSS, 1971, syn. nov.), *Isopterus kotoensis* (KÔNO, 1942, comb. nov. from *Kotoshozo*), and *Neasphalmus ihai* VOSS, 1971, comb. nov. from *Borodinophilus*). Keys to the tribes and subtribes in question, to the genera of Isopterina and to the species of *Neasphalmus* are given. Morphological features adopted are discussed with many illustrations.

Weevil genera *Arrhaphogaster*, *Borodinophilus*, *Isopterus*, *Kotoshozo*, *Neasphalmus* and *Pseudottistira* have been variously classified in the tribes Polydrusini, Celeuthetini, Pachyrhynchini or Otiorhynchini as noted in the following check list, or some are placed in the "genera incertae sedis" (LONA, 1936, 38; ALONSO-ZARAZAGA & LYAL, 1999). These confusion must be caused by the different valuation of such features as the antennal scrobes, exposed maxillae, and shortly pedunculate postmentum, and by oversight of the mandibular scars. Thus, morphological characters are precisely examined by dissection at first, and then important ones are selected for the taxonomy of these taxa.

These genera are newly combined together into the new subtribe Isopterina in the Celeuthetini based on the three main features: absence of the transverse sulcus at the base of rostrum, lack of the spiculum ventrale on the 8th sternite in female, and subdi-

vided 9th sternite in male.

To the late Dr. Yoshihiko KUROSAWA, this paper is dedicated in token of respect to the memory of his great contributions to the Coleopterology. He is known as the specialist of Buprestidae, but has interest in a wide range of insects including Celeuthetini and Pachyrhynchini of Curculionidae. Thus, Celeuthetini are selected for this memorial issue as an appropriate taxon to dedicate to him.

Morphological Notes on the Characters Adopted

1. Antennal scrobes

Position of the antennal scrobes have been adopted as one of the most important features for separating subfamilies in the adelognathous Curculionidae. Namely, Brachyderinae were defined by the characters that the scrobes forming sublinear furrow and curving downwards in front of the eyes, and lateral in position, whereas in Otiorhynchinae they are subdorsal in position and directed towards the eyes, and the rostrum often has the pterygia expanding outwards from the antennal sockets.

The tribe Celeuthetini have been classified in the subfamily Otiorhynchinae, but the antennal scrobes are dorso-lateral to lateral in position and characteristic in having generally open posteriorly, triangular or bifurcate. The pterygia are often indefinite. For example, *Platyspatus latiscapus* (Fig. 23) has the scrobes broadly open posteriorly and bare between dorsal and ventral edges; the dorsal part is shallowly furrowed from the antennal socket to the base of rostrum along dorsolateral edge, but the ventral margin is waved and running downwards in front of the eye, and the subtriangular area between them is bare and weakly convex. In *Philicoptus* spp. (Figs. 24, 25), the scrobe is apparently <-shaped and the dorsal furrow is sharp and rather short. In *Phraotes nodifer* (Fig. 26), the dorsal furrow is very short and the ventral furrow runs down obliquely in front of the eye to the ventrolateral edge like Brachyderinae auct.

Among the genera of *Isopterus* and its relatives, the antennal scrobes are more lateral in position than those of most Celeuthetini owing to having broader interscrobal area, but are similar to those of *Coptorhynchus* auct. and allies in general structures as was already noticed by GÜNTHER (1943) and VOSS (1971). The tribe Celeuthetini have been classified in the subfamily Otiorhynchinae, but the antennal scrobes are regarded as the intermediate position between those of the Otiorhynchinae and Brachyderinae auct. and the pterygia are often not marked.

2. Mouth-parts

The mouth-parts of the Curculionidae are generally divided into two types as in the followings (MORIMOTO & KOJIMA, 1994). 1) Phanerognathous type: Mandibles without deciduous process, often thinner, ventral cutting edge lying on or close to the exterior margin; inner surface oblique, almost flat or shallowly concave; maxillae largely or entirely exposed; mentum comparatively small or narrow in relation to the buccal cavity; postmentum pedunculate. 2) Adelognathous type: Mandibles with de-

ciduous process in general, robust, with inner surface faced to the opposite, deeply concave, so as to receive maxillary palpi and mala between them, their ventral cutting edge lying far interior to the outer contour in ventral aspect; mentum comparatively large and covering or nearly covering the buccal cavity, so as to conceal more or less completely the maxillae and their palpi; postmentum not or at most shortly pedunculate.

Among the tribes treated, the mouth-parts are of the adelognathous type in the Celeuthetini, Elytrurini and Ottistirini, whereas in the Sitonini the mandibles are partly of the phanerognathous type in having the ventral cutting edge close to exterior margin and almost flat inner surface, but has a deciduous process at the apex of the left mandible. Among the genera in the subtribe Isopterina, the postmentum is shortly pedunculate, and the maxillae are partly exposed (Fig. 7).

3. Procoxal and mesocoxal cavities

The coxae are usually termed as "connate or distant". These cavities are, however, apparently in three character states under close examination by taking off the legs: 1) the coxae are connate externally and the coxal cavities are also connate internally, 2) the coxae are separated externally, but the coxal cavities are connate internally, 3) the coxae and coxal cavities are entirely separated both externally and internally. Among the weevils in question, the Ottistirini are the only tribe having the coxae of the type 3, whereas in the other tribes treated here, they are of the type 1 or 2.

4. Tibial apex

The terminal surface of the tibiae is often subdived into the corbel and tarsal groove by the longitudinal carina or flange of tarsal cavity. According to the terms applied by EMDEN (1944) and followed by MORIMOTO (1962), the corbel is termed "semi-enclosed" when the tibial apex is divided into the corbel and tarsal groove and the corbel is fringed with a row of setae externally, and also termes "enclosed" when it is fringed externally with double row of setae along inner and outer margins of a crescent space. This space is also named "corbel" by EMDEN (1944), but not homologous with it (MORIMOTO, 1962). Thus, THOMPSON (1991, 1992) proposed such descriptive terms as the outer bevel for the crescent surface mentioned above, the inner flange for the semi-enclosed corbel sense EMDEN, and in case without the bevel and flange it can be described as simple. The apex of hind tibiae has outer bevel in the Elytrurini, and flange in the Celeuthetini.

5. Metendosternite

The metendosternite is fundamentally divided into two types by the presence or absence of the lateral arms in the Adelognatha (MORIMOTO, 1962). The lateral arms are present in the Sitonini and Ottistirini (Fig. 61), whereas these are absent in the Celeuthetini and Elytrurini (Figs. 10, 52, 57). The Elytrurini are characterictic in having the peculiar metendosternite, of which the metafurca is directly conglutinate to the meso-

sternite at three points, one at the middle of anterior margin, and a pair at the posterior walls of mesocoxal bowls (Fig. 57). This condition is similar to the case of *Blosyrus japonicus* (cf. MORIMOTO, 1962), but the metendosternite in the latter is conglutinate to the mesosternite only at coxal bowls.

6. Abdomen

The abdomen of the Curculionoidea is of the cryptogastran type, and the first and second sternites are absorbed into the posterior wall of coxal cavity. Thus, the first ventrite is morphologically the third sternite. Among some genera in the tribe Celeuthetini, the female abdomen has visibly only two ventrites (Fig. 12). This condition has been explained as the fusion of ventrites (MARSHALL, 1956; VOSS, 1940, 1958). It is not so, but the great expansion of the first and second ventrites results the complete covering of the following segments. By the examination under the microscope after softening treatment with KOH solution, the third to fifth ventrites are observed inside the second ventrite as less sclerotized short segments continuing from the respective tergite (Figs. 8, 20). By the same method, the concealed seventh sternite (= fifth ventrite) in the female of *Hypotactus papillatus*, which has four visible ventrites, can be observed inside the sixth sternite.

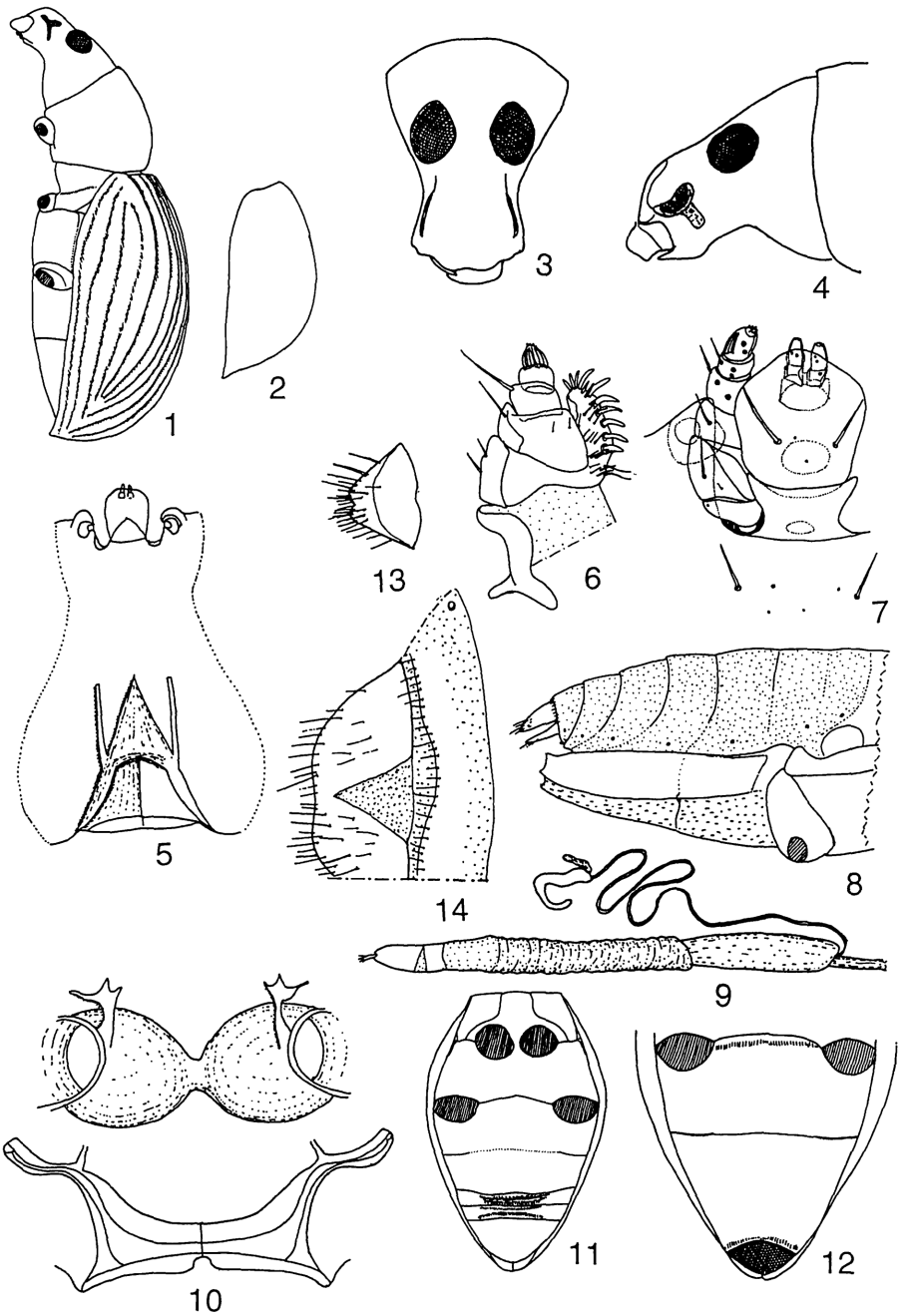
The 8th seternite in male is divided into a pair of crescent sclerites in most curculionids as well as the tribes in question, and can be taken out by dissection with 9th sternite (Figs. 42, 46). The 9th sternite in male is a small plate with or without median incision, or paired sclerites continuing to or separating from the expanded base of the spiculum gastrale. These structures may have important value for defining tribes. In the Isopterina, 9th sternite is divided into 3 sclerites (Figs. 42, 44–46). The 7th tergite is visibly terminal in most curculionids. This tergite in male has a pair of spicule patches at base, and almost completely covers the 8th tergite.

In female, the 8th sternite is the terminal, withdrawn inside the 7th, and usually furnished with the spiculum ventrale. The length of the spiculum ventrale may have relation with that of ovipositor. Isopterina are unique in having 8th sternite terminal and spiculum ventrale absent (Figs. 13, 21).

7. Ovipositor

The ovipositors of Curculionoidea were well compared from the viewpoints of both behavior and structure by HOWDEN (1995). However, these structures have not been examined for the taxonomic purpose in the related higher taxa except MORIMOTO

Figs. 1–14. —— 1–12. *Neasphalmus okinawanus*; 1, female, lateral; 2, male elytra, lateral; 3, rostrum and head, dorsal; 4, rostrum and head, lateral; 5, tentorium; 6, maxilla; 7, labium and maxilla, ventral; 8, female abdomen relaxed with KOH solution, lateral, showing the relation of tergites and sternites; 9, ovipositor; 10, meso- and metasterna, dorsal, showing metendosternite and mesocoxal bowls; 11, male venter; 12, female venter. —— 13–14. *Isopterus macromerus*; 13, 8th sternite, no spiculum ventrale; 14, 7th and 8th tergites.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(1962), who speculated their progressive differentiation in the adelognathous Curculionidae. Distal part of coxite is prominent as a pair of processes from the proximal mambranous part in the Sitonini and Ottistirini, whereas in the Elytrurini and Celeuthetini, it embraces the vagina and not prominent. The ovipositor is slender in the Celeuthetini and capable of stretching more than whole body length when ovipositing. In this case, the spermatheca is drawn into the tubular extended part.

Key to the Tribes and Subtribes in Question

1 (4) Metendosternite with lateral arms (Fig. 61); ovipositor very short, distal part of coxite prominent caudad from proximal membranous part (Fig. 62), bursa copulatrix well bulged (Fig. 53); 8th sternite in female with spiculum ventrale (Fig. 60).

2 (3) Mandibles of phanerognathous type, with almost flat and oblique inner surface, with deciduous process at apex of left mandible, which directs internally and its scar small crescent at apex; maxillae with galea and lacinia distinct; pro- and mesocoxal cavities connate internally. . . . Tribe Sitonini

3 (2) Mandibles of adelognathous type, inner surface faced to the opposite, deeply concave; deciduous process indefinite; maxillae with galea and lacinia fused; pro- and mesocoxal cavities entirely separated both externally and internally. . . . . Tribe Ottistirini

4 (1) Metendosternite without lateral arms (Figs. 10, 52); ovipositor short to long, distal part of coxite continuous with proximal part and embrace vagina between them (Figs. 9, 21).

5 (6) Metendosternite T-shaped, anterior part entirely flat, transverse, rounded laterally and conglutinate to mesosternite at three points, the middle of anterior margin and at the posterior wall of mesocoxal bowls, anterior arms and anterior tendons absent (Fig. 57); ovipositor short, bursa copulatrix well bulged, reaching cephalad the level of second ventrite (Fig. 53); 8th sternite in female with spiculum ventrale (Fig. 55); rostrum without transverse sulcus at base; hind tibiae with outer bevel (=corbel enclosed). . . . . Tribe Elytrurini

6 (5) Metendosternite with anterior arms, anterior tendons widely distant, free from mesosternum (Figs. 10, 52); ovipositor slender, spermathecal duct very long (Figs. 9, 21).

7 (8) Metendosternite with ventral longitudinal flange strongly developed, prominent anteriorly as a narrow process from the middle of anterior margin in

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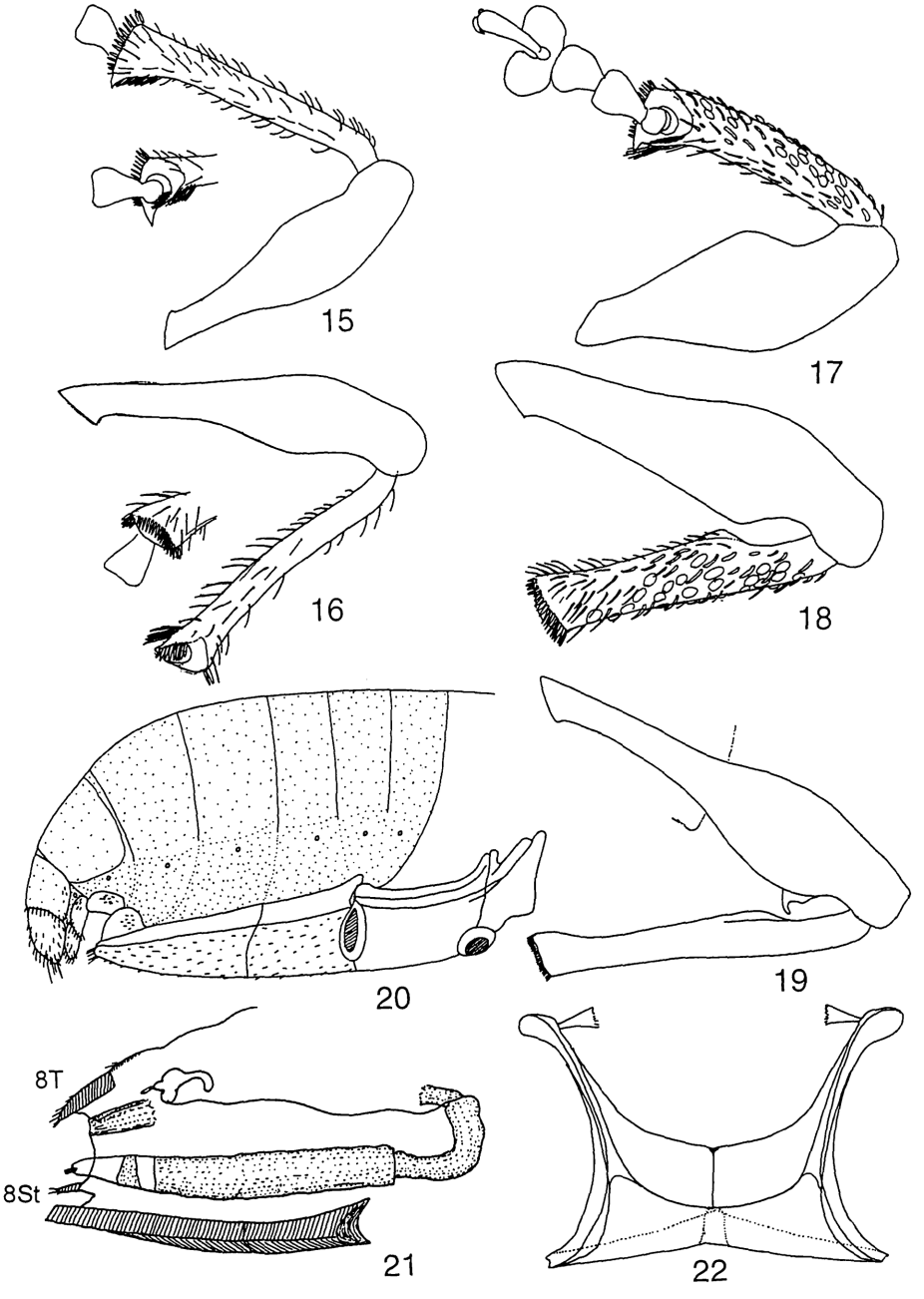
Figs. 15–22. —— 15–19. Legs; 15, 16, *Neasphalmus okinawanus* (15: fore leg, 16: hind leg); 17, 18, *Isopterus kotoensis* (17: fore leg, 18: hind leg.); 19, hind leg of *Isopterus macromerus*, showing slender femur and characteristic tooth. —— 20, 21. *Arrhaphogaster pilosus*, female; 20, abdomen relaxed with KOH solution; 21, ovipositor in abdomen, semidiagrammatical. —— 22. Metendosternite of *Isopterus macromerus*.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dorsal aspect, anterior arms reaching mesocoxal bowls; ovipositor with distal part sclerotized, proximal part membranous with sclerotized stripe at side, bursa copulatrix short; venter in female with 7th tergite terminal, wholly covering 8th, 8th sternite concealed inside the 7th, with slender spiculum ventrale; mandibles without deciduous process, other structure of typical adelognathous type..... Tribe Pachyrhynchini

8 (7) Metendosternite with anterior margin straight or shallowly concave; ovipositor very long, reaching basally to mesosternum, distal part divided into two sclerotized part, proximal part membranous, long and bellows-like (Fig. 9); bursa copulatrix indiscernible; mandibles with deciduous process, of typical adelognathous type. ..... Tribe Celeuthetini

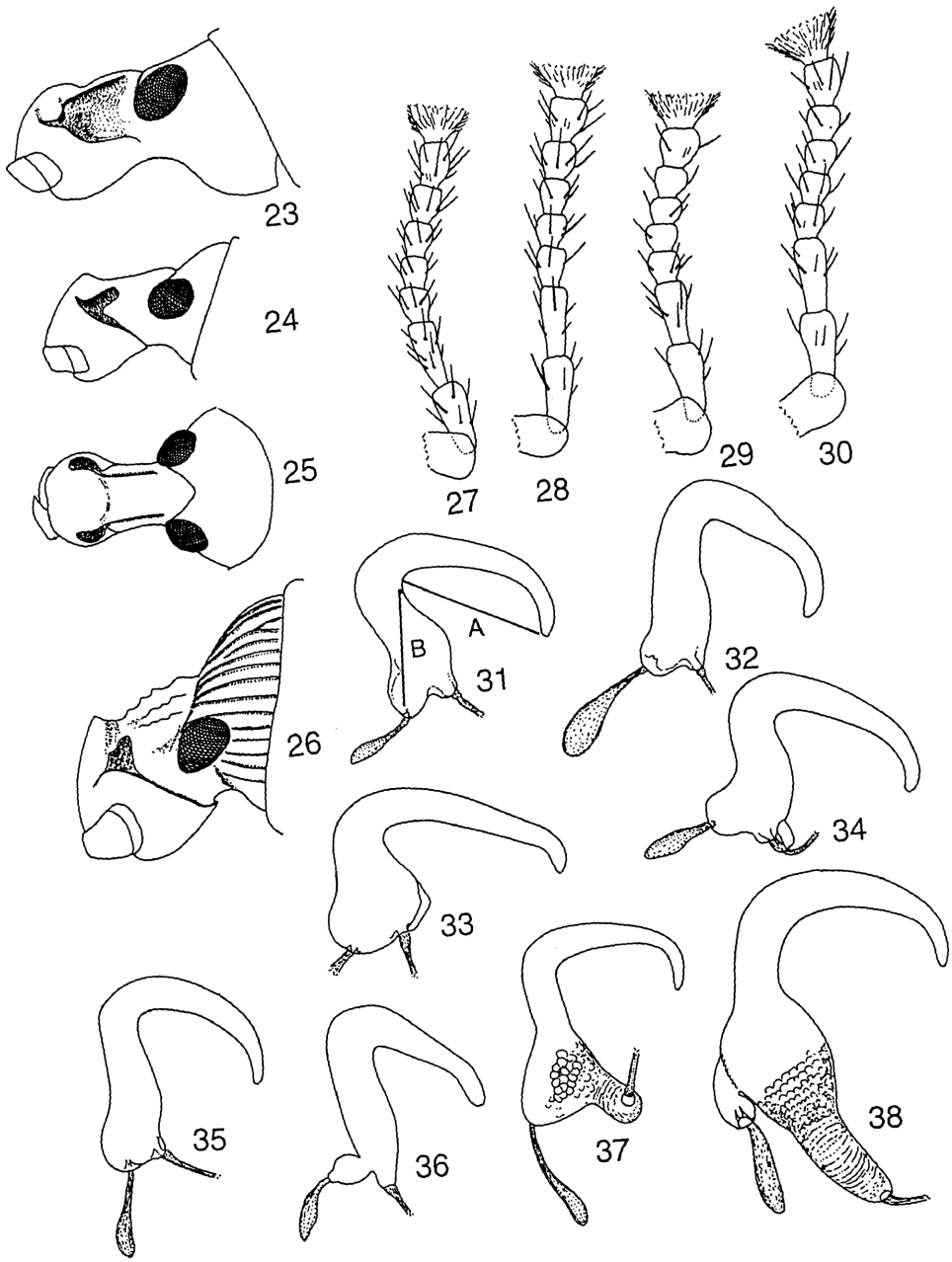
9 (10) Rostrum with transverse sulcus at base separating dorsal from head (Fig. 25); 8th sternite in female withdrawn inside 7th, with slender spiculum ventrale (Fig. 50); 8th tergite in female partly covered by 7th at base; 9th sternite in male consisting of a sclerite. ..... Subtribe Celeuthetina s. str.

10 (9) Rostrum without transverse sulcus at base (Fig. 3); 8th sternite in female terminal (Figs. 8, 20), without spiculum ventrale(Fig. 13); 8th tergite in female also terminal, uncovered; 9th sternite in male subdivided into three sclerites..... Subtribe Isopterina nov.

Tribe **Celeuthetini** LACORDAIRE, 1863

Mandibles with deciduous appendages, with three setae in general; antennal scrobes dorso-lateral or lateral, narrow triangular or bifurcate, ventral furrow running down obliquely in front of eye to the ventrolateral edge; rostrum without pterygia; antennae with scape long, exceeding posteriorly beyond the anterior margin of pronotum when rested, 7-segmented in funicle, club much shorter than funicle; postmentum shortly pedunculate; prementum about as long as broad, labial palpi attached to the inner surface of its apical margin; maxillae partly visible between labium and hypostoma, galea and lacinia fused. Prothorax without ocular lobes. Procoxae often narrowly separated, but coxal cavities connate internally; mesocoxae separated externally, but connate internally. Metacoxae widely separated, contiguous with elytra at sides. Mesepimera much reduced, remote from the base of elytra. Metendosternite transverse, without lateral arms, anterior tendons widely distant. Hind tibiae with inner flange at apex (corbel semienclosed auct.). Claws simple, free. Aedeagus long, its

Figs. 23–38. —— 23–26. Rostrum and head of Celeuthetini; 23, *Platyspatus latiscapus* (ex Sulawesi); 24, 25, *Philicoptus waltoni* (ex Mindanao); 26, *Phraotes nodifer* (ex Sulawesi). —— 27–30. Antennal funicle of *Neasphalmus* spp.; 27, 29, *N. rotundipennis* (27: ex Kuchinoshima I., 29: ex Okinawa-Hontô I.); 28, *N. okinawanus*; 30, *N. ihai* (ex. Ishigaki I.). —— 31–38. Spermatheca of *Neasphalmus* spp. and *Isopterus* spp.; 31, 32, *N. okinawanus* (31: ex Takarajima I., 32: ex Nakanoshima I.); 33, 34, *N. rotundipennis* (33: ex Iejima I., 34: ex Kuchinoshima); 35, *N. ihai* (ex. Ishigaki I.); 36, *I. kotoensis*; 37, *I. variabilis*; 38, *I. macromerus*.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struts almost reaching cephalad to or beyond the anterior margin of mesothorax. Ovipositor also long, reaching cephalad to the anterior margin of mesothorax, bursa copulatrix not differentiated as pouch, spermathecal duct long, meander.

Subtribe **Celeuthetina** s. str.
=Coptorrhynchina VOSS, 1940
=Platysparina VOSS, 1940
=Celeuthetini: MARSHALL, 1956

Rostrum with sulcus at base separating transversely from head. Female venter with five, four or two visible segments (ventrites), 8th sternite with spiculum ventrale, setose at apex; 9th sternite in male consisting of a sclerite, undivided.

Subtribe **Isopterina** nov.

Type genus: *Isopterus* FAUST, 1895.

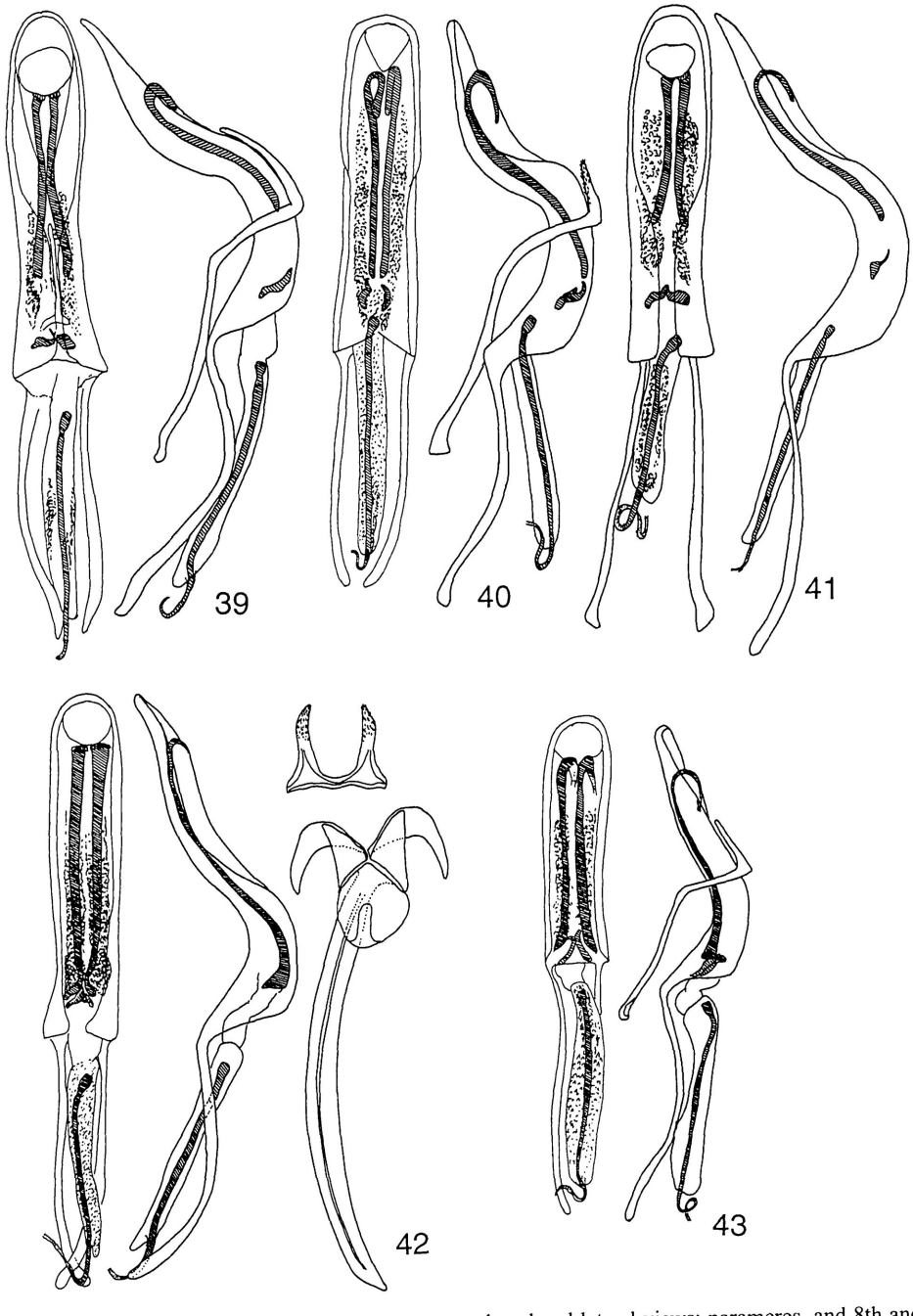
The other genera included: *Arrhaphogaster* ROELOFS, 1873; *Neasphalmus* NAKANE, 1963; *Pseudottistira* HELLER, 1934.

Mandibles with scar a little below the mid-line of outer margin, with dorsal, apical and ventral teeth, with 3–5 setae, not scaled; postmentum shortly but distinctly pedunculate, prementum about as long as broad, labial palpi attached to the inner surface of apical margin, close to each other in position, two-segmented; maxillae partly exposed, galea and lacinia fused. Rostrum not delimited posteriorly by transverse sulcus, shallowly and broadly depressed and bare behind epistome to antennal sockets; antennal scrobes dorso-lateral (*Arrhaphogaster*) or lateral, with or without definite oblique sulcus from antennal socket in addition to the dorsolateral sulcus. Antennae with scape reaching pronotum, funicle 7-segmented, basal two segments slender. Pronotum without ocular lobes. Elytra wholly covering abdomen, with 10 or 12 regular striae. Pro- and mesocoxal cavities narrowly separated externally, but continuous internally. Legs with hind coxae rather broadly touching elytra; femora clavate, tibiae mucronate, corbels with inner flange (=semienclosed), tarsi with 3rd segment deeply bilobate; claws simple, free. Venter visibly 5-segmented in male, first and second ventrites large, second longer than third and fourth combined, 9th sternite subdivided into three sclerites; in female venter visibly 2-segmented and 8th sternite without spiculum ventrale. Metendosternite transverse, without lateral arms, anterior tendons attached near apex.

Among the genera in Isopterina, *Arrhaphogaster* is apparently isolated from the rest, and *Isopterus* includes more diverse species than the others. The arrangement of the genera in the following key can be regarded as the reflection of their phylogenetic relationship.

Key to Genera of the Subtribe Isopterina

1 (2) Elytra with 12 striae; antennal scrobes dorso-lateral in position, reniform in dorsal aspect, with short, shallow and weak oblique sulcus below antennal



Figs. 39–43. Male aedeagus of *Neasphalmus* spp., dorsal and lateral views; parameres, and 8th and 9th sternites in some species; 39, 40, 41, *N. okinawanus* (39: ex Kuroshima I., 40: ex Nakanoshima I., 41: ex Takarajima I.); 42, 43, *N. ihai* (42: ex Ishigaki I., 43: ex Yonaguni I.).

socket at each side, their dorsal margins incurved behind antennal sockets in dorsal aspect, then parallel to each other to base; dorsal area between them half as broad as the basal width of rostrum, much narrower than forehead between eyes; eyes small, convex, slightly longer than broad; rostrum not declivous at apex. (Japan: Kantô District). . . . . *Arrhaphogaster* ROELOFS

2 (1) Elytra with 10 striae; antennal scrobes lateral in position, <-shaped, oblique sulcus shallow but definite, dorsal area between them narrowed posteriorly to base; eyes ovate, weakly convex, forehead between them much less than half the width of rostrum at base.

3 (4) Rostrum not abruptly declivous at apex, but weakly and evenly bent ventrad and almost bare before antennal sockets; forehead between eyes more than half the width of rostrum; hind tibiae often costate internally at least on basal half and often enlarged internally at about basal third. (Philippines, Taiwan: Lan Yu and Lutao Isls.). . . . . *Isopterus* FAUST (=*Kotoshozo* KÔNO)

4 (3) Rostrum abruptly declivous at apex, lateral margin above antennal scrobe obtusely ridged and arcuate ventrad in lateral aspect.

5 (6) Elytra distinctly costate along basal margin, tuberculate. (Philippines: Luzon). . . . . *Pseudottistira* HELLER

6 (5) Elytra not costate along basal margin, smooth. (Japan: Ryukyus). . . . . *Neasphalmus* NAKANE (=*Borodinophilus* VOSS)

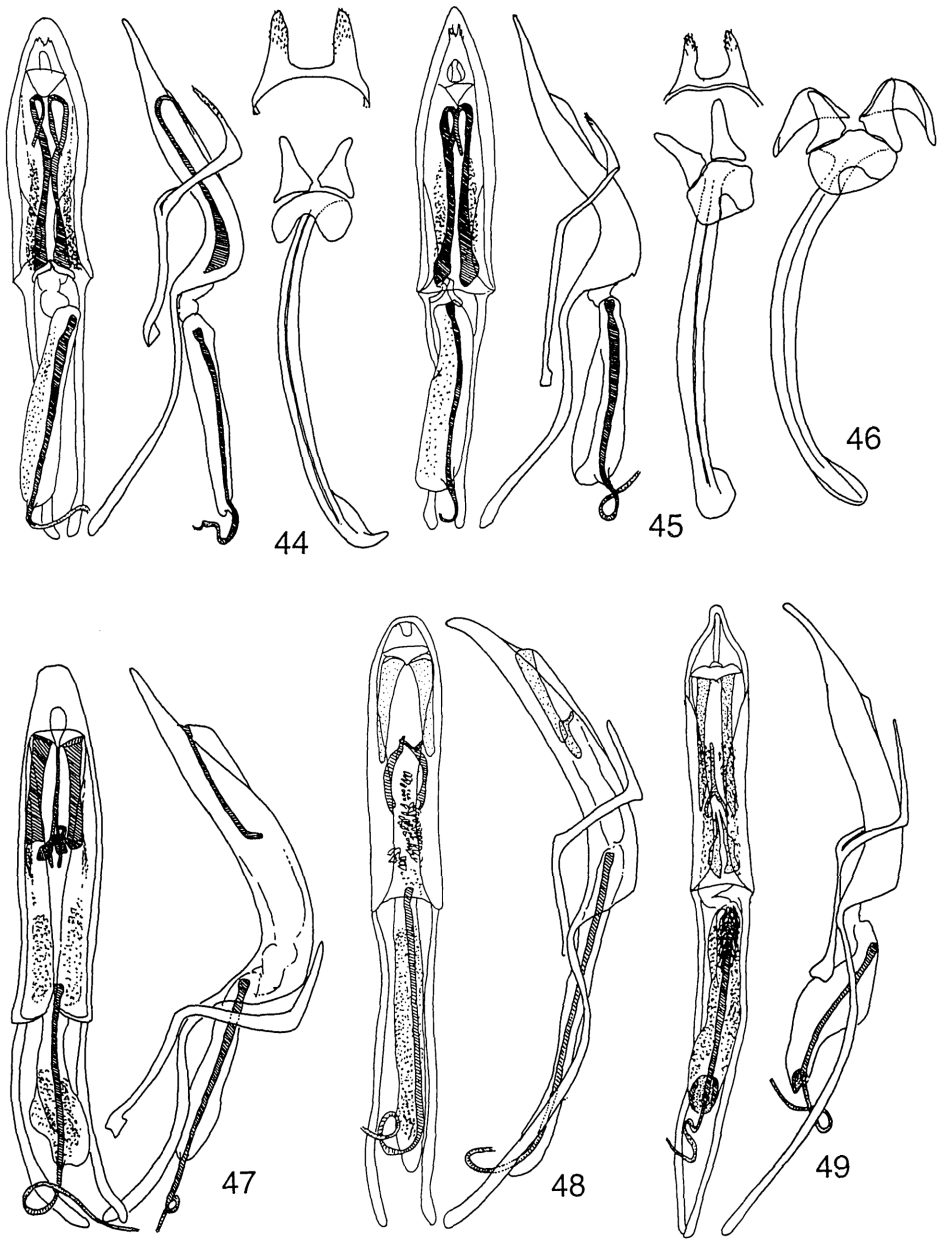
Arrhaphogaster ROELOFS, 1873

Arrhaphogaster ROELOFS, 1873, Annls. Soc. ent. Belg., **16**: 163 (Celeuthetides; type species: *Arrhaphogaster pilosus* ROELOFS, 1873, monobasic). —— SHARP, 1896, Trans. ent. Soc. Lond., **1896**: 94. —— FAUST, 1897, Stett. ent. Ztg., **58**: 16, note. —— KÔNO, 1930, J. Fac. Agric., Hokkaido imp. Univ., **24**: 221, 222. —— LONA, 1938, Coleopt. Cat., 162, Otiorrhynchinae III: 507 (Celeuthetini). —— MORIMOTO, 1962, J. Fac. Agric., Kyushu Univ., **12**: 32. —— MORIMOTO & MIYAKAWA, 1985, Mushi, Fukuoka, **50**: 30 (Key to spp.). —— ALONSO-ZARAZAGA & LYAL, 1999, World Cat. Fam. Gen. Curc., 147 (Celeuthetini).

This genus has been placed in the Celeuthetini, but MARSHALL (1956) ignored it in his generic revision, because its distibution is outside the range of the tribe in MARSHALL's viewpoint. This genus comprises two species.

Arrhaphogaster pilosa ROELOFS, 1873

Arrhaphogaster pilosus ROELOFS, 1873, Annls. Soc. ent. Belg., **16**: 164, pl. 2, fig. 3 (Hakodadi= Hakodate). —— SHARP, 1896, Trans. ent. Soc. Lond., **1896**: 94 (Yokohama). —— KÔNO, 1930, J. Fac. Agric., Hokkaido imp. Univ., **24**: 222 (Abiko, Takao). —— YOKOYAMA, 1931, Zoku Nihon no Kôchû, 69, pl. IX, fig. 8. —— KAMIYA & ADACHI, 1933, Genshoku Kôchû Zufu, pl. 44, f. 9. —— TAKAHASHI, 1930, Kaju Gaichû Kakuron, **1**: 450, fig. 232 (injurious to pear and peach). —— WATANABE, 1934, Nihon Jumoku Gaichû Sou Mokuroku, 24, 373, 456 (pear and peach). —— NAKANE, 1963, Icon Ins. Japon. Col. nat. ed., **2**: 360, pl. 180, f. 25. —— MORIMOTO, 1984, Coleopt. Japan Col., Osaka, **4**: 276,



Figs. 44–49. Male aedeagus of *Neasphalmus* spp. and *Isopterus* spp., dorsal and lateral views; parameres, and 8th and 9th sternites in some species; 44, 45: *N. rotundipennis* (44: ex Okinawa-Hontô I., 45: ex Kuchinoshima I.); 46, 47, *I. kotoensis*; 48, *I. macromerus*; 49, *I. variabilis*.

pl. 54, f. 12. —— MORIMOTO & MIYAKAWA, 1985, Mushi, Fukuoka, **50**: 32, fig. 6 C.

Distribution. Japan (Hokkaido: Hakodate – after ROELOFS, 1873; Honshu: Chiba, Tokyo, Izu-Oshima I., Kanagawa, Nagano, Ishikawa). This species was recorded from Hakodate in the original description, but no specimen has been captured in Hokkaido and northern Honshu ever since. This is fairly common in Tokyo, Kanagawa and Chiba Prefs. at present, and old specimens are preserved in the collection of Kyushu University from Nagano (Mt. Yatsugatake, 1918, M. SUZUKI leg.) and Ishikawa (Mt. Sekidô, 1947, T. JOHRAKU).

Biology. The adults feed on the flowers, flower- and leaf buds, and young leaves of pear and peach from the middle spring to the summer, and often give considerable damage.

Arrhaphogaster hachijoensis MORIMOTO et MIYAKAWA, 1985

Arrhapogaster [sic] *hachijoensis* MORIMOTO et MIYAKAWA, 1985, Mushi, Fukuoka, **50**: 30, fig. 6 AB (Izu Isls.: Hachijô, Miyake and Mikura Isls).

Distribution. Japan: Izu Islands (Hachijô, Miyake and Mikura Isls.)

Isopterus FAUST, 1895

Isopterus FAUST, 1895, Stett. ent. Ztg., **56**: 4 (Scythropini; type not designated). —— HELLER, 1912, Philipp. J. Sci., **7**: 388 (Scythropidae). —— EMDEN, 1936, Stett. ent. Ztg., **97**: 70 (Otiorhynchinae). —— LONA, 1938, Coleopt. Cat., (162), Otiorrhynchinae: 526 (in genera incertae sedis). —— GÜNTHER, 1943, Dt. ent. Z., Iris, **1943**: 58 (Celeuthetini; key to spp.). —— MARSHALL, 1956, Otior. Curc. Celeuthetini, 5 (Comp. w. *Pseudottistira*; excl. from Otiorrhynchinae). —— ALONSO-ZARAZAGA & LYAL, 1999, World Cat. Fam. Gen. Curc., 187 (Entiminae, incertae sedis).

Kotoshozo KÔNO, 1942, Ins. Mats., **16**: 23 (Pachyrrhynchini; type species: *Kotoshozo kotoensis* KÔNO, 1942, by original designation). —— ALONSO-ZARAZAGA & LYAL, 1999, World Cat. Fam. Gen. Curc., 170 (Pachyrhynchini) – *syn. nov.*

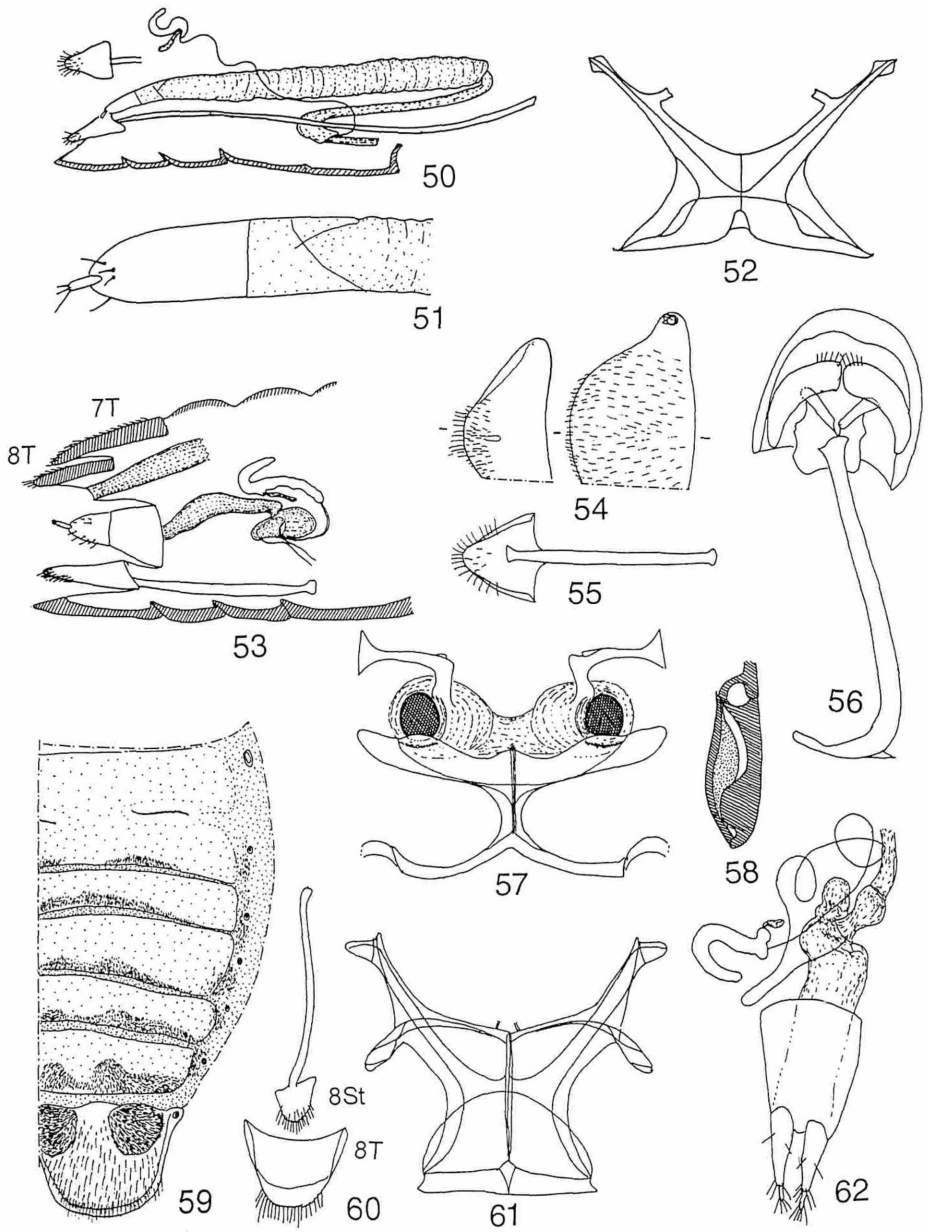
This genus was revised by GÜNTHER (1943), who recognized 6 species and 7 subspecies in the Philippines and a key to them was provided. *Kotoshozo kotoensis* was originally described by KÔNO (1942) in the Pachyrrhynchini from Kotosho (=Lan Yu Island, south-east off Taiwan), but is synonymous with *Isopterus* as newly treated in this paper. The type species of the latter is easily recognized in the following emendation of GÜNTHER's key (p. 59, first and second couplets):

1 (14) Fore femora edentate.

2 (5) Hind femora also edentate; fore tibiae slightly curved inwards, of the same width throughout.

3 (4) Hind tibiae distinctly enlarged internally at basal third; legs robust, fore tibiae much thicker than antennal scape; forehead between eyes about quarter as wide as the maximum width of rostrum. . . . . *Isopterus kotoensis* (KÔNO), comb. nov.

4 (3) Hind tibiae of the same width throughout; legs slender, fore tibiae almost as



Figs. 50–62. —— 50–52. *Philicoptus waltoni* (ex. Mt. Makiling, Luzon); 50, ovipositor and 8th sternite; 51, distal part of ovipositor, enlarged; 52, metendosternite. —— 53–58. *Elytrurus subangulatus* (ex Fiji); 53, ovipositor, semidiagrammatical; 54, 7th and 8th tergites; 55, 8th sternite; 56, male 8th tergite, 8th sternite and 9th sternite; 57, metendostertnite; 58, ditto, lateral aspect. —— 59–62. *Ottistiria* sp., female (ex New Britain); 59, tergum of abdomen; 60, 8th tergite and 8th sternite; 61, metendosternite; 62, ovipositor, dorsal.

thick as antennal scape; forehead between eyes about a half as wide as the maximum width of rostrum. . . . . *Isopterus minutus* GÜNTHER

5 (2) Hind femora dentate. (continued to couplet 4 of GÜNTHER's key)

Pseudottistira HELLER, 1934

Pseudottistria HELLER, 1934, Philipp. J. Sci., **54**: 289 (aberrant genus in Celeuthetini, near *Celeuthetes*; type species: *Pseudottistira subtuberculata* HELLER, 1934, monobasic). —— MARSHALL, 1956, Otior. tribe Celeuthetini, 4 (excluded from Celeuthetini). —— ALONSO-ZARAZAGA & LYAL, 1999, World Cat. Fam. Gen. Curc., 149 (Celeuthetini).

This genus is known to contain only the type species from Luzon, of which the important features were well illustrated in the original description.

Neasphalmus NAKANE, 1963

Neasphalmus NAKANE, 1963, Fragm. Coleopterol., pars 9: 35 (near *Asphalmus*; type species: *Neasphalmus okinawanus* NAKANE, 1963, by monotypy). —— MORIMOTO, 1984, Coleopt. Japan Col., Osaka, **4**: 276.

Borodinophilus VOSS, 1971, Mem. Fac. Educ., Kagawa Univ., (II), (202): 46 (Celeuthetini; type species: *Borodinophilus ihai* VOSS, 1971). – *syn. nov.*

This genus includes so similar species as MORIMOTO (1984) once regarded them as one species, but are markedly different in the structure of male genitalia. Weevils of this genus are variable in general shape and pilosity of elytra; namely, the elytra are ovate and evenly rounded from humeri to apices in males and in smaller females, or straightly expanded for a short distance from humeri to above hind coxae, then rounded to apices in larger females; and thus the elytra are angulately rounded at the broadest point on each side. The suberect scales on the elytra are generally evident on caudal half, but are often conspicuous on whole part, or appressed or declined and only visible in lateral aspect, they are scale-like and more or less clavate in general, or slender and setaceous in some cases, and no species distinction are noticed.

The adults feed frequently on sprout and young plant of suash, cucumber and water-melon in farm and garden.

Key to Species

1 (4) Male aedeagus almost parallel-sided or weakly sinuate at sides, broadly rounded at apex before ostium when viewed dorsally (Figs. 39-43); spermatheca with apical part shorter than basal part (A<B in Fig. 31); second ventrite with punctures sparser, intervals between punctures at least as great as the diameter of punctures in medio-basal area in female.

2 (3) Male aedeagus arcuate dorsally in basal half when viewed laterally (Figs. 39, 40, 41). Kuroshima I., Nakanoshima I., Takarajima I. . . . . *Neasphalmus okinawanus* NAKANE, 1963

3 (2) Male aedeagus arcuate dorsally in basal quarter when viewed laterally (Figs. 42, 43). Ishigaki I., Iriomote I., Yonaguni I., Daitô I. . . . . *Neasphalmus ihai* (VOSS, 1971)

4 (1) Male aedeagus tapered apically in front of middle and narrowly rounded at apex when viewed dorsally (Figs. 44, 45); spermatheca with apical part longer than basal part (A>B in Fig. 31); second ventrite with punctures larger, intervals between punctures at most as great as the diameter of punctures. Okinawa-Hontô I., Iejima I., Kuchinoshima I. . . . . *Neasphalmus rotundipennis* NAKANE, 1963, stat. nov.

Neasphalmus okinawanus NAKANE, 1963

Neasphalmus okinawanus NAKANE, 1963, Fragm. Coleopterol., pars 9: 35 (Nakanoshima, Tokaras); 1963, Icon. Ins. Japon. Col. nat. ed., **2**: 361, pl. 181, fig. 4. —— MORIMOTO, 1984, Coleopt. Japan Col., Osaka, **4**: 276, pl. 64, fig. 16.

Distribution. Japan: Kuroshima I., Nakanoshima I., Takarajima I.

Neasphalmus rotundipennis NAKANE, 1963, stat. nov.

Neasphalmus okinawanus rotundipennis NAKANE, 1963, Fragm. Coleopterol., pars 9: 35 (Okinawa). —— MORIMOTO, 1984, Coleopt. Japan Col., Osaka, **4**: 276 (in part).

Distribution. Japan: Okinawa-Hontô I., Iejima I., Kuchinoshima I.

Neasphalmus ihai (VOSS, 1971), comb. nov.

Borodinophilus ihai VOSS, 1971, Mem. Fac. Educ., Kagawa Univ., (II), (202): 47 (Is. Borodino). —— MORIMOTO, 1984, Coleopt. Japan Col., Osaka, **4**: 276 (in part).

VOSS described this species on three specimens from Is. Borodino (Minami-Daitô I.), and another one specimen from Okinawa was noted as "variation ?". The holotype, one paratype and the last mentioned specimen in the Chûjô collection were examined. These are all females, a little broken, and mounted on respective cards. Specimens from Ishigaki, Iriomote and Yonaguni Is. are tentatively identified as *N. ihai* on external examination.

Distribution. Japan: Ishigaki I., Iriomote I., Yonaguni I., Daitô I.

要　　約

森本　桂・小島弘昭：ヒメカタゾウムシ族に新亜族 Isopterina の創設とこれの近似族との関係．—— ヒメカタゾウムシ族に関する総説で MARSHALL (1956) が除外した属，所属不明の属，および KÔNO (1942) が紅頭嶼からカタゾウムシ族で記載した *Kotoshozo* を含む6属を再検討して4属に整理し，吻基部に溝がないこと，雌腹部は外見上2節で，第8腹板に支柱突起を欠くこと，雄第9腹節が3小片に分かれることなどの特徴で，新亜族 Isopterina を創設してヒメカタゾウムシ族に含めた．この亜族はフィリッピン，台湾（蘭嶼，緑島），日本（琉球列島，関東地方，伊豆諸島）に分布する．

NAKANE (1963) の記載した *Neasphalmus* 属は，*N. okinawanus*（トカラ中之島）とその亜種 *rotundipennis*（沖縄）を含み，また大東島から記載された *Borodinophilus ihai* VOSS, 1971 もこの属のシノニムである．これらは外見上酷似し，しかもかなりの個体変異を示すにもかかわらず，雄交尾器は明瞭に3つの型を示すことから，これらを次ぎの3種とした．1) *Neasphalmus okinawanus* NAKANE, 1963 ニセホソヒメカタゾウムシ（黒島，中之島，宝島），2) *N. rotundipennis* NAKANE, 1963 オキナワホソヒメカタゾウムシ（新称）（沖縄本島，伊江島，口之島），3) *N. ihai* (VOSS, 1971) ヤエヤマホソヒメカタゾウムシ（新称）（石垣島，西表島，与那国島，大東島）．今回の研究では，上記以外の島の標本を調べることができず，また大東島産も雌だけで，触角や点刻などから八重山産と同種としておいた．さらに，トカラ群島に2種分布することなど生物地理学上の問題や，今回標本を調べることができなかった奄美群島などを含めた種の分類については，今後十分の標本を集積した再検討が望まれる．

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Elytra, *Tokyo*, **29** (2): 284–290, November 15, 2001

Distribution of the *Anoplophora* Species (Coleoptera, Cerambycidae, Lamiinae) in Okinawa Island, Southwest Japan

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Abstract Local distribution in Okinawa Island of the Ryukyus of the three cerambycid beetles belonging to the lamiine genus *Anoplophora* is analyzed on the basis of field survey and re-examination of old specimens. *Anoplophora oshimana* is the only species autochthonous to the island and is now restricted to the central part. *Anoplophora malasiaca* seems to have invaded into Okinawa from the mainland of Japan sometime in the 1970's and is now mainly found in orange orchards in the northern area, probably having been driven by *Anoplophora macularia*, which may have invaded into the southern part of the island in the 1990's.

Introduction

Although *Anoplophora oshimana* had been considered the only species of the genus *Anoplophora* occurring in Okinawa Island (BREUNING, 1961; MAKIHARA, 1976), there were some specimens identical with *A. malasiaca* in my collection as was already recorded (OHBAYASHI, 1992). Besides, I collected some specimens identical with *A. macularia* on this island in 1993. After that in 1999, I asked my friends residing in Okinawa Island for collecting as many *Anoplophora* specimens as possible. I also tried to examine old specimens of the genus *Anoplophora* collected on this island in the collections of the University of the Ryukyus, Okinawa Agricultural Experiment Station, Hokkaido University and Ehime University.

In 2000, I visited Okinawa Island and observed by myself the habitats of these species with the help of my friends. Some of the living specimens of the *Anoplophora* species collected during my survey were brought to the Entomological Laboratory of Ehime University. They were paired and placed in plastic cages with living twigs of *Melia azedarach*, and the mating behavior of these couples was observed.

I wish to dedicate this short report to the late Dr. Yoshihiko KUROSAWA for his useful advice given at times on my study of the Cerambycidae. He suggested me differences of *A. malasiaca* and *A. macularia* when the latter had been usually regarded as a synonym of the former. I would like to express my sincere gratitude to Messrs. Seiji INADA of Okinawa Prefecture and Mr. Yûsaku SUGIURA of our laboratory who accompanied me on my collecting trip to the Okinawa Island in 2000. I am also much indebted to Dr. Masako YAFUSO and Mr. Takeshi SASAKI of the University of the

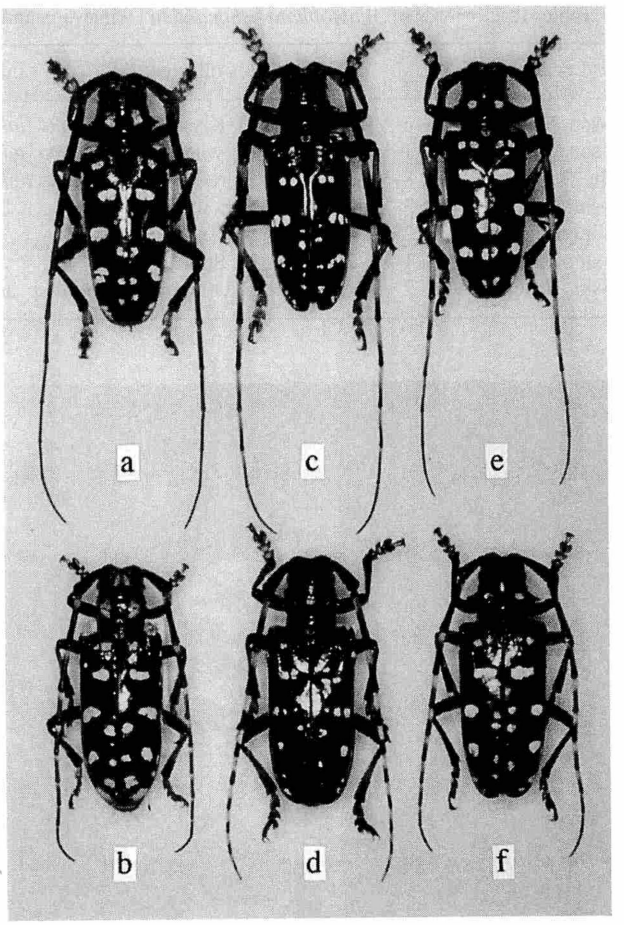


Fig. 1. Habitus of *Anoplophora* species from Okinawa Island. —— a, b, *A. oshimana*; c, d, *A. malasiaca*; e, f, *A. macularia*. —— a, c, e, males; b, d, f, females.

Ryukyus, and Messrs. Masaaki KIMURA, Tôru MATSUMURA and Masashi SUGIMOTO of Okinawa Prefecture for their invaluable help in various ways.

Distribution of the *Anoplophora* Species in Okinawa Island

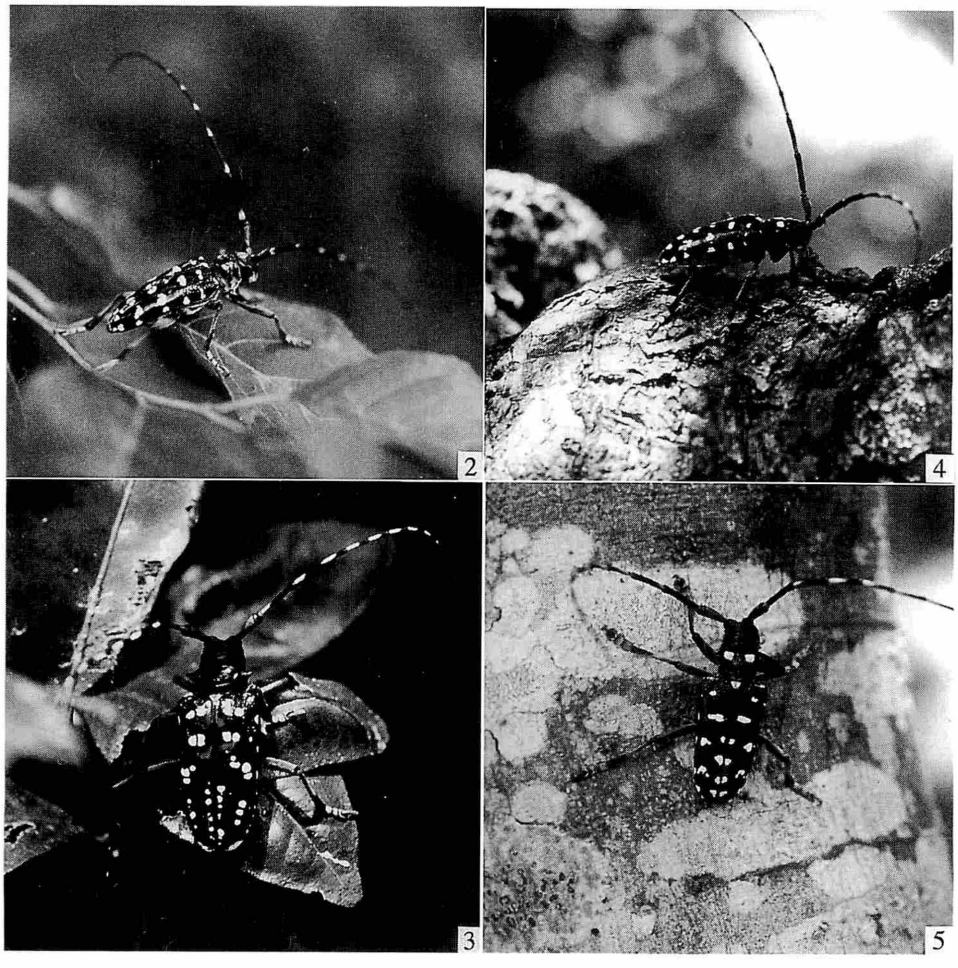
Anoplophora oshimana (FAIRMAIRE, 1895)

(Table 1, Figs. 1 a–b, 2)

This species was originally described from Amami-ôshima Island and is distributed in Amami-ôshima Is., Okinoerabu-jima Is., Ukejima Is. (new record), Tokunoshima Is. and Okinawa Is. of the Ryukyus. However, I never saw any specimens

Table 1. Records of *Anoplophora oshimana* in Okinawa Island.

Number	Locality	Date	Collector	Infested plant
3♂, 1♀	Onna-son, Yamada	6–VII–1999	M. KIMURA	*Schima liukiuensis*
3♂, 4♀	Onna-son, Yamada	1–VI–2000	N. OHBAYASHI	*Schima liukiuensis*
Many	Kin-chô, Kin	8–VI–2000	S. INADA	*Schima liukiuensis*
1♀	Nago-shi, Yofuke	3–VI–1999	S. INADA	
2♀	Nago-shi, Isagawa	27–V–1999	SAKASHITA	
1♂	Nago-shi, Kouki	1–VI–2000	M. SUGIMOTO	
Many	Nago-shi, Haneji River	2~5–VI–2000	N. OHBAYASHI	*Alnus* sp. and *Melia azedarach*



Figs. 2–5. Mode of life of *Anoplophora* species. — 2, *A. oshimana* on the leaf of *Alnus* sp.; 3, *A. malasiaca* on the leaf of *Citrus depressa*; 4–5, *A. macularia* on the trunk of *Melia azedarach*.

collected on Okinawa Island before 1999 when Messrs. Seiji INADA and Masaaki KIMURA found the true *A. oshimana* specimens there. By the survey made in 2000, I was able to observe this species infesting for maturation by feeding on stems or leaves of *Schima liukiuensis* (Theaceae), *Alnus* sp. (Betulaceae) or *Melia azedarach* (Meliaceae). I also observed holes which seemed to be the emergence holes of this species on the trunks of *Quercus* sp. As the result, it became apparent that this species now inhabited rather limited areas around Nago City in the middle of the island.

Anoplophora malasiaca (THOMSON, 1865)

(Table 2, Figs. 1 c–d, 3)

The specimens examined from Okinawa Island are identical with *A. malasiaca* distributed in the mainland of Japan. The oldest specimen which I was able to examine was collected in Naha City in 1970. In the 1970's, *A. malasiaca* was mainly collected in the area around Naha City which is mainly occupied now by *A. macularia*. We col-

Table 2. Records of *Anoplophora malasiaca* in Okinawa Island.

Number	Locality	Date	Collector	Infested plant
1♀	Naha-shi, Shuri	20–VI–1975	TSUTSUMI	
1♂	Naha-shi, Shuri	1–V–1977	T. NAKAMOTO	
1♂	Naha-shi, Shuri	27–V–1975	Y. NOTSU	
4♂, 2♀	Naha-shi, Shuri	9–V–1970	S. AZUMA	
1♂	Naha-shi, Sueyoshi	16–VI–1976	M. KINJO	
1♀	Ginowan-shi, Ooyama	17–V–1970	K. MIYAGI	
1♀	Ginowan-shi, Kakazu	30–IV–1995	T. MATSUMURA	*Citrus* sp.
1♀	Ginowan-shi, Kakazu	11–V–1971	Tukasa KOHAMA	
1♀	Gushikawa-shi, Gushikawa	1–VII–1995	T. MATSUMURA	
1♀	Gushikawa-shi, Enobi	1–VI–2000	M. SUGIMOTO	
1♀	Gushikawa-shi, Kanekadan	1–VI–2000	N. OHBAYASHI	*Melia azedarach*
1♂, 2♀	Motobu-chô, Kenken	19–VI–2000	S. INADA	*Citrus depressa*
1♂	Nakijin-son, Gogayama	9–VI–1979	M. KINJO	
1♀	Nakijin-son, Shoshi	18–VI–1995	T. MATSUMURA	
1♀	Nago-shi	13–V–1980	N. OOBA	
1♀	Nago-shi, Yaga	1–V–1999	SAKASHITA	
1♂, 2♀	Oogimi-son, Uehara	22–VI–1999	S. INADA	*Citrus* sp.
Many	Oogimi-son, Uehara	2–VI–2000	N. OHBAYASHI	*Citrus depressa*
1♂	Oogimi-son, Takasato	29–VI–1993	N. OHBAYASHI	*Melia azedarach*
3♂, 4♀	Oogimi-son, Nerome	2–VI–1995	T. MATSUMURA	*Citrus* sp.
1♂, 3♀	Oogimi-son, Nerome	18–VI–1995	T. MATSUMURA	*Citrus* sp.
Many	Oogimi-son, Nerome	2–VI–2000	N. OHBAYASHI	*Citrus depressa*
1♀	Oogimi-son, Nekumachiji	24–VII–1995	T. SASAKI	
1♀	Oogimi-son, Nekumachiji	8–VIII–1995	T. SASAKI	
1♀	Oogimi-son, Nekumachiji	14–VII–1996	T. SASAKI	
1♂	Kunigami-son, Yona	18–VII–1999	TERUYA	
1♂	Kunigami-son, Ôkuni-rindô	27–V–2000	T. ÔHASHI	

lected this species mainly in the northern area of the island where orchards of *Citrus depressa* (Rutaceae) were prevalent. Only a few specimens were found in the middle to southern areas of the island from *Melia azedarach* (Meliaceae).

Anoplophora macularia (THOMSON, 1865)

(Table 3, Figs. 1e–f, 4, 5)

This species is mainly distributed in Taiwan though its type locality is designated to North China in the original description. In 1993, I collected this species at Sueyoshi Park of Naha City which had been the territory of *A. malasiaca* in the 1970's. According to the investigations made by my friends, it is now widely found from the southen end to the middle of the island. I observed that several trees of *Melia azedarach* were damaged by heavy infestation of this species. It seemed likely that the southern areas of this island were occupied by *A. macularia*.

Table 3. Records of *Anoplophora macularia* in Okinawa Island.

Number	Locality	Date	Collector	Infested plant
1♂	Itoman-shi, Nashiro	30–VII–1999	S. INADA	
1♂, 2♀	Itoman-shi, Maehira	23–V–2000	S. INADA	
4♂, 1♀	Itoman-shi, Maehira	24–V–2000	S. INADA	
1♀	Tamagusuku-son	26–VII–1999	T. SASAKI	
Many	Chinen-son, Kudeken	5–VI–2000	N. OHBAYASHI	*Melia azedarach*
2♂	Chinen-son, Utaki	30–V–2000	S. INADA	*Melia azedarach*
1♀	Naha-shi, Furushima	29–VI–1999	TERUYA	
1♂, 1♀	Naha-shi, Tomari	3–VII–1999	M. KIMURA	
1♂, 1♀	Naha-shi, Tomari	27–VII–1999	M. KIMURA	*Melia azedarach*
4♂	Naha-shi, Sueyoshi	28–VI–1993	N. OHBAYASHI	
2♀	Naha-shi, Sueyoshi	30–VII–1999	M. KIMURA	
1♂, 2♀	Naha-shi, Maejima	VI–1999	H. NAKACHI	*Melia azedarach*
1♀	Nishihara-chô	1–VII–1999	T. SASAKI	
1♀	Nishihara-chô	27–VII–1999	TERUYA	
14♂	Nakagusuku-chô	27–VII–1999	T. SASAKI	
1♂	Kadena-chô	9–VII–1999	N. KAWAUCHI	
6♂, 2♀	Okinawa-shi, Ikehara	30–VI–1999	S. INADA	*Melia azedarach*
1♂, 1♀	Okinawa-shi, Goya	29–VI–1999	S. INADA	
1♀	Okinawa-shi, Goya	29–VI–1999	M. KIMURA	
2♂	Okinawa-shi, Yogi	30–VI–1999	M. KIMURA	*Melia azedarach*
2♂, 1♀	Okinawa-shi, Yogi	2–VII–1999	S. INADA	
3♂, 2♀	Okinawa-shi, Koja	3–VII–1999	S. INADA	*Melia azedarach*
5♂, 1♀	Gushikawa-shi, Kanekadan	30–VI–1999	S. INADA	*Melia azedarach*
Many	Gushikawa-shi, Kanekadan	1–VI–2000	N. OHBAYASHI	*Melia azedarach*
1♂	Gushikawa-shi, Miyasato	15–V–1995	T. MATSUMURA	
1♂	Ishikawa-shi, Sonan	30–V–2000	S. INADA	
1♂	Kin-chô, Okukubi	21–VII–1999	TERUYA	

Mating Trial of the *Anoplophora* spp.

The results are shown in Table 4. All the species fed on the twigs of *Melia azedarach* and males made contact with females of other species with the exception of a couple of a small male of *A. malasiaca* and a large female of *A. oshimana*. After the contact, they mounted on females and achieved mating.

Table 4. Mating trial of *Anoplophora* spp. collected from Okinawa Island (June 9–10, 2000).

	A. malasiaca ♂ (Nerome)	*A. oshimana* ♂ (Haneji River)	*A. macularia* ♂* (Chinen)
A. malasiaca ♀		Mount and mate	—
A. oshimana ♀	Mount and mate		No contact
A. macularia ♀	Mount and mate	—	

* Small specimen.

Discussion

The results delineated above show that *A. macularia* may be a new invader associated with *Melia azedarach*, which is widely distributed from Taiwan to Japan. Though

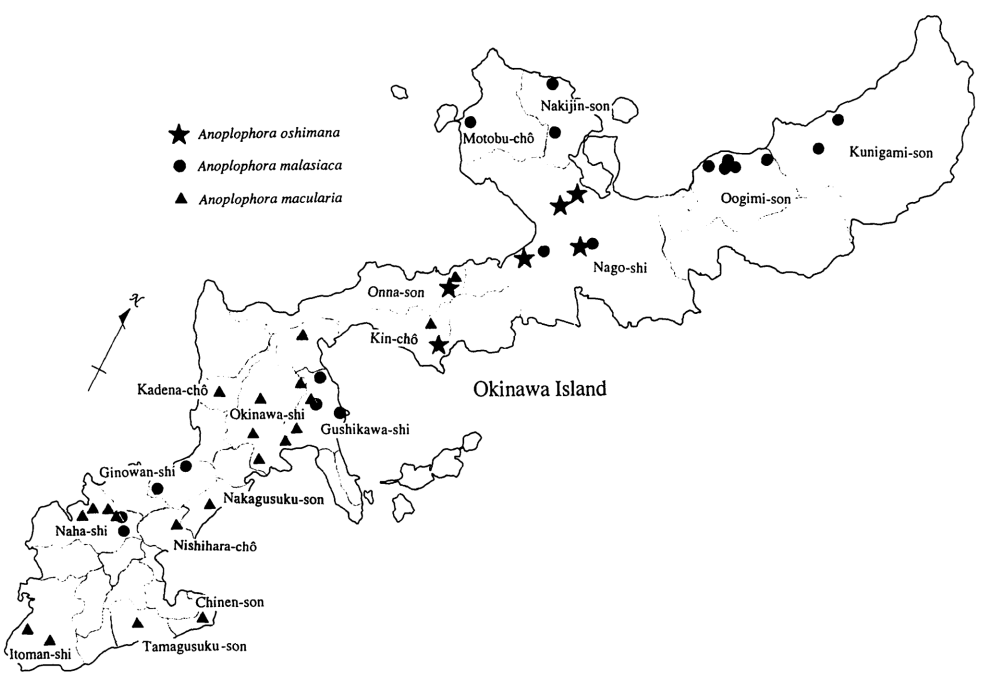


Fig. 6. Distributional map of the *Anoplophora* species in Okinawa Island.

no *Anoplophora* species was found by our survey from the northern mountainous area, in which flourishes the true natural forest, *A. oshimana* seems to be autochthonous to this island because they attack several wild trees. On the other hand, *A. malasiaca* had once been widely distributed in the island, and possibly they were also an invader before 1970's associated with introduction of Satsuma mandarin (*Citrus unshiu*), but now rather restricted its habitat to northern citrus orchard area.

The distributional map of the three species is shown in Fig. 5. They appear to share their habitats, though partly inhabiting sympatrically. No specimen possessing intermediate character states of the three had been found out, but the mating trial suggests possibility of their hybridization. I am now carrying on a DNA analysis of these *Anoplophora* species in collaboration with specialists of that field. It will clarify the origin of the invaders and also possible existence of hybrid individuals.

要　　約

大林延夫：沖縄本島におけるゴマダラカミキリ属3種の分布．—— 沖縄本島のゴマダラカミキリ属には，従来，オオシマゴマダラカミキリ1種のみが知られていたが，今回，このほかにゴマダラカミキリとタイワンゴマダラカミキリの2種が同所的に分布していることが明らかとなった．これらの分布状況について，昨年，現地での観察を行うとともに，過去の標本について調査を行った．このうち，在来種と考えられるオオシマゴマダラカミキリは，中部の名護市周辺に分布が極限されていた．一方，ゴマダラカミキリは，1970年代には那覇市周辺で採集された標本が散見されたが，現地調査では北部の柑橘栽培地帯でシークヮーサーを加害しているものが多く見られた．タイワンゴマダラカミキリは，南部の知念村から中部の名護市周辺まで広く分布し，センダンの生木に多数の生息するようすが観察された．この結果から，ゴマダラカミキリは1970年代に本土から沖縄に侵入し，さらに1990年代になってタイワンゴマダラカミキリが南から侵入してきたと考えられた．これらは，島内の各地で同所的に分布していたが，外見的に雑種と思われる個体はほとんど見いだせなかった．しかし，これらの種を相互にペアにして飼育すると，大部分の組み合わせでマウントおよび交接が観察され，野外で雑種が生じている可能性が示唆された．

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Elytra, *Tokyo*, **29** (2): 291–297, November 15, 2001

A New Splendid Species of the Genus *Pachyteria* (Coleoptera, Cerambycidae) from Sulawesi

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Abstract A new callichromine cerambycid species is described from Sulawesi, Indonesia, under the name of *Pachyteria kurosawai* nov. It is closest to *P. ruficollis* WATERHOUSE distributed in Borneo, but discriminated from it by the body coloration with unicolored blood red pronotum, dark purplish blue to purplish black elytra and pale yellow antennal segments 3–6 instead of 3–5, weakly produced forehead and closely punctured pronotum. A member of *Pachyteria* is firstly recorded from Sulawesi.

It has been well known that the late Dr. Yoshihiko KUROSAWA was not only an eminent specialist of the coleopteran family Buprestidae but also a great natural historian at least in the later half of the 20th Century. He guided me in various fields of the coleopterology, and encouraged my study of the Asian Cerambycidae. My interest in the callichromine cerambycids was brought forth by his recommendation. He had wide knowledege about this group, and usually lectured us on the problem of classification and possibility of mimicry. This splendid group no doubt attracted his keen interest.

In this paper, I would like to describe a new splendid species belonging to the genus *Pachyteria* from Sulawesi, giving his name to it to the memory of the late Dr. KUROSAWA. The new species was already found out by him in my private collection more than eight years ago. He suggested that a new name should be proposed to the *Pachyteria* species in question, but I was unable to do so in his lifetime.

The abbreviations used in the description are already explained in previous papers of mine (cf. NIISATO, 1999, p. 151).

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his constant guidance, and also to the late Dr. KUROSAWA who kindly guided me in his lifetime.

Pachyteria kurosawai sp. nov.

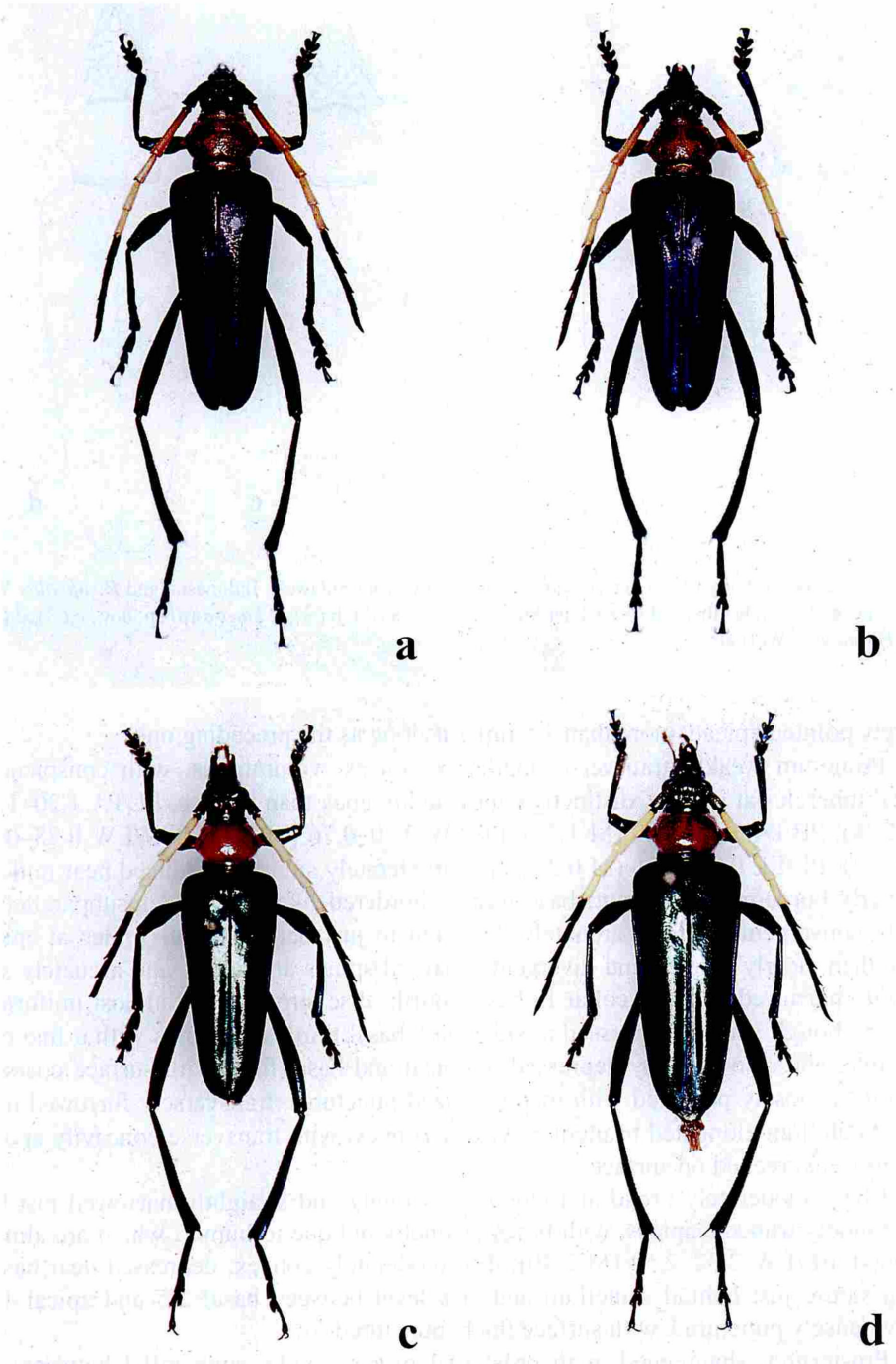
(Figs. 1 a–b, 2 a–b, 3)

Similar to *P. ruficollis* WATERHOUSE from Borneo and agreeing with it in many respects, but discriminated at first sight by the unique coloration with unicolored blood red pronotum, dark purplish blue to purplish black elytra and pale antennal segments 3–6. Medium to relatively large-sized species in the genus, with moderately long atten-

uate elytra. Colour dark purplish blue to purplish black, with pronotum entirely blood red, antennae except for pale yellow segments 3–6 black, usually segment 3 slightly more reddish and segment 7 pale yellow in small basal or lateral parts, partly reddish to reddish brown in most of mouth parts except mandibles and labrum, a median spot of gula, weakly shiny on dorsum though rather strongly so on venter of hind body. Body in general almost glabrous or thinly pubescent, though partly with dense pubescence; elytra densely clothed with fine black recumbent pubescence; tibiae with dense pubescence along undersides and near apices, which is golden yellow in fore, black in middle and hind ones; ventral surface with dense silvery white pubescence at the sides of mesosternum, posterior margins of metepisternum and metasternum, near hind coxa, and near apical margins of sternites 3–7, which are interrupted near middle and sometimes enlarged on basal two sternites.

Male. Head not so large, moderately convex and rather weakly produced forwards with strongly prominent large eyes, coarsely and rugosely punctured, HW/PA 1.10–1.17 (M 1.14), HW/PW 0.64–0.68 (M 0.67); frons flattened at middle, strongly depressed and vermiculate in fronto-clypeal area and at sides, parallel at sides, strongly and arcuately produced anteriad, with a median longitudinal groove which is very fine though deep and extends to remarkably convex vertex, FL/FB 0.77–0.94 (M 0.84); occiput distinctly raised posteriad, with anterior part depressed and strongly vermiculate; genae shallow, 1/3 the depth of lower eye lobes; clypeus weakly raised, coarsely and closely punctured, with apical margin transversely truncate though gently emarginate at middle; labrum distinctly raised, moderately dilated apicad, strongly arcuately emarginate at apex. Mandibles long and stout, about 2.7 times as long as basal width, almost straight and hooked in about 45° at apical tenth; viewed laterally, dorsal margin gently emarginate in basal 3/5, then moderately raised and sinuate to the extremity, ventral margin strongly emarginate in basal 3/5, then almost straight to apical tenth; left inner margin straight in basal 2/5, provided with four weak denticles at a level between basal 2/5 and apical 2/5, though both ends of denticles are slightly larger, and also supplemented with a very weak one at apical 3/10; right inner margin similar to that of the left, though bearing rather conspicuous denticle at basal 2/5 and a very small one at apical fifth. Antennae very stout and thick, reaching apical fourth of elytra, with segments 3–4 clavate, segments 5–10 more or less compressed and strongly serrate apico-externally, though more distinctly compressed towards apical segments; scape not so thick, arcuate on dorsal margin and strongly sinuate on ventral, with a weak apico-external angle, a little less than a half the length of segment 3; segment 2 strongly reduced, nearly 1/3 as long as the width, segment 3 very long, 1.8 times as long as segment 4, segment 4 a little shorter than segment 5 which is nearly 1.2 times as long as segment 6, segments 7–10 slightly decreasing in length, terminal segment

Fig. 1. *Pachyteria kurosawai* sp. nov. from Sulawesi, Indonesia, and *P. ruficollis* WATERHOUSE from northern Borneo, East Malaysia. —— a (♂), b (♀), *P. kurosawai* sp. nov.; c (♂), d (♀), *P. ruficollis* WATERHOUSE.


a
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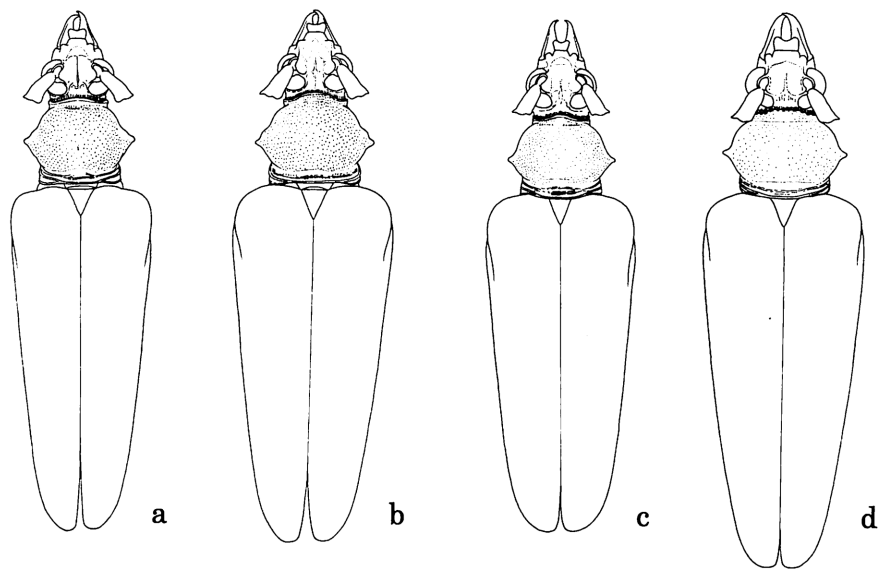

Fig. 2. Outline of body of *Pachyteria kurosawai* sp. nov. from Sulawesi, Indonesia, and *P. ruficollis* WATERHOUSE from northern Borneo, East Malaysia. —— a (♂), b (♀), *P. kurosawai* sp. nov.; c (♂), d (♀), *P. ruficollis* WATERHOUSE.

sharply pointed apicad, more than 1.5 times as long as the preceding one.

Pronotum weakly transverse, markedly convex, voluminous, with conspicuous lateral tubercles at middle, distinctly contracted to apex than to base, PL/PA 1.20–1.29 (M 1.26), PB/PA 1.18–1.29 (M 1.23), PL/PW 0.70–0.76 (M 0.74), PW/EW 0.78–0.86 (M 0.82), PL/EL 0.24–0.26 (M 0.25); apex moderately sinuate, produced near middle, distinctly bordered throughout; base weakly bordered like apex; sides subparallel or gently convergent in front, arcuately divergent to just before lateral spines at apical third, then clearly sinuate and divergent to lateral spines at middle, and arcuately and strongly narrowed to basal collar in basal fourth; disc strongly and almost uniformly convex, though usually depressed at sides near basal third, sometimes with a fine median line, and also strongly depressed in apical and basal fifth, with surface coarsely and rather closely provided with medium-sized punctures, transversely furrowed near base. Scutellum elongated triangular, weakly convex, with transverse concavity at apical third, shagreened on surface.

Elytra moderately broad and elongate, strongly and straightly narrowed just before roundly truncate apices, with bases distinctly oblique to humeri which are almost rounded, EL/EW 2.32–2.52 (M 2.40); disc moderately convex, depressed near bases, along suture just behind scutellum and at a level between basal 2/5 and apical 1/5, finely densely punctured, with surface finely punctured.

Prosternum shagreened, with prosternal process wide, subparallel between the

coxal cavities, longitudinally furrowed, nearly truncate at apex. Meso- and metathoraces sparsely provided with punctures, with mesosternal process markedly convex, distinctly arcuately narrowed to apex which has U-shaped deep concavity at middle. Abdomen strongly narrowed apicad, provided with a few punctures, with sternite 7 distinctly, arcuately concave at apex.

Legs stout and fairly long, 1st hind tarsal segment more than 1.2 times as long as the following two segments combined.

Male genital organ slender and moderate in size. Median lobe slightly less than 1/4 the length of elytra, fairly slender, with gently convex apical lobe; ventral plate with sides weakly sinuate in basal halves, then narrowed to apex which is triangularly concave; dorsal plate barely reaching apical fifth of ventral plate, with apical third narrowed and arcuately emarginate to bluntly pointed extremity, and also moderately emarginate in profile; median struts short, a little less than 3/5 the length of median lobe. Tegmen 7/10 the length of median lobe, broad; paramere rather narrowly dehiscent in apical half measured along the midline, with sides gently arcuately convergent to apices, provided with dense setae near apices.

Body length: 27.5–32.0 mm.

Female. Basically similar to male, though the body is slightly broader and the head is smaller on an average, the antennae shorter and reaching apical 2/5 of elytra,

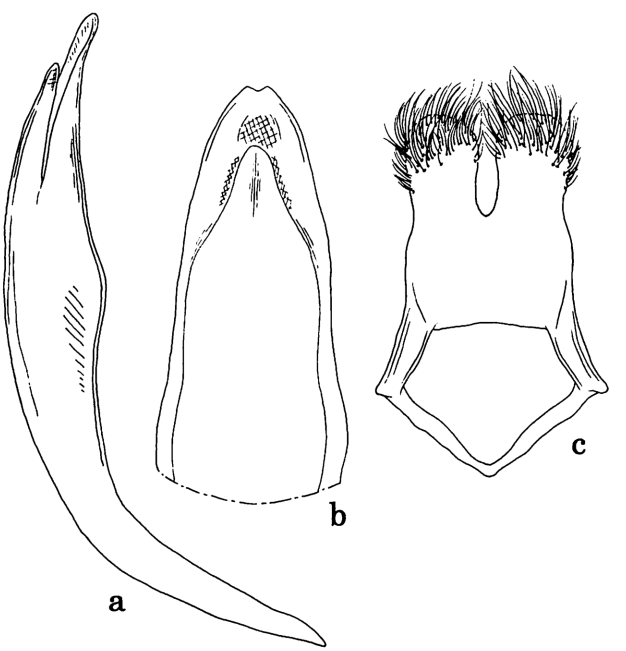

Fig. 3. Male genital organ of *Pachyteria kurosawai* sp. nov. from Sulawesi, Indonesia; a, median lobe in lateral view; b, ditto, apical part in dorsal view; c, tegmen in dorsal view.

apical margin of 7th sternite arcuate and moderately emarginate at middle. Standard ratios of body parts as follows: HW/PA 1.08–1.16 (M 1.11), HW/PW 0.61–0.68 (M 0.64), FL/FB 0.82–0.91 (M 0.87), PL/PA 1.25–1.32 (M 1.29), PB/PA 1.20–1.29 (M 1.24), PL/PW 0.71–0.75 (M 0.74), PW/EW 0.81–0.87 (M 0.83), PL/EL 0.25–0.26 (M 0.25), EL/EW 2.35–2.50 (M 2.41).

Body length: 29.0–33.5 mm.

Colour variation. Individual variation of coloration is recognized in antennae and elytra (total 25 males and 23 females examined). The pale yellow parts of the antennae are almost always limited to segments 3–6, though the segment 7 is largely pale yellow in 1 male and 1 female specimens. The elytra are dark purplish blue in most specimens, though purplish black in 5 male and 3 female specimens, and almost entirely black in 2 males.

Type series. Holotype ♂, near Mamasa, South Sulawesi, Indonesia, IV–2000. Allotype ♀, same data as the holotype. Paratypes: 21♂♂ and 22♀♀, same data as the holotype; 1♂, near Pukac, Palopo, Central Sulawesi, XI–1994; 2♂♂, Pulupulu, Central Sulawesi, IV–1989. The holotype and allotype are deposited in the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, and a pair of the paratypes are in the Natural History Museum, London, Bernice P. Bishop Museum, Honolulu, and Kanagawa Prefectual Museum, Odawara, respectively. The other paratypes are preserved in the private collection of T. NIISATO.

Distribution. South and Central Sulawesi, Indonesia.

Notes. Though quite different in facies, particularly in body coloration, this new species is most closely related to Bornean *P. ruficollis* in the genus, and may be regarded as its geographical race in Sulawesi. The two species have in common such basic structure as the weakly transverse and well convex pronotum, rather long and attenuate elytra, and also the pattern of body coloration, reddish pronotum and bluish or greenish elytra, and black and whitish bicolored antennae. As was mentioned in the above description, the new species is easily distinguished from *P. ruficollis* by the unicolored blood red pronotum with close punctations, and the purplish black or black elytra instead of metallic green.

Ecological information of *P. kurosawai* is almost lacking. I have known its existence in Sulawesi since more than a decade. In several recent years, many more specimens of this species were brought forth by insect dealers in Sulawesi.

要　　約

新里達也：スラウェシ産*Pachyteria*属アオカミキリの美しい1新種. —— インドネシアのスラウェシから発見された*Pachyteria*属の1新種を，*Pachyteria kurosawai* sp. nov.と命名して記載した．本種は，赤色の前胸背板および暗紫青色の翅鞘の独特の色彩から，同属他種とは容易に識別可能であるが，色彩以外の多くの点においてボルネオに分布する*P. ruficollis* WATERHOUSEに近縁で，その代置種とみなされるものである．なお，新名は今年の2月27日に逝去された故黒澤良彦博士に献名した．

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Elytra, *Tokyo*, **29** (2): 298–303, November 15, 2001

A New Species of the Genus *Bandar* (Coleoptera, Cerambycidae, Prioninae) from Malaysia, with Notes on *Bandar khooi* HAYASHI

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Abstract A new species of the genus *Bandar* found in East Malaysia (Sabah) is described under the name *Bandar kurosawai* sp. nov. *Bandar fisheri khooi* HAYASHI, 1975 is revived from a junior synonym of *B. pascoei*.

It is well known that the late Dr. Yoshihiko KUROSAWA had interest in a part of the Cerambycidae such as the Callichromini, but it is little known that his interest and knowledge also covered the subfamily Prioninae of Asia. When I started in the study of the world Prioninae in 1977, he gave me many useful suggestions and through them, I knew his extensive knowledge about this subfamily. Later, when I met him by chance in 1993, he told me that he believed the genus *Bandar* from Malaysia included at least one unknown species and suggested me to investigate it. I believe this paper will confirm the accuracy of his supposition on this genus, though many years have passed since it was given. I would like to dedicate this paper with deep gratitude to the late Dr. Yoshihiko KUROSAWA for his suggestion as well as many advice given to me for my study on the Prioninae in his lifetime.

Bandar is a small genus of the tribe Macrotomini distinct in having the third antennal segments robust and prism-formed. It was classified into one species *B. pascoei* and its subspecies by QUENTIN and VILLIERS (1981), and this paper has often been referred to by many workers during the recent two decades. However, in classifying a long series of specimens mainly collected from Malaysia in recent ten years, I recognized two other species in this genus. In this paper, I am going to describe a new species under the name *Bandar kurosawai* sp. nov. and also going to revive *B. khooi* HAYASHI, 1975 as an independent species with notes on the male. This species was originally described as a subspecies of *Macrotoma fisheri* based on a single female from middle West Malaysia, and was regarded as a junior synonym of *Bandar pascoei* by QUENTIN and VILLIERS (1981).

I would like to express my cordial thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist), Tokyo, for his constant guidance and kind and appropriate revisings given to my original manuscripts of my papers. I am indebted to Mr. DRUMONT Alain, Belgium for his advice and help on materials concerning this study.

Bandar kurosawai sp. nov.

(Figs. 1–2)

A medium- or large-sized species of elongated cylindrical body form and with rather short antennae. Integument chestnut-brown, more dark-colored on head including eyes, mandibles, basal parts of antennae and fore legs, yellowish and more bright on elytra; surface glabrous, mat and partly shiny. Such a combination of characters gives this species a general appearance somehow similar to *Prionotoma* KOLBE of western Africa.

Male. Head small, about 0.6 times as long as wide, finely punctured and with a distinct median groove; antennal tubercles transverse, large but not strongly raised; eyes large, interspace between eyes slightly narrower than each eyelobe; mandibles short, external lines obtusely angulate inwards, internal lines almost straight and each furnished with two distinct internal dents.

Antennae about 0.7–0.8 times as long as body; segment 1 about 0.77 times as long as head, segment 3 about 1.37 times as long as segment 1, robust and prismatic, segments 1–3 irregularly punctured on dorsal side and roughly granulate on ventral side, segment 4 about 0.67 times as long as segment 1 and much narrower than segment 3, segment 5 a little narrower in width and longer in length than segment 4, segment 5 and remainders almost of the same width and gradually increasing in length to apex, segment 11 a little longer than segment 1, segments 3–11 smooth and segments 5–10 partly depressed and sub-acutely angulate near the apico-external ends ("moitié rostrale" by the expression of QUENTIN and VILLIERS, 1978, 1981).

Pronotum about 1.53 times as long as head, 1.76 times as wide as maximum width of head at base and almost straightly narrowed apicad; both basal and apical angles acute but not furnished with distinct spines; lateral margins furnished with 12–15 small dents; dorsum roughly punctured and obtriangular impunctate part at the middle near base. Scutellum lingulate, without distinct punctures and granules.

Elytra roughly punctured and rather shiny in basal fourth and other portions mat and minutely granulate or shallowly vermiculate, slightly wider than maximum width of pronotum, widest just after the middle and moderately narrowed towards both ends, smoothly rounded apicad and not furnished with apical dent; each elytron with four costae; inner two costae starting from humerus, almost running parallel and disappearing just before apex; outer two starting at basal fourth and disappearing a little before inner two, four costae usually not meeting one another but outer two sometimes meeting basad.

Ventral surface generally glabrous, mat and smooth, covered with short reddish yellow pubescence on meso- and metepisterna and metasternum.

Legs rather short and slender, femora and tibiae smooth on dorsal sides and with small dents on undersides; tarsal segments narrow, segment 1 slightly longer than segments 2 and 3 combined, segment 3 deeply bilobate, claw segment as long as combined length of segments 1–3.

Male genital organ similar to that of *B. pascoei* but tegmen shorter and each apex of lateral lobes rectangularly truncate apicad and not elongatedly separately rounded as in *B. pascoei*.

Body length: 49.4–74.7 mm.

Female. Similar to male in general appearance though a little wider. Antennae about a half as long as body, segment 3 about 0.54 times as long as pronotum, narrowest at the base and widened apicad, segments 6 and 10 angulate at external apices.

Body length: 52.7 mm

Type series. Holotype: ♂, Tavau, Sabah, East Malaysia, 1–IV–1995. Deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo. Paratypes: 2 ♂♂, same locality, 9–IV–1996; 1 ♀, Trus Madi, 3–V–2000, 1 ♂, same locality, V–2001.

Notes. *Bandar kurosawai* sp. nov. is allied to *B. pascoei* LANSBERGE but can easily be distinguished by the following points: body more convex and shiny; antennae shorter, with segment 3 shorter than 0.8 times the length of pronotum in both sexes, legs shorter. The relationship between this species and *B. khooi* HAYASHI, stat. nov. is given below.

Bandar khooi (HAYASHI), stat. nov.

(Fig. 3)

Macrotowa [sic!] (*Bandar*) *fisheri* ssp. *khooi* HAYASHI, 1975, Bull. Osaka Jonan Women's Jr. Coll., (10): 168, pl. 1, fig. 2.

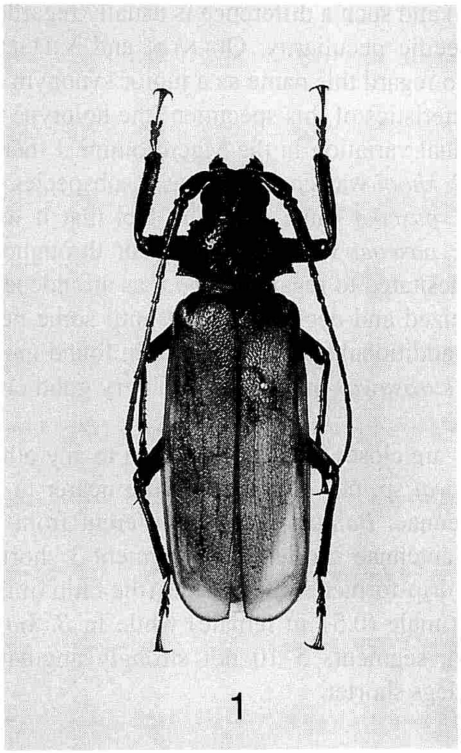
Bandar pascoei pascoei: QUENTIN & VILLIERS, 1981 [nec LANSBERGE] (pro parte), Annls. Soc. ent. Fr., (N.S.), **17**: 363–364.

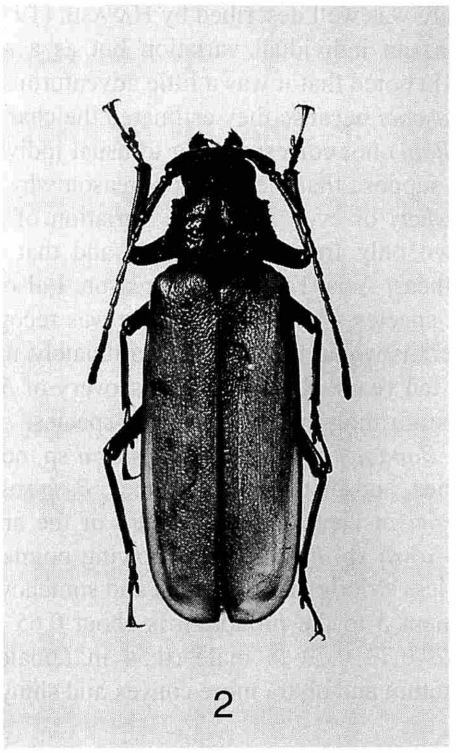
Male. Generally agreeing with the original description which was given on a female except for the following points: Body slenderer, elytra 2.4 times as long as wide. Antennae about 0.65 times as long as body; segment 3 about 1.31 times as long as segment 1 and slightly longer than a half of pronotum, segment 3 almost prism-formed but the inner face is a little rounded, narrowed at base, widened apicad and then roundly ending so as to show somehow drip-formed appearance; segments 7–10 obtusely angulate at each apico-external end. Male genital organ closely similar to those of *B. kurosawai* but the median lobe is slenderer and each lateral lobe is rounded apicad.

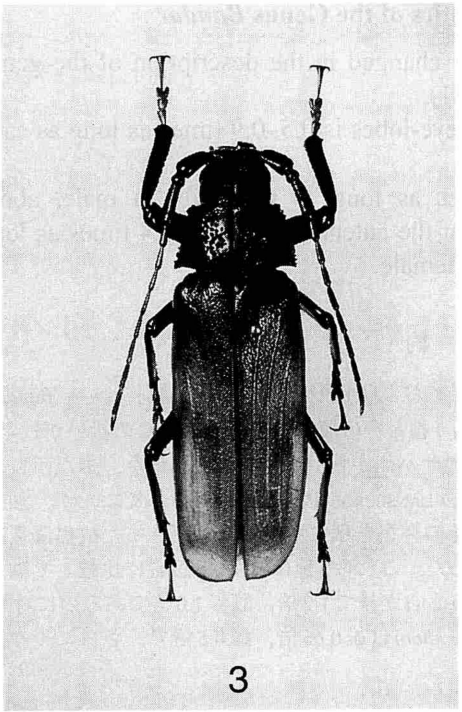
Body length: 48.4 mm.

Specimen examined. 1♂, SW Pahang near Bukit Tinggi, Malaysia, 3–IV–1980, Y. KOH leg.

Notes. This species is close to *B. pascoei* but is easily distinguished by very short third antennal segment. I examined 230 ♂♂, 17 ♀♀ of *B. pascoei* from many localities of Malaysia and Indonesia and confirmed that the range of variation in the ratio of the third antennal segment to the pronotum within this area is 1.10–1.24 in male (0.96–1.01 in female) while *B. khooi* has that of only 0.54 (0.51 in female). This







Figs. 1–3. *Bandar* spp., habitus. —— 1–2. *B. kurosawai* sp. nov.; 1, male, 2, female. —— 3. *B. khooi* HAYASHI, 1975; male.

feature was well described by HAYASHI (1975) and such a difference is usually regarded not as an individual variation but as a specific peculiarity. QUENTIN and VILLIERS (1981) noted that it was a little adventurous to regard this name as a junior synonym of *B. pascoei* because they estimated the characteristics of this specimen (the holotype of *B. khooi*) not corresponding to usual individual variation in the Macrotomini. I therefore suppose that the principal reason why *B. khooi* was considered as a subspecies of *B. fisheri* or even as a mere variation of *B. pascoei* came from the fact that it was known only from one example and that *B. pascoei* was very abundant throughout Southeast Asia. For the same reason, I also hesitated to regard *B. khooi* as an independent species when the first male was recognized and decided to wait until some new materials would be added. Unfortunately, no additional specimen has been found in recent ten years. However, the discovery of *B. kurosawai* sp. nov. gives a very good clue for confirming the affinity of this species.

Bandar khooi and *B. kurosawai* sp. nov. are closer to each other than to any other species, and of these two species, *B. kurosawai* sp. nov is placed a little nearer to *B. pascoei* in view of the structure of the antennae. *Bandar khooi* is different from *B. kurosawai* sp. nov. in the following points: antennae shorter, with segment 3 shorter and less strictly prism-formed and somehow drip-formed in both sexes (the ratio of the segment 3 to the pronotum is about 0.65 in male (0.51 in female) while in *B. kurosawai* 0.73–0.79 in male (0.54 in female)), segments 5–10 not strongly angulate; pronotum and elytra more convex and shiny, legs shorter.

Emendation of Characteristics of the Genus *Bandar*

The following characteristics are to be changed in the description of the genus *Bandar* given by QUENTIN and VILLIERS (1981).

1) The interspace between the upper eye-lobes is 0.5–0.9 times as long as each eye-lobe.

2) The antennae are 0.65–1.04 times as long as the body in male, about 0.51–0.76 times in female. The segment 3 of the antennae is 0.65–1.24 times as long as the pronotum in male, 0.51–1.01 times in female.

要　約

小宮次郎：マレーシア産*Bandar*属の1新種の記載および1亜種の地位の再検討．—— *Bandar*属は，QUENTIN & VILLIERS (1981) により*B. pascoei* 1種とその亜種に整理され，この扱いが近年，標準的に引用されている．しかし，マレーシアのサバ州から1新種が発見された．また西マレーシアの*B. khooi* HAYASHIは，前記論文で*B. pascoei* LANSBERGEのシノニムとされていたが，独立した種であることが判明した．上記の新種は，その存在を私に示唆してくださった故黒澤良彦博士に献名し，*Bandar kurosawai* sp. nov.と命名した．これら2種は，*B. pascoei*に比較して触角第3節がはるかに短く，前胸の長さに比して*B. pascoei*が雄で1.2倍，雌で1.0倍であるのに対し，*B. kurosawai* sp. nov.は雄0.8倍弱，雌0.5倍強，*B. khooi*は雄0.65倍，雌0.5倍で，さらにやや滴

涙型であるため，容易に区別できる．

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Elytra, *Tokyo*, **29** (2): 304–309, November 15, 2001

Two New Cnodalonine Beetles (Coleoptera, Tenebrionidae) from Southeast Asia

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Abstract Two new cnodalonine tenebrionid beetles from Southeast Asia are described under the names *Augolesthus* (s. str.) *yoshihikoi* sp. nov. and *Tetragonomenes kurosawai* sp. nov.

On this occasion, I would like to select two small but very beautiful species of the tenebrionid tribe Cnodalonini, one belonging to the genus *Augolesthus* and the other to the genus *Tetragonomenes*. This small paper is dedicated to the memory of the late Dr. Yoshihiko KUROSAWA, ex-director of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, who constantly led me to the study of coleopteran insects, particularly the dung beetles, for 45 years since the time of my junior high school student.

I wish to acknowledge my indebtedness to Dr. Wolfgang SCHAWALLER, Staatliches Museum für Naturkunde in Stuttgart for permission to examine invaluable specimens preserved in that museum. Appreciation should be expressed to Mr. Seiji MORITA (Tokyo) for taking photographs inserted in this paper.

Augolesthus (s. str.) *yoshihikoi* sp. nov.

(Figs. 1, 3 & 4)

Brownish black with weak dark greenish lustre, head, pronotum, scutellum, elytra and legs dark blue, elytra with feeble greenish lustre, basal parts of antennae, tarsi, mouth parts and gula yellowish brown, hairs on ventral surface of protibiae rather golden; dorsal surface strongly, metallically shining, ventral surface moderately and somewhat alutaceously so. Body elongated elliptical, moderately convex above.

Head subhexagonal, gently inclined apicad, covered with microscopically isodiametric sculpture, moderately closely but rather irregularly punctate; clypeus weakly raised, somewhat widely V-shaped, triangularly emarginate in front, each side of the emargination rounded, fronto-clypeal border grooved; genae rather ax-shaped, raised laterad, depressed in basal parts, scattered with minute punctures; frons wide, gently declined to fronto-clypeal groove, precipitous in lateral parts, bordered from tempora by a deep sulcus, diatone about 3.3 times the width of transverse diameter of an eye.

Eyes rather transversely comma-shaped in dorsal view, obliquely inlaid into head, and gently convex laterad. Antennae moderately clavate, gently flattened, reaching the middle of pronotum, ratio of the length of each segment from base to apex: 0.39, 0.2, 0.37, 0.32, 0.31, 0.28, 0.31, 0.34, 0.32, 0.36, 0.58.

Pronotum subquadrate, 1.36 times as wide as long, widest slightly behind the middle; apex weakly produced in middle, gently sinuous on each side, neither bordered nor margined; base moderately bisinuous, bordered by a punctate groove; sides gently declined to lateral margins, which are bordered by grooves and sparsely crenulate; front angles rectangular, hind angles acute; disc moderately and evenly convex, weakly micro-isodiametrically sculptured, moderately scattered with punctures, which are slightly larger than those on frons, and sometimes intermixed with smaller ones. Scutellum rather widely subcordate, feebly sculptured, sparsely scattered with minute punctures.

Elytra somewhat elongated elliptical, 1.63 times as long as wide, 2.69 times the length and 1.14 times the width of pronotum, subparallel-sided; dorsum rather strongly convex, transversely depressed at basal 2/9, swollen at basal 1/8, depressed in area between the swellings; disc very feebly micro-isodiametrically sculptured, finely punctato-striate, the striae sometimes interrupted in medio-basal part, the punctures somewhat longitudinal; intervals slightly convex in interior parts and strongly convex in lateral parts, microscopically, sparsely punctate, very weakly, somewhat transversely micro-aciculate; humeri narrowly swollen; apices simply rounded.

Profemur with a tooth at the anterior edge of dorsal face near apex; male protibia obtusely toothed at basal 1/3 on dorsal face, noticeably gouged and haired in apical 2/3 of ventral face; ratios of the lengths of pro-, meso- and metatarsomeres: 0.24, 0.18, 0.2, 0.22, 1.2; 0.27, 0.21, 0.2, 0.22, 1.22; 0.62, 0.31, 0.23, 1.22.

Male genitalia slender, 2 mm in length and 0.27 mm in width, very slightly twisted, feebly constricted in an area between basal piece and lateral lobes, gently curved in lateral view; fused lateral lobes rather nib-shaped, 0.49 mm in length.

Body length: 7.4 mm.

Holotype: ♂, "N-Sumatra: Medan / Bukit Lawang / 11.–12. 10, 1990 / leg. A. RIEDEL" (SMNS). Paratype: 1ex., same data as for the holotype.

Notes. This new species resembles *Augolestus* (s. str.) *borneensis* (KULZER, 1952) in having the body subparallel-sided and with dorsal surface bluish, but can be distinguished from the latter by the body more elongate with clypeus somewhat widely V-shaped and triangularly emarginate in front, femora and tibiae almost dark blue (these except front tibiae light brown in *A. borneensis*), and profemur with a tooth at the anterior edge of the dorsal face near the apex.

Key to the Species of the Genus *Augolesthus*

1(4) Elytra neither transversely depressed nor convex anteriorly; protibiae neither thickened nor haired; elytra with a transverse fascia before the middle . . . .

. . . . . Subgenus *Falsoaugolesthus* MASUMOTO.

2(3) Head convex but weakly depressed; pronotum more closely punctate, with apex more strongly produced forwards; elytral fascia shorter, lying in basal 2/5; intervals flat; 8–8.5 mm; Taiwan . . . . . *A.* (*F.*) *kurosawai* MASUMOTO

3(2) Head convex but not depressed; pronotum less closely punctate, with apex less strongly produced forwards; elytral fascia longer, lying in basal 1/3; intervals gently convex; 7–8 mm; North Vietnam . . . . . *A.* (*F.*) *pulcher* (PIC).

4(1) Elytra transversely depressed anteriorly and often convex before the depression; protibiae distinctly thickened and haired; elytra with a transverse fascia in some species but without in others . . . . . Subgenus *Augolesthus* MOTSCHULSKY.

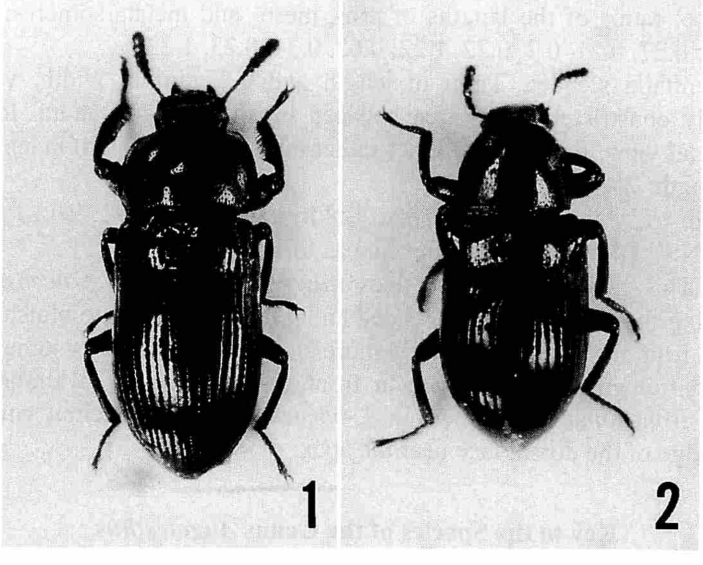
5(12) Elytra without transverse fascia in the middle.

6(7) Body rather elongate; elytral striae deeper; intervals more strongly convex; larger species (7.5–8.8 mm); Thailand, Laos. . . *A. thailandicus* MASUMOTO.

7(6) Body oblong-ovate; elytral striae shallower; intervals less strongly convex; smaller species (6.2–8.5 mm).

8(9) Elytral intervals flat; punctures on dorsal surface weaker; lateral margins of pronotum not crenulate; 7 mm; Singapore . . . . . *A. protensus* (FAIRMAIRE).

9(8) Elytral intervals distinctly convex in lateral portions; punctures on dorsal surface stronger; lateral margins of pronotum more or less crenulate.



Figs. 1–2. Habitus. —— 1, *Augolesthus* (s. str.) *yoshihikoi* sp. nov., holotype, ♂; 2, *Tetragonomenes kurosawai* sp. nov., holotype, ♂.

10(11) Profemur with a tooth at anterior edge of dorsal face near apex; clypeus noticeably triangularly emarginate in front; 7.4 mm; Sumatra ..... *A. yoshihikoi* sp. nov.

11(10) Profemur without tooth at anterior edge of dorsal face near apex; clypeus not so noticeably triangularly emarginate in front; 6.2–8.5 mm; Borneo ..... *A. borneensis* (KULZER).

12(5) Elytra with a distinct transverse fascia in the middle.

13(14) Profemur without tooth at anterior edge of dorsal face near apex; elytral fascia lying slightly before the middle; 8–9.5 mm; Borneo, Sumatra ..... *A. purpureofasciatus* MOTSCHULSKY.

14(13) Profemur with a tooth at anterior edge of dorsal face near apex.

15(16) Body noticeably robust (profemur with a distinct tooth near apex; elytral fascia short and lying in basal 1/3, with anterior margin produced forwards); 8.5–9 mm; Borneo ..... *A. latus* (KULZER).

16(15) Body noticeably slender.

17(18) Female (type!): pronotum with apex distinctly narrower than base; profemoral tooth triangular and acute; elytral fascia shorter, lying in basal 1/3; 9 mm; Java ..... *A. violaceofasciatus* (PIC).

18(17) Female: pronotum somewhat barrel-shaped, with apex as wide as base; profemoral tooth obtuse; elytral fascia longer, lying in basal 2/5; 7–8 mm; Malay Peninsula ..... *A. andoi* MASUMOTO.

Tetragonomenes kurosawai sp. nov.

(Figs. 2, 5 & 6)

Brownish black with weak dark bluish tinge, head golden green with feeble bluish tinge, pronotum, scutellum and dorsal surfaces of legs dark blue with very feeble greenish tinge, basal 1/4 of elytra dark blue, apical 3/4 of elytra deep purple; head sericeously shining, pronotum, scutellum and legs moderately shining, basal 1/4 of elytra strongly shining, apical 3/4 of elytra rather weakly shining. Oblong-ovate; strongly convex above.

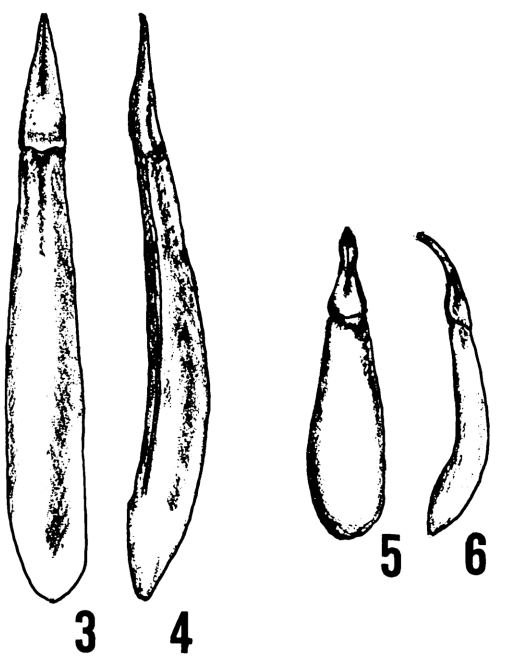
Head transversely subhexagonal, strongly raised in basal part, depressed in clypeus and genae, microsculptured, rather closely, finely punctate; clypeus somewhat invertedly trapezoidal, very slightly bilobed in front, raised medially, feebly depressed on each side, fronto-clypeal suture indistinct and irregularly punctate; genae before eyes gently raised in basal parts, flattened in anterior part, with outer margins rounded, those behind eyes subparellel-sided, weakly depressed; frons raised with a declivity in middle, noticeably swollen on each side, outer margins of the swellings precipitous and deeply sulcate; diatone about 3 times the width of transverse diameter of an eye. Eyes subreniform, gently convex laterad, obliquely and roundly inlaid into head, interior margins not sulcate. Antennae subclavate, reaching the midst of pronotum, ratio of the length of each segment from base to apex: 0.38, 0.2, 0.33, 0.24, 0.22, 0.45, 0.49, 0.51,

0.52, 0.55, 0.75.

Pronotum subquadrate, 1.22 times as wide as long; apex feebly produced and arched; base triangularly produced, sinuous on each side, finely rimmed; sides steeply declined to lateral margins, which are slightly expanded laterad, very finely rimmed and crenulate; front angles obtuse, hind angles nearly rectangular, weakly projected postero-laterad; disc strongly convex and almost hemispherical, highest at apical 2/5, very slightly microsculptured, rather closely punctate, the punctures small, somewhat ovate, and feebly umbilicate with minute hairs. Scutellum triangular with slightly emarginate base and feebly rounded sides, microscopically, transversely wrinkled, scattered with small punctures in lateral parts.

Elytra subelliptical, 1.6 times as long as wide, 2.5 times the length and 1.39 times the width of pronotum, widest at the middle; dorsum strongly convex in apical 3/4, highest at the middle, gently, obliquely depressed in area around basal 1/4; disc finely punctato-striate, the punctures in basal 1/4 (dark bluish part) slightly larger than those in the remaining part, 5th stria deepened close to base; intervals gently convex, sparsely scattered with small punctures, further with microscopic punctures which are visible under 40X, weakly, rather transversely aciculate; humeri rather strongly swollen in a gibbose shape; apices very feebly, roundly produced.

Legs rather stout, without special modification; ratios of the lengths of pro-,



Figs. 3–6. Male genitalia. —— 3–4. *Augolesthus* (s. str.) *yoshihikoi* sp. nov.; 3, dorsal view; 4, lateral view. —— 5–6, *Tetragonomenes kurosawai* sp. nov.; 5, dorsal view; 6, lateral view.

meso- and metatarsomeres: 0.31, 0.21, 0.2, 0.23, 1.2; 0.34, 0.21, 0.22, 0.23, 1.22; 0.62, 0.27, 0.21, 1.2.

Male genitalia short fusiform, 1.1 mm in length and 0.2 mm in width, with a basal part weakly curved in lateral view; fused lateral lobes 0.3 mm in length, gently constricted in middle, with spatulate apices.

Body length: 3.5 mm.

Holotype: ♂, "BORNEO: Sarawak / Belanga, Long Linau / 17.–21.3.1990/ leg. A. RIEDEL" (SMNS).

Notes. No species allied to this new tenebrionid has hitherto been known, in view of its remarkable coloration and peculiar shape of the head and elytra. Judging from general appearance, *e.g.*, the subparallel-sided body and the moderately convex eyes, this new species seems to belong to the genus *Tetragonomenes*. It also resembles some species of the genus *Malayaplamius* in having the modified head and the strongly convex posterior parts of the elytra. It may, therefore, be an annectent of the above two genera. More than 80 species of the genus *Tetragonomenes* are distributed over East Asia and the northern part of Australia. When a detailed study is made in the future, this genus would possibly be divided into several subgenera or genera, because the genus in the current sense is obviously heterogeneous.

要　　約

益本仁雄：東南アジア産ニジゴミムシダマシ族の2種. —— 東南アジア産ゴミムシダマシ科ニジゴミムシダマシ族 (Cnodalonini) の2新種を，永年ご指導くださった故黒澤良彦博士に因み，*Augolesthus* (s. str.) *yoshihikoi* sp. nov.および *Tetragonomenes kurosawai* sp. nov.と命名して記載した.

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Elytra, *Tokyo*, **29** (2): 310–314, November 15, 2001

A Beautiful New Mordellid of the Genus *Variimorda* (Coleoptera, Mordellidae) from the Southern Ryukyus

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Abstract A new mordellid species from the Yaeyama group of the Ryukyu Islands is described under the name of *Variimorda kurosawai* sp. nov. It is very closely related to *V. miyarabi* NOMURA from the central Ryukyus, but distinguished from it by the well developed yellowish maculations of the elytra, slenderer antennae and thinner pygidium.

Up to the present, I have regarded the specimens of the genus *Variimorda* MÉQUIGNON from the Yaeyama group of the Ryukyu Islands as *V. miyarabi* NOMURA (TAKAKUWA, 1976, 1985), though some apparent differences are recognized between these two populations. My view has been based upon a plausible reason that they have somewhat similar male genitalia at a glance. After a detailed examination, however, I have come to the conclusion that the population of the Yaeyama Islands should be considered a good species because of the unique characteristics in external morphology and rather weak but stable characteristics of the male genitalia. I am going to describe it as a new species in this paper.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critically reading the original manuscript. My cordial thanks are also due to Mr. Takeichiro HATAYAMA of Osaka for loaning me the mordellid specimens used in this paper and to Mr. Tatsuya NIISATO of Bioindicator Co., Ltd., Tokyo for literature.

This short paper is dedicated to the memory of the late Dr. Yoshihiko KUROSAWA, formerly of the National Science Museum (Nat. Hist.), Tokyo. I am sincerely grateful to him for his kind guidance and encouragement extended to me in the course of the study of mordellid beetles, and also pay my heartfelt respect to him for his great contributions on various fields of entomology.

Variimorda kurosawai sp. nov.

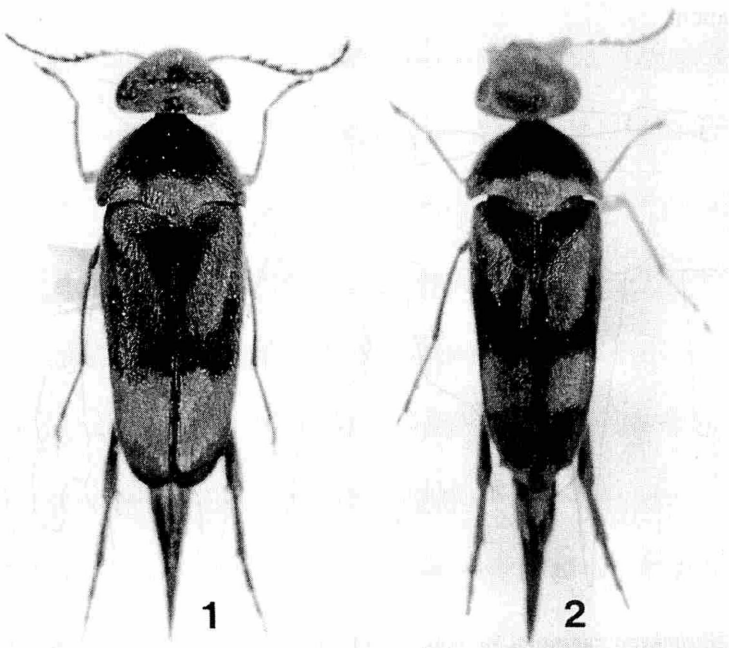
(Figs. 1, 3–9)

Variimorda miyarabi: TAKAKUWA, 1976, Elytra, Tokyo, **3**: 17, pl. 3, no. 8; 1985, Coleopt. Japan Col., Osaka, **3**: 385, pl. 66, no. 23.

Closely allied in external morphology to *V. miyarabi* NOMURA from Amami-O-shima Is. and *V.* sp. from Taiwan, but readily distinguished from them by the developed flavous pubescence which bears on the most parts of body surface.

Male. Black; mouth-parts yellow to yellowish brown except for dark castaneous apices of mandibles; each antenna yellow to castaneous, basal three segments yellow, segment 4 and basal parts of segments 5–10 yellowish brown, the remainders castaneous; fore and middle legs yellowish, more or less darkened apicad; hind legs and apical areas of abdominal segments 1–5 reddish brown to castaneous; terminal spurs of hind tibiae brown.

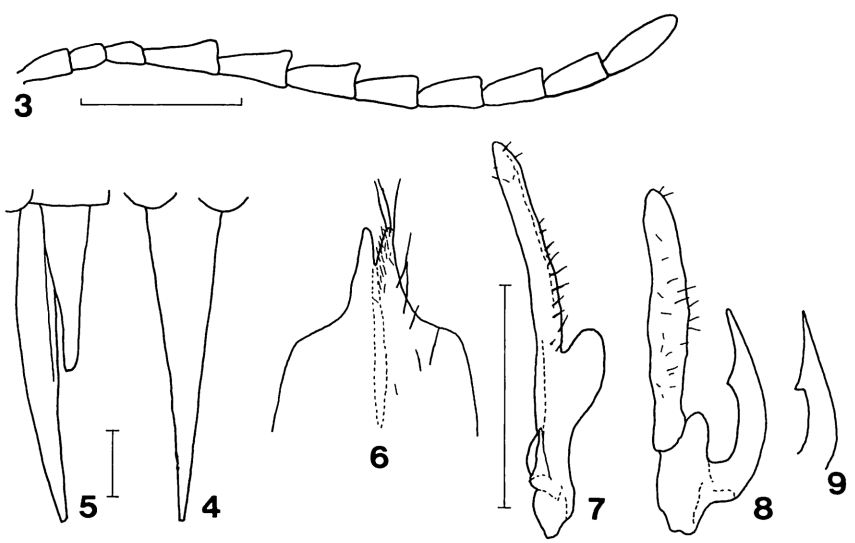
Head densely clothed with light flavous pubescence; eye subcircular, rather sparsely bearing long hairs; tempora very narrow. Terminal segment of maxillary palpus right-angled isosceles triangular though the apical angles are rounded; anterior margin a little longer than outer one (1.1 : 1). Antenna slender, as illustrated; segment 4 as long as segments 2 and 3 combined; terminal segment elongate fusiform, extremely narrowly rounded at apex, about three times as long as wide. Pronotum densely clothed with flavous pubescence almost all over though often with a vague longitudinal median blackish spot, about 1.43 times as wide as long, widest at basal 3/10; sides gently rounded. Scutellum tongue-shaped, bearing light flavous pubescence. Elytra about 2.1 times as long as wide; sides very slightly broadened to basal 1/4 to 1/5, then



Figs. 1–2. Habitus of *Variimorda* spp. —— 1, *V. kurosawai* sp. nov., ♂, holotype; 2, *V. miyarabi* NOMURA, ♂.

almost straightly attenuate posteriad, and rather rapidly, arcuately convergent to near each apex; surface clothed with fuscous pubescence, decorated with flavous one as follows: a pair of very broad oblique fasciae from humeral parts to just before the middle, which are broadly touched each other at sutural lines and prolonged to behind scutellum along each basal margin and to behind middle along each lateral side; a pair of extremely enlarged posterior fasciae which are broadly contiguous both to sutural and lateral margins and usually barely connected with the former maculations at lateral sides. Pygidium slender and thin, attenuate apicad with slightly excavating sides, about 1.71 times as long as elytra, 1.24 times as long as elytral width, and just twice as long as anal sternite; dorsum gently arcuate in profile, clothed with fuscous hairs except for basal 1/4 to 1/3; apex extremely narrowly truncate in dorsal view and obliquely so in lateral view. Abdomen clothed with flavous pubescence almost all over; anal sternite parabolical, narrowly rounded at apex; eighth abdominal sternite very thin, with apical projection deeply divergent. Legs slender, hind one at least reaching apex of pygidium; fore tibia curved downwards and slightly so inwards, with a few long erect setae on dorso-basal portion; inner terminal spur of hind tibia about twice as long as outer one, considerably thickened, scarcely attenuate towards apex which is rather truncate.

Parameres slender, as illustrated; left paramere apparently longer than right one (1 : 1.15); right paramere rather stout though the membranous piece is slender and elongated oblong, with developed apical protruding of basal piece, and with stout sclerotized branch.



Figs. 3–9. *Variimorda kurosawai* sp. nov., ♂, holotype. —— 3, Right antenna; 4, pygidium in dorsal view; 5, pygidium and anal abdominal sternite in lateral view; 6, apical part of 8th abdominal sternite; 7, left paramere in inner view; 8, right paramere in inner view; 9, sclerotized branch of right paramere in lateral view. Scales: 0.5 mm.

Female. Terminal segment of maxillary palpus obtuse triangular with arcuate outer and apical margins; outer margin about twice as long as inner one, a little longer than inner one (1 : 0.9). Antenna shorter and broader than in male. Pygidium shorter than in male, about 1.11 times as long as elytral width. Fore tibia straight in dorsal view though curved downwards as in male.

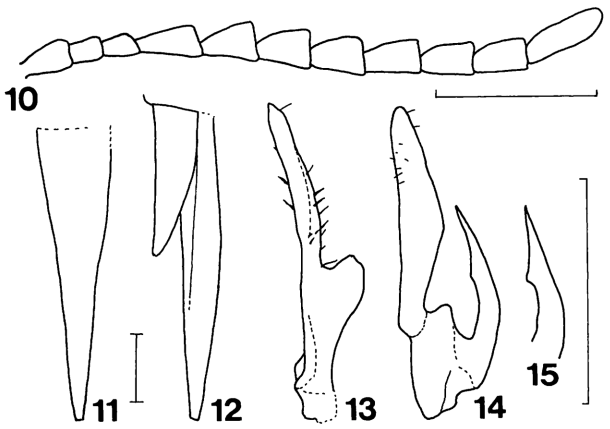
Length: ♂: 5.4–6.2 mm (incl. head and excl. pygidium); ♀: 5.0 mm (excl. head and pygidium).

Type series. Holotype: ♂, Shirahama, Iriomote Is., Yaeyama group of the Ryukyus, 30–V–1974, M. TAKAKUWA leg. Paratypes: Ishigaki Is., Yaeyama Isls.: 1♂, Yonehara, 5–VI–1973, K. MASAKI leg.; 1♂, same, 20–VI–1973, K. AKIYAMA leg.; 1♂, Arakawa, 31–V~1–VI–1997, M. TAKAKUWA leg. Iriomote Is., Yaeyama Isls.: 1♀, Sonai, 16–VI–1974, T. MIKAGE leg.; 1♂, Ohtomi-rindô, 6~7–VI–1993, M. TAKAKUWA leg.

Type depositories. The holotype is deposited in the collection of the Kanagawa Prefectural Museum of Natural History, Odawara. The paratypes are preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo, and the author's and Mr. HATAYAMA's private collections.

Distribution. Yaeyama Isls., SW. Ryukyus, SW. Japan.

The present new species doubtless forms a unique group together with *V. miyarabi* NOMURA from the central Ryukyus and *V.* sp. from Taiwan, particularly in having similar genitalic features, but clearly differs from *V. miyarabi* in the following characters: body stouter; surface clothed with flavous pubescence almost all over, with elytral yellowish maculations much more developed; antennae distinctly slenderer, with terminal segments elongated fusiform; pygidium thinner, about 1.71 times as long as elytra in male (about 1.61 times in *V. miyarabi*); left paramere of male genitalia slenderer, apparently longer than the right (very slightly longer in *V. miyarabi*); right paramere with



Figs. 10–15. *Variimorda miyarabi* NOMURA, ♂. —— 10, Right antenna; 11, pygidium in dorsal view; 12, pygidium and anal abdominal sternite in lateral view; 13, left paramere in inner view; 14, right paramere in inner view; 15, sclerotized branch of right paramere in lateral view. Scales: 0.5 mm.

stouter basal piece which is provided with developed apical protruding, and with slenderer membranous piece which is elongated oblong (knife-like in *V. miyarabi*).

Notes. *Variimorda* sp. from Taiwan preliminarily recorded in the present paper is somewhat similar in dorsal maculations to *V. taiwana* (NAKANE et NOMURA) from Taiwan which is regarded as a junior synonym of *V. truncatopyga* (PIC) from China, but doubtless differs from the latter at least in the characteristics of the pygidium.

要　　約

高桑正敏：琉球南部産キンオビハナノミ属の美しい1新種．—— 琉球列島の八重山諸島からハナノミ科の1新種，*Variimorda kurosawai* sp. nov.（ハデキンオビハナノミ）を記載した．本種はその雄交尾器を含めた形態的特徴から，奄美大島産の *V. miyarabi* NOMURA および台湾産の *V.* sp. と密接な関係をもち，これらとともに1つのまとまったグループを形成する．このなかにあって本種は，体表がほぼ全体に黄色微毛で被われ，鞘翅の金黄色紋がいちじるしく発達する点で容易に区別されるほか，前種とは触角と尾節板がより細く，雄交尾器側葉片の左片が右片より明らかに長い点などで明瞭に異なっている．

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Elytra, *Tokyo*, **29** (2): 315–317, November 15, 2001

A Remarkable New Species of the Genus *Chelonarium* (Coleoptera, Chelonariidae) from Borneo

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Abstract A new species of the genus *Chelonarium* is described from Borneo under the name of *C. kurosawai* sp. nov. The present new species is peculiar in the genus for its remarkable color pattern.

It is extremely regrettable that Dr. Yoshihiko KUROSAWA passed away on February 27, 2001. He was a leading coleopterist in Japan, and was credited with "Mushikichi". On the other hand, he was one of the best teachers of mine, who gave useful suggestions for my work on the Coleoptera. He would not like my expressions because he believed that we were "Mushinakama", or insect-loving companions. That was his policy. Therefore, I wish to dedicate his name to a rather beautiful chelonariid species from my specialized groups to the memory of the late Dr. Y. KUROSAWA who loved beautiful insects, the buprestid beetle in particular, which was the subject of his life work.

I am grateful to Dr. Shun-Ichi UÉNO for his kindness in reading this manuscript.

Chelonarium kurosawai M. SATÔ, sp. nov.

(Fig. 1)

Body oblong-oval, distinctly convex, rather shining, closely covered with brownish to blackish suberect hairs above, and with cinereous recumbent hairs beneath; pronotum, scutellum and elytral markings covered with orange, stiff, close and recumbent hairs. Colour almost black; pronotum, legs and abdominal sternites brown to dark brown, except for yellowish brown tarsi.

Head small, a little convex, concealed under pronotum; surface closely punctate; eyes large, prominent and a little wider than the distance between them; antennae serrate from 5th to 10th segments, 1st to 3rd stout, 3rd the longest, 4th the smallest, 11th elongated oval and slightly longer than 10th.

Pronotum about 1.9 times as broad as long, broadest at the base, anterior and lateral margins conjointly convergent anteriad, strongly edged and reflexed; hind angles rectangular; surface slightly convex in central area, somewhat depressed in antero-lateral areas, distinctly and closely punctate, the punctures round at marginal portions;

Fig. 1. *Chelonarium kurosawai* M. SATÔ, sp. nov.

integument smooth. Scutellum suboval, moderately punctate, covered with orange hairs.

Elytra about 1.3 times as broad as pronotum, about 1.3 times as long as broad, broadest at apical third, thence slightly narrowed anteriad and distinctly narrowed posteriad; surface finely and closely punctate, the punctures more or less transversely rugose; a pair of oval markings consisting of orange hairs present a little behind the middle.

Ventral surface closely and strongly punctate. Legs stout, somewhat flattened, densely reticulate, closely and strongly punctate; tibiae provided with many small teeth along the outer edge; 3rd tarsal segment strongly lobate beneath; claws strongly dilated at the base.

Length: 4.4 mm; braedth: 2.7 mm.

Holotype: ♀, Crocker Range (alt. 1,400 m), 16 miles Northwest of Keningau, Sabah, Borneo, 22–IV–1983, S. NAGAI leg. (in coll. Nagoya Women's Univ.).

The present new species is easily discriminated from all the members of the genus *Chelonarium* by having the peculiar orange maculation consisting of stiff hairs on the pronotum, scutellum and elytra.

要　　約

佐藤正孝：ボルネオ産の特異なダエンマルトゲムシ科の新種．—— ボルネオで得られた美しい色をしたダエンマルトゲムシ科の1種を調べたところ，これまで記録された近似のものが

同属に見当たらない特異な種であることがわかり，ここに新種として記載した．この種名を，先般亡くなられた，美しい虫の好きであった黒澤良彦博士に献名し，ご冥福を祈るものである．

Reference

DALLA TORRE, K. W. VON, 1911. Subfamily Chelonariinae. *In* JUNK, W., & S. SCHENKLING (eds.), *Coleopterorum Catalogus*, pars 33: 11–12. W. Junk, Berlin.

Elytra, Tokyo, **29** (2): 318–320, November 15, 2001

A New Species of the Buprestid Genus *Chrysochroa* (Coleoptera, Buprestidae) from Northern Borneo

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Abstract A new buprestid species, *Chrysochroa kurosawai* sp. nov., is described from North Borneo. It can be easily distinguished from the other congeners by the characteristics of the hind tibiae, which are densely covered with golden hairs on the inner side.

We collected an interesting specimen belonging to the buprestid genus *Chrysochroa* SOLIER, 1833, from Mt. Trus Madi during our collecting trip to North Borneo. After our careful study, it becomes clear that the present specimen is distinguished from the other known species except for *C. weyersi* DEYROLLE, 1864, by the haired hind tibiae. However, the male of *C. weyersi* also bears such hairs on the hind tibiae, though the hairs are distinctly shorter and sparser. We are therefore going to describe it under the name, *C. kurosawai* sp. nov., in the following lines. The holotype will be deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

This short paper is dedicated to the memory of the late Dr. Yoshihiko KUROSAWA in honor of his leadership in the study of the buprestid fauna of Japan and its adjacent regions.

Chrysochroa kurosawai sp. nov.

(Fig. 1)

Male. Body robust. Color almost metallic green tinged red on dorsal surface and red slightly tinged green on ventral surface; head reddish in median concavity; pronotum red along the median line and greenish red in the lateral parts; elytra red and lustrous near suture in the anterior half; mesosternum green; metasternum green in the anterior part; antennae black tinged with violet; femora green; tibiae with greenish outer and reddish inner sides; tarsi black. Hind wing entirely dark brown.

Head about as wide as pronotum, with a deep median concavity running from vertex to clypeus; frons longitudinal, distinctly converging above between eyes, very coarsely punctured; eyes large, with the internal rims slightly sinuate; clypeus triangularly emarginate at the anterior margin, coarsely punctured and covered with semirecumbent golden hairs. Antennae rather compact, eleven-segmented and serrate from the fourth segment, with the sensory pores densely defused on the ventral parts of serrate segments, first segment the longest, stout and subglobular, the second very short and globular, the third slightly shorter than the first.

Pronotum about 1.2 times as wide as long, widest at the base; sides distinctly and sinuously convergent from posterior to the anterior angles; anterior margin slightly bisinuate, about 0.7 times as wide as the posterior; posterior margin distinctly bisinuate;

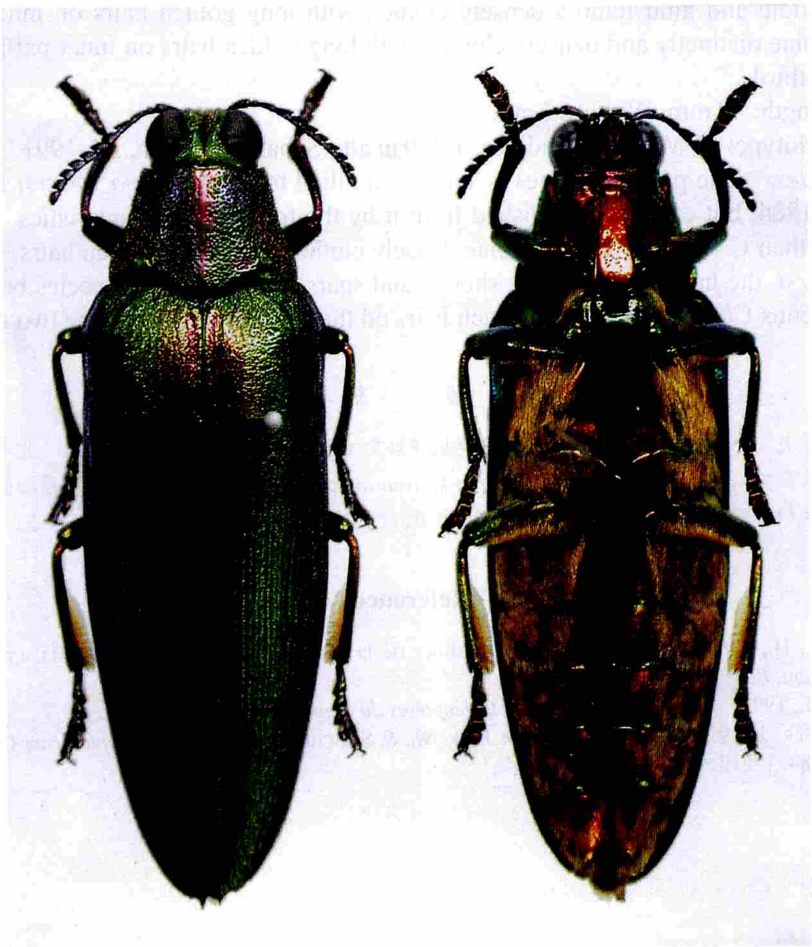

Fig. 1. *Chrysochroa kurosawai* sp. nov., holotype ♂; dorsal (left) and ventral (right) views.

marginal carinae defined in posterior half; disc convex, coarsely punctured except for the median and basal parts, which are impunctured. Scutellum invisible.

Elytra about 2.4 times as long as wide, about 4.9 times as long as pronotum, widest at the middle; sides distinctly expanded behind humeri, very slightly convergent to anterior fourth, arcuately and broadly expanded near the middle, then arcuately convergent to the tips, which form a distinct spine; basal margins with the lobes broadly and sinuously produced; surface obsoletely costate, longitudinally punctured between costae and hairless.

Ventral surface very densely clothed with long recumbent golden hairs in the lateral parts. Prosternum with two transverse grooves behind the anterior margin; prosternal process sparsely punctured and trilobed at the apex. Abdomen finely and sparsely punctured, with anal segment deeply and roundly emarginate at the apex.

Middle and hind femora densely clothed with long golden hairs on inner parts. Hind tibiae distinctly and densely clothed with long golden hairs on inner parts in apical two-thirds.

Length: 42 mm. Width: 13 mm.

Holotype: ♂, Mt. Trus Madi, ca. 1,200 m alt., Sabah, Malaysia, IV–1991.

Notes. The present species is somewhat allied to *Chrysochroa weyersi* H. DEYROLLE, 1864, but easily distinguished from it by the following characteristics: 1) body smaller than *C. weyersi*; 2) hind tibiae densely clothed with long golden hairs, while in *C. weyersi*, the hairs are distinctly shorter and sparser. There are no species belonging to the genus *Chrysochroa* bearing such hairs on the tibiae except for these two species.

要　　約

遠山雅夫・小林信之：北ボルネオから発見された *Chrysochroa* 属の1新種．—— 北ボルネオからルリタマムシ属の1新種，*Chrysochroa kurosawai* sp. nov. を記載した．本種は雄の後徑節の内側がきわめて密に金色の毛で覆われることで，同属の他の種から容易に区別できる．

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Elytra, *Tokyo*, **29** (2): 321–325, November 15, 2001

A New Locality of *Cypriacis* (*Akiyamaia*) *mirabilis* (Coleoptera, Buprestidae), with Notes on the Elytral Markings[1)]

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Abstract A Taiwanese buprestid, *Cypriacis* (*Akiyamaia*) *mirabilis* Y. KUROSAWA, 1969, is newly recorded from the eastern side of the central mountains. This population is somewhat different in elytral markings from that of the type locality which lies at the western side.

Cypriacis (*Akiyamaia*) *mirabilis* has the emerald green body with reddish or orange markings on the elytra, and is probably one of the most beautiful buprestid beetles in the Palearctic Region. The late Dr. Yoshihiko KUROSAWA gave a title, "A Splendid New Buprestid-beetle from Formosa" for his original description of this species, and showed it on a color plate seldom used at that time.

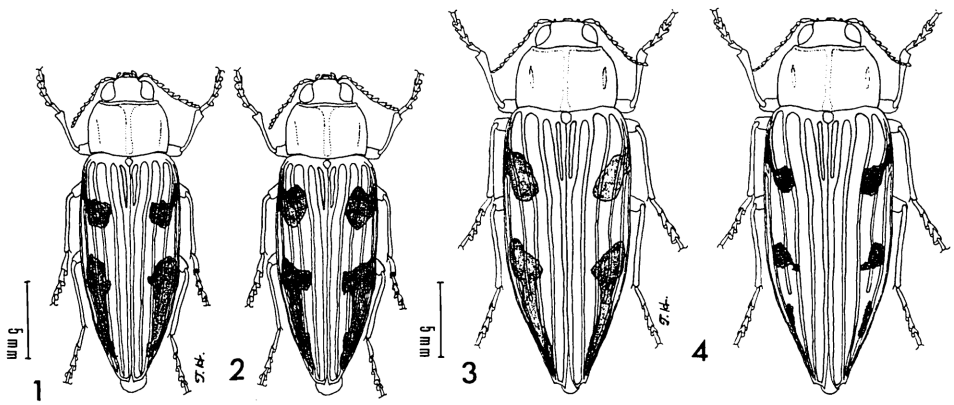
This species has hitherto been known from only a few places near the type locality "Tachien" which is situated at the western side of the Chungyang Shanmo, the central mountains of Taiwan. However, this species was recently found near Tzuen at the eastern side of the mountain range. These newly obtained specimens somewhat differ from the former in the elytral markings, though no morphological difference is recognized between them.

In this paper, I am going to describe the difference in the marking patterns between the population from near the type locality and that from near Tzuen located at the eastern side of the central mountains.

This paper is dedicated to the late Dr. Yoshihiko KUROSAWA, who kindly guided me throughout my study on the buprestid beetles. I would like to express my deep gratitude to him.

Before going further, I wish to express my sincere thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, to Dr. Masatoshi TAKAKUWA of the Kanagawa Prefectural Museum of Natural History, Odawara and to Dr. Kyôji TAZOE, Professor emeritus of Fukushima University, for their kindness in critically reading the original manuscript and offering invaluable suggestions. Thanks are also due to Mr. Tôru SHIMOMURA of Tokyo, Mr. Hyôji TORIGAI of Gifu Prefecture and Mr.

1) Part 4 of the series "Studies on the Buprestidae (Coleoptera) of Asia".



Figs. 1–4. Elytral markings of *Cypriacis* (*Akiyamaia*) *mirabilis* Y. KUROSAWA from the vicinities of the type locality; 1, 2, ♂; 3, 4, ♀.

Chinchi LUO of Nantou Hsien, Taiwan, for their kind offer of valuable materials used in this paper.

Cypriacis (*Akiyamaia*) *mirabilis* Y. KUROSAWA, 1969

Buprestis (*Cypriacis*) *mirabilis* Y. KUROSAWA, 1969, Bull. natn. Sci. Mus., Tokyo, **12**, p. 191, pl.1, fig. 1.
Cypriacis (*Akiyamaia*) *mirabilis*: Y. KUROSAWA, 1988, Kontyû, Tokyo, **56**, p. 265, fig. 4.
Cypriacis mirabilis: K. AKIYAMA & OHMOMO, 2000, Buprest. Beetles Wld., Tokyo, p. 207, pl. 78, no. 945.

Specimens from the Type Population from near "Tachien"

(Figs. 1–4)

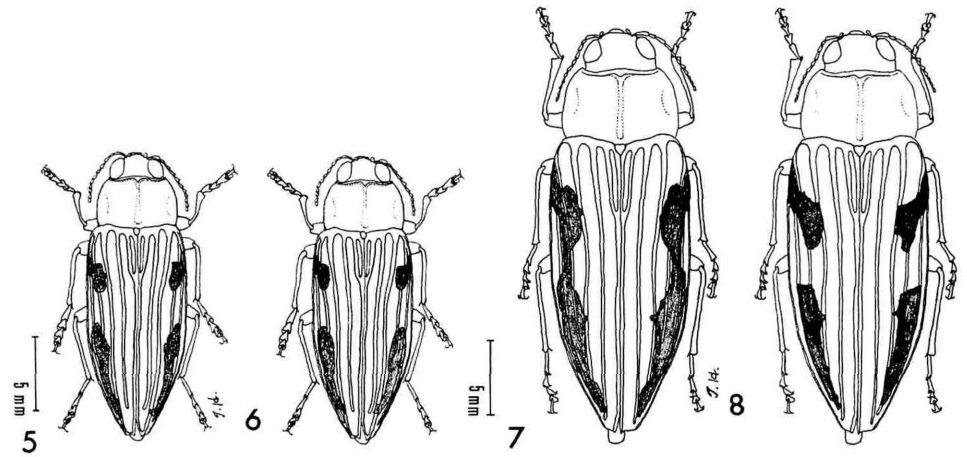
Each elytron decorated with two reddish markings as follows:

Male. Anterior marking from side margin at anterior 1/10 of elytral length[2] to anterior 3/10; posterior one from just before the middle to apical 1/5–1/20, both extending to 3rd interval (Figs. 1–2).

Female. Maculations variable; both anterior and posterior ones usually extended to 3rd interval, but sometimes one or both of them do not reach it; each usually forming a continuous maculation (Fig. 3), though the posterior one is often split into two (Fig. 4).

Specimens examined. Tapan (1,800 m in alt.) [new name of "Tachien"], Taichung Hsien: 1♂, 28–VII–1980, T. HATTORI leg.; 1♂, 30–VII–1980, T. HATTORI leg.; 2♂♂, 2–VIII–1987, T. HATTORI leg.; 1♂, 25–VII–1986, T. HATTORI leg.; 1♂, 27–VII–1988, T. HATTORI leg.; 1♀, 29–VII–1981, T. HATTORI leg.; 1♀, 27–VII–1978,

2) Elytral length is measured from the base of the scutellum to the apices.



Figs. 5–8. Elytral markings of *Cypriacis* (*Akiyamaia*) *mirabilis* Y. KUROSAWA from the vicinities of the "Tzuen"; 5, 6, ♂; 7, 8, ♀.

T. SHIMOMURA leg.; 1♀, 26–VII–1980; 1♀, 29–VII–1981; 1♀, 27–VII–1983; 1♀, 25–VII–1986; 1♀, 2–VIII–1987; 1♀, 27–VII–1988; 2♀♀, 30~31–VII–1988. Shishanchi (1,400 m in alt.), Taichung Hsien: 1♀, 23–VII–1988, H. TORIGAI leg.; 1♀, 30~31–VII–1988. Lishan (2,000 m in alt.), Taichung Hsien: 1♀, 14–VII–1989. Names of collectors are omitted in case the materials were taken by native collectors.

Notes. This population is characterized by the following features of the elytral maculations: 1) in male, both anterior and posterior ones extended to 3rd interval, 2) in female, anterior one never connected with posterior one.

Specimens from near "Tzuen"

(Figs. 5–8)

Different from the former population in the following respects of elytral maculations:

Male. Both anterior and posterior markings less developed, not extended to 3rd interval (Figs. 5–6), though reaching the outer margin of 3rd interval in one specimen taken at Pilu. Posterior one reaching apical 1/10–1/20.

Female. Anterior marking often running along side margin from anterior 1/10 to anterior 2/5 (Fig. 8), connected with the posterior one in 4 specimens (Fig. 7), and never extended to 3rd interval. Posterior marking enlarged from just before the middle to apical 1/10–1/20, usually connected with anterior marking as described above, and always extended to 3rd interval at the apical part.

Length: ♂: 16.5–19.9 mm (mean 18.4 mm); ♀: 20.0–26.7 mm (mean 23.1 mm).

Width: ♂: 5.9–7.2 mm (mean 6.5 mm); ♀: 7.1–9.4 mm (mean 8.4 mm).

Specimens examined. Tzuen (2,000 m in alt.), Hwalien Hsien: 1♂, V~VI–1989,

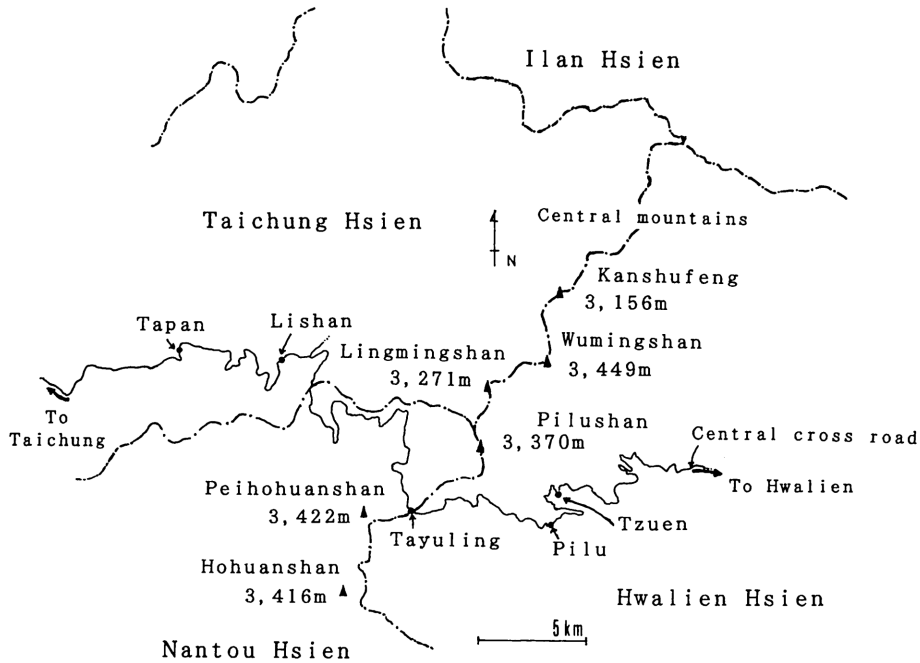


Fig. 9. Map showing the Hohuan Shan area of the central mountains of Taiwan.

Pu Chinhon leg.; 1♀, 28–VI–1985; 1♀, VII–1987; 1♂, 6–VII–1988; 1♀, 12–VII–1988; 1♀, VIII–1988; 1♂, 2♀♀, V～VI–1989. Sungmu (2,100 m in alt.), Hwalien Hsien: 1♀, 13–VIII–1986. Pilu (2,300 m in alt.), Hwalien Hsien: 1♂, 5–VIII–1988, Luo C. leg. Tayuling (2,600 m in alt.), Hwalien Hsien: 1♂, 10–VII–1988. Names of collectors are omitted in case the materials were taken by native collectors.

Notes. This population is characterized by the following features of the elytral maculations: 1) in male, both anterior and posterior markings not extended to 3rd interval, 2) in female, anterior one not extended to 3rd interval, and connected with the posterior one in most specimens.

要　　約

服部宇春：*Cypriacis* (*Akiyamaia*) *mirabilis* の新しい産地とそこでの個体群の特徴．—— 本種は，台湾中部の中央山脈の西側にある「達見」から記載され，またその周辺から知られてきたが，最近，その山脈の東側にある「花蓮県慈恩（標高 2,000 m）」およびその周辺で新しく発見された．新産地で採集された個体は，形態としては基準産地の個体と差異が見当たらないが，翅鞘の斑紋パターンをやや異にしている．すなわち，雄では翅鞘の前方と後方の2つの赤色紋が第3間室に達しない点，また雌では前方の赤色紋が第3間室に達しないことと，多くの個体で前方と後方の斑紋がつながる点である．

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Elytra, *Tokyo*, **29** (2): 326–334, November 15, 2001

Notes on Three Species of the Genus *Oxynopterus* (Coleoptera, Elateridae) from Southeast Asia, with Description of a New Species

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Abstract Three elaterid beetles belonging to the genus *Oxynopterus* are dealt with. *Oxynopterus palawanensis* ÔHIRA, 1974, which has been regarded as a subspecies of *Oxynopterus audouini* (HOPE, 1842), is raised to an independent species. *Oxynopterus harmseni* CANDÈZE, 1885, is briefly redescribed and illustrated for the first time. A new species of the genus is described from Borneo under the name of *O. kurosawai* W. SUZUKI. It is related to *O. harmseni*, but differs from it in the structure of the antennae and male genitalia.

The genus *Oxynopterus*, along with the genus *Tetralobus*, forms a group of Elateridae composed of giant species which can exceed 40 mm in length. This genus is distributed throughout Africa and Southeast Asia, and at the present time, six species are known from the former region and six species and two subspecies from the latter. No satisfactory taxonomic study has been made on the genus *Oxynopterus*, in spite of the fact that it includes such well-known and large species as *Oxynopterus mucronatus* (OLIVIER) and *O. candezei* FLEUTIAUX. In addition to the fact that there are many areas which have not yet been carefully surveyed or are lacking in specimens (particularly in the latter region, *e.g.*, islands of the Philippines and Indonesia), considerable local variation is observed within the respective species. Careful collecting methods and taxonomic re-examination are therefore necessary for determining exactly how many species there are in the areas concerned.

In the course of collecting specimens of beetles inhabiting the Southeast Asian regions, I was able to examine three interesting species of the genus from Palawan, Sumatra and Borneo islands. I soon identified one species with the one described by ÔHIRA (1974) under the name *O. audouini palawanensis* from Palawan Island of the Philippines. However, a comparison with the so-called nominotypical subspecies from Luzon Island revealed significant differences between the two in the shape of the male genitalia, and in this report I am going to regard it as an independent species. It has also become clear that another species from Sumatra belongs to *O. harmseni*, which has never been recorded again since its original description 116 years ago, and that the other species found on Borneo Island is, though related to *O. harmseni*, actually a new

species. In the present paper, I am going to introduce these three species, one of which will be newly described under the name *Oxynopterus kurosawai* to the memory of the late Dr. Yoshihiko KUROSAWA.

Oxynopterus palawanensis ÔHIRA, 1974, stat. nov.

(Figs.1–2, 9–11)

Oxynopterus audouini palawanensis ÔHIRA, 1974, Steenstrupia, Copenhagen, **3**: 167, fig. 24 (Palawan Is.: Pinigisan: 2♂♂). —— SAKAGUTI, 1981, Insects of the World, Osaka, **2**: 74–75, figs. 2(♂), 3(♀) (Palawan Is.). —— ÔHIRA, 1996, Gekkan-Mushi, Tokyo, (299): 16–17, fig. 3 B (Palawan Is.).

Male. Length: 48.8–58.4 mm (from front margin of head to elytral apices); width: 17.8–20.3 mm. Body somewhat robust, subparallel-sided. Color brown to dark brown, trochanters, outer halves of femora, and antennae light brown. Surface densely covered with golden recumbent pubescence, which is usually waved on pronotum and elytra (in *O. audouini*, the pubescence is minute and sparse or almost absent on the elytra).

Head broadly and markedly excavated. Surface densely punctured. Antennae not so long, apex of 10th segment barely reaching posterior angle of pronotum; 3rd to 10th segment pectinate, branch of 3rd segment long, about 5.7 times as long as the length of the 3rd, evidently shorter than pronotum (0.65 : 1.00), branch of 10th segment slightly longer than that of 3rd one (1.14 : 1.00), 11th with a short branch on outer margin near the apex.

Elytra 2.24 times as long as the greatest width, almost parallel in basal two-thirds, then gently narrowed apicad; apex of each elytron spinate.

Male genitalia (Figs. 9–11) 2.0 mm long, 2.9 times as long as basal piece; lateral lobe slender, about 5 times as long as basal width, outer margin distinctly sinuate in middle, apico-lateral margin nearly straight but widely and shallowly emarginate, apico-lateral hook strongly projected outwards and sharply pointed at the apex (in *O. audouini*, the hook is bluntly pointed).

Female. Length: 63.3 mm; width: 22.8 mm. Similar to the male, but the body is larger and robuster.

Antennae not so long, barely reaching the apex of posterior angle of pronotum, 2nd segment small, 3rd triangular, 1.75 times as long as 2nd, 1.7 times as long as width, 4th similar to 3rd in shape, 1.37 times as long as the latter, 3rd to 10th segments serrate though weaker than in *O. audouini*, 11th slender, 3.35 times as long as width and 1.44 times as long as 10th. Pronotum with lateral portions distinctly impressed.

Elytra robust, 2.1 times as long as the greatest width.

Specimens examined. 1♂, Puerto Princesa City, Palawan Is., Philippines, 11–IX–1983, J. KANEKO leg.; 7♂♂, 1♀, Brooke's Point, Palawan Is., Philippines, III–1996, native collector.

Distribution. Philippines (Palawan Is.).

Notes. Based upon two male specimens collected on Palawan Island, ÔHIRA

(1974) described this elaterid beetle as a subspecies of *Oxynopterus audouini* (HOPE), which is widely distributed in the Philippine Islands. Though SAKAGUTI (1981) gave color illustrations of male and female specimens of this elaterid beetle and ÔHIRA (1996) published further review of the subspecies, no taxonomic change has ever been proposed. When I received a male Palawan specimen of *O. a. palawanensis* from Mr. Junichiro KANEKO in 1984, I first suspected its taxonomic status as a subspecies of *O. audouini*, in view of the difference in body size. At that time, however, no female specimens were available, and I was unable to obtain adequate series of *O. audouini* for comparison. Recently, numerous specimens of *Oxynopterus* collected on Palawan and Luzon Islands became available for my study, which enabled me to confirm that my previous view was sound. In this paper therefore I regard it as an independent species.

Oxynopterus harmseni CANDÈZE, 1885

(Figs. 5–6, 15–16)

Oxynopterus Harmseni CANDÈZE, 1885, Notes Leyden Mus., **7**: 120–121 (Sumatra: pays des Battaks). ——— CANDÈZE, 1891, Catalogue méthodique de Élatérides connus en 1890, 46 (Sumatra). ——— SCHENKLING, 1925, Coleopt. Cat., pars 80: 68 (Sumatra). ——— FLEUTIAUX, 1926, Annls. Soc. ent. Fr., **95**: 111.

Oxynopterus harmseni: VAN ZWALUWENBURG, 1936, Philipp. J. Sci., **59**: 403(Sumatra).

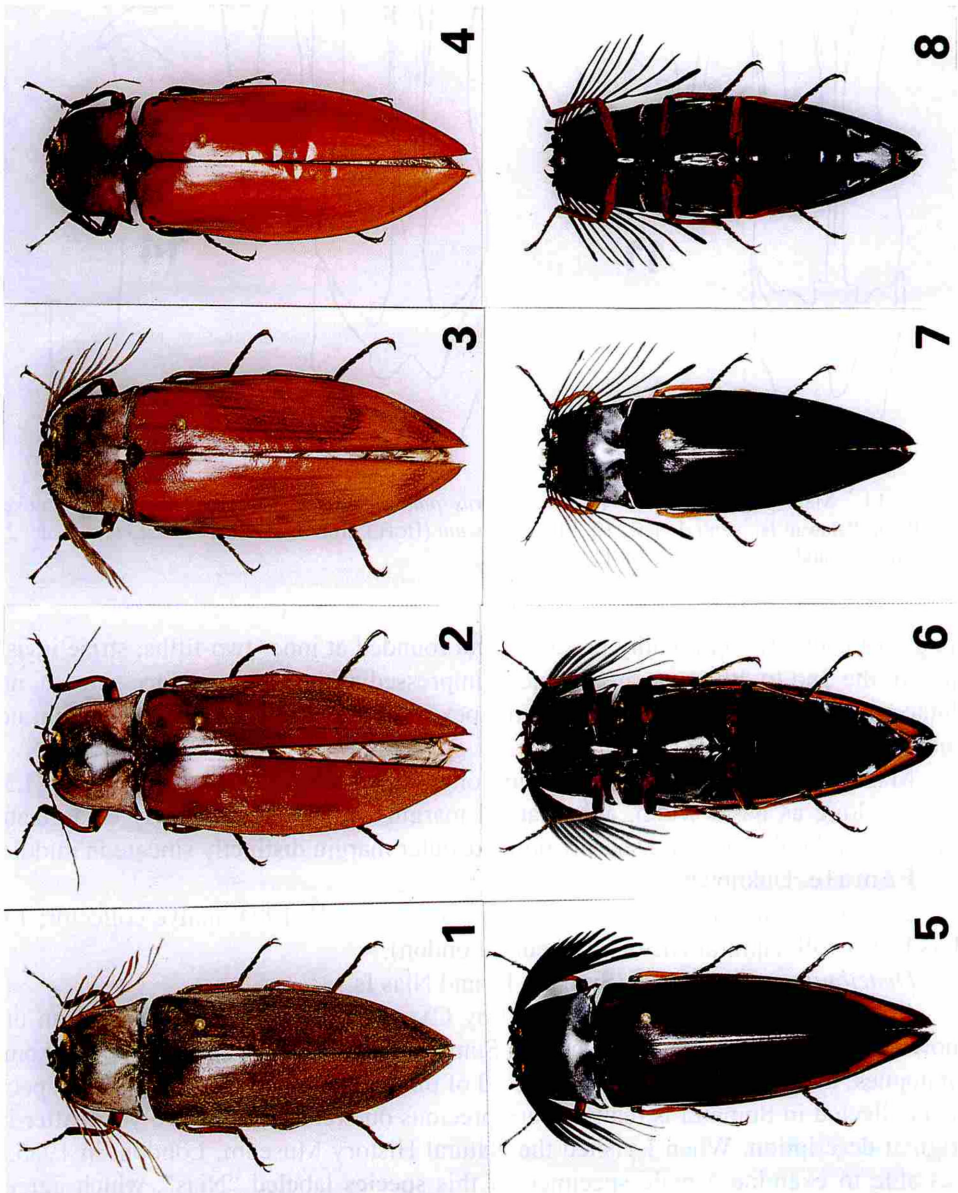
Male. Length 55 mm; width 17 mm.

Body elongate, moderately convex above and shining. Color black, elytra dark reddish brown, with anterior margin and sutural margin at the base dark brown, trochanters, and most parts of femora and tibiae reddish brown. Pubescence at the base of pronotum reddish golden. Head broadly and markedly excavated. Surface coarsely and densely punctured. Antennae somewhat long, reaching the basal sixth of elytra; basal three segments polished; 1st segment strongly robust; 2nd slightly longer than 3rd, which is the shortest and evidently broader than long, 3rd to 10th segments strongly pectinate, the branch of 3rd segment long, as long as that of the 10th, a little longer than pronotum in middle (1.22 : 1.00), 11th long, with a small but distinct denticle on outer margin.

Pronotum trapezoidal, evidently broadest across posterior angles (1.73 : 1.00); sides sinuate before posterior angles which are bill-shaped; surface densely and coarsely punctured; disc gently convex above; lateral margin finely and densely punctured. Scutellum densely covered with coarse punctures.

Elytra elongate, 2.58 times as long as the greatest width and 2.75 times as long as humeral width; sides nearly parallel in basal halves, then convergent apically; basal

Figs. 1–9. Habitus of *Oxynopterus* spp. —— 1–2. *O. palawanensis* ÔHIRA, stat. nov., dorsal view ; 1, ♂ from Brooke's Point, Palawan Is.; 2, ♀, from Brooke's Point, Palawan Is. —— 3–4. *O. audouini* (HOPE), dorsal view; 3, ♂ from Luzon Is.; 5, ♀ from Mindanao Is. —— 5–6. *O. harmseni* CANDÈZE, ♂ from Padang, W. Sumatra; 6, dorsal view; 7, ventral view. —— 7–8. *O. kurosawai* W. SUZUKI, sp. nov., ♂, holotype, from Tawau, NE. Borneo; 7, dorsal view; 8, ventral view.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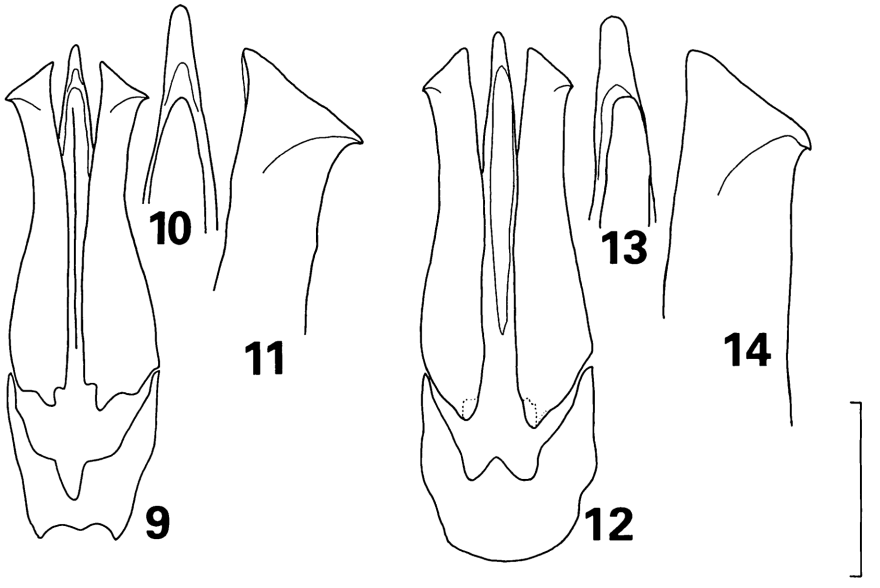


Figs. 9–14. Male genitalia. —— 9–11, *Oxynopterus palawanensis* ÔHIRA, stat. nov., from Brooke's Point, Palawan Is., ventral view; 12–14, *O. audouini* (HOPE), from Luzon Is., ventral view. Scale: 2.6 mm for 9 and 12; 1.0 mm for 10–11 and 13–14.

margin of each elytron broadly produced and rounded at inner two-fifths; striae invisible, but the 2nd to 4th striae are distinctly impressed at the bases; surface smooth, not alutaceous, densely and finely punctured; apex of each elytron sharply pointed but not spinate.

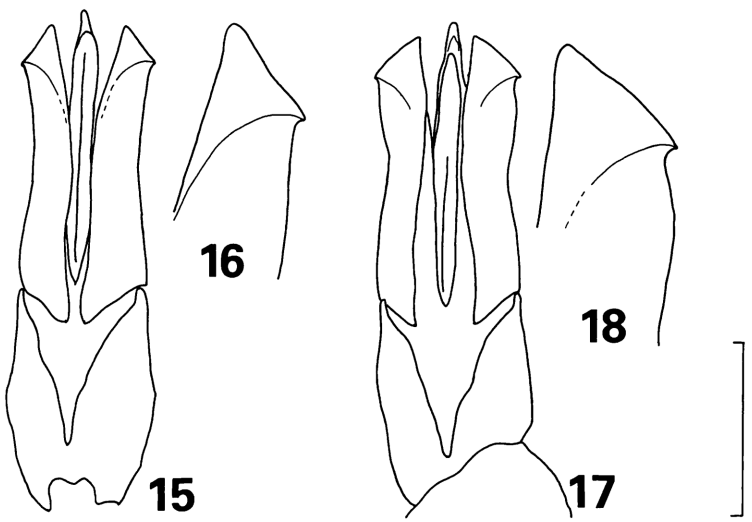
Male genitalia (Figs. 15–16) 7.2 mm long; lateral lobes nearly parallel, each 4.53 times as long as basal width, apico-lateral margin widely and shallowly emarginate, apico-lateral hook small and sharply pointed, outer margin distinctly sinuate in middle.

F e m a l e. Unknown.

Specimens examined. 1♂, Padang, W. Sumatra, VII–1994, native collector; 1♂, Nias Is. (in coll. Natural History Museum, London).

Distribution. Indonesia (Sumatra Is. and Nias Is.).

Notes. This species was described by CANDÈZE (1885) on the basis of an unknown number of specimens collected in Sumatra Island. Though it was listed in some catalogues, there has been no further record of the species since then. The above specimen collected in Sumatra is really a very precious one rediscovered 116 years after its original description. When I visited the Natural History Museum, London, in 1985, I was able to examine a male specimen of this species labeled "Nias", which agreed characteristically with the body form and color of this species, though unfortunately lacking both the antennae. I will record it herewith as a new addition to the fauna of Nias Island.



Figs. 15–18. Male genitalia. —— 15–16, *Oxynopterus harmseni* CANDÈZE, from Padang, W. Sumatra, ventral view; 17–18, *O. kurosawai* W. SUZUKI, sp. nov., holotype, from Tawau, NE. Borneo, ventral view. Scale: 2.6 mm for 15 and 17; 1.0 mm for 16 and 18.

Oxynopterus kurosawai W. SUZUKI, sp. nov.

(Figs. 7–8, 17–18)

Male. Length: 49.2 mm (from front margin of head to elytral apices); width: 16.1 mm.

Body elongated fusiform, more or less convex above and shining. Color black, with trochanters, femora and tibiae yellowish brown. Dorsal surface almost glabrous, except for the base of pronotum which is clothed with fine pale-yellow pubescence.

Head broadly and markedly excavated; surface coarsely and irregularly punctured, the punctures becoming sparser laterally and basally; coriaceous ground sculpture visible but weak. Antennae long, but barely reaching basal fourth of elytra; basal two segments polished but the remainings opalecent; 1st segment pear-shaped, robust, 1.18 times as long as wide; 2nd strongly transverse, 2.25 times as broad as long; 3rd slightly shorter than 2nd; 3rd to 10th segments strongly pectinate, the branch of 3rd segment very long, slightly longer than that of the 10th (1.16 : 1.00), a little longer than pronotum in middle (1.2 : 1.0); 11th slender, without any denticle on outer margin.

Pronotum trapezoidal, evidently broader across posterior angles than long (1.63 : 1.00); sides gently convergent anteriad, scarcely arcuate at middle, and feebly sinuate before posterior angles; anterior margin deeply emarginate, distinctly bordered throughout; each anterior angle strongly produced, broadly rounded at the apex; lateral margin distinctly bordered throughout; posterior angle narrow bill-shaped, projected postero-laterally; disc somewhat convex above; basal margin bisinuate, somewhat

lobed backwards and truncate at middle, distinctly emarginate inside posterior angles; surface densely and finely punctured. Prosternum sparsely covered with both fine and large punctures; epipleuron densely and finely pubescent. Scutellum cordate, distinctly impressed; anterior margin weakly impressed at middle; surface covered with fine and indistinct punctures.

Elytra well convex above, 2.45 times as long as the greatest width and 2.66 times as long as humeral width; sides gradually divergent from base to basal third, then distinctly convergent apicad; apex of each elytron pointed but not spinate; basal margin of each elytron broadly produced and strongly rounded at inner three-sevenths; surface weakly alutaceous, more strongly at the base, densely and coarsely punctured; striae hardly visible; 5th sternite subtriangular, with the apex abruptly truncate, preapical area deeply and somewhat coarsely punctured.

Male genitalia (Figs. 17–18) 7.0 mm long, well sclerotized, subparallel-sided, 2.19 times as long as basal piece; lateral lobe 6.25 times as long as basal width, apico-lateral margin scarcely arcuate, not emarginate, apico-lateral hook small and pointed, outer margin distinctly sinuate in middle; basal piece elongate, 1.43 times as long as broad.

Female. Unknown.

Holotype: ♂, Tawau, Sabah, East Malaysia, 5–V–1998.

The holotype will be deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Distribution. East Malaysia (Northeast Borneo).

Notes. Although it is surprising that a species of this large size has not been discovered before, we may conclude that researches on the Southeast Asian Elateridae are far from sufficiency. The specimen used for preparing the above description is the one obtained through an insect dealer in Japan, so that only the locality name "Tawau" is attached to it without any other details. Since females of this remarkable species remain unknown, it is hoped that future researches in this region will bring forth additional material.

The present species is very closely related to *O. harmseni* CANDÈZE, 1885, from Sumatra, but can be easily dintinguished from the latter by the smaller body, the longer antennae which reach the basal fourth of the elytra, the entirely black elytra, and the differently shaped male genitalia.

The specific name is given in honor of the late Dr. Yoshihiko KUROSAWA, who was the former president of the forerunner of our society.

Acknowledgements

My interest in the genus *Oxynopterus* stems from the words given to me by the late Dr. Yoshihiko KUROSAWA: "The apices of the elytra are different in shape between the Bornean specimens of *O. candezei* FLEUTIAUX and those found in the Malaysian Peninsula. I think this is worth scrutinizing." Dr. KUROSAWA kindly gave me a Bornean

specimen and valuable advice about the subject. Recently, my study approached completion by receiving specimens of *O. harmseni* CANDÈZE, but unfortunately, Dr. KUROSAWA unexpectedly passed away before seeing the result. Due to lack of comparative material, I was unable to discuss on *O. candezei* from Borneo, but I would like to dedicate this paper to the late Dr. Yoshihiko KUROSAWA in gratitude for his kind teaching for many years. I also wish to extend my gratitude to Mr. Junichiro KANEKO, Mr. Nobuo KASHIWAI, Mr. Tetsuo MIYASHITA and Mr. Shinji NAGAI for their kind help in locating precious specimens. I wish to express my sincere thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critically reading the original manuscript of this paper.

要　　約

鈴木　亙：東南アジアのオオヒゲコメツキ属3種について．—— 東南アジアのオオヒゲコメツキ属には，これまでに6種2亜種が記録されていた．今回，フィリピンのパラワン島，インドネシアのスマトラ島，そしてマレーシアのサバ州（ボルネオ島北東部）で採集された3種のオオヒゲコメツキの標本を調べた結果，いままで*Oxynopterus audouini* (HOPE)の亜種として扱われてきたパラワン島の*O. a. palawanensis* ÔHIRAは，雄交尾器の形状の違いにより別種と判断された．また，スマトラ産の個体は，原記載以来116年間も記録のなかった*O. harmseni* CANDÈZEであることが判明したので，形態記載と全形図を付けて紹介した．そして，ボルネオ島北東部で採集された個体は，学界未知の新種であることが明らかになったので，*O. kurosawai* W. SUZUKI と命名して記載した．本種は，*O. harmseni* CANDÈZEによく似ているが，より小型で，触角が長いこと，翅鞘全体が黒色を呈すること，また，雄交尾器の形状が異なることによって容易に識別することができる．

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Elytra, *Tokyo*, **29** (2): 335–342, November 15, 2001

Notes on the Genus *Hoplomaladera* (Coleoptera, Scarabaeidae) from Taiwan

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Abstract Two new sericid beetles, *Hoplomaladera hualiensis* and *H. kurosawai*, and a new subspecies *H. monticola anmashana*, are described from Taiwan. A key to the Taiwanese species of the genus is provided.

Key words: Scarabaeidae, *Hoplomaladera*, Taiwan, new species.

In this paper, the author will describe two new species and one new subspecies of the genus *Hoplomaladera* from Taiwan. The holotypes to be designated in this study will be deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist), Tokyo (NSMT). Other specimens are preserved in the author's collection.

Before going further, the author wishes to express his sincere gratitude to Messrs. Ching-Kin YU, Jiin-chi LO, Shusei SAITO and Tôru SHIMOMURA for their kind offer of materials for this study.

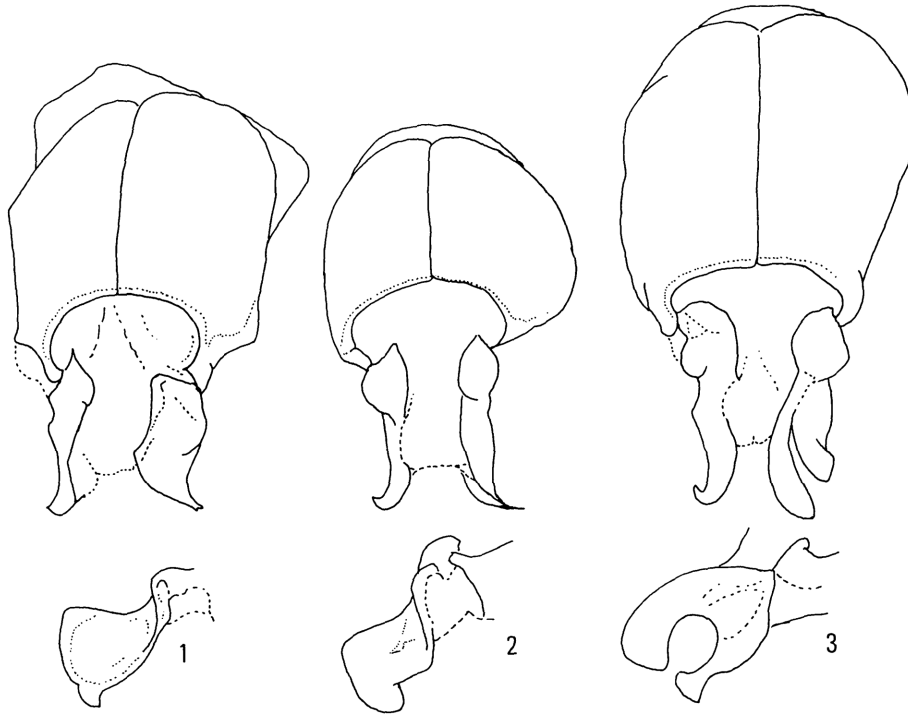
The author was deeply grieved on hearing the death of Dr. Yoshihiko KUROSAWA, a great entomologist in Japan, and is going to dedicate the specific name *Hoplomaladera kurosawai* to the memory of the late Dr. KUROSAWA.

Genus ***Hoplomaladera*** NOMURA, 1974

Hoplomaladera NOMURA, 1974, Tôhô-Gakuhô, Kunitachi, (24): 92. Type species: *Hoplomaladera shibatai* NOMURA, 1974

The genus *Hoplomaladera* is established by S. NOMURA in 1974 for *Hoplomaladera shibatai* NOMURA, 1974. Until now, only one species, *H. monticola*, was added to the genus by H. KOBAYASHI in 1991 from Taiwan.

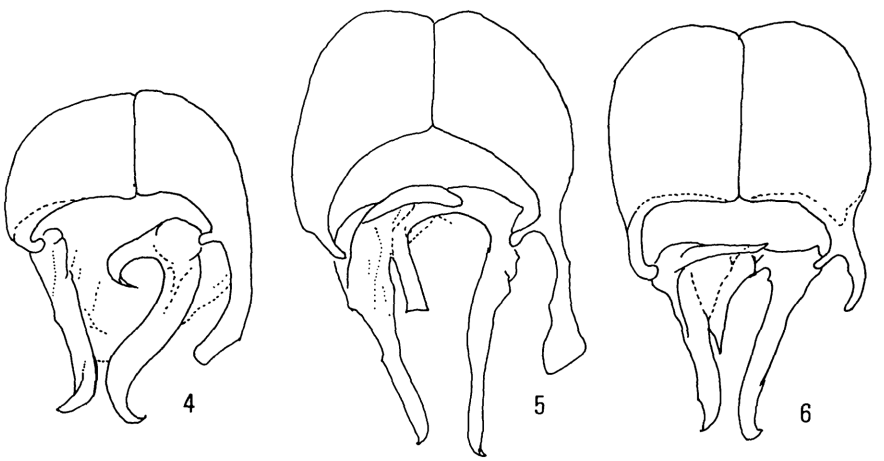
The genus *Hoplomaladera* is allied to the genera *Gastroserica* BRENSKE, 1897, *Gastromaladera* NOMURA, 1973 and *Trichomaladera* NOMURA, 1974, because of the fact that their propleuron has a transverse groove receiving the anterior femur, but the former genus is characterized by the well developed mesosternum which protrudes forwards between the middle coxae. Posterior tarsi impunctate. Antennae 10-segmented, club composed of three lamellae in both sexes.



Figs. 1–3. Male genitalia; 1, *Hoplomaladera monticola monticola* H. KOBAYASHI; 2, *H. monticola anmashana* subsp. nov.; 3, *H. hualiensis* sp. nov.; above, dorsal view; below, right paramere from lateral view.

Key to the Species

1. Body large (8.5–10.5 mm), yellowish brown. Dorsal surface opaque, sometimes faintly opalescent. Posterior tarsi with one to three short setae on ventral side... 2
— Body somewhat small (7.5–8.0 mm), light reddish brown or reddish brown..... 3
2. Posterior femur normal in shape, without dentation on posterior margin. Abdominal sternites feebly convex..... *H. shibatai* NOMURA
— Posterior femur with two or three denticulations in basal third of posterior margin. Fourth abdominal sternite rather convex at the middle in male..... *H. kurosawai* sp. nov.
3. Pronotum fringed with sparse, rather long hairs along anterior margin. Elytra with apico-sutural angles shortly pointed or rectangular..... *H. monticola* H. KOBAYASHI
(a) Dorsal surface dully shining. Posterior tarsi without setae on ventral side..... *H. monticola monticola* H. KOBAYASHI



Figs. 4–6. Male genitalia; 4, *Hoplomaladera kurosawai* sp. nov.; 5–6, *H. shibatai* NOMURA: 5, from Fenchihu; 6, from Tienchih.

(b) Dorsal surface opaque. Posterior tarsi with a few short setae on ventral side... ..... *H. monticola anmashana* subsp. nov.

— Pronotum without hairs along anterior margin. Elytra with apico-sutural angles rounded. ..... *H. hualiensis* sp. nov.

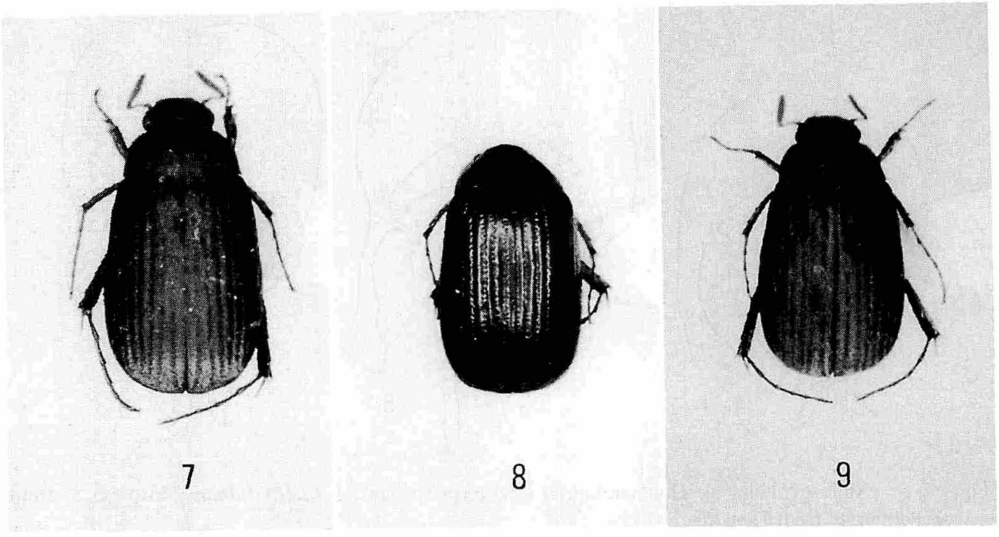
Hoplomaladera hualiensis H. KOBAYASHI, sp. nov.

[Japanese name: Karen-mizo-biroudo-kogane]
(Figs. 3, 7)

Oblong-oval, dorsal surface dark reddish brown, with antennae yellowish brown, clypeus reddish brown, margins of middle and posterior tibiae dark-colored. Surface of body opaque, clypeus, antennae, tibiae and tarsi shining.

Clypeus subtrapezoidal, with anterior margin widely sinuate, very densely and somewhat rugosely punctate, with a feeble transverse impression and a row of sparse erect hairs in front. Fronto-clypeal suture somewhat angulate at the middle. Frons finely and sparsely punctate, with a feeble longitudinal line at middle, bearing several rather long hairs near eyes. Antennae 10-segmented, with club composed of three lamellae, 1.6 times as long as footstalk in male.

Pronotum twice as broad as its length, broadest at the base, rather sparsely punctate, lateral margins gradually convergent to front and feebly arcuate near anterior angles, anterior angles protruded, posterior ones subrectangular, sides of anterior margin and lateral ones fringed with short sparse hairs. Scutellum almost of the same length as its breadth, very finely, sparsely punctate at the sides, impunctate at the middle. Elytra with scattered rather long or short hairs, striae rather densely punctate, intervals moderately convex, smooth, apico-sutural angles rounded. Pygidium broadly triangular,



Figs. 7–9. —— 7, *Hoplomaladera hualiensis* sp. nov.; 8, *H. monticola monticola* H. KOBAYASHI; 9, *H. monticola anmashana* subsp. nov.

feebly convex, sparsely punctate, somewhat densely bearing hairs at the sides and apical half of the middle.

Mesosternal process protruding, rounded at the tip. Abdominal sternites finely and rather densely punctate, each with a row of short hairs. Posterior femur 2.6 times as long as its breadth, broadened at the middle and very sparsely punctate. Middle and posterior femora with each posterior margin feebly sinuate and finely serrate in apical third. Posterior tibia rather slender, feebly sulcate and longitudinally punctate, outer terminal spur a little shorter than basal tarsal segment. Posterior tarsi impunctate, without setae on ventral side.

Length: 7.5 mm; breadth: 4.5 mm.

Type series. Holotype ♂, Hsinpaiyang, Hualien Hsien, 23–V–1993, C. YU leg.

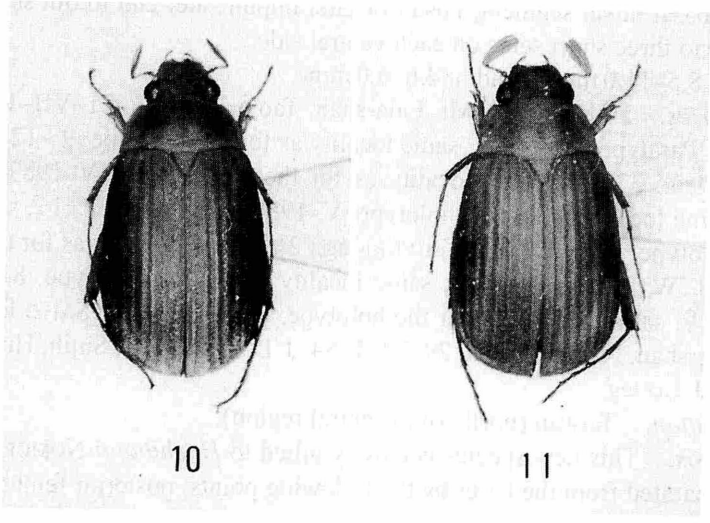
Distribution. Taiwan (eastern mountain range).

Diagnosis. This species is very closely allied to *H. monticola* H. KOBAYASHI, 1991, but may be separated from the latter by the following points: pronotum rather sparsely punctate; anterior margin of pronotum bearing short sparse hairs on each side; elytra with apico-sutural angles rounded.

Hoplomaladera kurosawai H. KOBAYASHI, sp. nov.

[Japanese name: Kurosawa-mizo-biroudo-kogane]
(Figs. 4, 10)

Elongated oval, yellowish brown, with head, tibiae and tarsi reddish brown, mid-



Figs. 10–11.—— 10, *Hoplomaladera kurosawai* sp. nov.; 11, *H. shibatai* NOMURA.

dle of pronotum, meso- and metasterna and abdomen dark reddish brown or dark yellowish brown. Surface of body opaque, somewhat opalescent in certain light, with anterior part and sides of clypeus, antennae, tibiae and tarsi shining.

Clypeus subtrapezoidal, roundly emarginate at anterior margin, somewhat densely punctate, with a transverse impression and several erect hairs in front. Frons somewhat sparsely punctate and pubescent. Antennae 10-segmented, with club 1.4 to 1.5 times as long as footstalk in male, almost of the same length in female.

Pronotum twice as broad as its length, with broadest part across base, surface rather sparsely punctate, lateral margins gradually convergent to front, feebly arcuate in front, scarcely sinuate, nearly straight behind, front angles protrudent and acute, hind ones subrectangular, sides of front margin and lateral margins fringed sparsely with short hairs. Scutellum triangular, as broad as its length, sparsely punctate. Each elytron scattered with several short hairs, striae rather densely punctate, intervals convex, smooth. Pygidium broad triangular, very convex, rather densely and shallowly punctate, bearing sparse long hairs in apical half.

Mesosternal process narrowed anteriorly, rounded at tip. Abdominal sternites each with a row of short hairs, 4th sternite rather convex at the middle in male, flattened in female. Anterior tibiae bidentate, shorter than tarsus. Posterior femur opalescent, with broadest part across basal third and tapered apically from there, surface sparsely punctate, with two rows of sparse hairs, posterior margin with two or three denticulations in basal third. Posterior margins of middle and posterior femora finely serrate in apical half. Posterior tibia rather slender, and with broadest part across apex, feebly sulcate and longitudinally punctate, with two oblique spinose ridges on outer side, but the basal one is very short and inconspicuous, outer terminal spur a little

shorter than basal tarsal segment. Posterior tarsi impunctate, 2nd to 5th segments usually with one to three short setae on each ventral side.

Length: 8.5–11.0 mm; breadth: 4.6–6.0 mm.

Type series. Holotype: ♂, Mt. Lala-shan, Taoyuan Hsien, 21–VII–1978, T. SHIMOMURA leg. Paratypes: 1♂, 4♀♀, same locality as for the holotype, 9~12–V–1978, T. SHIMOMURA leg.; 37 exs., same locality as for the holotype, 3–IV–1987, J. LO leg.; 2♂♂, 1♀, same locality as for the holotype, V–1988, J. LO leg.; 1♂, 1♀, same locality as for the holotype, 4–V–1981, S. TSUYUKI leg.; 2♀♀, same locality as for the holotype, 21–VII–1978, W. SUZUKI leg.; 1♂, same locality as for the holotype, 8–V–1978, S. SAITO leg.; 1♀, same locality as for the holotype, 27–V–1978, S. SAITO leg.; 1♂, 1♀, Mt. Herwang-shan, Nantou Hsien, 29–VI–1984, J. LO leg.; 6♂♂, Sujih, Hualien Hsien, 8–VI–1994, J. LO leg.

Distribution. Taiwan (northern to central region).

Diagnosis. This new species is closely allied to *H. shibatai* NOMURA, 1974, but it may be separated from the latter by the following points: posterior femur with two or three denticulations in basal third of posterior margin; 4th abdominal sternite rather convex in the middle.

Hoplomaladera monticola monticola H. KOBAYASHI, 1991

[Japanese name: Miyama-mizo-biroudo-kogane]
(Figs. 1, 8)

Hoplomaladera monticola H. KOBAYASHI, 1991, Elytra, Tokyo, **19**: 219.
Hoplomaladera monticola: YU, KOBAYASHI & CHU, 1998, Scarab. Taiwan, 83, 144, 221.

Specimen examind. Holotype ♂, Mt. Guandao-shan, Nantou Hsien, 10–IV–1984, J. LO leg.

Distribution. Taiwan (central mountain range).

Hoplomaladera monticola anmashana H. KOBAYASHI, subsp. nov.

[Japanese name: Anmasan-mizo-biroudo-kogane]
(Figs. 2, 9)

Oblong-oval, dorsal surface reddish brown, ventral surface dark reddish brown, with antennal club dark reddish brown, legs reddish brown (middle and posterior tibiae dark-colored). Ventral surface of body with dull lustre, dorsal surface opaque, clypeus, antennae, tibiae and tarsi shining.

Clypeus subtrapezoidal, with anterior margin widely sinuate, very densely and somewhat rugosely punctate, with a feeble boss like an elevation and a row of sparse erect hairs in front. Fronto-clypeal suture not so angulate at the middle. Frons finely and sparsely punctate, without any longitudinal line at middle, bearing several rather long hairs near eyes. Antennae 10-segmented, with club composed of three lamellae, 1.4 times as long as footstalk in male.

Pronotum twice as broad as its length, broadest at the base, somewhat densely punctate at sides, rather sparsely punctate at the middle, lateral margins gradually convergent to front and feebly arcuate near anterior angles, anterior angles dully protruded, posterior ones subrectangular, anterior margin (except for the middle) and lateral ones fringed sparsely with short hairs. Scutellum almost of the same length as its breadth, very finely, sparsely punctate at the sides, almost impunctate at the middle. Elytra scattered with rather long or short hairs, striae rather densely punctate, intervals moderately convex, smooth, apico-sutural angle almost rectangular. Pygidium broadly triangular, feebly convex, somewhat densely punctate at the sides, sparsely so at the middle, bearing somewhat dense hairs at the sides and apical half of the middle.

Mesosternal process protruding, rounded at the tip. Abdominal sternites finely and somewhat sparsely punctate (punctures of sides somewhat dense), each with a row of short hairs. Posterior femur 2.8 times as long as its breadth, broadened at the middle and scarcely punctate. Middle and posterior femora each with posterior margin feebly sinuate and finely serrate in apical two-thirds. Posterior tibia rather slender, feebly sulcate and longitudinally punctate, outer terminal spur a little shorter than basal tarsal segment. Posterior tarsi impunctate, with a few short setae on ventral side.

Length: 8.0 mm; breadth: 4.5 mm.

Type series. Holotype: ♂, Mt. Anma-shan, Taichung Hsien, 29–IV–1992, C. YU leg.

Distribution. Taiwan (central mountain range).

Diagnosis. This new subspecies is different from the nominotypical one in the following points: dorsal surface of body opaque; apico-sutural angle of elytra almost rectangular; posterior tarsi with a few short setae on ventral side.

Hoplomaladera shibatai NOMURA, 1974

[Japanese name: Mizo-biroudo-kogane]
(Figs. 5, 6, 11)

Hoplomaladera shibatai NOMURA, 1974, Tôhô-Gakuhô, Kunitachi, (24): 92.
Hoplomaladera shibatai: YU, KOBAYASHI & CHU, 1998, Scarab. Taiwan, 52, 83, 144, 221.

Specimens examind. 1♂, Mt. Guandao-shan, Nantou Hsien, 7–V–1986, J. LO leg.; 1♂, Tienchih, Kaohsiung Hsien, 11–V–1978, H. SAKAINO leg.; 1♂, 1♀, Fenchihu, Chiai Hsien, 24–IV–1975, K. AKIYAMA leg.

Distribution. Taiwan (central to southern region).

要　　約

小林裕和：台湾産ミゾビロウドコガネ属について．—— 台湾産のミゾビロウドコガネは，今まで基準種である*H. shibatai*のほかには*H. monticola*が知られているに過ぎなかった．今回，調査をした結果，*monticola*とは亜種の関係にあると考えられる鞍馬山で採集された種に，*anmashana*という亜種名を与えた．また，*H. monticola*に非常に近縁の別種には*H. hualiensis*とい

う新種名を与えた．さらにもう1種，*H. shibatai* によく似ているが後腿節の形状が明らかに異なる種には，この度，逝去された故黒澤良彦博士の名前を冠して *H. kurosawai* と命名した．

ここに改めて，故黒澤先生の偉業を称えご冥福をお祈り申し上げる次第である．

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Elytra, *Tokyo*, **29** (2): 343–351, November 15, 2001

Descriptions of Two New Species of the Clavigerine Genus *Articerodes* (Coleoptera, Staphylinidae, Pselaphinae) from the Ogasawara Islands, Japan

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Abstract The clavigerine genus *Articerodes* is discovered for the first time from Japan. Two new species, *A. kurosawai* and *A. kishimotoi* are described from the Ogasawara Islands far south of Tokyo, Japan.

Key words: Staphylinidae, Pselaphinae, Clavigerini, *Articerodes*, new species, Ogasawara.

Introduction

Two new species of the clavigerine genus *Articerodes* RAFFRAY, 1890 was discovered from the Ogasawara Islands. This is the first record of this genus from Japan. In the present study, pselaphine species are recorded for the first time from the Ogasawara Islands.

Genus *Articerodes* RAFFRAY

[Japanese name: Shima-higebuto-arizukamushi Zoku]

Articerodes RAFFRAY, 1890 a, Revue Ent., Caen, **9**: 167. Type species: *Articerus syriacus* SAULCY, by monotypy.

Pararticerus JEANNEL, 1955, Mém. Mus. Hist. nat., Paris, (A), **9**: 179. Type species: *Articerodes latus* RAFFRAY, by original designation.

Remarks. The genus *Articerodes* including four species has been known from the Ethiopian and Oriental Regions. It is similar to the genus *Diartiger* widely distributed in East Asia in having the four-segmented antennae and the elytral fringes. However, it differs by very short third antennal segments.

Key to Clavigerine Genera Known from Japan

1. Antennae 3-segmented ..... *Triartiger* KUBOTA.
— Antennae 4-segmented ..... 2.
2. Third antennal segment long and elongate ..... *Diartiger* SHARP.
— Third antennal segment very short ..... 3.

3. Head ovoid; abdomen predominantly large and elytra strongly shortened . . . . . *Micrelytriger* NOMURA.
— Head subcylindrical; abdomen about as large as elytra . . . . . *Articerodes* RAFFRAY.

Articerodes kurosawai sp. nov.

[Japanese name: Kurosawa-higebuto-arizukamushi]
(Figs. 1, 2 A, C, 3 A, C, 4 A, 5)

Male. Length 1.58–1.60 mm. Width 0.69 mm. Body reddish brown, broadened posteriorly, widest at basal part of abdomen.

Head about 1.3 times as long as wide, subcylindrical, subparallel-sided, irregularly punctate on dorsal surface, sparsely covered with normal hairs intermingled with spatulate and bifurcate ones on dorsal side; clypeus short, arcuate at anterior margin, frons roundly convex on dorsal side, strongly narrowed and carinate anteriorly, vertex slightly convex, with a pair of distinct dorsal tentorial pits each between eye and hind margin of vertex, genae expanded and angulate antero-laterally before eyes, postgenae broad and nearly flat. Eyes convex and ovoid, each composed of about 20 facets. Antennae short and thick, about 1.3 times as long as head, 1st segment very short, invisible in dorsal view, 2nd short and thick, subcylindrical, 3rd smaller than 2nd, slightly wider than long, narrowed basally, 4th the largest, slightly longer than head, 3.8 times as long as wide, elongate and weakly thickened distad, truncate and excavated at apex, densely with foliate setae on apical excavation.

Pronotum slightly shorter than head, as long as wide, subglobose, irregularly punctate on dorsal and lateral sides, with a pair of lateral foveae at basal 1/3 and a large shallow concavity at postero-median part, sparsely covered with normal hairs and a few bifurcate setae on dorsal surface. Metasternum very broad, conically projected at the middle, with dense hairs just behind the median projection, densely covered with linear microsculpture at lateral sides. Elytra wider than long, nearly trapezoidal, arcuately emarginate at anterior and posterior margins, weakly convex on dorsal side, shallowly concave at postero-median part, covered with linear microsculpture and sparse normal hairs, each elytron with a large conical fringe at postero-lateral part. Legs short and thick, mid femora stout, each with a large denticle on posterior side near the middle, mid tibiae elongate, each with a small denticle at apical 1/8.

Abdomen slightly larger than elytra, wider than long, rounded at lateral and posterior margins, composite tergum (4th to 6th tergites) very broad, strongly concave in basal part, roundly convex in posterior part, with a pair of short basilateral fringes each just behind elytral fringe and with a pair of very deep basilateral foveae just outside the basilateral fringe, 7th tergite very short and transverse, nearly trapezoidal in posterior view, 8th small, semicircular, paratergites narrow, each with a narrow paratergal fringe on basal part, 4th sternite the largest, transverse, 5th to 7th each short, successively shortened posteriorly in median part, 8th semicircular, almost flat at median part.

Male genitalia strongly sclerotized; median lobe reniform in lateral view, basal

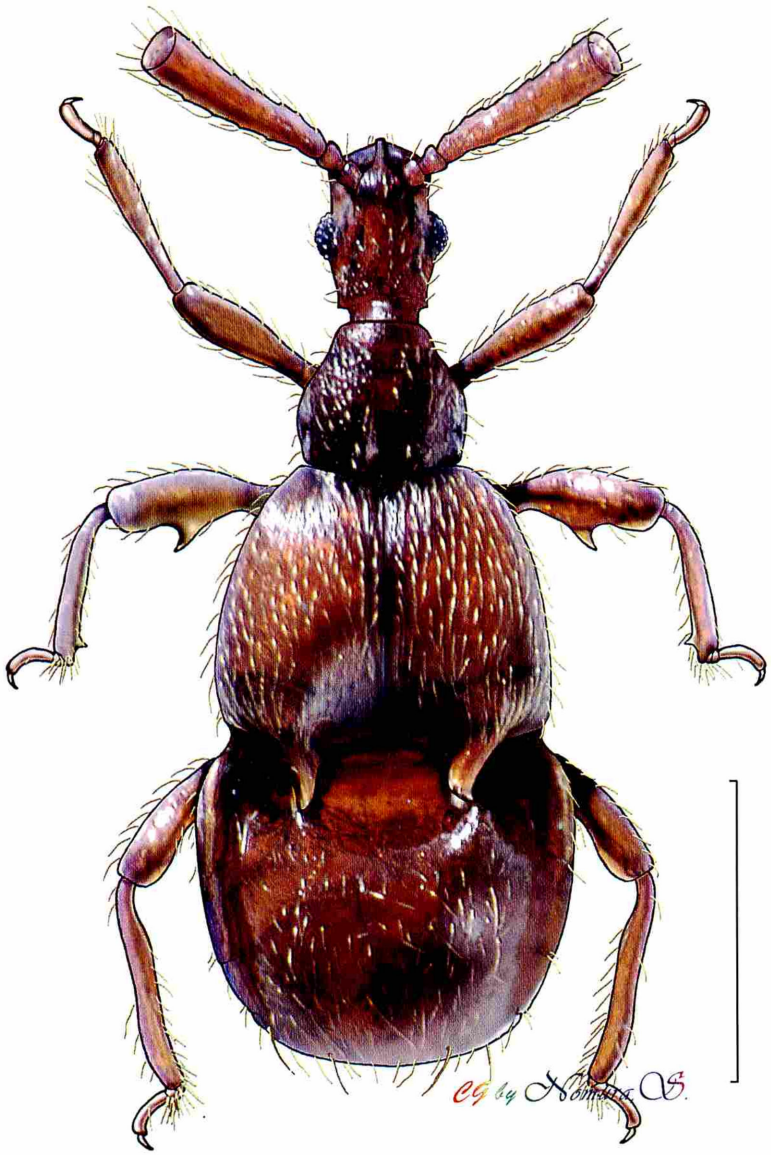

Fig. 1. *Articerodes kurosawai* sp. nov., male, habitus. Scale: 0.5 mm.

capsule large and bulbous in basal part, weakly narrowed apicad, weakly constricted at apical 1/4, then gently broadened distad, with a small and ovate membranous part on dorsal side, apical lobe very small, subcylindrical, projected ventrally on internal side at apex; endophallus weakly sclerotized, composed of a weakly curved median spine and a pair of strongly curved lateral spines.

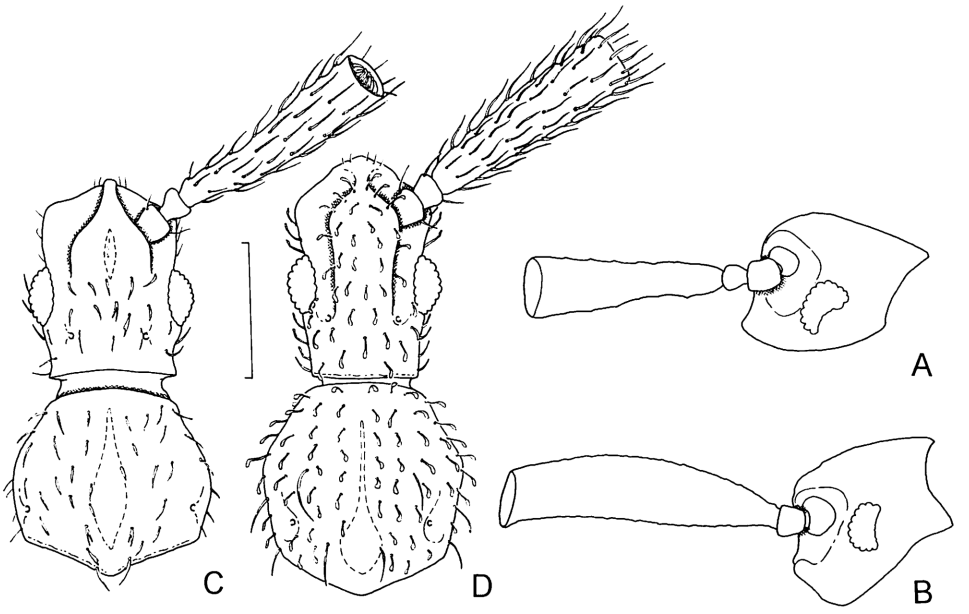

Fig. 2. Cephalic and pronotal structures of *Articerodes* and *Triartiger*; A–B, head in lateral view; C–D, head and pronotum in dorsal view; A, C, *Articerodes kurosawai* sp. nov.; B, *Triartiger urceus* KUBOTA; D, *Articerodes kishimotoi* sp. nov. Scale: 0.2 mm.

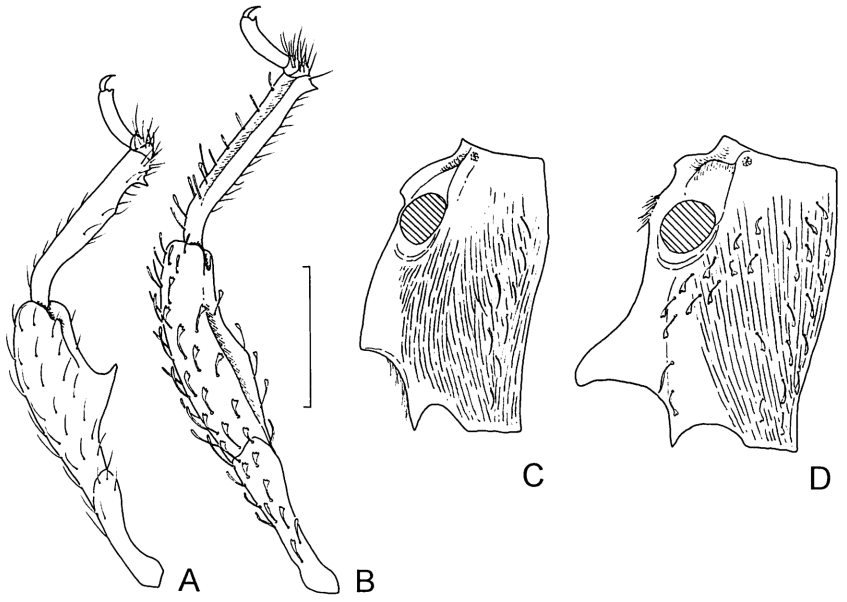

Fig. 3. Mid legs (A–B) and meso- and metanota (C–D) of *Articerodes* spp.; A, C, *A. kurosawai* sp. nov.; B, D, *A. kishimotoi* sp. nov. Scale: 0.2 mm.

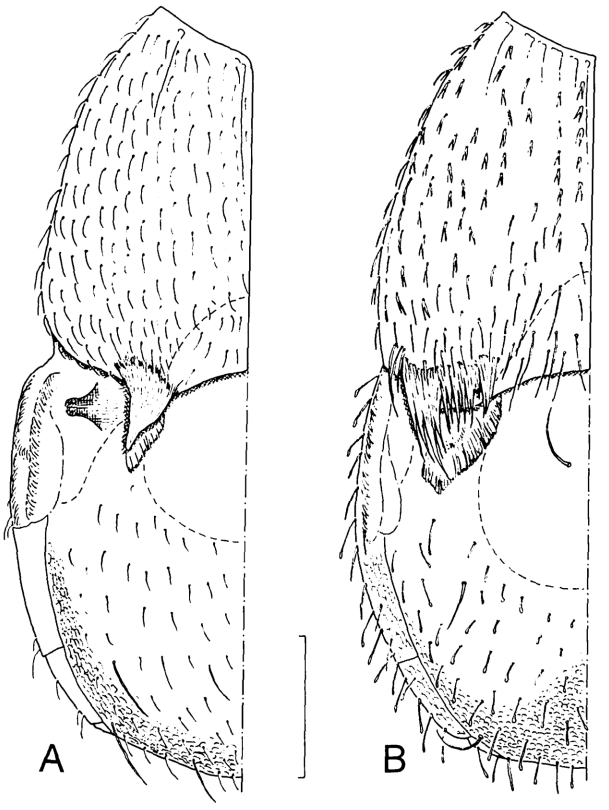

Fig. 4. Elytral and abdominal structures of *Articerodes* spp.; A, *A. kurosawai* sp. nov.; B, *A. kishimotoi* sp. nov. Scale: 0.2 mm.

Female. Length 1.50–1.73 mm. Width 0.64–0.74 mm. Very similar to male except for the following characters: antennae slightly shorter than in male, 4th segment 3.6 times as long as wide; metasternum gently convex in median part, densely covered with hairs along median line from mesocoxae to just before metacoxae; mid femora each flat on posterior side, mid tibiae without denticle; 8th abdominal sternite shorter than in male, transverse and U-shaped.

Holotype male (preserved in National Science Museum, Tokyo), Mt. Chibusa-yama, Haha-jima Is., Ogasawara Isls., 17–VI–1999, H. INOUE leg. Paratypes: 1 female, same locality as holotype, by Tullgren funnel, 6–VII–1997, T. KISHIMOTO leg.; 1 male, 1 female, Mt. Sakaigatake, by Tullgren funnel, Haha-jima Is., 5–VII–1997, T. KISHIMOTO leg.; 1 female, Sekimon, by Tullgren funnel, Haha-jima Is., 9–III–1999, T. KISHIMOTO leg.; 1 female, nr. Mt. Tenkaizan, by Tullgren funnel, Otouto-jima Is., 9–VII–1997, T. KISHIMOTO leg.; 1 female, Ainosawa, by Tullgren funnel, Otouto-jima Is., 28–IV–1997, T. KISHIMOTO leg.

Distribution. Ogasawara Islands (Haha-jima Is. and Otouto-jima Is.).

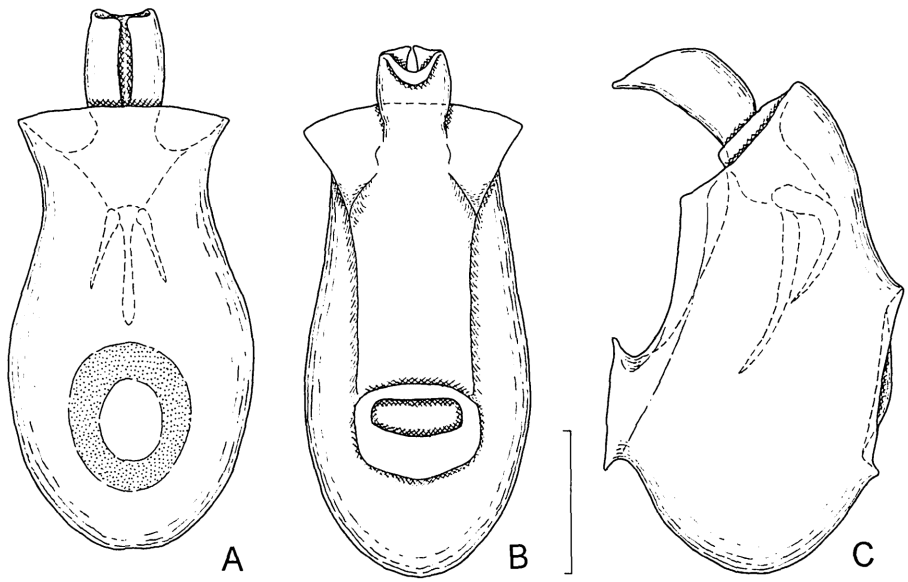

Fig. 5. Male genitalia of *Articerodes kurosawai* sp. nov.; A, dorsal view; B, ventral view; C, lateral view. Scale: 0.1 mm.

Remarks. This new species is closely allied to the type species of the genus, *A. syriacus* (SAULCY) in the antennal structure illustrated by RAFFRAY (1890 b), but it is distinctive within the genus in having conically projected metasternum, the mid femur with a large denticle and the mid tibia with a small denticle at the apical 1/8 in the male. It is quite different from *A. latus* (JEANNEL) in external characters, though their male genitalic characters are almost coincident according to JEANNEL (1955).

Etymology. This species is dedicated to the late Dr. Yoshihiko KUROSAWA who was a great coleopterologist and remarkably contributed to the study of the coleopteran fauna of the Ogasawara Islands.

Articerodes kishimotoi sp. nov.

[Japanese name: Ogasawara-higebuto-arizukamushi]
(Figs. 2 D, 3 B, D, 4 B, 6)

Male. Length 1.74 mm. Width 0.71 mm. Body slightly larger than in *A. kurosawai*, reddish brown to dark brown, similar to *kurosawai* in general structure, but the head, pronotum, legs and the peripheral parts of the elytra and abdomen are sparsely covered with spoon-like hairs.

Head about 1.5 times as long as wide, rugosely sculptured on dorsal surface, clypeus angulate at anterior margin, frons narrower than in *kurosawai*, with a pair of deep and broad longitudinal grooves each running from frontal gena to dorsal tentorial

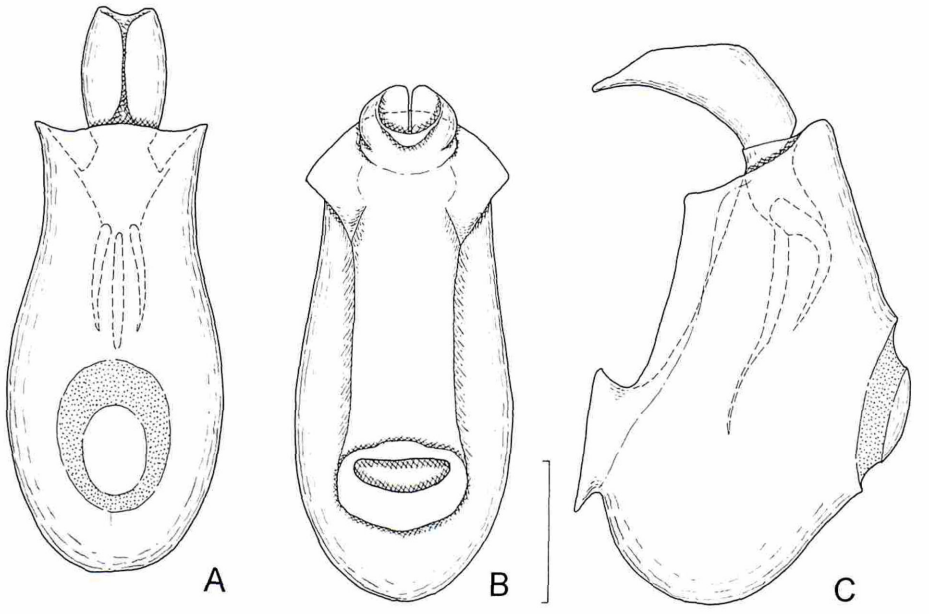

Fig. 6. Male genitalia of *Articerodes kishimotoi* sp. nov.; A, dorsal view; B, ventral view; C, lateral view. Scale: 0.1 mm.

pit. Eyes ovoid and convex, each consisting of about 20 facets. Antennae similar to those of *kurosawai*, 4th segment elongate, 3.7 times as long as wide. Pronotum as long as wide, subglobose, rugosely sculptured on dorsal surface, lateral foveae and postero-median concavity deeper and more distinct than in *kurosawai*. Metasternum less convex than in *kurosawai*, with a well projected large and triangular median keel. Elytra wider than long, nearly trapezoidal, sparsely covered with spoon-like hairs on peripheral part, with bifurcate hairs on discal part, each elytron with indistinct four basal foveae and a large fringe in postero-lateral part. Legs short and stout, mid femora thick, with weak projection on posterior side at the middle, mid tibiae each elongate, with a short mucro near apex. Abdomen similar to that of *kurosawai*, but basilateral fringe larger than in *kurosawai*, basilateral foveae hidden by the basilateral fringes in dorsal view. Male genitalia very similar to those of *kurosawai*, but the apical lobe of the median lobe is slightly larger and the lateral spine of the endophallus is less curved than in *kurosawai*.

Female. Length 1.78 mm. Width 0.73 mm. Similar to male, but antennae shorter than in male, with the 4th segment thick, 2.9 times as long as wide; metasternum gently convex, less densely covered with hairs along median line than in female of *kurosawai*; mid femora straight on posterior margin, mid tibiae without mucro.

Holotype male (preserved in National Science Museum, Tokyo), Mt. Sakaigatake, 400 m alt., Haha-jima Is., 1–IX–1997, S. NOMURA leg. Paratype: 1 female, Sekimon, by Tullgren funnel, Haha-jima Is., 9–VIII–1999, T. KISHIMOTO leg.

Distribution. Ogasawara Islands (Haha-jima Is.).

Remarks. This species is similar to *A. kurosawai* sp. nov. in general characters, but it is easily separated by the spoon-like hairs located on the head, pronotum, legs and the peripheral parts of the elytra and abdomen, the deep and broad frontal grooves, and the basilateral foveae of the abdomen hidden by the large basilateral fringes.

Etymology. The name of this species is given after the collector of the paratype, Dr. Toshio KISHIMOTO.

Key to the Species of the Genus *Articerodes* from Japan

1. Head, pronotum, legs, peripheral parts of elytra and abdomen sparsely covered with spoon-like hairs, head and pronotum rugosely sculptured on dorsal surface; frons with a pair of deep and broad longitudinal grooves at lateral sides; metasternum with a well-projected triangular median keel in male; mid femora each with a small projection on posterior side at the middle, mid tibiae each with a short mucro near apex in male; abdomen with basilateral foveae hidden by basilateral fringes ..... *A. kishimotoi* sp. nov.

— Body sparsely covered with many normal hairs and a few spatulate and bifurcate hairs, head and pronotum irregularly punctate on dorsal surface; frons with a pair of shallow concavities at lateral sides; metasternum conically projected at the middle in male; mid femora each with a large denticle on posterior side near the middle, mid tibiae each with a small denticle at apical 1/8 in male; abdomen with deep and exposed basilateral foveae ..... *A. kurosawai* sp. nov.

Acknowledgement

I wish to express my sincere thanks to the late Dr. Yoshihiko KUROSAWA for his kind encouragement in the course of my coleopterological studies. My cordial thanks are due to Dr. Shun-Ichi UÉNO for his continuous guidance and critical reading of the manuscript. I am also indebted to Dr. Toshio KISHIMOTO and Mr. Hiromitsu INOUE for their kind offer of invaluable materials.

要　　約

野村周平：小笠原産ヒゲブトアリヅカムシ*Articerodes*属（ハネカクシ科アリヅカムシ亜科）2新種の記載．—— 日本から未記録であったヒゲブトアリヅカムシ族の1属，*Articerodes* RAFFRAY シマヒゲブトアリヅカムシ属（和名新称）の2新種を小笠原から記載した．本属は*Diartiger*ヤマトヒゲブトアリヅカムシ属に似ており，同様に4節からなる触角をもち，上翅末端に毛茸をそなえるが，触角第3節が短いことで容易に区別できる．新種*A. kurosawai*クロサワヒゲブトアリヅカムシは母島の山地森林と弟島から発見された．もう一方の新種*A. kishimotoi*オガサワラヒゲブトアリヅカムシは，母島石門付近の森林落葉土中から採集されている．両種はたがいによく似ているが，*kishimotoi*は，頭部，前胸，脚および上翅と腹部の周縁部がスプーン形

の刺毛でまばらに覆われ，前頭部側方に1対の深く幅広い縦溝を備えることで*kurosawai*から区別できる．本種の雄は中脚腿節後方に歯状突起がなく，後胸腹板中央に三角形の大きい竜骨突起をもつ点で*kurosawai*と異なっている．これらは小笠原諸島におけるアリヅカムシの初めての確実な記録である．

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——— 1890 b. Étude sur les Psélaphides. VI. Diagnoses des espèces nouvelles sur lesquelles sont fondés des genres nouveaux. *Ibid.*, **9**: 193–219.

Elytra, *Tokyo*, **29** (2): 352–357, November 15, 2001

A New Species of the Genus *Trichophya* (Coleoptera, Staphylinidae) from Taiwan

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Abstract A new staphylinid beetle of the genus *Trichophya* hitherto unrecorded from Taiwan is described and illustrated under the name of *T. kurosawai*. It is closely related to *T. japonica* Y. WATANABE et Y. SHIBATA from Japan, but is readily distinguished by its larger and broader body, more closely and strongly punctured pronotum and elytra, and differently shaped male genitalia.

The genus *Trichophya* MANNERHEIM is a peculiar group among staphylinid beetles having the 3rd to 11th segments of antennae extremely slender, verticillate and with antennal insertion exposed dorsally.

Up to the present, fourteen species have been known from North America, Europe, Southeast Asia, China and Japan. Of these, seven species are distributed in India, one in Malaysia, two in China and three in Japan. However, none of the species of this genus have been recorded from Taiwan.

In the present paper, I am going to describe a new species collected from the temperate forests in the central mountainous areas of Taiwan.

Before going further, I wish to express my cordial thanks to Professor Yasuaki WATANABE of Tokyo University of Agriculture for his continuous guidance and encouragement, and to Dr. Shun-Ichi UÉNO for his kindness extended to me in various ways. Hearty thanks are also due to Mr. Itsuro KAWASHIMA for his assistance in preparing the illustration of whole insect inserted in the present paper.

Trichophya kurosawai sp. nov.

(Figs. 1–9)

Body broad, tapered anteriorly and posteriorly, nearly parallel-sided and somewhat depressed above, surface densely covered with short yellowish brown pubescence. Colour reddish brown to brown, moderately shining, head black, pronotum blackish brown with the exception of yellowish brown postero-lateral part, mouthparts, antennae and legs yellowish brown to reddish brown.

Length: 2.8–3.2 mm.

Head subtriangular, narrowed anteriorly and weakly convex, and a little wider than length (greatest width of head, including eyes / greatest length of head = 1.24); sur-

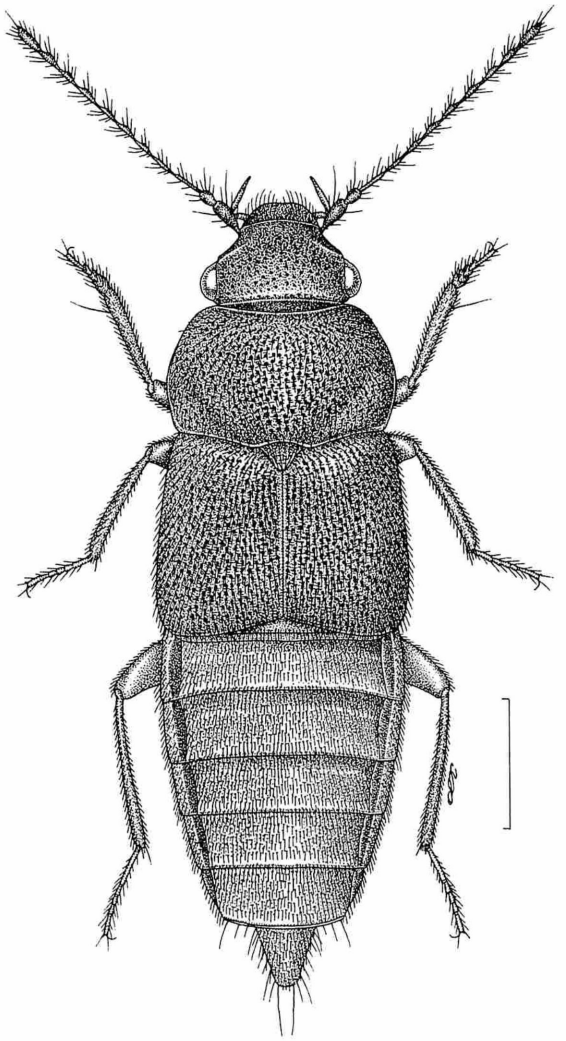


Fig. 1. *Trichophya kurosawai* sp. nov., ♂, from Alishan in Taiwan. Scale: 0.5 mm.

face sparsely and finely punctured, interspaces between the punctures are covered with microsculpture consisting of fine transverse meshes; eyes each situated at postero-lateral corner of head, relatively small but well convex. Antennae very slender, reaching anterior third of elytra, sparsely verticillate, 1st segment robust and broad, somewhat narrowed at base, 2nd globular, about as broad as 1st but distinctly shorter (length of 2nd segment / length of 1st segment=0.6), 3rd to 10th segments extremely slender and somewhat spindle-shaped, 11th elongated elliptical. Relative length of each antennal segment from base to apex as follows:— 11: 7: 10: 10: 10: 9: 9: 9: 9: 9: 12.

Pronotum gently convex above but deplanate postero-laterally, strongly transverse (greatest width of pronotum / length of pronotum measured along mid-line = 1.65), slightly longer (length of pronotum / greatest length of head = 1.09) but distinctly broader (width of pronotum / width of head = 1.48) than head, widest just behind the middle; anterior margin broadly and arcuately emarginate, lateral margin rounded, posterior margin very weakly tri-sinuate, anterior angles narrowly angulate though not visible from above, posterior angles nearly rectangular, each lateral side somewhat deplanate and distinctly obliquely impressed in posterior half; surface rather closely covered with coarsely setiferous punctures, microsculpture as on head. Scutellum triangular, surface with dense punctures and sparse pubescence.

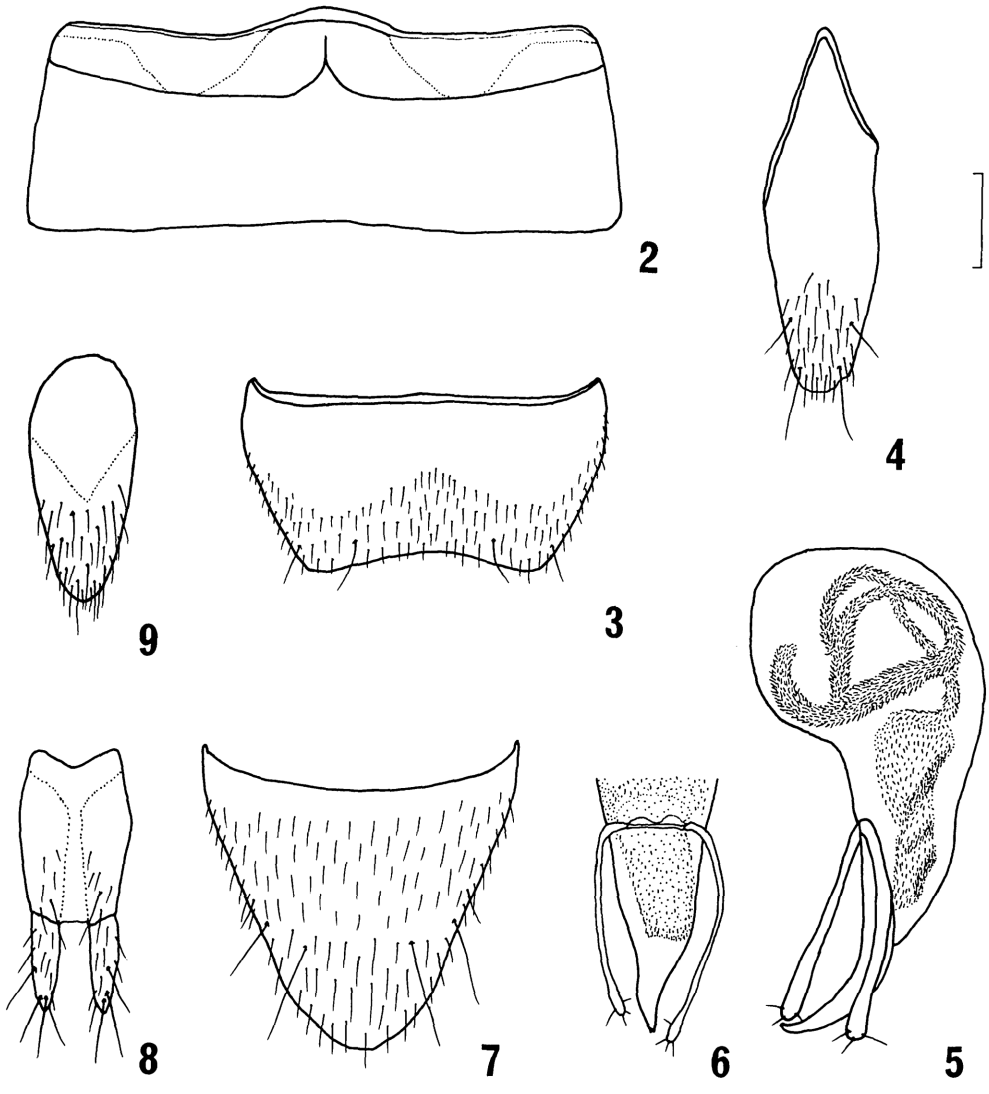
Elytra moderately convex above, subtrapezoidal and dilated posteriad, much broader (greatest width of elytra / greatest length of elytra = 1.29) and almost as broad as pronotum; lateral side weakly rounded, posterior margin somewhat emarginate at the middle; surface closely but more roughly punctured than that of pronotum, interspaces of punctures devoid of microsculpture and almost smooth.

Abdomen broad, broadest at the 4th segment, side margins rounded, 3rd to 7th segments each with well developed and erect paratergites; surface stuffed with very fine, sparse and indistinct punctures and covered with shallow and sometimes indistinct microsculpture which consists of transverse meshes. Third sternite (Fig. 2) provided with a longitudinal, short, angulate median carina, with the sides shallowly concave for receiving hind coxae. Legs relatively slender, tibiae elongate.

Male. Protarsi each with basal four segments moderately dilated, mesotarsi with basal four segments slightly dilated, and with ventral face bearing tenent setae. Eighth sternite (Fig. 3) with two pairs of long, erect and black setae, posterior margin broadely and shallowly emarginate. Ninth sternite (Fig. 4) with somewhat asymmetrical basal portion, pubescent at apical portion, posterior margin rounded, with two pairs of black and erect setae and a pair of very long subtransparent setae. Aedeagus (Figs. 5, 6) asymmetrical, with basal part large and globular; viewed ventrally, median lobe gradually narrowed towards the acutely pointed apex, apical fifth asymmetrically curved to the right; viewed laterally, this part abruptly curved ventrad at the tip. Parameres elongate, one lobe a little shorter and the other lobe longer than median lobe, each more or less dilated in apical part and provided with four short setae at the apex. Internal sac long and coiled, its proximal portion narrow, of heavily sclerotized structure consisting of fine spines, distal portion broad, surface densely covered with extremely small teeth-like structure.

Female. Basal four segments of each protarsus slender and without distinct tenent setae. Eighth tergite (Fig. 7) long and wide, broadly rounded apically, surface covered with numerous fine setae, and with two pairs of long and strong setae near apico-lateral margin. Ninth sternite (Fig. 8) with coxite somewhat longer, sparsely setose, bearing a few long black setae at the apical margin. Tenth tergite (Fig. 9) oblong-ovate, posterior margin evenly rounded and with short setae in apical half.

Type series. Holotype: ♂, allotype: ♀, Alishan, about 2,100 m alt., Chiai



Figs. 2–9. *Trichophya kurosawai* sp. nov. —— 2, Third abdominal sternite in male; 3, 8th abdominal sternite in male; 4, 9th abdominal sternite in male; 5, male genitalia in lateral view; 6, apical part of aedeagus in dorsal view; 7, 8th abdominal sternite in female; 8, 9th abdominal sternite in female; 9, 10th abdominal tergite in female. Scale: 0.2 mm.

Hsien, 7–VIII–1971, Y. SHIBATA leg. Paratypes: 13♂♂, 3♀♀, same locality and date as for the holotype.

The holo- and allotypes are deposited in the Laboratory of Insect Resources, Tokyo University of Agriculture, and the paratypes are preserved in the author's private collection.

Further specimens examined. 2♂♂, 2♀♀, near Tsuifeng, about 2,200 m alt.,

Nantou Hsien, 27–VII–1974, Y. SHIBATA leg.

Distribution. Taiwan.

Notes. The present new species is similar in general appearance to *T. japonica* Y. WATANABE et Y. SHIBATA from Japan, but can be readily distinguished from the latter by the following features: body larger and broader; pronotum and elytra more closely and more strongly punctured, the punctures not granular; 8th abdominal sternite in male provided with short setae in posterior half of sternite and with two pairs of long and erect black setae; male genital organ with median lobe abruptly curved ventrad in apical fifth in lateral view.

The type material was found from under fallen leaves accumulated at the margin of a broadleaved forest. All the specimens from Tsuifeng were collected from heaps of fallen leaves accumulated at the edge of the water of a narrow mountain stream.

Etymology. The specific name is given to the memory of the late Dr.Yoshihiko KUROSAWA, one of the leading coleopterologists in Japan.

要　　約

柴田泰利：台湾から未記録のホソヒゲハネカクシ属の1新種．—— ホソヒゲハネカクシ属は，単独で1亜科ホソヒゲハネカクシ亜科 (Trichophyinae) を形成し，ヒゲブトハカクシ亜科に近縁のものと考えられている．触角の 3–11 節がきわめて細長く輪状に細毛をそなえ，触角第1節の基部は頭部の前縁にあり，背面に露出しているなどの特徴により他属との区別は容易である．

ホソヒゲハネカクシ属は既知種14種の小さい属で，北米，欧州，東南アジア，中国，日本から知られている．東南アジア7種，中国2種，そして日本からは3種が記録されている．

今回，台湾の嘉義県阿里山（標高 2,100 m）と南投県翠峰（標高 2,200 m）から採集した種が新種と判定されたので，*Trichophya kurosawai* と命名記載した．本種は，頭部と胸部表面に強い皮革状の微細構造をもち，日本産の *T. japonica* Y. WATANABE et Y. SHIBATA ホソヒゲハネカクシに似ているが，やや大型で幅広，前胸と上翅の点刻（顆粒状ではない）はより密で，より強いこと，雌雄の交尾節の構造，雄交尾器の形状が異なることなどによって区別される．なお，本種の学名は，長年にわたり日本の甲虫学の発展に尽くされた黒澤良彦博士に献名したものである．

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Elytra, *Tokyo*, **29** (2): 358–363, November 15, 2001

A New Species of the Group of *Lathrobium brachypterum* (Coleoptera, Staphylinidae) from Southern Aizu in Northeastern Honshu, Japan

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Abstract A new species of the group of *Lathrobium* (s. str.) *brachypterum* is described and illustrated under the name of *L.* (s. str.) *kurosawai*. It is obtained from under dead leaves at Nanairi of southern Aizu in northeastern Honshu, Japan.

The members of the group of *Lathrobium brachypterum* are usually found from under dead leaves accumulated in broadleaved forests on various mountainous areas in Japan. They are similar in coloration and facies, and belong to the members of the two species-groups, those of *L. pollens* and of *L. monticola*, but can be distinguished from the latter two by body size and second sexual characters of the abdominal sternites in the male.

Examining the members of the group of *L. brachypterum* from Japan, I have found an interesting species obtained from under dead leaves at Nanairi of southern Aizu in northeastern Honshu, Japan. This species is similar in general appearance to *L. brachypterum* known from Miyanoshita of Hakone in central Honshu, Japan.

After a careful examination, it has become clear that this species is new to science because of different configuration of second sexual characters of the abdominal sternites and genital organ in the male. It will be described and illustrated in the present paper in dedication to the memory of the late Dr. Yoshihiko KUROSAWA, former president of the Coleopterist' Association of Japan, which is a forerunner of the present society. The type series of the new species to be described is deposited in the collection of the Laboratory of Insect Resources, Tokyo University of Agriculture.

Before going further, I wish to express my hearty thanks to Dr. Shun-Ichi UÉNO, Visiting Professor at Tokyo University of Agriculture, for his kind advice on the present study.

Lathrobium (s. str.) ***kurosawai*** Y. WATANABE, sp. nov.

[Japanese name: Kurosawa-himekobanenaga-hanekakushi]
(Figs. 1–5)

Body length: 6.8–7.7 mm (from front margin of head to anal end); 3.3–3.5 mm (from front margin of head to elytral apices).

Body elongate, parallel-sided and somewhat depressed above. Colour reddish brown to brownish black and moderately shining, with mandibles, antennae, sometimes sutural areas and posterior margins of elytra brownish red; palpi, legs and two apical abdominal segments brownish yellow.

Male. Head subquadrate and slightly elevated medially, as long as broad, widest at posterior fourth and gently narrowed both anteriad and posteriad; lateral sides feebly arcuate; frontal part between antennal tubercles flattened and glabrous, provided with a large setiferous puncture inside each antennal tubercle; surface sparingly scattered with coarse and setiferous punctures which become much sparser in antero-dorsal part, and covered all over with microscopic coriaceous ground sculpture; eyes small and almost flat, the longitudinal diameter nearly one-third as long as postocular part. Antennae elongate, extending a little beyond the middle of pronotum and not thickened apicad, 6th to 11th more or less moniliform, two proximal segments polished, the remainings opaque; 1st segment robust and strongly dilated apicad, about twice as long as broad; 2nd constricted at the base, a little longer than broad (length/width=1.20) but considerably shorter (2nd/1st=0.50) and somewhat narrower (2nd/1st=0.83) than 1st; 3rd and 4th almost equal in width to each other, 3rd distinctly longer than broad (length/width=1.40) and a little longer (3rd/2nd=1.17) than though as broad as 2nd; 4th somewhat longer than broad (length/width=1.20) but a little shorter (4th/3rd=0.86) than 3rd; 5th to 7th equal in both length and width to one another, each slightly longer than broad (length/width=1.10); 8th and 9th equal in both length and width to each other, each slightly longer than broad (length/width=1.04); 10th as long as broad, and as long as but slightly broader than (10th/9th=1.04) 9th; 11th fusiform, remarkably longer than broad (length/width=1.80) and distinctly longer (11th/10th=1.80) than though as broad as 10th, subacuminate at the tip.

Pronotum elevated medially, distinctly longer than broad (length/width=1.17), apparently longer (pronotum/head=1.35) and somewhat broader (pronotum/head=1.15) than head, widest behind anterior angles and slightly narrowed in anterior four-fifths though more strongly so in posterior fifth; lateral sides straight or slightly arcuate with the exception of arcuate parts of anterior and posterior angles as seen from above, anterior margin gently arcuate, posterior margin nearly truncate, anterior angles obtuse and not visible from dorsal side, posterior ones narrowly rounded; surface sparingly, coarsely and setiferously punctured except for a narrow smooth median space through the length of pronotum. Scutellum subtriangular, provided with a few minute setiferous punctures on the surface. Elytra subtrapezoidal and dilated posteriad, slightly transverse (width/length=1.09), distinctly shorter (elytra/pronotum=0.81) and slightly

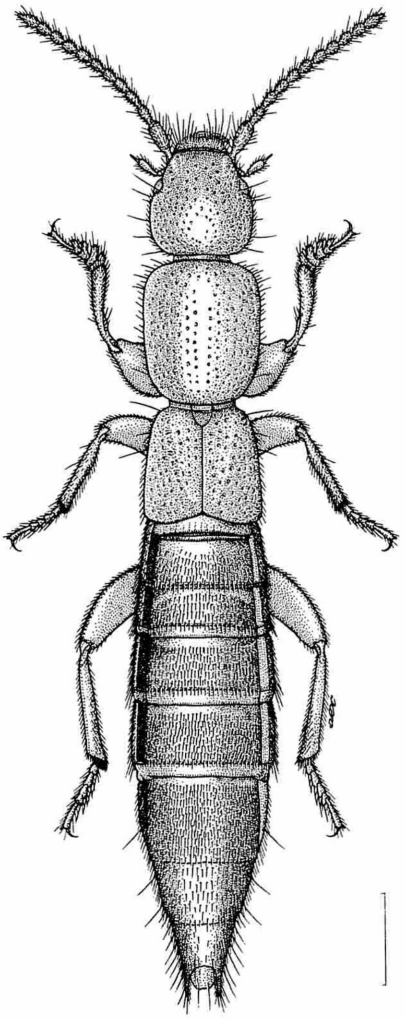


Fig. 1. *Lathrobium* (s. str.) *kurosawai* Y. WATANABE, sp. nov., ♂, from Nanairi of southern Aizu in northeastern Honshu, Japan. Scale: 1.0 mm.

broader (elytra/pronotum=1.04) than pronotum, or as broad as the latter; lateral sides nearly straight, posterior margin broadly emarginate at the middle, posterior angles rounded; surface closely and roughly punctured, and covered with fine brownish pubescence all over. Legs relatively short, profemora and protibiae similar in structure to those of *L. brachypterum*, 1st to 4th protarsal segments strongly widened.

Abdomen elongate, nearly parallel-sided from 3rd to 6th segments, and then abruptly narrowed towards the anal end, 3rd to 6th tergites each transversely depressed along the base, closely and superficially punctured and covered with fine brownish pubescence; 7th and 8th tergites each much more sparingly and more finely punctured than in the preceding tergites; 8th sternite shallowly, semicircularly emarginate at the middle of posterior margin and somewhat depressed in front of the emargination, sur-

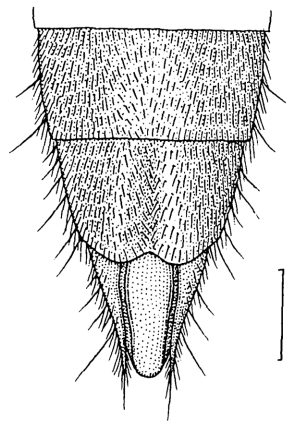
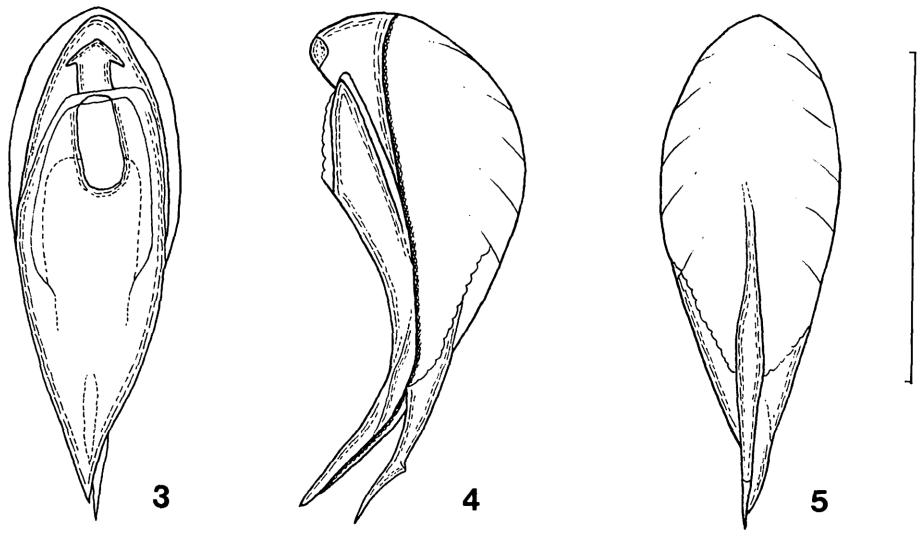


Fig. 2. Last three abdominal sternites in the male of *Lathrobium* (s. str.) *kurosawai* Y. WATANABE, sp. nov. Scale: 0.5 mm.



Figs. 3–5. Male genital organ of *Lathrobium* (s. str.) *kurosawai* Y. WATANABE, sp. nov.; dorsal view (3), lateral view (4), and ventral view (5). Scale: 1.0 mm.

face of the depression more closely set with fine blackish setae than in other parts.

Genital organ elliptical, well sclerotized except for membraneous ventral side of median lobe. Median lobe very slightly longer than fused paramere, widest at basal third and more strongly narrowed apicad than basad; ventral piece elongate, somewhat widened at the middle, and then narrowed both basad and apicad, with a minute subtriangular projection at a distance from the apex in profile. Fused paramere slightly asymmetrical and relatively broad, widest near the middle and abruptly narrowed to-

wards the pointed apex as seen from dorsal side, and strongly curved dorsad in posterior half in profile.

Female. Similar in facies to male, but different from it in the following points: 1st to 4th protarsal segments not so widened, abdomen with 8th sternite narrowed towards the rounded apex.

Type series. Holotype: ♂, allotype: ♀, Nanairi, southern Aizu, Fukushima Pref., Honshu, Japan, 24–VI–1990, Y. WATANABE leg. Paratypes: 2♀♀, same data as for the holotype; 1♂, same locality and collector as for the holotype, 14–VII–1967.

Distribution. Japan (northeastern Honshu).

Remarks. The present new species is similar in body size and facies to *L.* (s. str.) *brachypterum* SHARP (1889, p. 255) from Miyanoshita in central Honshu, but is different from it in the following points: in male, 8th abdominal sternite more deeply emarginate at the middle of posterior margin and more distinctly depressed before the emargination, 7th sternite indistinctly depressed at the middle in front of posterior margin; genital organ with median lobe slightly longer than fused paramere which is relatively short and much broader in apical half. Also similar in general appearance to *L. nabetaniense* Y. WATANABE (1997, p.144) from Hokuriku District and *L. masaoi* Y. WATANABE (1999, p. 109) from the Kii Peninsula, but can be distinguished from them by different configuration of second sexual character of the abdominal sternites and genital organ in the male.

Bionomics. The type series was obtained from under dead leaves in a deciduous broadleaved forest at an altitude of about 600 m.

Etymology. The present new species is dedicated to the memory of Dr. Yoshihiko KUROSAWA, who was a leading coleopterologist in Japan and has continuously encouraged my studies on the staphylinid beetles.

要　約

渡辺泰明：南会津の七入で採集されたヒメコバネナガハネカクシ種群（甲虫目ハネカクシ科）の1新種．—— ヒメコバネナガハネカクシ種群に含まれる種は，通常山地帯の落葉樹林の林床に堆積した落ち葉の下から採集される．私は手許のこの種群に含まれる種を検討しているが，福島県南会津の七入で採集された1未記載種を見出したので，*Lathrobium* (s. str.) *kurosawai* と命名・記載した．この種は，箱根宮ノ下から記載された *L. brachypterum* に体長および形態が類似しているが，雄の第8腹節腹板の後縁中央はより深く湾入し，この湾入部の前方はより強く凹陥すること，第7腹節の第二次性徴は不明瞭であること，交尾器中葉はわずかに側葉より長く，側葉は後半がはるかに幅広いことなどによって区別される．また，北陸地方から記載された *L. nabetaniense* および紀伊半島から記載された *L. masaoi* の両種にも類似しているが，雄の第二次性徴および交尾器の形状が明らかに異ることによって区別される．

なお，種小名の *kurosawai* は，本学会の前身である「甲虫談話会」の代表者であった黒澤良彦博士に献名したものである．

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Elytra, *Tokyo*, **29** (2): 364–368, November 15, 2001

A New *Leistus* (Coleoptera, Carabidae) from the Northern Japanese Alps

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Abstract A new nebriine carabid beetle is described from the Northern Japanese Alps, Central Japan, under the name of *Leistus kurosawai*. It is related to *L. niger alecto* BATES, but differs from it mainly in the shape of the elytra and the apical lobe of the aedeagus.

The present paper deals primarily with a new species of the nebriine genus *Leistus* from the Northern Japanese Alps, Central Japan. The subsequent paper will deal with a revisional study of the Japanese members of the genus. However, the revision will require several further years for completion.

The late Dr. Yoshihiko KUROSAWA who passed away early in this year affectionately watched my study of carabid beetles for a long time. My deep thanks are due to him, and the new species of *Leistus* described herein is named to his memory.

The abbreviations used herein are the same as those explained in my previous papers. The holotype and allotype of this new species are deposited in the National Science Museum (Nat. Hist.), Tokyo. The paratypes are preserved in the collection of the Toyohashi Museum of Natural History and my private collection.

I am deeply indebted to Dr. Shun-Ichi UÉNO for critically reading the manuscript of this paper. Thanks are also due to Mr. Michiaki HASEGAWA and the late Mr. Hirofumi HAYAKAWA for supplying me with important material.

Leistus kurosawai MORITA, sp. nov.

[Japanese name: Takane-kinokawa-gomimushi]

(Figs.1–6)

Diagnosis. Body elongate; elytral sides weakly arcuate throughout; hind wings reduced; elytral apices weakly produced; viewed dorsally, apical lobe of aedeagus narrow and basal margin of dorsal membraneous part weakly produced.

Description. L: 8.1–9.2 mm. Body elongate with narrow elytral base.

Colour blackish brown; mouth parts, antennal segments II–XI, tibiae and tarsi brown; antennal segment I and femora blackish brown.

Head moderately convex; eyes prominent; frontal furrows very shallow and usu-

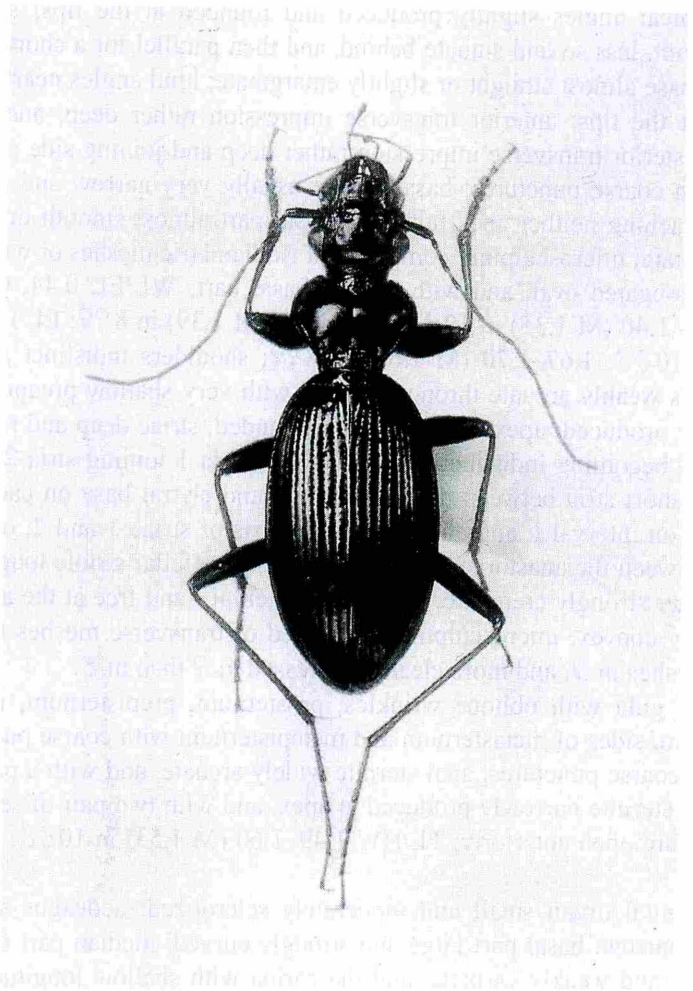


Fig. 1. *Leistus kurosawai* MORITA, sp. nov., ♂, from Mt. Sugoroku-dake.

ally with many longitudinal wrinkles; PW/HW 1.21–1.26 (M 1.23) in 10♂♂, 1.23–1.30 (M 1.26) in 8♀♀; microsculpture composed of isodiametric meshes; antennae slender and reaching basal 11/20 of elytra; relative lengths of antennal segments as follows:— I : II : III : IV : V : VI : XI = 1 : 0.32 : 0.76 : 0.57 : 1.08 : 1.02 : 0.78 in 10♂♂, 1 : 0.32 : 0.75 : 0.58 : 1.11 : 1.11 : 0.80 in 8♀♀.

Pronotum transverse and moderately convex; PW/PL 1.33–1.41 (M 1.38) in 10♂♂, 1.36–1.47 (M 1.41) in 8♀♀; PW/PA 1.71–1.86 (M 1.77) in 10♂♂, 1.67–1.77 (M 1.74) in 8♀♀; PW/PB 1.88–2.00 (M 1.92) in 10♂♂, 1.84–2.00 (M 1.89) in 8♀♀; PA/PB 1.03–1.17 (M 1.10) in 10♂♂, 1.06–1.17 (M 1.09) in 8♀♀; apical margin widely and clearly bordered except at middle, moderately produced, and with coarse punctures

at middle; apical angles slightly produced and rounded at the tips; sides strongly rounded in front, less so and sinuate behind, and then parallel for a short way towards hind angles; base almost straight or slightly emarginate; hind angles nearly rectangular and obtuse at the tips; anterior transverse impression rather deep, and with coarse punctures; posterior transverse impression rather deep and joining side gutter on each side, and with coarse punctures; basal foveae usually very narrow and deep; median line linear, reaching neither apex nor base; basal part almost smooth or sparsely and coarsely punctate; microsculpture composed of isodiametric meshes or wide ones.

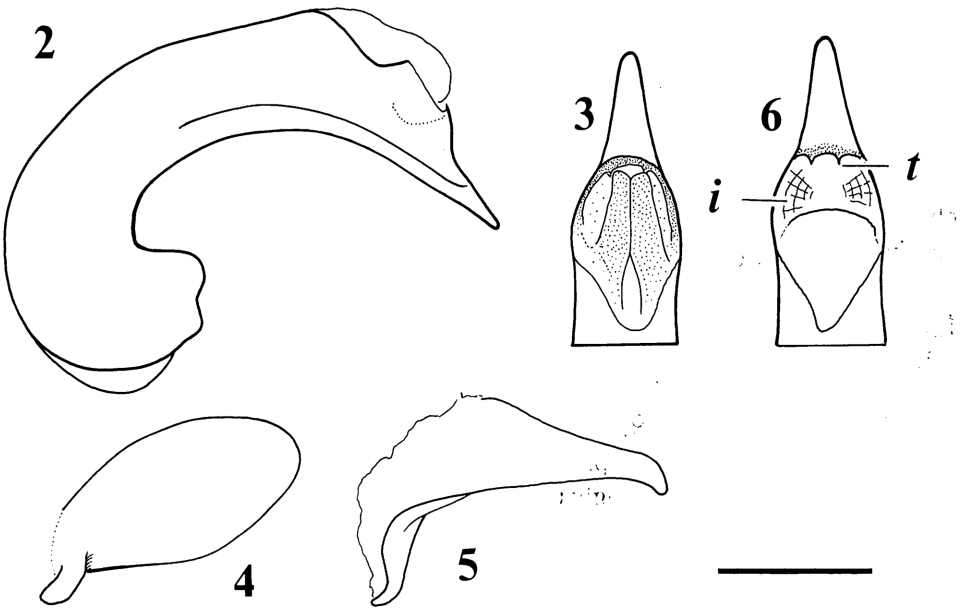
Elytra elongated oval, and with narrow basal part; WL/EL 0.44, 0.46 in 2♂♂; EW/PW 1.33–1.40 (M 1.35) in 10♂♂, 1.34–1.43 (M 1.39) in 8♀♀; EL/EW 1.68–1.75 (M 1.71) in 10♂♂, 1.67–1.70 (M 1.69) in 8♀♀; shoulders indistinct and obliquely rounded; sides weakly arcuate throughout, and with very shallow preapical sinuation; apices weakly produced; apex of each elytron rounded; striae deep and rather strongly crenulate, but becoming indistinct towards apices; stria 1 joining stria 2 at basal part and forming short stria between the anastomosis and elytral base on each side; basal pore situated on interval I, and close to anastomosis of striae 1 and 2, or close to the short stria between the anastomosis and elytral base; scutellar striole long, joining elytral base, rather strongly crenulate, situated on interval I and free at the apical end; intervals weakly convex; microsculpture composed of transverse meshes in ♂, wide or transverse meshes in ♀, and more clearly impressed in ♀ than in ♂.

Sides of gula with oblique wrinkles; prosternum, prepisternum, mesosternum, mesepisternum, sides of metasternum and metepisternum with coarse punctures; basal sternite with coarse punctures; anal sternite widely arcuate, and with a pair of setae in ♂; in ♀, anal sternite narrowly produced at apex, and with two pair of setae which are on a shallow arc open anteriorly; TL/HW 1.49–1.60 (M 1.53) in 10♂♂, 1.41–1.48 (M 1.44) in 8♀♀.

Male genital organ small and moderately sclerotized; aedeagus small; sagittal aileron very narrow; basal part large and strongly curved; median part of ventral side longitudinally and weakly carinate, and the carina with shallow longitudinal sulci on both sides; dorsal membraneous part narrow and weakly produced at the proximal end, and with two longitudinal strips which are poorly sclerotized; apical membraneous part and sides of the dorsal one heavily sclerotized, and with two teeth (cf. *t* in Fig. 6), and inner wall (cf. *i* in Fig. 6); apical lobe strongly produced and simply rounded in dorsal view; right paramere elongate, and with incurved apex; left one elongated oval.

Variation in elytral chaetotaxy. Setiferous dorsal pores are distributed between 1/20 and 4/5 from elytral base and on interval III and stria 3, but they vary in number and position.

Of the 32 males of the type series, 19 or 60% have three setiferous dorsal pores on the left elytron, and 17 or 55% have three setiferous dorsal pores on the right. Extremes of variation in the number are as follows: two males have five pores on the left elytron and three on the right, respectively; a male has a single pore on the left, and three on the right; a female has two pores on the left and one on the right.



Figs. 2–6. Male genital organ of *Leistus kurosawai* MORITA, sp. nov., from Mt. Sugoroku-dake; aedeagus, left lateral view (2), apical part of aedeagus, dorso-apical view (3), left paramere, left lateral view (4), right paramere, left lateral view (5), and apical part of aedeagus without two longitudinal strips in another specimen, dorso-apical view, *i* – wall, *t* – tooth (6). Scale: 0.5 mm.

In ♂, pores are usually present on interval III and close to stria 3, or joining stria 3, sometimes on stria 3, and rarely on the middle of interval III. In ♀, pores are usually present on interval III and close to stria 3, or on stria 3, and sometimes adjoining stria 3.

Type series. Holotype: ♂, allotype: ♀, Mt. Sugoroku-dake, Gifu Pref., 15~17–VII–1989, M. HASEGAWA leg. Paratypes: 3♂♂, Mt. Sugoroku-dake, Nagano Pref., 25–VII–1974, S. TAKENAKA leg.; 2♂♂, 1♀, same locality, 13–VIII–1989, S. MORITA leg.; 20♂♂, 6♀♀, Mt. Sugoroku-dake, Gifu Pref., 15~17–VII–1989, M. HASEGAWA leg.; 1♂, same locality, 16–VII–1989, N. KANIE leg.; 5♂♂, same locality, 8~11–IX–1989, M. HASEGAWA leg.; 1♀, Mt. Mitsumatarenge-dake, Gifu Pref., 9~10–IX–1989, M. HASEGAWA leg.

Localities of the type series. Mt. Sugoroku-dake (type locality) on the borders of Gifu and Nagano Prefectures, and Mt. Mitsumatarenge-dake, on the borders of Gifu, Nagano and Toyama Prefectures in central Honshu, Japan.

All the specimens were taken at about 2,600 m in altitude.

Notes. According to ERWIN (1970, p.112), this new species belongs to the subgenus *Neoleistus* ERWIN. However, recognition of the subgenus seems to be a matter of opinion (SHILENKOV, 1999, p.76), though I have no intention to go further into discussion on this problem.

This new species is very closely allied to *L. niger alecto* BATES (1883, p. 221) . It is, however, distinguished from it by the following points: 1) body usually small; 2) sides of pronotum rather straightly convergent posteriad; 3) pronotum less convex; 4) basal part of elytra narrower, and with more oblique shoulder on each side; 5) elytral sides weakly arcuate throughout; 6) short stria between anastomosis of striae 1 and 2 and elytral base longer, 7) hind wings reduced, WL/EL 0.44, 0.46 in 2♂♂; 8) apices of elytra less strongly produced, and 9) viewed dorsally, apical lobe of aedeagus narrower, and basal margin of dorsal membraneous part weakly produced. [In *L. niger alecto*, body larger, L : 8.2–9.8 mm; PW/HW 1.25–1.26 (M 1.25) in 3♂♂, 1.27 in 1♀, PW/PL 1.39–1.41 (M 1.40) in 3♂♂, 1.38 in 1♀, PW/PA 1.74–1.77 (M 1.75) in 3♂♂, 1.75 in 1♀, PW/PB 1.84–1.86 (M 1.85) in 3♂♂, 1.91 in 1♀, PA/PB 1.05–1.06 (M 1.05) in 3♂♂, 1.10 in 1♀, EW/PW 1.32–1.38 (M 1.34) in 3♂♂, 1.34 in 1♀, EL/EW 1.67–1.73 (M 1.70) in 3♂♂, 1.67 in 1♀, TL/HW 1.49, 1.53 (M 1.51) in 2♂♂, 1.37 in 1♀; WL/EL 0.54 in 1♂; viewed dorsally, apical lobe of aedeagus rather wide and basal margin of dorsal membraneous part strongly produced.]

要　約

森田誠司：北アルプス産キノカワゴミムシの1新種．—— 北アルプスの高山帯で採集されたキノカワゴミムシ属の1新種，タカネキノカワゴミムシ *Leistus kurosawai* を記載した．本種は，北日本に分布するキノカワゴミムシ *L. niger alecto* BATES に近縁であるが，上翅側縁がいちように丸まり，翅端が弱く突出すること，陰茎の背面の膜質部が基部方向に強く広がらないこと，陰茎の先端部が細いことなどの点で識別される．

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The *Trechiama* (Coleoptera, Trechinae) of the Asahi Mountains and the Adjacent Volcanoes in Northeast Japan

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Abstract Alpine and subalpine species of the trechine genus *Trechiama* are recorded from the non-volcanic Asahi Mountains and the two volcanoes adjacent to them, Mt. Gassan and Mt. Ha-yama, in northeastern Honshu, Northeast Japan. All the five species known are oculate and relatively dark-coloured, belonging to the *nivalis* subgroup of the group of *T. oreas*, three to the *nivalis* lineage (s. str.) and two to the *kurosawai* lineage. Both the Asahi Mountains and Mt. Gassan harbour two species of different lineages, though they appear to be ecologically segregated on the respective mountains, whereas Mt. Ha-yama seems to be inhabited by only a species of the *nivalis* lineage. Only one of the five species was previously described, that is, *T. babai* S. UÉNO, 1994 of the northwestern part of the Asahi Mountains. The new names given are *T. solorientis*, *T. montislunae* and *T. montisfolii* of the *nivalis* lineage, and *T. yoshihikoi* of the *kurosawai* lineage.

I am going to dedicate a paper to Yoshihiko KUROSAWA once again, to his memory this time. The subject to be taken up is the trechine beetles belonging to the genus *Trechiama* found on the Asahi Mountains and the two volcanoes adjacent to their northern end. KUROSAWA loved these mountains from his student days at Yamagata High School, and willingly helped me to clarify the trechine fauna of that part of Northeast Japan.

I first met KUROSAWA at Osaka near the end of the 1940's just after the World War II. He was very kind to me and taught me many things about Japanese beetles. After that, he always helped my study on the Japanese Carabidae, for several years at Aizu where he resided then and at Tokyo after 1951. About two dozen years later, when I became his only colleague in entomology at the National Science Museum, Tokyo, he received me as a good friend and adviser. We together worked hard for the enlargement and improvement of the entomology section of our museum for about twenty-five years, and even after his retirement in the spring of 1986, he gave me many useful advice for the development of the museum and the Japanese Society of Coleopterology.

It is therefore most regrettable that I have to write the present paper only after his death. It was KUROSAWA who urged me to investigate the trechine fauna of the high mountains of Yamagata Prefecture, and though I told him about the progress of my researches from time to time, I was unable to finish my studies in his lifetime. Even now, there still remain several matters that have to be clarified, but it can safely be said that

my present knowledge is satisfactory to show an outline of the *Trechiama* fauna of these mountains.

The Asahi Mountains are a range of non-volcanic, mainly granitic mountains at the northern part of the Echigo Range and stretch on the borders of Yamagata and Niigata Prefectures. The highest point is Oh-asahi-daké lying at the southern part, which attains to a height of 1,870 m, but there are many other peaks that reach or exceed 1,500 m in height. Though not so conspicuous in elevation, the Asahis lie in a heavy snowfall area of northeastern Japan and have many branch ridges sharply carved by snow couloirs. Alpine meadows are well developed on the watershed above the timberline and contain snow-patches here and there, some of which remain throughout the year and furnish favourable habitats for trechine beetles.

Adjacent to the northern end of the Asahis, there are two volcanoes erupted between the granite body of the Asahis and the Tertiary formation of the Dewa Hills. The higher of the two is called Gassan and is 1,984 m in height. Because of the relatively gentle topography at higher elevations, alpine meadows are more widely developed on Gassan than on the Asahis, embracing large snow-patches, particularly on the eastern slope, and yielding a favourable environment for harbouring various alpine insects inclusive of a *Trechiama*. On the other hand, the lower one of the two volcanoes, called Ha-yama and lying to the east of Gassan, is much lower than the latter, merely attaining to a height of 1,462 m and therefore not exceeding the timber-limit. Accordingly, only a few subalpine species are included in the carabid fauna of Ha-yama, though a *Trechiama* was found from colluvia deposited along a narrow stream flowing through a forest of mainly deciduous broadleaved trees.

In the present paper, these species of *Trechiama*, all oculate and relatively dark-coloured, will be dealt with. They are extremely similar to one another in external morphology, and cannot be discriminated with confidence on females alone. They are, however, apparently classified into two lineages by marked difference in the conformation of the aedeagal inner armature. One of them is the *nivalis* lineage whose component species are rather widely distributed on the high mountains at the southwestern and southern parts of Tôhoku District (cf. UÉNO, 1986, pp. 132–140, 1992, pp. 146–149, 1994 b, pp. 24–28; UÉNO & OHKAWA, 1993). The other lineage, that of *T. kurosawai*, has so far been known from four described species, of which three are endemic to the high mountains at the southern part of the Ôu Range stretching along the axis of Tôhoku District (UÉNO, 1986, pp. 140–142, 1989, pp. 124–128) and the fourth was described from the northwestern part of the Asahi Mountains under the name *T. babai* (UÉNO, 1994 a). We can now add a fifth species to this lineage, a relative of *T. babai* whose occurrence on Mt. Gassan was already noticed in the *Notes* following the original description of the latter species (UÉNO, 1994 a, p. 121).

The abbreviations used herein are the same as those explained in previous papers of mine.

Before going into further details, I wish to express my hearty thanks to Dr. Yasuaki WATANABE, Dr. Yoshiaki NISHIKAWA, Mr. Shigeru KIMATA and Mr. Satoru

MIZUSHIMA for their collaboration and help in making investigations on the remote mountains and for supplying me with additional specimens of one of the Gassan species.

Trechiama (s. str.) ***solorientis*** S. UÉNO, sp. nov.

(Figs. 1–2)

Length: 5.10–6.00 mm (from apical margin of clypeus to apices of elytra).

Closely similar to *T. nivalis* S. UÉNO (1986, p. 132, figs. 1–4) and practically indistinguishable from the latter in external morphology, but constantly and decisively different from it in the configuration of male genitalia, above all in that of the inner armature. Considerably variable in size, coloration, standard ratios and other details including the number of parameral setae. Colour usually darker than in *T. nivalis*, dark brown with brown appendages, sometimes with blackish fore body and pitchy black elytra.

Head as in *T. nivalis* though the genae are usually a little more convex; eyes variable in size and convexity, usually flat but sometimes convex even though small; genae two-thirds to five-sixths as long as eyes in most specimens, but as long as or even slightly longer than eyes in rare exceptions; antennae also variable in length, reaching basal three-tenths to three-sevenths of elytra. Pronotum as in *T. nivalis*, though the hind angles are more variable in the degree of sharpness and protrusion. Elytra also similar to those of *T. nivalis*, though usually less parallel-sided at middle and more clearly crenulate in striae; chaetotaxy identical with that of *T. nivalis* in basic pattern. Legs somewhat shorter than in *T. nivalis*. Standard ratios of body parts as follows: PW/HW 1.36–1.48 (M 1.43), PW/PL 1.15–1.30 (M 1.21), PW/PA 1.47–1.62 (M 1.56), PW/PB 1.24–1.52 (M 1.40), PB/PA 0.99–1.21 (M 1.12), EW/PW 1.43–1.60 (M 1.54), EL/EW 1.50–1.60 (M 1.55).

Male genital organ similar in basic conformation to that of *T. nivalis*, but markedly different in the configuration of aedeagus and its inner armature; the former is higher at the apical part, with the dorsal margin more strongly rounded in profile and the apex distinctly tuberculate in both lateral and dorsal views; the latter consists of two teeth-patches and a smaller, simply spatulate copulatory piece whose apex is rather widely rounded. Aedeagus about one-third as long as elytra, short and robust, somewhat expanded ventrad behind middle, and abruptly narrowed apicad from behind apical orifice, with the dorsal margin regularly rounded for the most part in lateral view, more strongly so at the apical part; basal part large, curved ventrad but not abruptly bent, and not regularly emarginate at the sides of basal orifice; sagittal aileron fairly large; apical lobe very short, curved ventrad, and abruptly narrowed towards the extremity, which is distinctly tuberculate and briefly reflexed; ventral margin bisinuate in lateral view. Copulatory piece lamellar, about three-tenths as long as aedeagus, and simply spatulate, with the apex rather widely rounded; dorsal teeth-patch lying dorsoapical to copulatory piece and somewhat longer than the latter; left dorsal teeth-patch

located left dorsal to the proximal half of copulatory piece, and obviously smaller than the dorsal one. Styles nearly straight, left style longer than the right, each usually bearing four or five apical setae, though the number of the setae often increases to six on one style, sometimes even to seven.

Variation in elytral chaetotaxy. Of the 101 specimens in total of the type series, 20 (8♂♂, 12♀♀), or 19.8%, are more or less aberrant in the number of setiferous dorsal pores on the elytra. Fourteen of them (7♂♂, 7♀♀) are lacking in one of the dorsal pores on the 3rd stria on one or both of the elytra, and three females possess an extra (fourth) dorsal pore on the 3rd stria of the left elytron. Even in normal specimens with three setiferous dorsal pores of the internal series on both the elytra, the middle and posterior dorsal pores are considerably variable in their position on the 3rd elytral stria, and sometimes closely approach to each other.

As compared with the internal series, the pore of the external series is usually stable, but four specimens, or 3.96%, of the type series are aberrant in this respect. Two females from Gingyokusui are lacking in this pore on the right elytron, so that the 5th stria of the right elytron is completely devoid of setiferous dorsal pores in these individuals. On the other hand, one male from the same locality possesses a second dorsal pore on the 5th stria of the right elytron, and one female from Kingyokusui has two dorsal pores on the 5th stria of both the elytra, a very interesting example suggesting a reversion of the elytral chaetotaxy.

Type series. Holotype: ♂, allotype: ♀, Gingyokusui, 24–VIII–1994, S. UÉNO leg. Paratypes: 1♂, Gingyokusui, 7–VIII–1983, Y. WATANABE leg.; 6♂♂, 14♀♀, Gingyokusui, 24–VIII–1994, S. UÉNO, Y. NISHIKAWA & Y. WATANABE leg.; 6♂♂, 4♀♀, Kingyokusui, 25–VIII–1994, S. UÉNO & Y. NISHIKAWA leg.; 1♂, 5♀♀, Ryûmon-zan, 25–VIII–1994, S. UÉNO & Y. NISHIKAWA leg.; 34♂♂, 28♀♀, Minamikankô-zan, 26–VIII–1994, S. UÉNO & Y. NISHIKAWA leg. All deposited at present in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Localities of the type series. Gingyokusui on Mt. Oh-asahi-daké (type locality!), 1,630 m in altitude, Kingyokusui on Mt. Oh-asahi-daké, 1,670 m in altitude, Ryûmon-zan, 1,570 m in altitude, and Minamikankô-zan, 1,530 m in altitude, all in Nishikawa-machi and on the Asahi Mountains, in Yamagata Prefecture, northeastern Honshu, Northeast Japan.

Additional specimens examined. 1♀, Asahi Mts.: Koasahi-daké, 1,530 m alt., Nishikawa-machi, Yamagata Pref., 24–VIII–1994, S. UÉNO leg.; 1♀, Asahi Mts.: Torihara-yama, 1,410 m alt., Asahi-machi, Yamagata Pref., 24–VIII–1994, S. UÉNO leg. (NSMT).

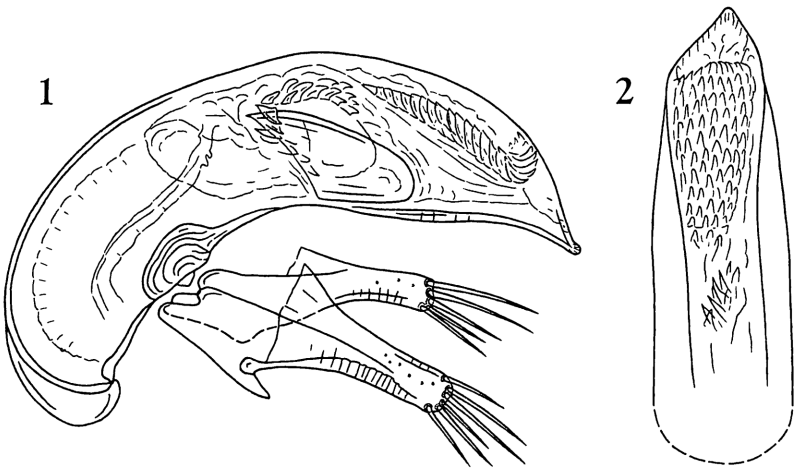
Notes. This new species seems primarily restricted to the alpine zone at the southeastern part of the Asahi Mountains. It has so far been known with certainty from four stations on the eastern side of the watershed ridge between Oh-asahi-daké and Minamikankô-zan, all of which lie at the lower edges of snow-patches developed at the heads of gullies. It should occur also in other places with similar environment, though it may not be easy to locate favourable habitats of the beetle.

The two stations, Gingyokusui and Kingyokusui, are located to the northeast and northwest of the summit of Mt. Oh-asahi-daké, respectively, and the former habitat is larger and a little lower than the latter. A beeline distance between the two is about 700 m. Near the end of August, snow-patches melt from the lower parts to an appreciable extent and feed the streams below. Gingyokusui is one of such melted snows and furnishes a typical habitat of the alpine *Trechiama*, which is found from beneath stones embedded at the edges of the cold water.

The other two stations are close to each other, but are moderately distant from the two stations on Oh-asahi-daké. Of these, the Ryûmon-zan site lies about 500 m northwest of Ryûmon-zan, a blunt head on the watershed branching off a side ridge, and is 3.8 km distant to the north-northwest in a beeline from Kingyokusui. The snow-patch on this gently sloping place completely melted away when we visited it on August 25, 1994, but several specimens of the *Trechiama* were found from beneath stones lying at the bottom of narrow grooves exposed after the retreat of the snow. On the contrary, the Minamikankô-zan site is a very steeply slanting snow-patch developed at the northeastern side of a markedly narrowed part of the watershed ridge about 600 m northwest of the Ryûmon-zan site. The depression embracing the snow-patch looks like a miniature of a cirque, with a semicircular, gently sloping section along the lower edge. The trechine beetle was abundant in this narrow humid place, being found from under heaps of stones probably accumulated by the downward movement of the snow couloir.

As was recorded above, the two specimens, both females, collected on the Koasahi Ridge are excluded from the type series, one from the western slope of Koasahi-daké about 1.4 km east-northeast of Gingyokusui and the other from the western side of Torihara-yama about 2 km east by south of Koasahi-daké. Their habitats are located in the forests of beech and birch well below the timber-limit, hence considerably different from those of the type series and similar to those of *T. babai* at the northwestern part of the Asahi Mountains to be described later. However, the Koasahi Ridge branches off from near the summit of Oh-asahi-daké and extends towards the east. The two localities on the ridge are therefore widely isolated from the known range of *T. babai*. Since the latter species is practically indistinguishable from *T. solorientis* in external morphology, it is impossible to determine the true systematic status of the Koasahi-daké and Torihara-yama specimens on females alone. However, I prefer to regard them tentatively as belonging to isolated populations of *T. solorientis* in view of the geographical situation of their collecting sites, leaving the final conclusion for future investigations. Incidentally, the Torihara-yama specimen is lacking in the third dorsal pore on the 3rd stria of the left elytron.

This new species is named after the Asahi Mountains, meaning the mountains of the rising sun in Japanese, on which are distributed its habitats.



Figs. 1–2. Male genitalia of *Trechiama* (s. str.) *solorientis* S. UÉNO, sp. nov., from Gingyokusui on Mt. Oh-asahi-daké of the Asahi Mountains; left lateral view (1), and apical part of aedeagus, dorso-apical view (2).

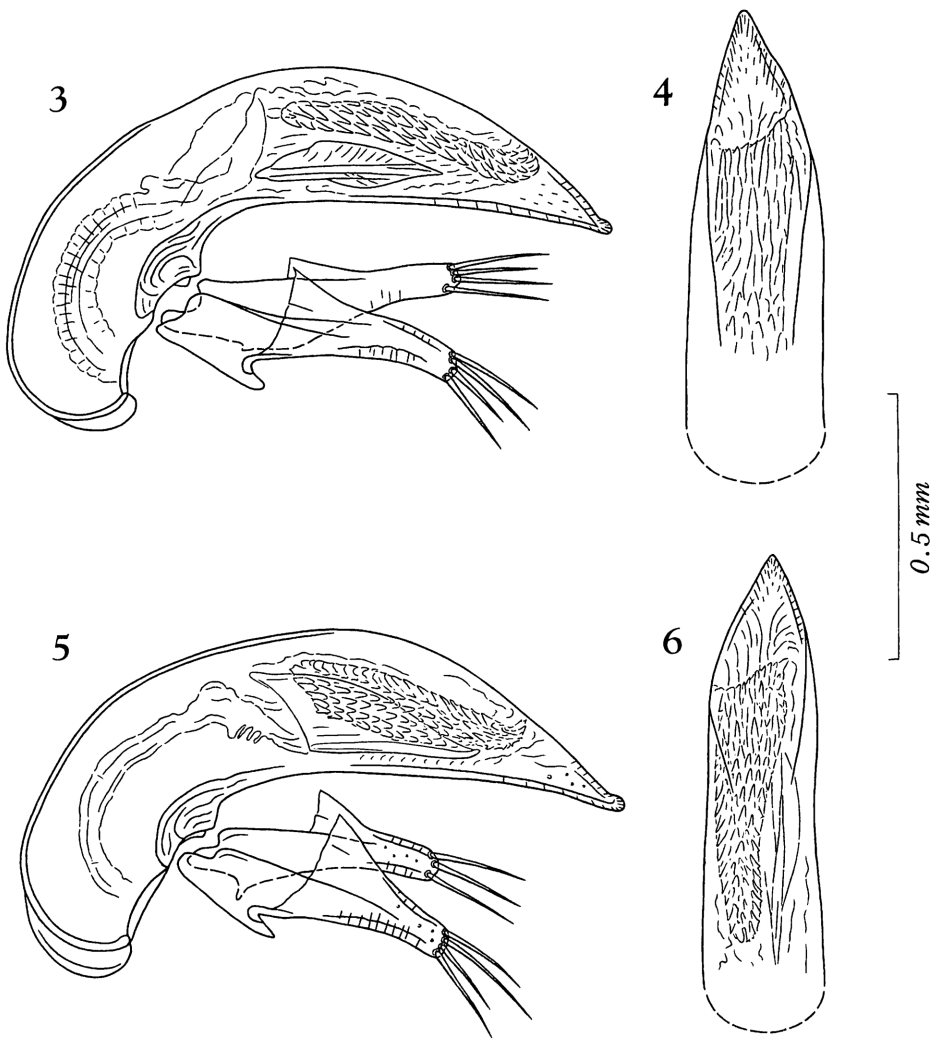
Trechiama (s. str.) ***montislunae*** S. UÉNO, sp. nov.

(Figs. 3–4, 7)

Length: 5.20–5.65 mm (from apical margin of clypeus to apices of elytra).

Very closely similar in external morphology to *T. solorientis*, with almost identical standard ratios, and practically indistinguishable from it except by the constant peculiarities of male genitalia. Colour usually a little lighter than in *T. solorientis*. Head as in *T. solorientis*, eyes and antennae similarly variable. Pronotum and elytra also similar to those of *T. solorientis*; elytral striae usually more faintly crenulate. Legs as in *T. solorientis*. Standard ratios of body parts as follows: PW/HW 1.37–1.50 (M 1.44), PW/PL 1.16–1.28 (M 1.21), PW/PA 1.51–1.65 (M 1.57), PW/PB 1.28–1.46 (M 1.41), PB/PA 1.04–1.19 (M 1.12), EW/PW 1.43–1.55 (M 1.50), EL/EW 1.52–1.60 (M 1.55).

Male genital organ markedly different in configuration from that of *T. nivalis* but similar to the latter in basic conformation. Aedeagus nearly three-eighths as long as elytra, hardly arcuate but almost semicircularly rounded at the dorsal margin in lateral view, with elongate basal part strongly bent ventrad and relatively long apical lobe; basal orifice small, with the sides only shallowly emarginate; sagittal aileron present though small and hyaline; viewed laterally, apical lobe gradually tapered towards the extremity, which is tuberculate and somewhat reflexed; viewed dorsally, apical lobe somewhat asymmetrical, inclined to the right, gradually narrowed apicad, and nearly pointed at the tip; ventral margin hardly emarginate in profile. Inner sac armed with a



Figs. 3–6. Male genitalia of *Trechiama* (s. str.) spp.; left lateral view (3, 5), and apical part of aedeagus, dorso-apical view (4, 6). —— 3–4. *T. montislunae* S. UÉNO, sp. nov., from Mt. Gassan. —— 5–6. *T. montisfolii* S. UÉNO, sp. nov. from Mt. Ha-yama.

copulatory piece and an elongate dorsal teeth-patch; copulatory piece three-tenths as long as aedeagus, lamellar, lanceolate, acicular at the apical part, and with a sclerotized rib along the ventral margin; dorsal teeth-patch horizontal, consisting of heavily sclerotized teeth which are compact and partially fused together, and obviously more elongate than copulatory piece as a whole. Styles fairly slender, left style only slightly longer than the right, each usually bearing four or five apical setae, rarely supplemented by a short sixth seta on one style.

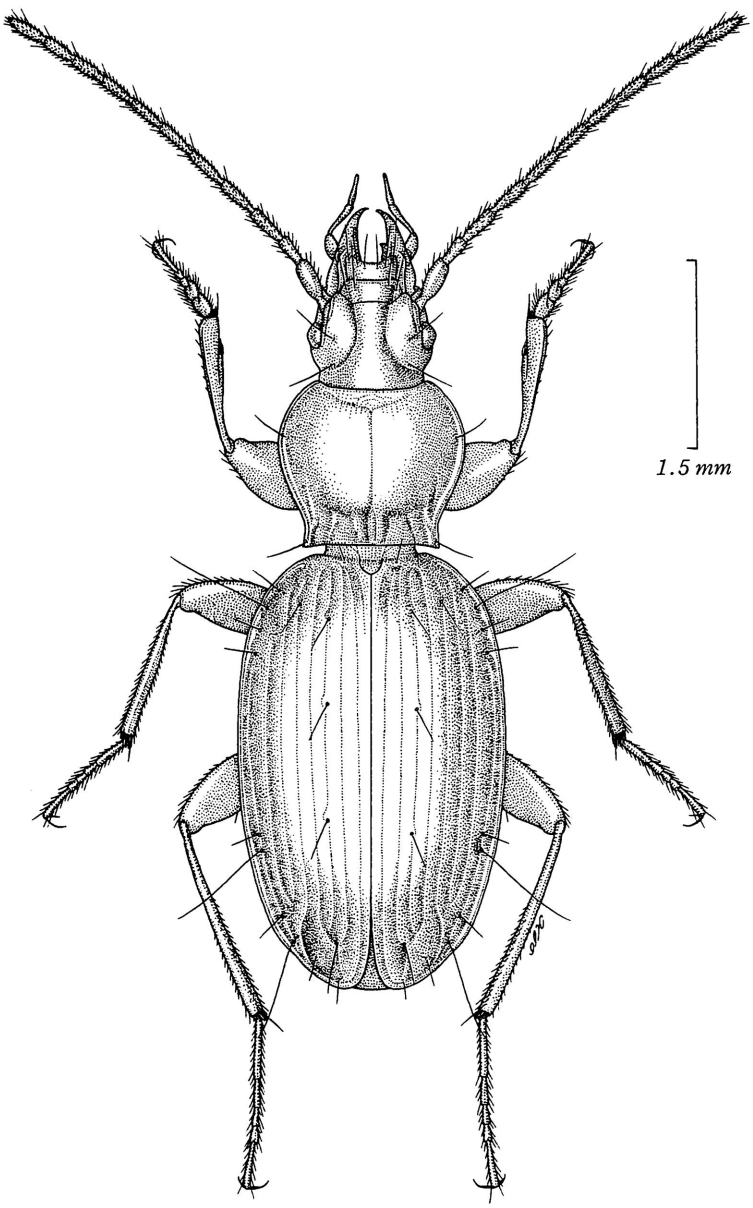


Fig. 7. *Trechiama* (s. str.) *montislunae* S. UÉNO, sp. nov., ♂, from Mt. Gassan.

Variation in elytral chaetotaxy. Of the total 20 specimens examined, five (3♂♂, 2♀♀), or 25%, are aberrant in the number of setiferous dorsal pores on the elytra. Two male paratypes are lacking in the middle pore of the internal series on the right elytron, while one female possesses a fourth dorsal pore on the 3rd stria of the right elytron.

One male paratype also possesses a fourth pore on the right elytron, and in this specimen, a second pore exists on the 5th stria of the left elytron. A second pore of the external series is also found on the right elytron of a female paratype. Thus, two paratypes (♂♀), or 10% of the specimens examined, show a partial reversion of the elytral chaetotaxy.

Type series. Holotype: ♂, N (=northern slope) 1,630 m, 1–VIII–1983, S. UÉNO leg. Allotype: ♀, N 1,800 m, 6–VIII–1964, S. UÉNO & S. MIZUSHIMA leg. Paratypes: 1♂, N 1,250 m, 5–VIII–1964, S. UÉNO leg.; 4♂♂, 3♀♀ (incl. teneral 1♂, 1♀), N 1,500–1,700 m, 29–VIII–1963, Y. WATANABE & K. MIZUSAWA leg.; 2♂♂, N 1,650 m (=Ichi-no-také), 5–VIII–1964, S. UÉNO & S. MIZUSHIMA leg.; 1♀, N 1,700 m, 22–VII–1955, K. MIYAMORI leg.; 1♂, 1♀, N 1,900 m, 6–VIII–1964, S. UÉNO & S. MIZUSHIMA leg.; 2♀♀, E (=eastern slope) 1,800 m, 7–VIII–1964, S. UÉNO & S. MIZUSHIMA leg.; 2♂♂, 1♀, WSW (=west-southwestern slope) 1,800 m, 31–VII–1983, S. UÉNO & Y. NISHIKAWA leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Localities of the type series. Mt. Gassan, 1,250–1,900 m in altitude on the northern slope and 1,800 m in altitude on the eastern slope, in Tachikawa-machi, and 1,800 m in altitude on the west-southwestern slope in Nishikawa-machi, all in Yamagata Prefecture of northeastern Honshu, Northeast Japan.

Notes. It seems worth noting that the aedeagal inner armature of this new species more closely resembles that of *T. nivalis* of the Iidé Mountains than that of *T. solorientis* of the Asahi Mountains, though Mt. Gassan and the Iidés are widely separated by the intervening Asahis, which are occupied by *T. solorientis*. On the other hand, the aedeagus itself is considerably different in configuration from those of *T. nivalis* and *T. solorientis*, which suggests a relatively isolated status of *T. montislunae*.

This new species is widely distributed, though by no means abundant, on the northern slope of Mt. Gassan, which is rather gentle as compared with the southern and particularly the western slopes. Mainly for climatic reasons, wide alpine meadows extend downwards to near a height of 1,400 m on this slope and harbour various alpine species of insects. *Trechiama montislunae* is mainly found above 1,600 m in altitude, though one of the paratypes was taken in a birch forest at an elevation of 1,250 m below the timber-limit. On the eastern and southwestern slopes, this species seems restricted to near the summit, at an altitude of about 1,800 m. At all the collecting sites, the trechine was found from beneath stones lying in humid places, usually not far from snow-patches.

The new specific name of this trechine beetle is derived from the name of the type locality, Gassan, which means a moon mountain in Japanese.

Trechiama (s. str.) ***montisfolii*** S. UÉNO, sp. nov.

(Figs. 5–6)

Length: 5.05–5.50 mm (from apical margin of clypeus to apices of elytra).

Very closely similar to *T. montislunae* of Mt. Gassan and agreeing with it in every external character state, but markedly different in male genitalic features, above all in the large size and different configuration of copulatory piece.

Colour reddish brown, shiny, as in the light-coloured individuals of *T. montislunae*, with lighter palpi and legs. Head as in *T. montislunae*, but the eyes are always flat; genae gently convex, three-fifths to three-fourths as long as eyes; antennae reaching basal three-eighths of elytra in ♂, basal third of elytra in ♀. Pronotum and elytra as in *T. montislunae*, the latter a little shorter and more widely depressed in ♀ than in ♂. Legs a little slenderer than in *T. montislunae*. Standard ratios of body parts as follows: PW/HW 1.38–1.44 (M 1.41), PW/PL 1.20–1.23 (M 1.22), PW/PA 1.55–1.61 (M 1.58), PW/PB 1.43–1.45 (M 1.44), PB/PA 1.08–1.12 (M 1.10), EW/PW 1.47–1.53 (M 1.49), EL/EW 1.59–1.67 in ♂♂, 1.53 in ♀.

Male genital organ similar in many respects to that of *T. montislunae*, but the aedeagus is a little shorter, thicker and gently compressed, about two-fifths as long as elytra, and bears a very large copulatory piece and laterally extended dorsal teeth-patch; copulatory piece triangularly spatulate, about two-fifths as long as aedeagus, about as long as dorsal teeth-patch and partially covered with its left lateral part; dorsal teeth-patch formed by smaller teeth and extending to the left lateral side. Styles relatively short, each bearing three or four apical setae.

Type series. Holotype: ♂, allotype: ♀, paratype: 1♂, 29–VIII–1994, S. UÉNO leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Mt. Ha-yama: Yûno-sawa, 1,110 m in altitude, in Sagaé-shi of Yamagata Prefecture, northeastern Honshu, Northeast Japan.

Notes. This trechine beetle is so similar to *T. montislunae* in both the external and genitalic character states that it could be regarded as a low altitude subspecies of the latter. It is particularly similar to light-coloured individuals of the Gassan species occurring in the alpine meadow, but the small flat eyes and depigmentation of the body of the Ha-yama trechine are indicative of its existence in the subterranean domain. In fact, two of the three specimens known were dug out from the upper hypogean zone, and the remaining one was found from an endogean habitat. On the other hand, remarkable modification of the aedeagal inner armature, above all the remarkably developed copulatory piece, seems to suggest that the differentiation of the Ha-yama trechine attains to the species level. Taking all these evidences into consideration, I have decided to regard the Ha-yama population of *Trechiama* as belonging to an independent species, not as a subspecies of *T. montislunae*, even though the speciation of them may be at a sibling stage.

Mt. Ha-yama, the type locality of this new species, lies about 16 km to the east by south of Mt. Gassan. As was already mentioned in the introduction of this paper, it is much lower than the latter volcano and devoid of true alpine zone. The three specimens of the type series of *T. montisfolii* were found near the source of the Yûno-gawa on the western slope of the mountain, one from beneath a large stone embedded in the

soil and the other two by digging colluvia deposited on the right side of the stream shaded by deciduous broadleaved trees. The trechine beetle is therefore sylvicolous and similar in this respect to the members of the *kurosawai* lineage, though the conformation of its male genitalia clearly shows that it belongs to the *nivalis* lineage.

This new species is named after its type locality, Ha-yama, which means a leaf mountain in Japanese.

Trechiama (s. str.) ***babai*** S. UÉNO, 1994

Trechiama (s. str.) *babai* S. UÉNO, 1994, Spec. Bull. Essa ent. Soc., Niigata, (2), p. 119, figs. 1–3; type locality: Sagami-iké on the Asahi Mountains.

Additional specimens examined. 4♂♂, 5♀♀, Asahi Mts.: Zenroku-iké, 1,490 m alt., Asahi-mura, Niigata Pref., 26–VIII–1994, S. UÉNO & Y. NISHIKAWA leg.; 1♀, Asahi Mts.: Ohtori-iké, 960 m alt., Asahi-mura, Yamagata Pref., 27–VIII–1994, S. UÉNO leg., 2♂♂, same locality, 28–VIII–1994, Y. NISHIKAWA leg.; 1♀, Asahi Mts.: Nanatsudaki-zawa, 780 m alt., Asahi-mura, Yamagata Pref., 28–VIII–1994, S. UÉNO leg. (all NSMT).

Notes. This species is a member of the *kurosawai* lineage originally described from "Sagami-iké" at the northwestern part of the Asahi Mountains. At the time of its description, I was not personally aware of its type locality and only cited BABA's personal notes on the habitat of the species. Later, however, I had an opportunity to visit "Sagami-iké" and to make a close examination of the habitat condition by myself. As a result, several errors were found out in the original account. First of all, "Sagami-iké" consists of two small subalpine lakes lying on different levels, the upper one, called Genzô-no-iké, being at an elevation of 1,530 m and the lower one, called Zenroku-iké, being at an elevation of 1,490 m. The exact type locality of *T. babai* is the lower one, or Zenroku-iké, which is only 2.5 km distant to the west-northwest in a beeline from Minamikankô-zan, the northernmost known locality of *T. solorientis*. Secondly, the habitat stream described in the original account does not emerge from the snow-edged lake itself but from a gully about 150 m southwest of it. Both the lake and the gully lie just above the timber-line, but the stream forms a deeply carved groove in a forest of dwarf birch. It is this groove that harbours the trechine beetle, which is always found from beneath stones lying in dark corners shaded by the scrub.

Thus, the original designation of the type locality, "Sagami-iké, 1,580 m in altitude", should be emended to "Zenroku-iké, 1,490 m in altitude", and the exact habitat of *T. babai* is not in the alpine meadow but at the uppermost part of the forest zone.

The sylvicolous nature of *T. babai* was further verified by the discovery of two additional localities in a beech forest more than 500 m lower than Zenroku-iké. One of them is Ohtori-iké, a beautiful lake surrounded by beech forests 6.7 km north-northwest of Zenroku-iké, and the other is the Nanatsudaki-zawa in a continuation of the same beech forest. The three specimens from Ohtori-iké were found from beneath stones lying in a gully running into the eastern side of the lake, and were identified

with *T. babai* by a careful comparison of the male genitalia.

The single female specimen taken in the Nanatsudaki-zawa Valley is rather small (5.00 mm in the length of body) and has relatively narrow elytra, but is regarded as an exceptional individual of *T. babai*, since its collecting site is only 1.3 km northwest of that of the Ohtori-iké specimens and since the Nanatsudaki-zawa is the outlet of Lake Ohtori-iké. The standard ratios of the specimen in question are as follows: PW/HW 1.36, PW/PL 1.17, PW/PA 1.51, PW/PB 1.35, PB/PA 1.12, EW/PW 1.48, EL/EW 1.61.

Within the *nivalis* subgroup, *T. babai* shows an exceptional stability in the number and arrangement of setiferous dorsal pores on the elytra. All the specimens examined including the type series (12♂♂, 8♀♀) invariably bear three dorsal pores of the internal series and a single dorsal pore of the external one.

Trechiama (s. str.) ***yoshihikoi*** S. UÉNO, sp. nov.

(Figs. 8–10)

Length: 5.40–5.45 mm (from apical margin of clypeus to apices of elytra).

Probably nearest to *T. yoshikoae* S. UÉNO (1994 b, p. 24, figs. 1–4) from Mt. Chôkai-zan, but distinguished at first sight from it by the large transverse prothorax and much less slender aedeagus. Readily discriminated from *T. babai* of the northwestern Asahis also by the large transverse prothorax and by the differently shaped aedeagus with quite different inner armature.

Colour dark brown with lighter elytra, shiny; palpi, apical antennomeres, venter of hind body, and legs light brown, evidently lighter than dorsum.

Head as in *T. yoshikoae* though the neck is a little broader and the frontal furrows less strongly arcuate; eyes small and rather flat; genae feebly convex, three-fourths to six-sevenths as long as eyes; antennae fairly stout, reaching basal three-eighths of elytra in ♂, basal third of elytra in ♀.

Pronotum obviously larger and more transverse than in *T. yoshikoae*, widest at five-eighths from base, and a little more strongly contracted towards apex than towards base; PW/HW 1.44 in the holotype (H), 1.49 in the allotype (A), PW/PL 1.24 in H, 1.28 in A, PW/PA 1.58 in H, 1.62 in A, PW/PB 1.38 in H, 1.49 in A; sides sharply bordered throughout, strongly rounded in front, less so behind the widest part, briefly but deeply sinuate at about basal ninth, and then slightly divergent towards hind angles, which are sharp and postero-laterally produced; apex a little narrower than base, PB/PA 1.14 in H, 1.09 in A, with obtuse front angles; base slightly bisinuate; sculptures on dorsum as in *T. yoshikoae*.

Elytra oblong-subovate, less elongate than in *T. yoshikoae*, widest at basal four-ninths, and almost equally narrowed towards bases and apices; EW/PW 1.38 in both H and A, EL/EW 1.55 in H, 1.48 in A; sides widely bordered, feebly arcuate from behind shoulders to the level of preapical pore, and widely rounded at apices; prehumeral borders feebly arcuate; dorsum widely depressed even in ♂, entirely and rather deeply stri-

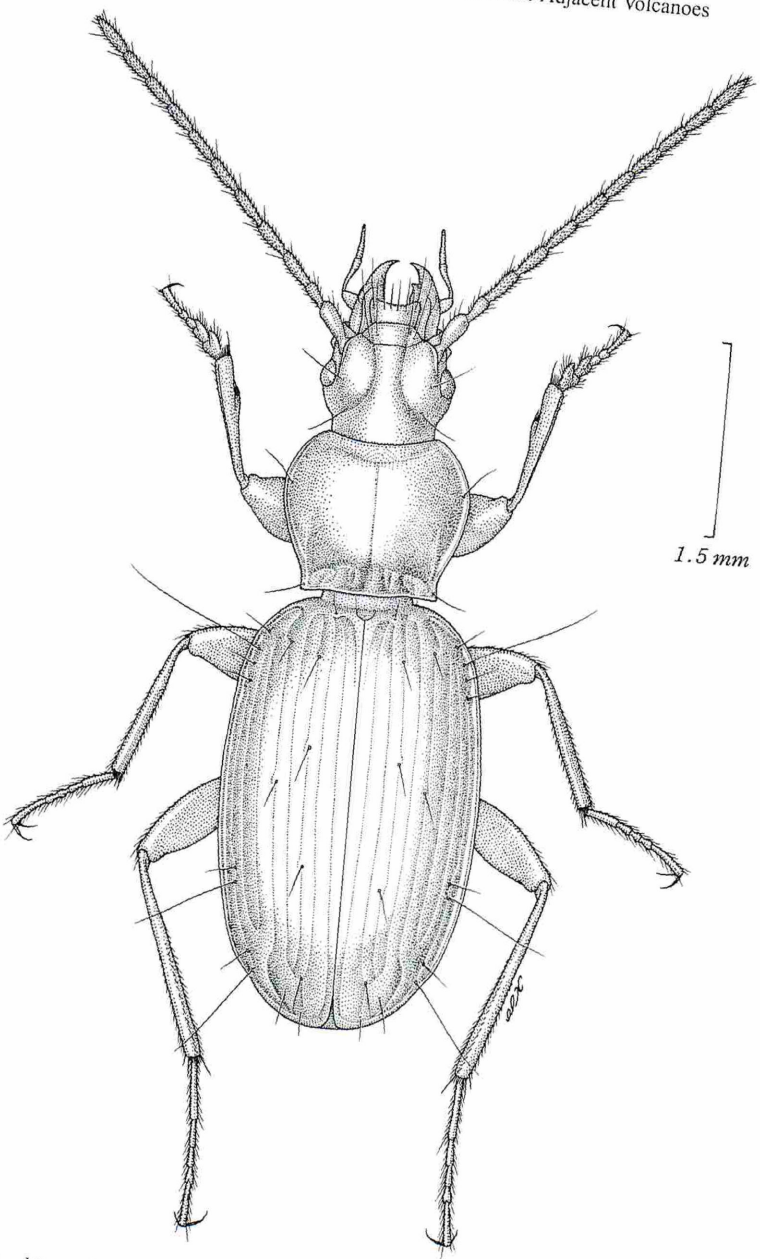


Fig. 8. *Trechiama* (s. str.) *yoshihikoi* S. UÉNO, sp. nov., ♂, from Uba-ga-také on Mt. Gassan.

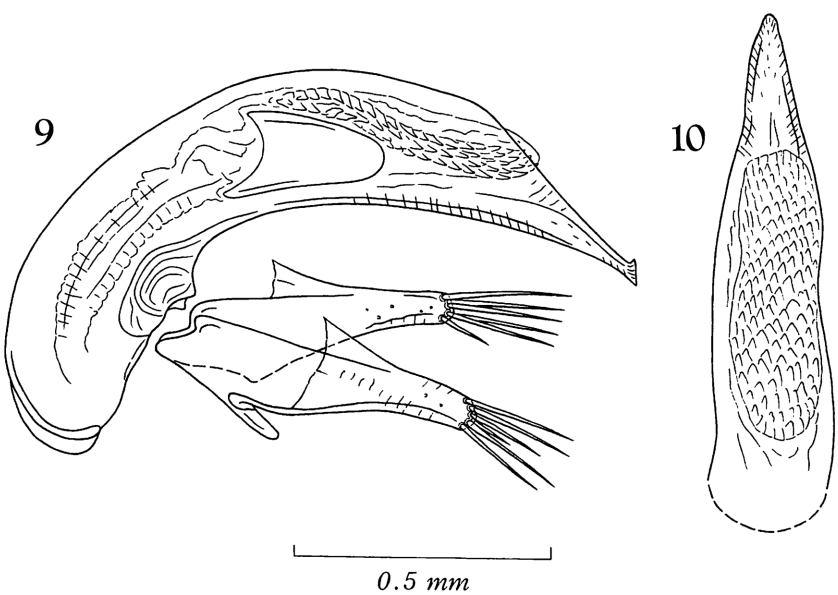
ate, all the striae clearly crenulate, both scutellar and apical strioles distinct, the latter deeply impressed and joining stria 5; stria 3 with three setiferous dorsal pores at about 1/8, 1/3–3/8 and 3/5–2/3 from base, respectively; stria 5 with a single setiferous dorsal

pore at about basal 1/9 in the allotype, but with two setiferous dorsal pores in the holotype, at 1/9 and 3/7 from base, respectively; preapical pore located at the apical anastomosis of striae 2 and 3 at about 1/10 from apex, behind the level of the terminus of apical striole.

Venter smooth; anal setae normal. Legs fairly stout as in *T. yoshikoae*.

Male genital organ basically similar to that of *T. yoshikoae*, though considerably different in configuration. Aedeagus three-eighths as long as elytra, lightly sinuate, moderately arcuate from basal bulb to apical orifice, and with the dorsal margin semicircularly rounded in profile; basal part fairly elongate, not ventrally bent, and not regularly emarginate at the sides of basal orifice; sagittal aileron narrow and hyaline; viewed dorsally, apical lobe elongate, gradually tapered towards the blunt extremity; viewed laterally, apical lobe straightly produced, gradually tapered, and ending in a sharp extremity tuberculate at the dorsal side; ventral margin widely emarginate in profile. Inner sac armed with a large hyaline copulatory piece and an elongate dorsal patch of sclerotized teeth; copulatory piece nearly one-fourth as long as aedeagus, flattened spatulate, with the apex widely rounded; dorsal teeth-patch horizontal, extending from above copulatory piece to apical orifice. Styles fairly large and relatively narrow, left style a little longer than the right, each bearing six apical setae, one of which is much shorter than the others.

Type series. Holotype: ♂, allotype: ♀, 7–VIII–1964, S. UÉNO leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.



Figs. 9–10. Male genitalia of *Trechiama* (s. str.) *yoshihikoi* S. UÉNO, sp. nov., from Uba-ga-také on Mt. Gassan; left lateral view (9), and apical part of aedeagus, dorso-apical view (10).

Type locality. Uba-ga-také, at the southwestern side of Mt. Gassan, 1,450 m in altitude, in Nishikawa-machi of Yamagata Prefecture, northeastern Honshu, Northeast Japan.

Notes. This is an interesting species probably related to *T. yoshikoae* in view of the close similarity in the aedeagal apical lobe, which is much elongated and slender with characteristically modified tip, and in the conformation of the inner armature. However, Mt. Chôkai-zan, to which *T. yoshikoae* is restricted, is more than 60 km distant to the north from Mt. Gassan beyond the deep valley of the Mogami-gawa River, whereas the latter volcano is only 26 km distant to the northeast, without appreciable topographical barrier, from Lake Ohtori-iké on the Asahis, the nearest known locality of *T. babai* belonging to the *kurosawai* lineage. Though tentatively placed in the *kurosawai* lineage, the true affinity of *T. yoshihikoi*, and the true phylogenetic status of the lineage itself, should be reconsidered in the future, since there is a wide gap in the conformation of the aedeagal inner armature between the present species and *T. babai*.

It is difficult to determine at present the ordinary condition of the elytral chaetotaxy of *T. yoshihikoi*, since only a pair of the available specimens are different in the number of setiferous dorsal pores of the external series. In *T. yoshikoae*, which is considered related to *T. yoshihikoi*, there are invariably two setiferous dorsal pores on the 5th elytral stria, whereas there is only one setiferous dorsal pore of the external series in all the hitherto known species of the *kurosawai* lineage. It is to be hoped that this will be clarified before long, because its answer may give us a clue for analysing the phylogeny of the *nivalis* subgroup of *Trechiama*.

The type locality of this interesting new species is a short but deep gully on the southeastern slope of Uba-ga-také, about 2.2 km southwest of the summit of Mt. Gassan. It is located below the timber-limit and is shaded by deciduous broadleaved trees, mostly birches. The pair of the type specimens were found from a crack of the clayey, nearly vertical side wall of the gully about 1 m above the water of the narrow stream at the bottom. No additional specimens of the same species were obtained in spite of several revisits to the gully, and besides, we have failed in finding out any other habitats of this trechine beetle.

This rare species is dedicated to the memory of Yoshihiko KUROSAWA in token of deep gratitude.

要　　約

上野俊一：朝日山地および隣接する火山に生息するナガチビゴミムシ類．—— 東北地方の南西部，山形・新潟両県にまたがって延びる朝日山地と，その北側に隣接する月山および葉山の両火山に生息する有眼のナガチビゴミムシ類を検討し，これらを 5 種に分類した．いずれもイワキナガチビゴミムシ種群のイイデナガチビゴミムシ亜群に属し，外部形態では識別できないほどたがいによく似ているが，雄交尾器内袋の棘状小片群の構造からみて，そのうちの3種は狭義のイイデナガチビゴミムシ系列のものであり，残りの2種はクロサワナガチビゴミムシ系列のものである．

イイデナガチビゴミムシ系列の種類は，東北地方南西部および南部の高山に広く分布し，北限が鳥海山に及んでいて，これまでに4種が記載されている．朝日山地南東部と月山では，この系列のナガチビゴミムシ類がおもに森林限界より上の開けた高山帯に生息し，葉山では同系列の別の1種が，樹林帯上部の沢の源頭部にすんでいる．これらにそれぞれ，アサヒナガチビゴミムシ *Trechiama solorientis* S. UÉNO，ガッサンナガチビゴミムシ *Trechiama montislunae* S. UÉNO およびハヤマナガチビゴミムシ *Trechiama montisfolii* S. UÉNO の新名を与えてこの論文に記載した．学名は，それぞれの産地の山名をラテン語に訳したもので，亡くなった黒澤良彦博士がとくに深い愛着をもたれていた山やまの名称を，博士の記念として新種名にとどめたものである．

いっぽう，朝日山地と月山の樹林帯上部にはクロサワナガチビゴミムシ系列の種が分布し，朝日山地北西部のものには，ババナガチビゴミムシ *T. babai* S. UÉNO という名がすでに与えられている．この論文では，月山のほうの種に，ヨシヒコナガチビゴミムシ *T. yoshihikoi* S. UÉNO という新名を与えた．同系列のナガチビゴミムシ類は，吾妻山から蔵王山を経て船形山にいたる奥羽山脈南部の高山に主として分布しているが，最上川の本流が流れる山形盆地の西側の山地にも局所的に生息し，しかもイイデナガチビゴミムシ系列のものとは生態的に隔離されているらしいのが，生物地理学上ひじょうに興味深い．

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Two New *Apotomopterus* (Coleoptera, Carabidae) from Southwestern Hubei, China

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Abstract Two new subspecies of the subgenus *Apotomopterus* (genus *Carabus* s. lat.) are described from southwestern Hubei, China, under the names *Carabus* (*Apotomopterus*) *arrowi kurosawaianus* subsp. nov. and *C.* (*A.*) *cyanopterus kanekoi* subsp. nov.

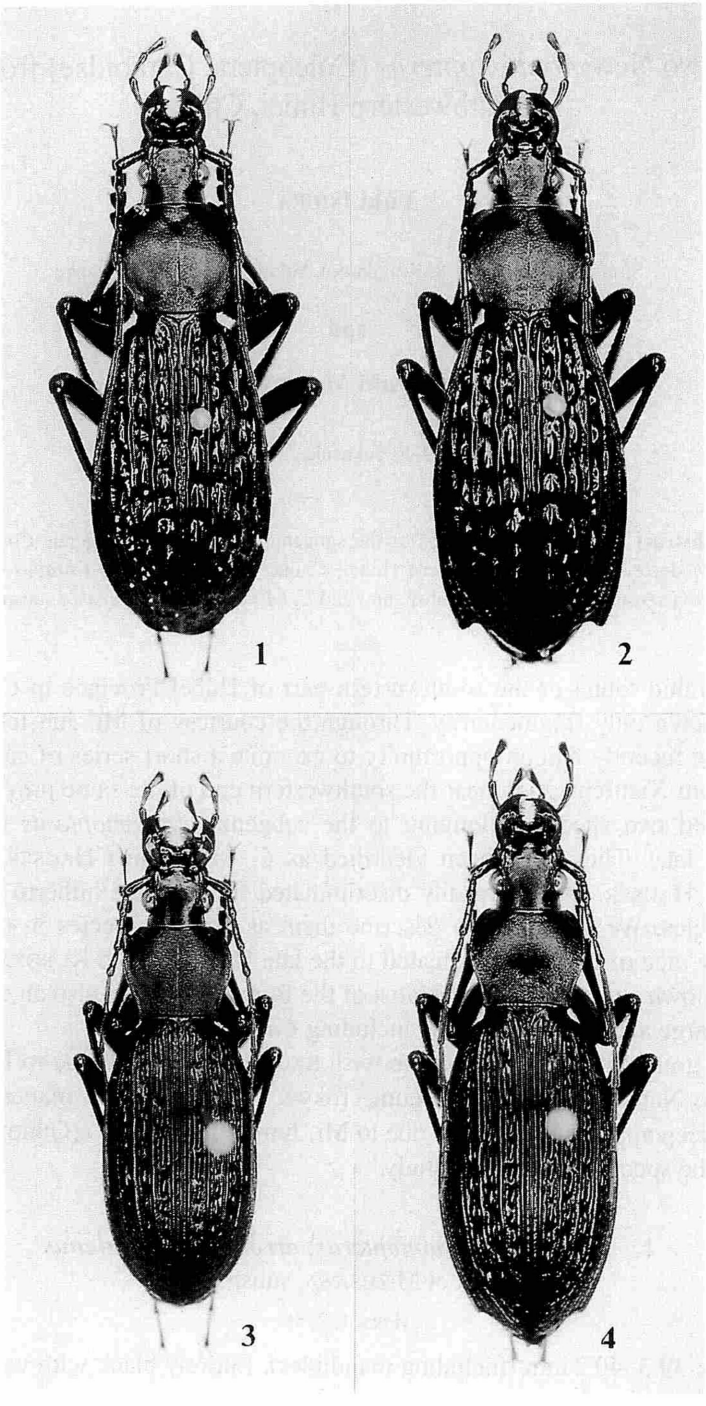
The carabid fauna of the southwestern part of Hubei Province in Central China has been known only fragmentarily. Through the courtesy of Mr. Jun-Ichiro KANEKO (Gunma), we recently had an opportunity to examine a short series of carabid beetles collected from Xianfeng Xian near the southwestern end of the same province. The series contained two species belonging to the subgenus *Apotomopterus* of the genus *Carabus* (s. lat.). They have been identified as *C.* (*A.*) *arrowi* HAUSER and *C.* (*A.*) *cyanopterus* HAUSER, though readily discriminated from all the hitherto known races of each species. We are going to describe them as new subspecies in the following lines. A new race of *arrowi* is dedicated to the late Dr. Yoshihiko KUROSAWA, who has been well-known as an eminent specialist of the Buprestidae, and also an enthusiast for all sorts of large and beautiful insects including *Carabus*.

Before going into descriptions, we wish to express our gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum, Tokyo, for revising the manuscript of this paper. Our deep appreciation is also due to Mr. Jun-Ichiro KANEKO (Gunma) for kindly submitting the specimens to us for study.

1. *Carabus* (*Apotomopterus*) *arrowi kurosawaianus* IMURA et MIZUSAWA, subsp. nov.

(Figs. 1, 2, 5)

Length: 39.3–40.2 mm (including mandibles). Entirely black with weak dark purplish tinge along the elytral margins.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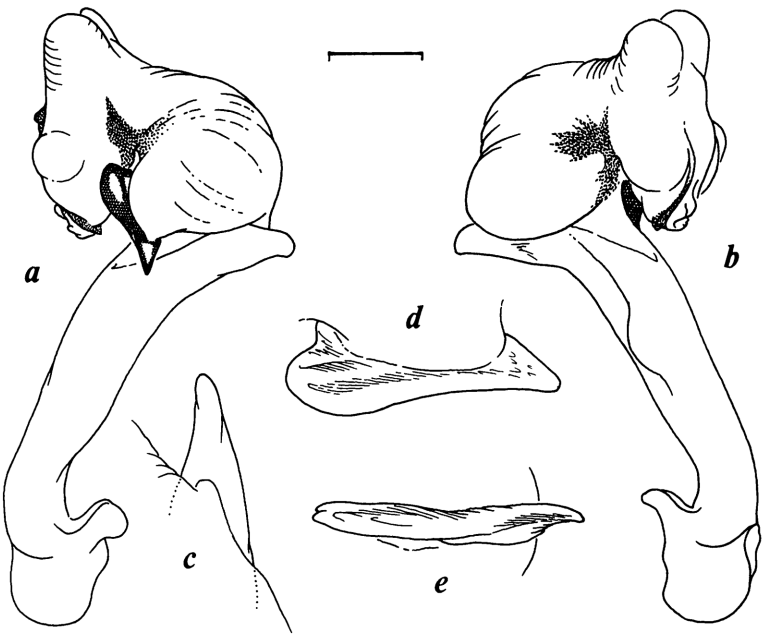

Fig. 5. Male genital organ of *Carabus* (*Apotomopterus*) *arrowi kurosawaianus* subsp. nov. —— a, Aedeagus with fully everted endophallus in left lateral view; b, ditto in right lateral view; c, apical part of aedeagus in dorsal view; d, spinula in dorsal view; e, ditto in basal lateral view. Scale: 2 mm for a & b; 1 mm for c–e.

This new subspecies is most closely allied to subsp. *hector* HAUSER described from "Liang-tow-tang" (=Liangshizhen [两市镇] in Shaodong Xian [邵东县]) of Central Hunan, but is distinguishable from HAUSER's race by differently colored dorsal surface, more transverse pronotum with scarcely protrudent hind angles, shorter and robuster elytra, longer and a little more strongly convex primary callosities, and a little more deeply emarginate preapical part of female elytra. From subsp. *arrogantior* DEUVE of northeastern Guangxi, the new race is discriminated by much differently colored dorsal surface, shorter antennae, larger primary callosities of elytra, less remarkably meandering secondary carinae of elytra, a little robuster aedeagus, etc. Male genital organ as shown in Fig. 5.

Type series. Holotype: ♂, Laoyan [老岩], in Xianfeng Xian [咸丰县] of southwestern Hubei, China, 8~22–VI–2000, in coll. Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Allotype: ♀, same data as for the holotype, in coll. K. MIZUSAWA.

Figs. 1–4. *Carabus* (*Apotomopterus*) spp. from southwestern Hubei, China. —— 1–2, *Carabus* (*Apotomopterus*) *arrowi kurosawaianus* subsp. nov. (♂, holotype, ♀, allotype); 3–4, *C.* (*A.*) *cyanopterus kanekoi* subsp. nov. (♂, holotype, ♀, allotype).

2. *Carabus* (*Apotomopterus*) *cyanopterus kanekoi* IMURA et MIZUSAWA, subsp. nov.

(Figs. 3, 4, 6)

Length: 26.0–29.0 mm (including mandibles). Entirely black though dimly tinged with brown purplish lustre along elytral margins.

Rather small-sized race for the species, with heterodyname elytral sculpture. Distinguishable at a glance from such subspecies with homodyname elytral sculpture as nominotypical *cyanopterus* HAUSER, *dabamontanus* IMURA and *melandetos* IMURA et MIZUSAWA. From subsp. *shanliangensis* IMURA et SU, which bears heterodyname elytral sculpture, the new form is discriminated by a little smoother pronotal surface, longer and less strongly convex elytra with weaker preapical emargination in female, and larger primary foveoles which invade the adjacent tertiary intervals more prominently. Male genitalia as shown in Fig. 6, with the apical lobe narrower and less strongly bent ventrad than in the nominotypical subspecies

Type series. Holotype: ♂, Laoyan [老岩], in Xianfeng Xian [咸丰县] of southwestern Hubei, China, 8~22–VI–2000, in coll. Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Allotype: ♀, same data as for the holotype, in coll. K. MIZUSAWA.

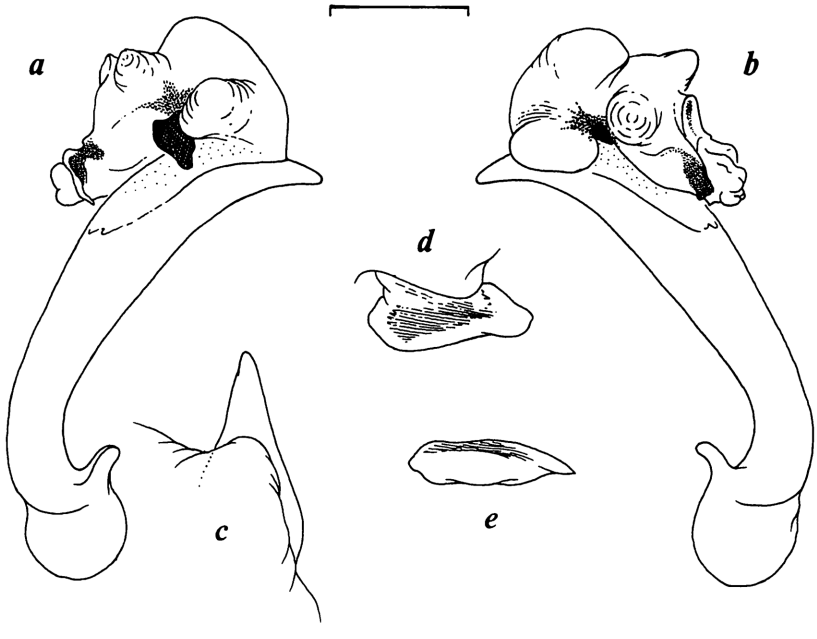

Fig. 6. Male genital organ of *Carabus* (*Apotomopterus*) *cyanopterus kanekoi* subsp. nov. —— a, Aedeagus with fully everted endophallus in left lateral view; b, ditto in right lateral view; c, apical part of aedeagus in dorsal view; d, spinula in dorsal view; e, ditto in basal lateral view. Scale: 2 mm for a & b; 1 mm for c–e.

Derivatio nominis. This new subspecies is named after Mr. Jun-Ichiro KANEKO (Gunma).

要　約

井村有希・水沢清行：中国湖北省南西部におけるトゲオサムシの2新亜種．—— 中国湖北省南西部から得られたアロウトゲオサムシとアオバネトゲオサムシを新亜種と認め，それぞれにsubsp. *kurosawaianus* nov.およびsubsp. *kanekoi* nov.という名を与えて記載した．いうまでもなく前者は，ご専門のタマムシのみならずオサムシを含む大型美麗昆虫をこよなく愛された，故・黒澤良彦博士に捧げたものである．

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Elytra, *Tokyo*, **29** (2): 391–400, November 15, 2001

Description of a New Prionine Genus Intermediate between *Megopis* and *Eurypoda* (Coleoptera, Cerambycidae, Prioninae) from Indochina and Borneo

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Abstract A new genus *Rhineimegopis* gen. nov. is proposed to receive *Eurypoda cordieri* LAMEERE and *Megopis sabahensis* HÜDEPOHL. A third species of the same genus is described from Thailand under the name *Rhineimegopis rugicollis* sp. nov.

Résumé Nous proposons la création d'un nouveau genre de Prioninae dans lequel seront placés *Eurypoda cordieri* LAMEERE et *Megopis sabahensis* HÜDEPOHL. Une troisième et nouvelle espèce du même genre est également décrite de Thaïlande.

From 1996 to 2000, Mr. M. ITOH rediscovered *Eurypoda cordieri* LAMEERE, 1916 from southern Vietnam after 80 years blank. This species was originally described by a single female and no additional specimen, of course no male, has been reported until this time. He obtained six females and a male from several places in southern Vietnam including the type locality. After a close examination of these specimens, particularly a male, we concluded that a new genus is required for this species just as predicted by LAMEERE himself in the original description. *Megopis* (*Nepiodes*) *sabahensis* HÜDEPOHL, 1997 was found from East Malaysia and we have been remarking the peculiarity of this species in the genus *Megopis*. This time, after examining 14 examples of this species and also referring to the holotype, we considered that this species is better to be included in the same genus as *E. cordieri* although it is a little more similar to the genus *Megopis*. In this paper, we are going to describe this interesting genus under the name of *Rhineimegopis* gen. nov. We are also going to describe a third species of the same genus under the name of *Rhineimegopis rugicollis* sp. nov. based on the specimens from northern Thailand.

Before going to the next stage, we would like to express our sincere gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for kindly reading and giving appropriate revises to our original manuscript. We are also grateful

to Dr. Karl-Ernst HÜDEPOHL of Germany for kindly helping us to examine the holotype of *M. sabahensis* and to our friend Mr. Jiri LORENC of Czech Republic for providing us important materials and considerable advice concerning this study.

Rhineimegopis gen. nov.

Eurypoda: LAMEERE, 1916 [nec SAUNDERS], Bull. Soc. ent. France, **25**: 234, 235.
Eurypoda subg. *Neoprion*: LAMEERE, 1919 [nec SAUNDERS, nec LACORDAIRE], Gen. Ins., Wytsman, (172): 64–66 (pro parte).
Megopis subg. *Nepiodes*: HÜDEPOHL, 1997 [nec SERVILLE, nec PASCOE], Entomofauna, Ansfelden, **18**: 45–48.

Type species. *Eurypoda cordieri* LAMEERE, 1916.

Male. Body usually dark brown, small, slender and flat. Head fairly robust, obviously wider than long; eyes bulging but having upper eye-lobes very small, distant from each other; mandibles not large, acutely pointed at the apices, and strongly bent at about middle, each furnished with a distinct internal dent. Antennae about 0.8–1.1 times as long as body, covered with thin hairs throughout and thick hairs on the underside of segments 3–8, segment 1 subcylindrical and attached to antennal tubercle at lateral angle of cylinder, so that the external angle is projected forwards, segment 3 elongated and more than twice as long as segment 1, segment 4 much shorter than segment 3.

Pronotum much wider than head, about 0.5–0.7 times as long as wide, roundly convex at middle and concave at the top, furnished with distinct lateral margins and each side also with three small but distinct lateral dents, one slightly after apex, next after the middle, the third at base; apical or basal dents sometimes disappearing.

Elytra flat, slender but wider than pronotum, parallel-sided at basal four-fifths and rounded apicad, roughly punctured and granulate, each with three not strong costae.

Posterior third of metepisternum slightly narrowed apicad and then obliquely truncated at the end. Abdominal sternites each thinly haired, the hairs becoming thicker apicad, segments 2–4 each furnished with an arch-shaped false posterior margin at about middle and on the apical part along the false margin clothed with a transverse band of hairs which often point anal-wards like a tooth brush (see Figs. 6–8).

Legs short, slender, thinly haired.

Female. Similar to male in color and general appearance but head and pronotum smaller and antennae slenderer. Antennae about 0.6–0.7 times as long as body, sparsely haired throughout but without additional hairs on the underside of segments 3–8. Abdominal sternites 1–4 glabrous, finely punctured, sternite 5 covered with thick hairs.

Body length: About 19–33 mm.

Notes. *Rhineimegopis* gen. nov. is different from any other related genera by a combination of the following characters: Mandibles strongly bent inwards; antennae furnished with thick hairs on the underside of segments 3–8 in male, thinly haired in female; pronotum with two or three lateral spines; elytra roughly punctured, depressed

and parallel-sided; abdominal sternites 2–4 each furnished with a false posterior margin and haired band; legs short and slender.

Rhineimegopis cordieri (LAMEERE, 1916), comb. nov.

(Figs. 1, 2, 6)

Eurypoda (*Neoprion*) *cordieri* LAMEERE, 1916, Bull. Soc. ent. France, **1916**: 234, 235.
Eurypoda (*Neoprion*) *cordieri*: LAMEERE, 1919, Gen. Ins., Wytsman, (172): 66.

Male. Head robust, about 0.78 times as long as wide, widest at eyes and narrowed both anteriad and posteriad; under eye-lobes bulging and upper lobes very small, interspace between eyes twice as wide as each upper eye-lobe; vertex sparsely punctured and depressed at middle, antennal tubercle small and not strongly raised; mandibles about 0.39 times as long as head, acutely pointed at apices, abruptly bent inwards at about middle and each furnished with a distinct internal dent.

Antennae about 0.84 times as long as body, sparsely punctured and furnished with short and sparse hairs throughout, long fur-like hairs on underside of segments 3–8, segment 1 rather densely punctured, slightly over eyes at apex, segment 3 about 2.35 times as long as segment 1, segments 3–11 gradually decreasing in length and width.

Pronotum about twice as wide as long, anterior angles rounded, parallel-sided in anterior half, having a dull dent just after middle and then straightly narrowed to obtuse basal angles, finely punctured throughout except on the median raised discoidal part where the surface is more sparsely punctured and somewhat shiny, furnished on the basal half of discoidal part with a pair of oblique dimple-like depressions; lateral margins distinctly ridged. Scutellum semicircular.

Elytra slightly wider than pronotum, about 2.45 times as long as wide, parallel-sided in basal four-fifths and broadly rounded apicad, strongly and densely punctured and thinly haired throughout and furnished with weak costae, lateral margins fringed with not punctured and granulated bands.

Prosternum glabrous, deeply and thickly punctured; metasternum and metepisternum with short yellow hairs; abdominal sternites 2–4 each furnished with an arched false posterior margin at about middle accompanied with transverse haired band just after the false margin which is a half as wide as sternite itself and shallowly concave around the haired band (see Fig. 6).

Legs short and slender, tarsal segments each wider than long, segment 3 wider than segment 2 or 1, claw segment about as long as segments 2 and 3 united.

Body length: 24.1 mm.

Female. Agreeing with the original description by LAMEERE (1916). The median discoidal part of the pronotum is almost the same as that of male.

Body length: 21.4–25.4 mm.

Distribution. Southern Vietnam, eastern Thailand (new record).

Specimens examined. [Southern Vietnam]: 1 ♀, Dalat 13~15–VI–1996, M. ITOH leg., 1 ♀, same locality, 18~25–V–1998; Mt. Bao Loc, 1 ♂, 1 ♀, 29–IV~1–V–1999, M.

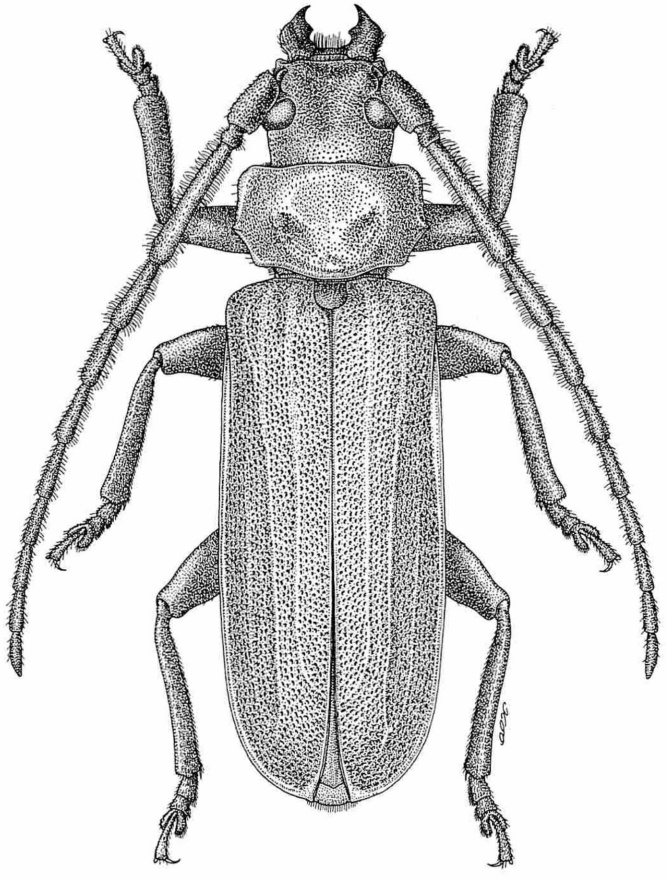


Fig. 1. *Rhineimegopis cordieri* (LAMEERE), comb. nov., ♂, from Vietnam.

ITOH leg., 3♀♀, same locality, 20, 21–V–2000; 1♀, Cho Phuoc Hai, VI–1998. [Eastern Thailand]: 1♀, Khao Yai Park, 200 km NE of Bangkok, 3–V–1992.

Notes. This species was placed in the subgenus *Neoprion* of the genus *Eurypoda* in the original description. Although it is different from both the subgenera, it appears more similar to the subgenus *Eurypoda* than to the subgenus *Neoprion*.

Rhineimegopis sabahensis (HÜDEPOHL, 1997), comb. nov.

(Figs. 4, 5, 8)

Megopis (*Nepiodes*) *sabahensis* HÜDEPOHL, 1997, Entomofauna, Ansfelden, **18**: 45–48.

Notes. This species was placed in the subgenus *Nepiodes* of the genus *Megopis* in the original description, but it has thick hairs on the underside of the male antennae and in this respect, it is rather close to the subgenera *Aegolipton*, *Aerogrammus* or

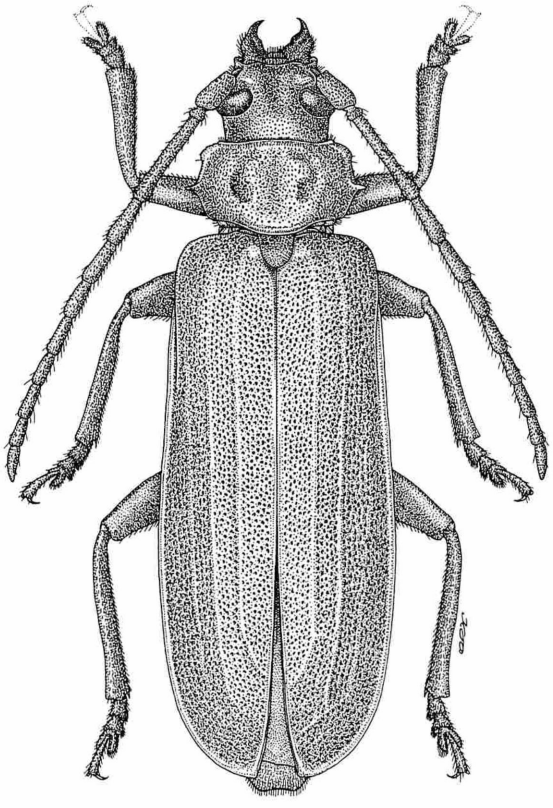


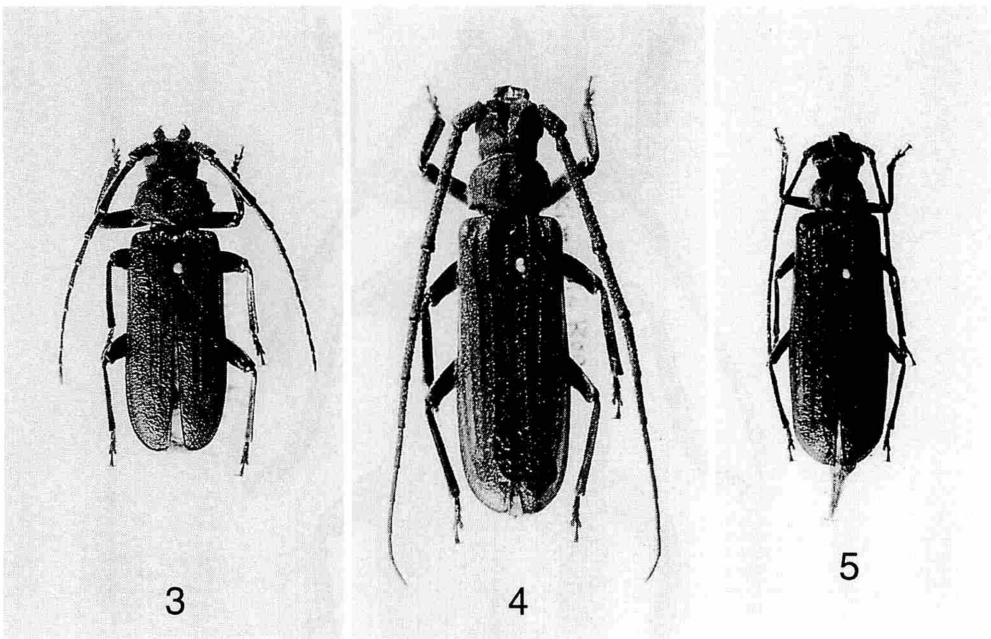
Fig. 2. *Rhineimegopis cordieri* (LAMEERE), comb. nov., ♀, from Vietnam.

Spinimegopis. It has less flat body, longer antennae and slenderer pronotum, which gives more *Megopis*-like appearance to this species than to the other two species of the same genus. However, several important points, such as haired antennae, thick hairs on the underside of the male antennal segments 3–8, abruptly inwardly bent mandibles, roughly punctured and parallel-sided elytra, short and slender legs, etc., are possessed by this species just as *R. cordieri*. The peculiar structure on the male abdominal sternites is not so conspicuous as in the other two species but evidently observed by a close examination (see Fig. 8).

Body length: ♂, 19.3–33.1 mm, ♀, 22.3–27.1 mm.

Distribution. Mountainous areas of Sabah, East Malaysia.

Specimens examined. 3♂♂, 2♀♀, Mt. Trus-madi, Sabah, East Malaysia, IV–1996; 1♂, Kimanis Road, near Keningau, 9–IX–1988, T. MIZUNUMA leg; 1♂, 2♀♀, same locality, 1–V–1994, M. ITOH leg.; and six other examples including the holotype.



Figs. 3–5. Habitus of *Rhineimegopis* spp.; dorsal view, ♂ (3, 4); ♀ (5). —— 3. *R. rugicollis* sp. nov., from northern Thailand. —— 4, 5. *R. sabahensis* (HÜDEPOHL), comb. nov., from East Malaysia.

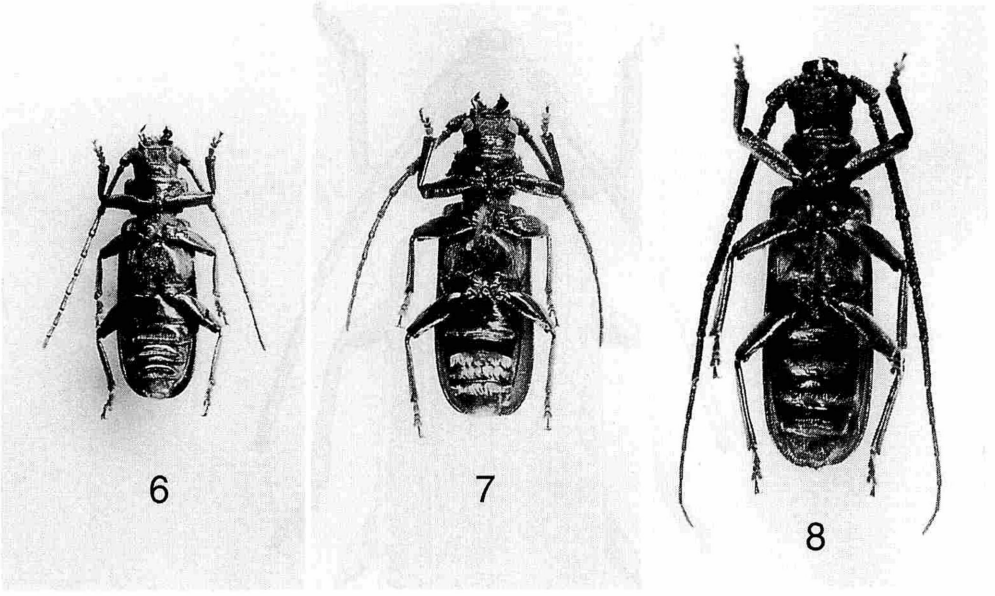
Rhineimegopis rugicollis sp. nov.

(Figs. 3, 7, 9)

A small species with depressed body. Integument brown or dark brown, rugosely punctured and granulate on dorsum and with sparse short yellow hairs throughout including antennae and legs.

Male. Head 0.63 times as long as wide, widest at eyes and constricted at basal margin, rugosely punctured, partly granulate and sparsely haired; frons concave at middle; vertex deeply and widely grooved between eyes; under eye-lobes bulging and upper lobes small, interspace between eyes twice as wide as each upper eye-lobe; antennal tubercle small and conically, acutely projected. Mandibles about 0.33 times as long as head, acutely pointed apicad and abruptly bent inwards at about middle, each with a small but distinct internal dent, roughly granulate except on apical part of blade.

Antennae about 0.81 times as long as body, sparsely haired and roughly punctured on segments 1–6, clothed with long hairs on the undersides of segments 3–8, almost cylindrical in segments 1–5 and gradually depressed in the remainders; segment *1* about as long as mandible, segment 3 about 2.44 times as long as segment 1, segment 4 1.14 times as long as segment 1, segments 4–10 gradually decreasing in length, segment 11 a little longer than segment 10.



Figs. 6–8. Habitus of *Rhineimegopis* spp.; ♂ ventral view. —— 6. *R. cordieri* (LAMEERE), comb. nov., from Vietnam. —— 7. *R. rugicollis* sp. nov., from northern Thailand. —— 8. *R. sabahensis* (HÜDEPOHL), comb. nov., from East Malaysia.

Pronotum robust, well convex and narrowly concave at middle, roughly and strongly punctured, about 0.62 times as long as wide, widest at basal third and straightly slightly narrowed apicad while strongly narrowed basad, lateral margins edged and furnished with distinct dents at apical angle and basal third, basal angles obtuse. Scutellum semicircular, sparsely punctured.

Elytra flat, hardly wider than pronotum, parallel-sided at basal four-fifths and smoothly rounded apicad, deeply and roughly punctured and granulate in general, each furnished with two costae and two other indistinct lines.

Gula strongly punctured; metasternum and metepisternum covered with short hairs; the other portions of ventral side generally glabrous or very thinly haired; abdominal sternite 1 almost glabrous and having posterior margin double-lined, sternites 2–4 each furnished at each middle with a false posterior margin accompanied with distinct band of long hairs just after the false margin (see Fig. 7), sternite 5 straightly truncated apicad and haired in apical half.

Legs short and stout, sparsely punctured and haired on most parts; tarsal segment 1 about as long as united length of segments 2+3 or claw segment, segment 3 wider than segment 2 and slightly wider than long, deeply bilobated.

Length: 30.4 mm.

Female. Generally close to male in color and structure but smaller, slenderer and flatter. Antennae 0.55–0.60 times as long as body, very sparsely uniformly haired,

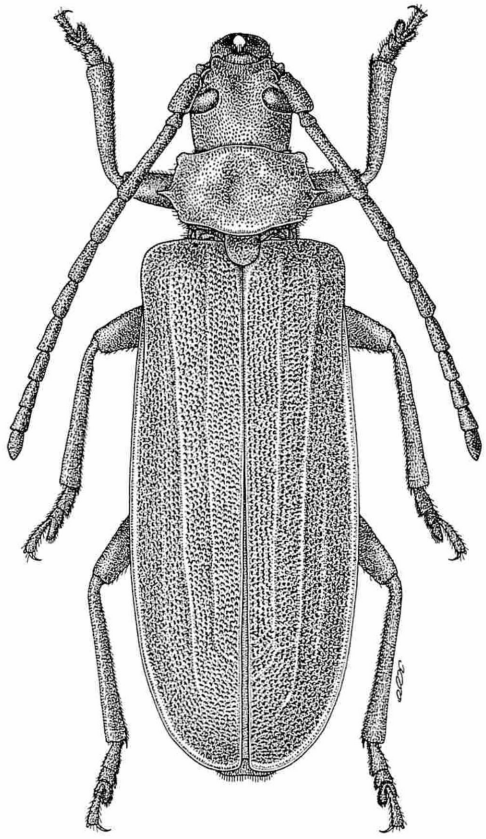


Fig. 9. *Rhineimegopis rugicollis* sp. nov., ♀, from northern Thailand.

distinctly depressed in apical three segments, segment 11 rounded apicad. Pronotum rather strongly narrowed apicad and lateral dents more distinct than in male, with basal angles projected and not obtuse as in male. Gula not roughly punctured, abdominal sternites 1–4 almost glabrous and sternite 5 haired.

Length: 25.3–27.9 mm.

Distribution. Northern Thailand (Chiang Mai Prov.).

Type series. Holotype: ♀, Wingpapao, Chiang Mai Prov., northern Thailand, IV–1996. Deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo. Paratypes 1♀, same locality as the holotype, 13–V–1997; 1♂, Chiang Mai Prov., 5–VII–1990; 1♀, Ban Som Pong Vill., Chiang Mai Prov., 18–VII–1990.

Notes. This species is allied to *R. cordieri* but different in having dorsum very roughly granulate and punctured, the antennae shorter and more sparsely haired, and the pronotum bearing distinctly projected apical angles. In the pronotal structure, this species is rather similar to *R. sabahensis* in having a concavity and two or three dis-

tinct lateral spines. Therefore, general appearance of *R. cordieri* is somewhat *Eurypoda*-like, *R. sabahensis* is *Megopis*-like and *R. rugicollis* sp. nov. is intermediate between the former two species. However, the appendages of the male abdominal sternites are most developed in *R. rugicollis* sp. nov., most inconspicuous in *R. sabahensis*, and *R. cordieri* comes between the other two species in this respect.

Discussion on the Relationships of *Rhineimegopis* and its Allied Genera

In general appearance, *R. cordieri* resembles the genus *Eurypoda* SAUNDERS, 1853, but *R. sabahensis* is more similar to the genus *Megopis* though the two species are no doubt congeneric. The genera *Rhineimegopis*, *Eurypoda* and *Palaeomegopis* BOPPE, 1911, have similarly flat body and in this respect, they form a group different from the genus *Megopis*. *Eurypoda* and *Palaeomegopis* have straightly elongated male mandibles, while *Rhineimegopis* and a part of *Megopis* have strongly inwardly bent ones. *Rhineimegopis*, *Palaeomegopis* and a part of *Megopis* have thick hairs on the underside of the male antennae and in this point, they are distinct from *Eurypoda*. The lateral spines of the pronotum are distinct in *Rhineimegopis* and a part of *Megopis* and not at all in the other two genera. *Megopis* has the metepisterna gradually narrowed posteriad and acutely angulate apicad, while in *Rhineimegopis*, they are obliquely truncated at each apical end, and in this respect, *Rhineimegopis* is close to *Eurypoda* and *Palaeomegopis* to *Megopis*. Such relationships among these four genera suggest that the genus *Eurypoda* has a close relationship to the genus *Megopis* through the two intermediate genera, *Palaeomegopis* and *Rhineimegopis*, and that certain revision may be required for the tribes Eurypodini GAHAN, 1906 and Megopidini GRESSITT, 1940.

要　　約

小宮次郎・DRUMONT Alain：ウスバカミキリ属とコゲチャヒラタカミキリ属の中間的な新属の記載．—— LAMEERE が1916年に記載した *Eurypoda cordieri* が再発見された．検討の結果，LAMEERE 自身が原記載の中で予告したとおり，この種は新しい属を代表すると考えられるので，それを基準種とする新属 *Rhineimegopis* を記載した．*Megopis sabahensis* HÜDEPOHL, 1997 も，検討の結果この新属に所属することが判明した．さらにタイ北部より同属の第3の種が発見されたので，*Rhineimegopis rugicollis* sp. nov. と命名した．

Rhineimegopis 属は，褐色，体長19–33 mm と小型で，体は扁平である．さらに，1) 大顎が中央で急に内側に折れ曲がる；2) 触角に毛があり，とくに雄の3～8節下面に長毛がある；3) 前胸背板側縁に2～3の棘がある；4) 前胸背板中央に多少ともくぼみがある；5) 翅鞘上面が平坦で粗く点刻され，両縁が平行である；6) 雄第2～4腹節中央に擬似的な後縁があり，その後方にこれと平行に長毛の帯があって，毛がブラシのように後方に向くなどの特徴で，他のいかなる属とも異なる．*Megopis* 属と *Eurypoda* 属は一般的に別族のものとされているが，この属を中間に置いて考えるとかなり近縁であるように思われるので，族の取り扱いは今後，検討を要する．

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Elytra, Tokyo, **29** (2): 400, November 15, 2001

New Localities of *Merionoeda tosawai* (Coleoptera, Cerambycidae)

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Merionoeda tosawai (KOBAYASHI, 1932, Mushi, Fukuoka, **5**, p. 1, fig. 1) has so far been known to occur on two main islands of the Ogasawaras, i.e., Chichi-jima and Haha-jima Islands. I recently examined the specimens of this stenopterine collected from Imouto-jima Island off southern Haha-jima and Muko-jima Island of the Muko-jima island group as recorded below. All the specimens examined were collected by H. KARUBE of the Kanagawa Prefectural Museum of Natural History and are preserved in his museum.

1♂, Muko-jima Is., 27–VI–2001; 3♂♂, Imouto-jima Is., 26–VI–2001.

In closing this short report, I wish to thank Mr. Haruki KARUBE for his permission to examine the interesting material.

Elytra, *Tokyo*, **29** (2): 401–418, November 15, 2001

Study of Asian Strongyliini (Coleoptera, Tenebrionidae)

XI. Ten New Small-sized Species of the Genus *Strongylium* from Southeast Asia

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Abstract This is the eleventh part of the study of the Asian Strongyliini and deals with 10 new species of the genus *Strongylium* from Southeast Asia, which are described under the following names: *Strongylium modiglianii* sp. nov., *S. nagaii* sp. nov., *S. notsui* sp. nov., *S. walshae* sp. nov., *S. muloti* sp. nov., *S. sirambense* sp. nov., *S. moerianum* sp. nov., *S. tsuyukiellum* sp. nov., *S. nagaiellum* sp. nov., and *S. dolokense* sp. nov.

This paper is the eleventh part of my study of the Asian Strongyliini and deals with ten new species of the genus *Strongylium* from various areas of Southeast Asia. All the species to be described is small in body size (less than 10 mm), so that only a few members have been historically recognized. PIC described less than five species. GEBIEN prepared to describe more than ten species, but he did not finish it because of the World War II and the confusion followed it. I am going to describe ten new species, including GEBIEN's invalid ones.

The specimens examined are submitted to me for taxonomic study from the collections of the Muséum National d'Histoire Naturelle, Paris, and the Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw. Other materials, besides the specimens in my collection, are also submitted to me personally from Dr. Wolfgang SCHAWALLER, Staatliches Museum für Naturkunde, Stuttgart, Ing. Stanislav BEČVÁŘ, Institute of Entomology, Czech Academy of Sciences, Dr. Masataka SATÔ, Nagoya Women's University, Messrs. Shigeo TSUYUKI, Zushi City, and Minoru TAO, Yokohama City.

I wish to express my cordial thanks to Dr. Claude GIRARD and Mlle Jeanne CHARBONNEL, Muséum National d'Histoire Naturelle, Paris, Mr. Martin J. D. BRENDELL, the Natural History Museum, London, Ing. Stanislav BEČVÁŘ, and Dr. Kiyoshi ANDO, Osaka Prefecture, for their invaluable support in the course of the present study. I thank Dr. Michel BRANCUCCI and Dr. Daniel BURCKHARDT, the Natural History Museum, Basel, and Dr. Dariusz IWAN, the Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw, for permitting me to examine the GEBIEN collection preserved in the Museums. Appreciation is due to the above persons who offered me

materials, and also to Mr. Seiji MORITA and Mr. Kaoru WADA, Tokyo, for taking photographs and drawing figures both inserted in this paper. Finally, my deepest thanks should be expressed to Dr. Shun-Ichi UÉNO, National Science Museum (Nat. Hist.), Tokyo, for his constant guidance in my taxonomic studies.

Depositories of the holotypes to be designated are given in each description. The abbreviations used herein are as follows: NSMT – National Science Museum (Nat. Hist.), Tokyo; MNHNP – Muséum National d'Histoire Naturelle, Paris; NHMB – Natural History Museum, Basel; SMNS – Staatliches Museum für Naturkunde, Stuttgart.

Strongylium modiglianii sp. nov.

(Figs. 1, 11–12)

Brown, head and pronotum blackish brown with feeble dark greenish lustre, scutellum and elytra partly with feeble golden lustre, head and pronotum weakly, sericeously shining, scutellum, elytra and ventral surface slightly alutaceously shining, legs moderately shining; almost glabrous. Elongated fusiform, longitudinally convex, though weakly flattened in medio-basal halves of elytra.

Head transversely elliptical, very feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus somewhat transversely hexagonal, flattened in basal part, gently inclined forwards, truncate at apex, fronto-clypeal border gently curved and indistinctly sulcate; genae oblique, raised outwards, with rounded outer margins; frons rather wide, gently inclined anteriad, diatone 1.2 times the width of transverse diameter of an eye, with an impunctate area at the middle of posterior part. Eyes medium-sized, subreniform, convex laterad, triangularly, shallowly inlaid into head. Antennae reaching humeri of elytra, ratio of the length of each segment from base to apex: 0.32, 0.2, 0.59, 0.39, 0.32, 0.27, 0.23, 0.26, 0.23, 0.25, 0.29.

Pronotum widely hexagonal, 1.36 times as wide as long; apex sublinear, finely rimmed on each side, vaguely margined in middle; base gently sinuous on each side, bordered and weakly ridged in middle; sides steeply declined to lateral margins, which are produced and entirely finely ridged, each with a tooth slightly behind the middle; front angles rounded, hind angles obtusely angulate; disc gently convex, weakly impressed close to base on each side, weakly depressed in medio-basal parts, very feebly covered with isodiametric microsculpture, rather closely punctate. Scutellum triangular with rounded sides, feebly elevated, very weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures.

Elytra elongated subovate, 1.7 times as long as wide, 3.65 times the length and 1.30 times the width of pronotum; dorsum longitudinally convex, though flattened in medio-basal part, weakly depressed in area along scutellar striole; disc punctate grooved, 5th groove deepened and touching base, the punctures small, rather closely set, becoming smaller posteriad; intervals gently convex, flattened posteriad, very weakly covered with isodiametric microsculpture, sparsely scattered with shallow microscopic punctures, very feebly, rather transversely wrinkled; humeri gently swollen;

apices roundly produced.

Male anal sternite weakly, subelliptically depressed in apical part. Legs rather slender, no special modification; ratios of the lengths of pro-, meso- and metatarsomeres: 0.27, 0.24, 0.22, 0.23, 1.2; 1.2, 0.56, 0.52, 0.29, 1.27; 2.39, 0.62, 0.32, 1.22.

Male genitalia subfusiform, 1.65 mm in length and 0.3 mm in width, feebly curved in lateral view with basal piece subovate and distinctly wider than lateral lobes; fused lateral lobes elongated triangular, 0.7 mm in length with rounded, somewhat spatulate apices.

Body length: 7.7 mm.

Holotype: ♂, "SUMATRA / SIBOGA / X. 90 e III. 91 / E. MODIGLIANI // MUSÉUM PARIS / 1952 / COLL. R. OBERTUR" (MNHNP). Paratypes: 1 ex., same data as for the holotype; 1 ex., "SUMATRA, MEDAN / Env. De Dolok-Baros / 2e semestre 1905".

Notes. This new species somewhat resembles *Strongylium diversicolor* PIC, 1940, from Tonkin, but can be distinguished from the latter by the larger and wider body, with different coloration (wholly dark greenish in *S. diversicolor*).

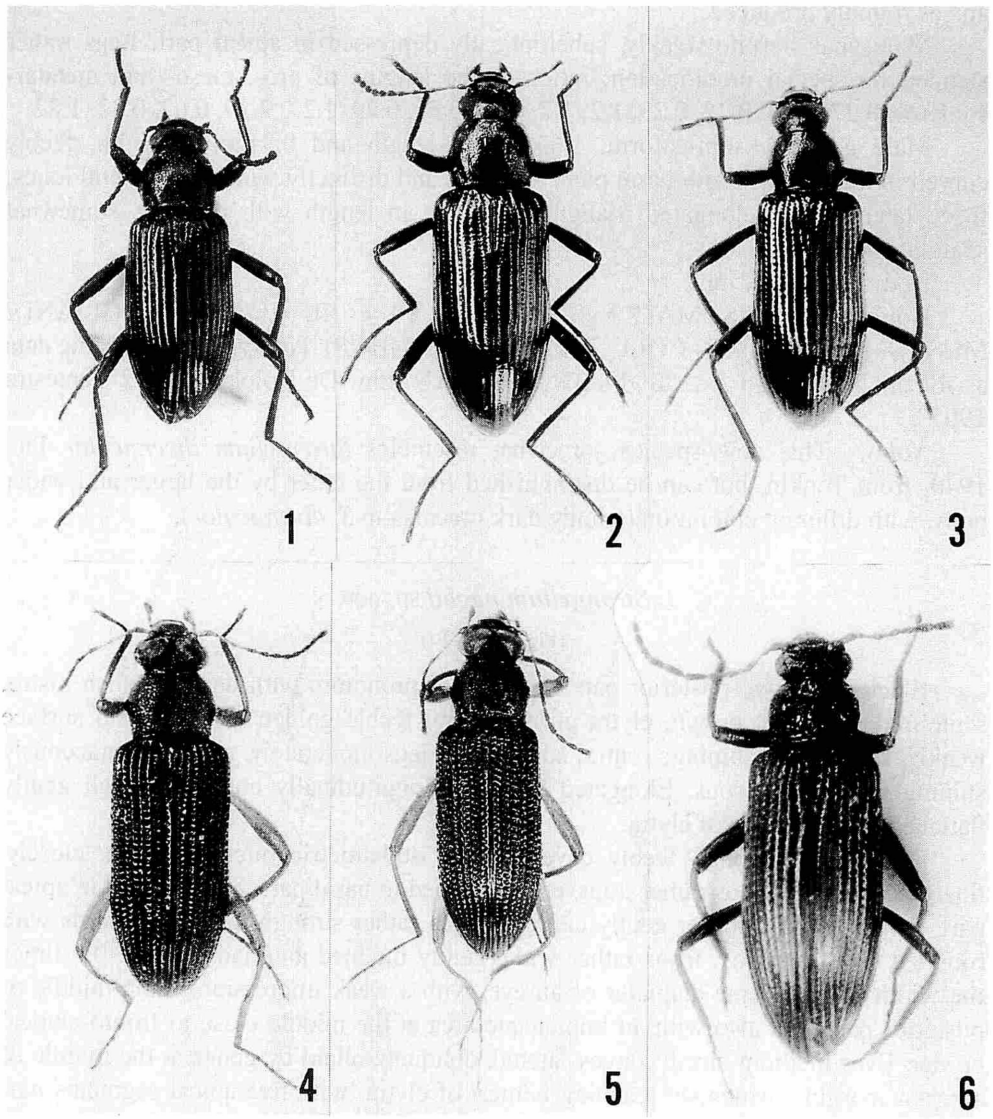
Strongylium nagaii sp. nov.

(Figs. 2, 13–14)

Blackish brown, posterior part of head and pronotum with dark greenish lustre, scutellum chocolate brown, elytra purplish with feeble golden lustre; dorsal surface weakly, sericeously shining; ventral surface and legs moderately, slightly alutaceously shining; almost glabrous. Elongated fusiform, longitudinally convex, though gently flattened in basal parts of elytra.

Head subdecagonal, feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus rather transverse, flattened in basal part, bent ventrad in apical part, fronto-clypeal border gently curved; genae rather strongly raised outwards with rounded outer margins; frons rather wide, gently inclined anteriad, diatone 0.9 times the width of transverse diameter of an eye, with a weak impression at the middle of posterior part, and also with an impunctate area at the middle close to fronto-clypeal border. Eyes medium-sized, convex laterad, obliquely inlaid by genae at the middle of anterior margins. Antennae reaching humeri of elytra, with five apical segments narrowed at each base, ratio of the length of each segment from base to apex: 0.39, 0.2, 0.72, 0.62, 0.43, 0.36, 0.26, 0.27, 0.24, 0.23, 0.32.

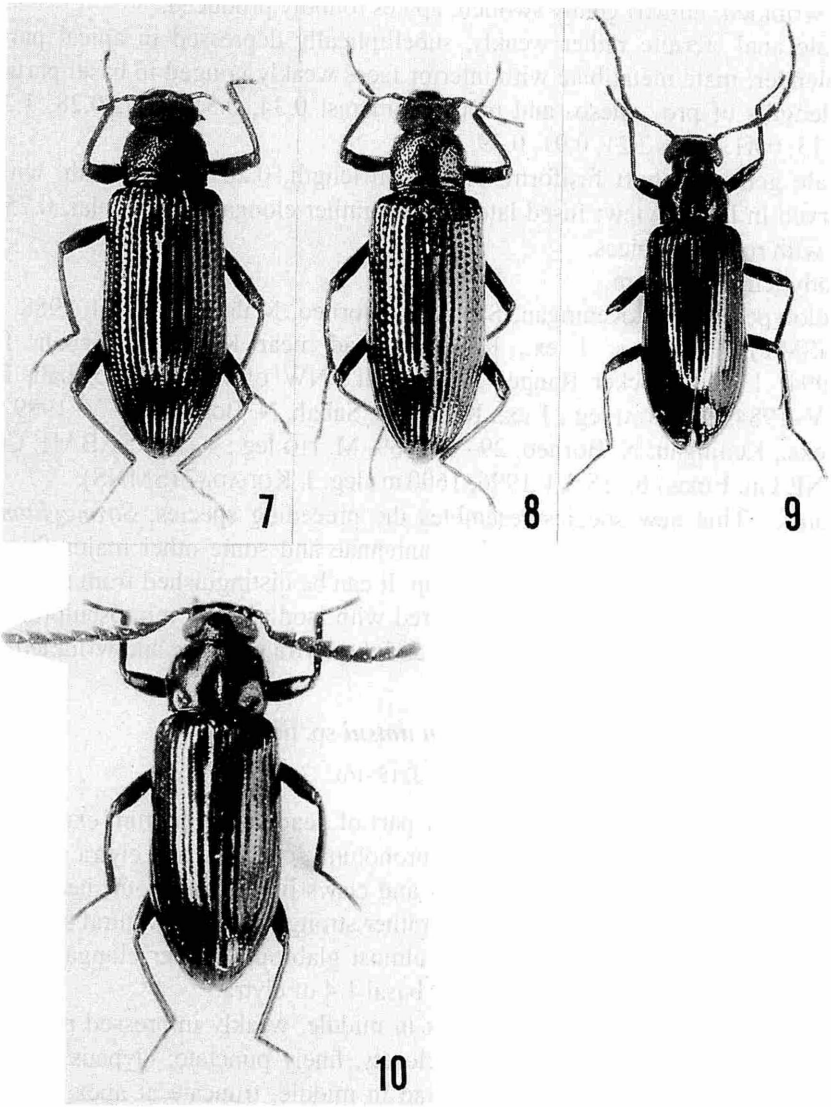
Pronotum widely hexagonal, 1.3 times as wide as long; apex sublinear, finely rimmed on each side; base slightly sinuous on each side, bordered and weakly ridged widely in middle; sides rather steeply declined to lateral margins, which are entirely finely rimmed, each with crenulations in medial part; front angles rounded though feebly produced, hind angles obtusely angulate; disc gently convex, weakly, vaguely obliquely impressed in baso-lateral parts, and also more clearly impressed close to base on each side, covered with isodiametric microsculpture, rather closely punctate,



Figs. 1–6. Habitus of *Strongylium* spp. from East Asia. —— 1, *S. modiglianii* sp. nov., holotype, ♂; 2, *S. nagaii* sp. nov., holotype, ♂; 3, *S. notsui* sp. nov., holotype, ♂; 4, *S. walshae* sp. nov., holotype, ♂; 5, *S. muloti* sp. nov., holotype, ♂; 6, *S. sirambense* sp. nov., holotype, ♂.

the punctures sparsely intermixed with smaller punctures. Scutellum subcordate, gently elevated posteriad, weakly ridged longitudinally at the middle, feebly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures.

Elytra elongated subovate, 2.1 times as long as wide, 3.83 times the length and



Figs. 7–10. Habitus of *Strongylium* spp. —— 7, *S. moerianum* sp. nov., holotype, ♂; 8, *S. tsuyukiellum* sp. nov., holotype, ♂; 9, *S. nagaiellum* sp. nov., holotype, ♂; 10, *S. dolokense* sp. nov., holotype, ♂.

1.22 times the width of pronotum; dorsum longitudinally convex, weakly depressed in interior parts of basal 1/5; disc punctate grooved, 5th groove deepened close to base, the punctures small, rather closely set, becoming finer posteriad; intervals gently convex in major anterior parts, becoming lower posteriad, weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures, feebly, rather trans-

versely wrinkled; humeri gently swollen; apices roundly produced.

Male anal sternite rather weakly, subelliptically depressed in apical part. Legs rather slender; male metatibiae with interior faces weakly gouged in basal parts; ratios of the lengths of pro-, meso- and metatarsomeres: 0.34, 0.31, 0.32, 0.28, 1.2; 1.73, 0.89, 0.73, 0.41, 1.29; 2.21, 0.91, 0.49, 1.29.

Male genitalia short fusiform, 1.3 mm in length, 0.28 mm in width, with basal part curved in lateral view; fused lateral lobes rather elongated triangular, 0.75 mm in length, with rounded apices.

Body length: 8.6 mm.

Holotype: ♂, near Keningau, Sabah, N. Borneo, Malaysia, 14–III–1988, M. ITO leg. (NSMT). Paratypes: 1 ex., Kimanis Road, near Keningau, Sabah, Borneo, 5–V–1994; 1 ex., Crocker Range, 1,400 m alt., NW of Keningau, Sabah, Borneo, 2~14–V–1984, S. NAGAI leg.; 1 ex., Keningau, Sabah, N. Borneo, 11–V–1989, M. ITO leg.; 2 exs., Keningau, N. Borneo, 29–V–1989, M. ITO leg.; 1 ex., "SABAH: Crocker/ Range NP, Gn. Emas/6.–18. VI. 1996, 1600 m/leg. J. KODADA" (SMNS).

Notes. This new species resembles the preceding species, *Strongylium modiglianii* sp. nov., in having characteristic antennae and some other major features, so that these two species form a species-group. It can be distinguished from the preceding species by the dorsal surface rather covered with isodiametric microsculpture, lateral margins of pronotum crenulate in middle, and the elytra punctate and wrinkled.

Strongylium notsui sp. nov.

(Figs. 3, 15–16)

Dark reddish brown, major posterior part of head and pronotum except for basal part with dark bluish lustre, basal part of pronotum, scutellum and elytra with coppery, partly slightly golden lustre, mouth parts and claws lighter in colour; head, pronotum and scutellum sericeously shining, elytra rather strongly shining, ventral surface somewhat alutaceously shining; each surface almost glabrous. Rather elongate, longitudinally convex, though weakly depressed at basal 1/4 of elytra.

Head nearly rounded, gently convex in middle, weakly impressed medially, covered with isodiametric microsculpture, closely, finely punctate; clypeus semicircular, gently flattened in basal part, bent ventrad in middle, truncate at apex, with a short transverse impression before fronto-clypeal border; genae somewhat obliquely rhombic, raised outwards, with obtuse outer margins; frons widely T-shaped, rather steeply inclined anteriad, diatone 0.67 times the width of transverse diameter of an eye. Eyes medium-sized, subreniform, convex laterad, obliquely inlaid into head. Antennae missing four apical segments in the type specimen: ratio of the length of each segment from base to 7th segment: 0.38, 0.2, 0.6, 0.49, 0.41, 0.39, 0.31, —, —, —, —.

Pronotum somewhat transversely hexagonal, 1.33 times as wide as long; apex almost straight, finely bordered and rimmed on each side; base slightly sinuous on each side, clearly bordered and rimmed, the rim becoming bolder widely in middle; sides

steeply declined to lateral margins, which are separated from ventral parts by fine rims, roundly produced in middle and feebly sinuous before base in dorsal view; front angles nearly rounded, hind angles subrectangular; disc gently convex, covered with isodiametric microsculpture, moderately closely punctate, the punctures larger and sparser than those on head. Scutellum triangular, gently convex, covered with isodiametric microsculpture, sparsely scattered with very fine punctures.

Elytra elongated subfusiform, 2.31 times as long as wide, 4.5 times the length and 1.5 times the width of pronotum; dorsum longitudinally convex, though weakly flattened in areas around basal 1/5 and along scutellar striole; disc punctate grooved, 5th groove touching base, the punctures longitudinal and deep, becoming smaller and shallower posteriad; intervals gently convex, flattened posteriad, covered with isodiametric microsculpture, very sparsely scattered with microscopic punctures, which are very sparsely intermixed with larger punctures; humeri weakly swollen; apices slightly produced.

Male anal sternite without any modification, covered with isodiametric microsculpture and microscopically punctate. Legs rather slender; male metatibiae with interior face weakly gouged at basal 1/4; ratios of the lengths of pro-, meso- and metatarsomeres: 0.35, 0.33, 0.31, 0.27, 1.2; 1.28, 0.79, 0.67, 0.39, 1.27; 1.91, 0.89, 0.41, 1.22.

Male genitalia fusiform, 0.85 mm in length and 0.2 mm in width, weakly curved in lateral view; fused lateral lobes somewhat triangular, 0.35 mm in length, feebly depressed longitudinally in posterior part, scattered with microscopic and somewhat longitudinal punctures in apical halves.

Body length: 6.3 mm.

Holotype: ♂, Sabah, Borneo, 14–IV~19–V–1984, S. NAGAI leg. (NSMT). Paratypes: 1 ex., same data as for the holotype; 3 exs., 16 miles NW of Keningau, 1,400 m alt., Borneo, Malaysia, 12~19–VIII–1983, Y. NOTSU leg.; 1 ex., Crocker Range, 1,400 m alt., NW of Keningau, Sabah, Borneo, 12–V–1984, S. NAGAI leg.; 1 ex., Keningau, Sabah, N. Borneo, 10~20–X–1988, M. ITO leg.

Notes. This new species somewhat resembles *Strongylium modiglianii* sp. nov., but can be distinguished from the latter by the smaller and slenderer body, with elytra more deeply punctato-striate.

Strongylium walshae sp. nov.

(Figs. 4, 17–18)

Yellowish brown, posterior part of head and elytra except for medio-basal part brownish black with dark greenish or blue lustre, apical margin and apico-medial part of pronotum brownish black, scutellum and medio-basal part of elytra chocolate brown; head and pronotum weakly, rather sericeously shining, scutellum vitreously shining, elytra feebly sericeously, somewhat metallically shining, ventral surface and legs rather alutaceously shining; each surface almost glabrous. Elongated fusiform,

longitudinally convex, though weakly flattened in medial parts of elytra.

Head transversely elliptical, covered with isodiametric microsculpture, closely rugoso-punctate; clypeus semicircular, feebly depressed in basal part, gradually inclined forwards, gently bent and truncate in front, fronto-clypeal border gently curved and not clearly impressed; genae obliquely subrhombic, rather strongly raised outwards; frons rather finely T-shaped, steeply inclined anteriad, diatone 1/8 times the width of transverse diameter of an eye, with a longitudinal impression at the middle of posterior part, weakly sulcate along the borders of eyes. Eyes noticeably large, subreniform, strongly convex laterad, approximate with each other. Antennae rather filiform, reaching basal 1/3 of elytra, ratio of the length of each segment from base to apex: 0.64, 0.2, 0.81, 0.79, 0.61, 0.63, 0.62, 0.6, 0.58, 0.59, 0.63.

Pronotum widely subhexagonal, 1.33 times as wide as long; apex sublinear, rimmed, the rim thickened in middle; base slightly sinuous on each side, clearly bordered and rimmed; sides steeply declined to lateral margins, which are not defined from ventral parts, produced in middle, and gently sinuous before the base in dorsal view; front angles obtuse, hind angles subrectangular; disc gently convex, weakly depressed in medio-longitudinal part and deepened in apical and basal parts, weakly impressed close to base on each side, very feebly covered with isodiametric microsculpture, rather closely punctate, the punctures often fused with one another. Scutellum slightly elongated triangular, feebly convex, almost smooth, sparsely scattered with microscopic punctures.

Elytra elongated ovate, 2.18 times as long as wide, 4 times the length and 1.2 times the width of pronotum; dorsum longitudinally convex, though flattened in medial part; disc with rows of punctures, 5th row close to base, the punctures large and transverse, closely set, often somewhat hexagonal, becoming smaller posteriad; intervals narrow and weakly convex, rather ridged in lateral parts, weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures, with 2nd interval flattened; humeri weakly swollen; apices roundly produced.

Male anal sternite semicircularly depressed and pubescent in apical part. Legs medium-sized for a member of this genus, male metatibiae flattened in interior faces of basal halves, weakly twisted, with dorso-internal edges roundly produced; ratios of the lengths of pro-, meso- and metatarsomeres: 0.32, 0.23, 0.25, 0.22, 1.2; 1.96, 0.95, 0.77, 0.44, 1.32; 2.03, 0.69, 0.48, 1.28.

Male genitalia subfusiform, 1.5 mm in length and 0.3 mm in width, almost straight in lateral view; fused lateral lobes elongated triangular, 0.7 mm in length with slightly prolonged rather acute apices.

Body length: 6.32 mm.

Holotype: ♂, "SUMATRA / Reg. de Benkoelen / Moeara Tenam / Mme M. E. WALSH / 1935" (MNHNP).

Notes. This new species resembles *Strongylium benakatense* MASUMOTO, 1997, from South Sumatra in having modified male metatibiae, but can be distinguished from the latter by the differently colored body, with larger eyes, the longer elytra, and

the antennae and legs with different ratios of segment lengths.

Strongylium muloti sp. nov.

(Figs. 5, 19–20)

Yellowish brown, antennae, apical halves of tibiae and metepisterna darker in colour, head and pronotum blackish brown with weak dark bluish lustre, elytra in major parts with greenish blue lustre, those in antero-medial parts feebly with golden greenish lustre, and those in postero-lateral parts faintly with purple lustre; head and pronotum weakly, sericeously shining, scutellum vitreously shining, elytra metallically and somewhat sericeously shining, ventral surface rather alutaceously shining, legs moderately shining; each surface almost glabrous. Elongated fusiform, longitudinally convex, though weakly flattened in antero-medial parts of elytra.

Head transversely subelliptical, weakly covered with isodiametric microsculpture, closely, finely punctate; clypeus semicircular, gently inclined apicad, truncate in front, fronto-clypeal border curved and finely impressed; genae remarkably oblique, raised posteriad and outwards, with obtuse outer margins; frons rather T-shaped, steeply inclined anteriad, diatone 1/9 times the width of transverse diameter of an eye, with a medio-longitudinal impunctate impression at the level of the posterior parts of eyes. Eyes large, subreniform, convex laterad, obliquely inlaid into head. Antennae rather filiform, reaching basal 1/4 of elytra, ratio of the length of each segment from base to apex: 0.78, 0.2, 0.79, 0.72, 0.56, 0.55, 0.53, 0.56, 0.51, 0.53, 0.59.

Pronotum short barrel-shaped, 1.21 times as wide as long; apex very weakly produced, bordered and rimmed, the rim microscopically punctate and feebly thickened in middle; base slightly sinuous on each side, clearly bordered and rimmed, the rim noticeably smooth in middle; sides steeply declined to lateral margins, which are not defined from ventral parts, rounded in middle and gently sinuous before base in dorsal view; front angles obtuse, hind angles subrectangular; disc gently convex, weakly depressed in medio-basal part, very weakly impressed close to base on each side, weakly covered with isodiametric microsculpture, closely punctate, the punctures sometimes fused with one another. Scutellum triangular with rounded sides, almost smooth, sparsely scattered with microscopic punctures, sparsely somewhat longitudinally aciculate.

Elytra elongated subfusiform, 2.04 times as long as wide, 3.8 times the length and 1.4 times the width of pronotum; dorsum longitudinally convex, though flattened in medio-longitudinal part; disc with rows of punctures, the punctures large, transverse and closely set, sometimes rather hexagonal, becoming smaller posteriad; intervals narrow and convex, ridged in lateral parts, with 2nd interval flattened, weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures; humeri not so distinct; apices roundly produced.

Male anal sternite weakly depressed and pubescent in apical part. Legs medium-sized for a member of this genus, male protibiae curved ventrad; male metatibiae flat-

tened in interior faces of basal halves, weakly twisted, with the dorsal edges roundly produced; ratios of the lengths of pro-, meso- and metatarsomeres: 0.27, 0.22, 0.24, 0.26, 1.2; 2.05, 0.96, 0.82, 0.6, 1.42; 2.18, 0.86, 0.59, 1.37.

Male genitalia subfusiform, 1.7 mm in length and 0.3 mm in width, weakly curved in lateral view; fused lateral lobes elongated triangular, 0.75 mm in length, depressed medio-longitudinally, with slightly prolonged, rather acute apices.

Body length: 5.5–6.5 mm.

Holotype: ♂, "Bornéo occ. / Goenong Ampar / Mulot 1897 // Museum Paris / ex Coll. / R. OBERTHUR" (MNHNP). Paratypes: 1 ex., "Bornéo Occ. / Pontianak / 1901"; 3 exs., "Est Borneo / Batanbessi / Me M. E. WALSH / 1937"; 1 ex., Keningau, Sabah, 7–V–1981, M. TAO leg.; 1 ex., nr. Kpg. Poring, Sabah, Borneo Is., Malaysia, 4–I–1985, M. NISHIKAWA leg.; 2 exs., BORNEO: SABAH / Bingkor N Keningau / 400–500 m, 19. 20. XI. 1996 / leg. W. SCHAWALLER" (SMNS).

Notes. This new species closely resembles *Strongylium benakatense* MASUMOTO et MAKIHARA, 1997, from South Sumatra in having modified male metatibiae, but can be distinguished from the latter by the differently colored body, with eyes larger and closer to each other, pronotum more convex laterad and elytra shorter.

This and the preceding new species are the members of the species-group of *S. benakatense*, whose males are characterized by modified legs.

Strongylium sirambense sp. nov.

(Figs. 6, 21–22)

Dark yellowish brown, elytra, basal parts of antennae and tibiae lighter in colour, dorsal surface moderately, vitreously shining, ventral surface somewhat alutaceously shining, six apical segments of antennae not shining; each surface almost glabrous. Elongated fusiform, longitudinally convex, though weakly flattened in antero-medial parts of elytra.

Head transversely subelliptical, very weakly micro-shagreend, closely, finely punctate, the punctures lightly fused with one another in area between posterior parts of eyes; clypeus semicircular, rather steeply inclined apicad, truncate in front, fronto-clypeal border curved and rather strongly impressed; genae oblique, raised posteriad and outwards, with obtuse outer margins; frons finely T-shaped, steeply inclined anteriad, diatone 1/12 times the width of transverse diameter of an eye, with an indistinct impression at the middle of posterior part of eyes. Eyes large, approximate to each other, convex laterad, rather broadly inlaid into head. Antennae subfiliform, reaching basal 1/3 of elytra, ratio of the length of each segment from base to apex: 0.41, 0.2, 0.59, 0.45, 0.41, 0.6, 0.59, 0.62, 0.61, 0.60, 0.79.

Pronotum subquadrate, 1.3 times as wide as long; apex almost straight, entirely bordered and rimmed, the rim sparsely scattered with microscopic punctures; base slightly sinuous on each side, clearly bordered and rimmed, the rim bolder than that of apex and almost impunctate; sides steeply declined to lateral margins, which are sepa-

rated from ventral parts by fine rims, rounded in middle and gently sinuous before base in dorsal view; front angles nearly rounded, hind angles subrectangular; disc gently convex, moderately but noticeably depressed transversely in basal 1/4, weakly impressed close to base on each side, moderately closely punctate. Scutellum triangular with rounded sides, feebly convex, almost smooth, sparsely scattered with microscopic punctures.

Elytra elongated subfusiform, 2.17 times as long as wide, 4.38 times the length and 1.51 times the width of pronotum; dorsum longitudinally convex, though feebly flattened in area around scutellar striole; disc punctate grooved, the grooves shallow, 5th groove deepened close to base, the punctures rounded with transversely quadrate shadows, those in posterior parts becoming smaller and shallower; intervals gently convex, vitreously smooth, very sparsely scattered with microscopic punctures; humeri weakly swollen; apices slightly roundly produced.

Male anal sternite without any modification, covered with isodiametric microsculpture and microscopically punctate. Legs rather slender, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.38, 0.28, 0.25, 0.23, 1.2; 0.8, 0.4, 0.23, 0.21, 1.22; 0.81, 0.41, 0.38, 1.28.

Male genitalia elongate, 1.3 mm in length and 0.17 mm in width, very weakly curved in lateral view; fused lateral lobes somewhat elongated triangular, 0.65 mm in length, depressed medio-longitudinally, with rather remarkably prolonged subparallel-sided apices.

Body length: 5.7–6.3 mm.

Holotype: ♂, "SUMATRA / SI-RAMBE / XII. 90–III. 91 / E. MODIGLIANI // MUSÉUM PARIS / 1952 / COLL R OBERTHÜR" (MNHNP). Paratypes: 1 ex., "SUMATRA / SI-RAMBE / XII. 90–III. 91 / E. MODIGLIANI // Muséum Paris / ex Coll. / R. OBERTHÜR / 1952"; 1 ex., "SUMATRA / MEDAN // Muséum Paris / Coll. M. PIC".

Notes. No *Strongylium* resembling this new species has hitherto been known. It somewhat resembles an alleculid species.

Strongylium moerianum sp. nov.

(Figs. 7, 23–24)

Dark yellowish brown, tarsi, claws and hairs lighter in colour; major basal part of head, pronotum except for apical and basal parts somewhat sericeously shining; apical part of head, apical and basal parts of pronotum, scutellum and elytra rather strongly vitreously shining; ventral surface alutaceously or sericeously shining; each surface almost glabrous. Rather elongated fusiform, convex longitudinally, though weakly depressed in areas across basal 1/7 and around scutellar strioles.

Head transversely subelliptical, micro-shagreend, closely, finely punctate; clypeus rather small and semicircular, strongly depressed in basal part, gently inclined anteriad and truncate in front, fronto-clypeal border curved and impressed; genae rather transverse, gently raised outwards, with widely rounded outer margins; frons finely T-

shaped, rather steeply inclined anteriad, diatone about 1/23 times the width of transverse diameter of an eye. Eyes very large, approximate to each other, noticeably convex laterad, broadly, gently obliquely inlaid into head. Antennae missing eight apical segments in the type specimen, ratio of the length of each segment from base to 3rd segment: 0.32, 0.2, 0.53, —, —, —, —, —, —, —, —.

Pronotum transversely subhexagonal, 1.36 times as wide as long; apex almost straight, clearly bordered, ridged widely in middle, finely rimmed in lateral parts; base gently sinuous on each side, clearly bordered, rather boldly ridged in middle; sides produced slightly before the middle and sinuous before base in dorsal view, and steeply declined to lateral margins, which are separated from ventral parts by ridges, the ridges being weakly expanded laterad and visible from above; front angles nearly rounded, hind angles subrectangular; disc gently convex, covered with isodiametric microsculpture, closely punctate, the punctures small and closely set in medial part, obliquely impressed at basal 1/4 on each side. Scutellum triangular, feebly raised, smooth, sparsely scattered with very minute punctures.

Elytra elongated subfusiform, 2.1 times as long as wide, 4.1 times the length and 1.42 times the width of pronotum; dorsum longitudinally convex, though weakly flattened in areas around basal 1/5 and along scutellar strioles; disc punctate grooved, 5th groove touching base, the punctures nearly rounded; intervals gently convex, very sparsely scattered with microscopic punctures; humeri gently swollen longitudinally; apices slightly produced.

Male anal sternite without any modification, alutaceous and haired. Legs medium-sized, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.39, 0.33, 0.29, 0.38, 1.2; 0.77, 0.46, 0.41, 0.36, 1.26; 1.08, 0.58, 0.39, 1.29.

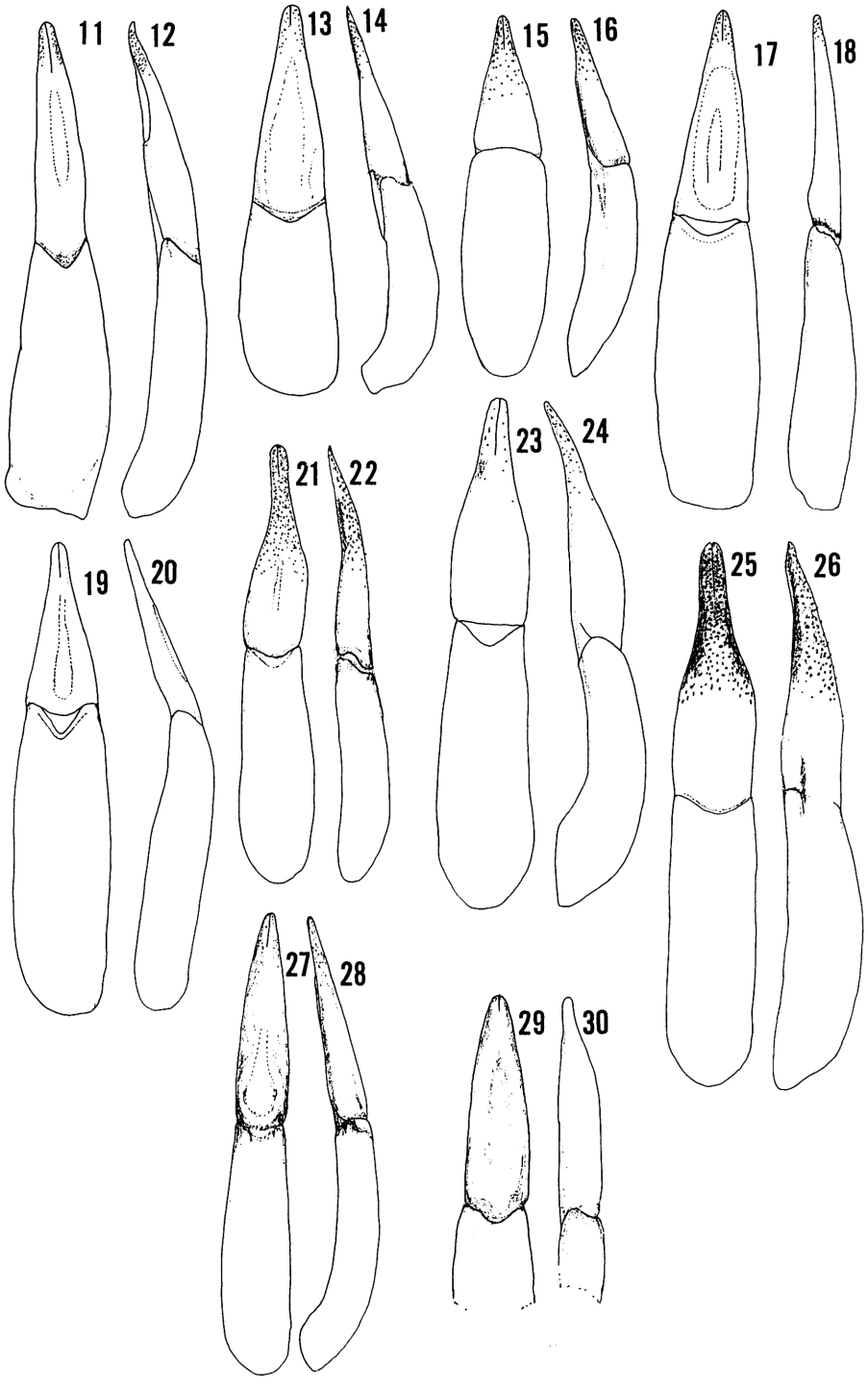
Male genitalia elongated fusiform, gently constricted between basal piece and lateral lobes, 1.4 mm in length and 0.24 mm in width, feebly curved near the base of basal piece and also curved in the middle of lateral lobes in lateral view; fused lateral lobes elongated triangular, 0.8 mm in length, scattered with microscopic punctures in apical halves, with prolonged apices.

Body length: 6–7 mm.

Holotype: ♂, "Java / Mt. Moeria, 3–4000′ // Muséum Paris / ex. Coll. / R. OBERTHÜR" (MNHNP). Paratypes: 2 exs., same data as for the holotype; 2 exs., Java, Coll. PIC; 2 exs., Mt. Ijen, Java, 14–V–1982, M. TAO leg.

Notes. This new species somewhat resembles *Strongylium nigroannulipes* PIC,

Figs. 11–30. Male genitalia. —— 11–12, *Strongylium modiglianii* sp. nov., 11, dorsal view, 12, lateral view; 13–14, *S. nagaii* sp. nov., 13, dorsal view, 14, lateral view; 15–16, *S. notsui* sp. nov.,15, dorsal view, 16, lateral view; 17–18, *S. walshae* sp. nov., 17, dorsal view, 18, lateral view; 19–20, *S. muloti* sp. nov., 19, dorsal view, 20, lateral view; 21–22, *S. sirambense* sp. nov., 21, dorsal view, 22, lateral view; 23–24, *S. moerianum* sp. nov., 23, dorsal view, 24, lateral view; 25–26, *S. tsuyukiellum* sp. nov., 25, dorsal view, 26, lateral view; 27–28, *S. nagaiellum* sp. nov., 27, dorsal view, 28, lateral view; 29–30, *S. dolokense* sp. nov., 29, dorsal view, 30, lateral view.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1926, originally described from Tonkin, but can be distinguished from the latter by the smaller body, with the pronotum not longitudinally grooved.

Strongylium tsuyukiellum sp. nov.

(Figs. 8, 25–26)

Dark dusty brown, clypeus, antennae, basal parts of femora, tibiae, tarsi, claws and hairs on legs lighter in colour; dorsal surface strongly, vitreously shining, ventral surface moderately and rather vitreously shining; each surface almost glabrous. Rather elongated fusiform, longitudinally convex, though weakly depressed in medio-basal parts of elytra.

Head somewhat transversely elliptical, very feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus rather small and trapezoidal, narrowed in areas bordered from genae, feebly depressed in basal part, gently inclined anteriad and truncate in front, fronto-clypeal border curved and impressed widely in middle, strongly bent and sinuous in lateral parts; genae gently oblique, raised outwards and posteriad, with widely rounded outer margins; frons finely T-shaped, rather steeply inclined anteriad, diatone about 1/23 times the width of transverse diameter of an eye. Eyes very large, approximate to each other, noticeably convex laterad, broadly, somewhat obliquely inlaid into head. Antennae missing six apical segments in the type specimen; ratio of the length of each segment from base to 5th segment: 0.39, 0.2, 0.38, 0.36, 0.34, —, —, —, —, —, —.

Pronotum subquadrate, 1.32 times as wide as long; apex almost straight, grooved and finely ridged, the groove becoming bolder in middle; base gently sinuous on each side, clearly bordered and rimmed, the rim becoming bolder in middle; sides roundly produced slightly before the middle and sinuous before base in dorsal view, and steeply declined to lateral margins, which are separated from ventral parts by very fine ridges visible from above; front angles nearly rounded, hind angles subrectangular; disc gently convex, very feebly covered with isodiametric microsculpture, rather closely punctate, transversely impressed at basal 2/7 on each side. Scutellum triangular with rounded sides, feebly raised, smooth, very sparsely scattered with microscopic punctures.

Elytra elongated subfusiform, 2.22 times as long as wide, 4.35 times the length and 1.43 times the width of pronotum; dorsum moderately convex longitudinally, though weakly depressed in basal 1/7; disc punctate grooved, 5th groove touching base, the punctures nearly rounded; intervals gently convex, feebly ridged along suture (=1st interval), punctures on the interval hardly visible even under a high magnification; humeri weakly, longitudinally swollen; apices slightly produced.

Male anal sternite without any modification, covered with isodiametric microsculpture and haired. Legs medium-sized, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.38, 0.31, 0.26, 0.33, 1.2; 0.79, 0.47, 0.39, 0.28, 1.29; 0.96, 0.49, 0.37, 1.33.

Male genitalia elongated fusiform, 1.7 mm in length and 0.3 mm in width, gently curved in middle in lateral view; fused lateral lobes elongated triangular, 0.7 mm in length, weakly depressed medio-longitudinally, with weakly prolonged apices.

Body length: 6–7 mm.

Holotype: ♂, Bandar Baru, Sumatra Utara, Indonesia, 5–V–1999, S. TSUYUKI leg. (NSMT). Paratypes: 1 ex., same data as for the holotype; 2 exs., Bandar Baru, Sumatra Utara, 3–V–1999, S. TSUYUKI leg.; 1 ex., Bandar Baru, nr. Berastagi, N. Sumatra, 19–IV–1994, S. NIRASAWA leg.; 1 ex., "Sumatra / Coll. GEBIEN" (NHMB).

Notes. This new species closely resembles the preceding in general characteristics, but can be distinguished from the latter by the slenderer body, with head and pronotum more strongly shining, eyes more rounded, pronotum less closely punctate, and elytral grooves less closely punctate. This new species is "*Strongylium kaestneri* i. l." of the GEBIEN collection preserved in the Naturhistorisches Museum, Basel.

Strongylium nagaiellum sp. nov.

(Figs. 9, 27–28)

Blackish brown, apical parts of 11th antennal segments, mouth parts, terminal segments of tarsi and claws lighter in colour; dorsal surface and prosternum dark coppery, partly feebly greenish golden and strongly shining, ventral surface moderately, rather alutaceously shining; each surface almost glabrous. Rather elongate, convex longitudinally, though weakly flattened in medio-longitudinal part of pronotum and medio-basal part of elytra.

Head subdecagonal, feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus rather small and semicircular, depressed in basal part, steeply inclined anteriad and truncate in front, fronto-clypeal border curved and finely impressed; genae gently oblique, raised outwards and posteriad, with obtuse outer margins; frons finely T-shaped, rather steeply inclined anteriad, diatone about 1/9 times the width of transverse diameter of an eye. Eyes large, convex laterad, broadly, obliquely inlaid into head. Antennae reaching basal 1/3 of elytra, with four basal segments small and more or less cylindrical, 5th–11th segments large and flattened, 5th–10th widened to each apex, with interior face rather serrate, ratio of the length of each segment from base to apex: 0.34, 0.2, 0.21, 0.23, 0.58, 0.54, 0.52, 0.49, 0.48, 0.41, 0.6.

Pronotum subquadrate, 1.25 times as wide as long; apex almost straight, finely bordered and ridged on each side, the ridge becoming bolder in middle; base gently sinuous on each side, ridged widely in middle; sides roundly produced slightly before the middle and sinuous before base in dorsal view, and rather steeply declined to lateral margins, which are separated from ventral parts by very fine ridges, the ridges being visible from above; front angles rounded, hind angles subrectangular; disc gently convex, feebly covered with isodiametric microsculpture, rather closely, finely punctate, obliquely impressed along base on each side and noticeably impressed close to base in lateral parts, with a weak medio-longitudinal impression. Scutellum triangular,

weakly elevated, feebly covered with isodiametric microsculpture, very sparsely scattered with microscopic punctures.

Elytra elongate, 2.14 times as long as wide, 4.02 times the length and 1.52 times the width of pronotum; dorsum moderately convex longitudinally, though feebly depressed at basal 1/4 of interior parts; disc punctato-striate, 3rd–5th striae close to base, 5th deepened near base, the punctures small, ovate and closely set; intervals gently convex, though flattened in posterior parts, feebly covered with isodiametric microsculpture, scattered with microscopic punctures; humeri gently swollen longitudinally; apices moderately produced.

Male anal sternite without any modification, covered with isodiametric microsculpture and scattered with microscopic punctures. Legs medium-sized, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.29, 0.24, 0.21, 0.23, 1.2; 0.81, 0.48, 0.36, 0.27, 1.22; 1.04, 0.48, 0.32, 1.24.

Male genitalia elongate, weakly constricted in the bordering area of basal piece and lateral lobes, 1.73 mm in length and 0.24 mm in width, gently curved medially in lateral view; fused lateral lobes elongated triangular, 0.78 mm in length, noticeably gouged medio-longitudinally, with acute apices.

Body length: 7.5 mm.

Holotype: ♂, Sabah, Borneo, 14–IV～19–V–1984, S. NAGAI leg. (NSMT).

Notes. No species resembling this new species has hitherto been known. See the notes in the description of the following species.

Strongylium dolokense sp. nov.

(Figs. 10, 29–30)

Blackish brown, four basal segments and apical parts of the 11th of antennae, mouth parts, apical parts of terminal segments of tarsi and claws lighter in colour; most posterior parts of head and pronotum gently with dark bluish lustre, elytra with weak coppery, or greenish blue lustre, ventral surface moderately, rather alutaceously shining; each surface almost glabrous. Rather elongate, convex longitudinally, gently depressed in posterior part of pronotum and along scutellar striole and 1st groove of elytra.

Head subdecagonal, feebly covered with isodiametric microsculpture, closely, finely punctate; clypeus inverted subtrapezoidal, strongly depressed in basal part, steeply inclined anteriad, truncate in front, fronto-clypeal border weakly curved and clearly impressed, obliquely bent anteriad on each side; genae gently oblique, raised outwards and posteriad, with rounded outer margins; frons widely T-shaped and raised, impressed medio-longitudinally, steeply inclined anteriad, depressed in areas before eyes, diatone about 0.55 times the width of transverse diameter of an eye. Eyes subreniform, convex laterad, obliquely inlaid into head. Antennae reaching basal 2/7 of elytra, with 1st–4th segments small, more or less cylindrical, 5th–11th large and flattened, 5th–10th widened to each apex, rather serrate in interior faces, ratio of the

length of each segment from base to apex: 0.42, 0.2, 0.26, 0.21, 0.78, 0.68, 0.79, 0.77, 0.74, 0.72, 0.81.

Pronotum subquadrate, 1.47 times as wide as long; apex almost straight, finely rimmed on each side; base gently sinuous on each side, finely bordered widely in middle, ridged; sides gently produced laterad, and rather steeply declined to lateral margins, which are separated from ventral parts by very fine ridges, the ridges being weakly expanded laterad, toothed at the middle, and visible from above; front angles rounded, hind angles subrectangular; disc weakly convex, feebly covered with isodiametric microsculpture, rather closely, finely punctate, obliquely impressed in lateral parts near base and triangularly so in basal 3/5 of the middle. Scutellum triangular with rounded sides, feebly elevated, weakly covered with isodiametric microsculpture, very sparsely scattered with microscopic punctures.

Elytra elongate, twice as long as wide, 3.53 times the length and 1.27 times the width of pronotum; dorsum moderately convex longitudinally, though feebly depressed in areas around scutellar striole and basal part of the 1st groove; disc punctate grooved, 3rd–5th grooves reaching base, 5th deepened close to base, the punctures small, ovate and closely set; intervals gently convex, feebly covered with isodiametric microsculpture, scattered with microscopic punctures; humeri gently swollen; apices moderately produced.

Male anal sternite without any modification. Legs medium-sized, without any modification even in male; ratios of the lengths of pro-, meso- and metatarsomeres: 0.24, 0.23, 0.26, 0.24, 1.2; 0.82, 0.39, 0.35, 0.28, 1.27; 0.98, 0.39, 0.32, 1.23.

Male genitalia elongated fusiform, total length unclear because those of the type specimen are broken in the basal part, 0.26 mm in width, gently curved in middle in lateral view; fused lateral lobes elongated triangular, 0.75 mm in length, noticeably gouged medio-longitudinally, with rather acute apices.

Body length: 7.6 mm.

Holotype: ♂, "16.–20. I. 1972 / Dolok-Merangeir / NORD SUMATRA / Dr DIEHL leg. // MUSEUM PARIS / COLL. P. ARDOIN / 1978" (MNHNP).

Notes. This new species resembles the preceding species in having serrate male antennae and some other characteristics, but can be distinguished from the latter by the stouter body, with eyes more widely separated from each other, pronotal punctures denser, and elytral punctures in grooves sparser. This and the preceding new species form the species-group of *S. nagaiellum*.

要　　約

益本仁雄：アジア産ナガキマワリ族 (Strongyliini) の研究．XI. 東南アジア産キマワリ属 (*Strongylium*) の小型種10新種．—— アジア産ナガキマワリ族 (Strongyliini) 研究の第11回として，東南アジア産のキマワリ属 (*Strongylium*) の小型種10種を新種記載した．それらは，*Strongylium modiglianii* sp. nov., *S. nagaii* sp. nov.，(以上2種は *modiglianii* 種群)，*S. notsui* sp. nov. (*modiglianii* 種群に近い)，*S. walshae* sp. nov., *S. muloti* sp. nov. (以上2種は *benaketense* 種群)，お

よび *S. sirambense* sp. nov., *S. moerianum* sp. nov., *S. tsuyukiellum* sp. nov., さらに *S. nagaiellum* sp. nov., *S. dolokense* sp. nov.（前種とともに *nagaiellum* 種群）である．

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Elytra, Tokyo, **29** (2): 418, November 15, 2001

A New Record of *Phyllopertha intermixta* (Coleoptera, Scarabaeidae) from Kunashir Island of the Kurils

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Phyllopertha intermixta ARROW, 1913, has been recorded from Hokkaido, Honshu, Shikoku and Kyushu, Japan. Recently, we examined 5 specimens of this species collected by A. BARKALOV from Ivanovsky Cape of Kunashir Island of the Kuril Islands. We are going to record it for the first time from Kunashir Island.

Specimens examined. 2♂♂, 3♀♀ (preserved in the collection of the Siberian Zoological Museum), Ivanovsky Cape, Kunashir Island (Kuril Islands), 9～15–VII–1989, A. BARKALOV leg.

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Elytra, *Tokyo*, **29** (2): 419–421, November 15, 2001

A New *Malayaplamius* (Coleoptera, Tenebrionidae, Cnodalonini) from Southeast Asia

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Abstract A new cnodalonine tenebrionid beetle from Southeast Asia is described under the name of *Malayaplamius schawalleri* sp. nov.

On the occasion of visiting Europe in March 2001, the authors were offered some beetles from Dr. Wolfgang SCHAWALLER, Staatliches Museum für Naturkunde in Stuttgart for taxonomic study. They are interested in a very beautiful small species belonging to the genus *Malayaplamius*. It possesses a very distinct body shape, so that it is readily recognized as being new to science. In this article they are going to describe it as a new species.

They acknowledge Dr. Wolfgang SCHAWALLER for permission to examine the invaluable specimen. Appreciation should be expressed to Mr. Seiji MORITA (Tokyo) for taking the photograph inserted in this paper.

Malayaplamius schawalleri sp. nov.

(Fig. 1)

Female. Dark brownish black with dark greenish tinge, anterior part of head, major part of elytra and dorsal surface of legs dark coppery, postero-external margins of elytra with rather dark bluish reflexion; head, pronotum, scutellum and elytra strongly metallically shining, ventral surface mostly moderately shining, femora and tarsi moderately shining, tibiae sericeously shining; almost glabrous. Slightly oblong-ovate; strongly convex above and posteriad.

Head transverse, with basal part strongly raised, clypeus and genae continuously depressed; clypeus transverse, not clearly defined from genae, smooth in lateral parts,

gently raised and sparsely micro-punctate in medial part, fronto-clypeal suture gently curved and finely sulcate; genae before eyes flattened, weakly concave in middle, with outer margins rounded; frons noticeably raised posteriad, covered with isodiametric sculpture, moderately scattered with microscopic punctures, lateral parts precipitous and deeply sulcate; diatone about 5 times the width of transverse diameter of an eye. Eyes triangularly convex laterad, feebly roundly inlaid into head. Antennae clavate and flattened, reaching apical 1/3 of pronotum, ratio of the length of each segment from base to apex: 0.3, 0.2, 0.3, 0.21, 0.22, 0.26, 0.27, 0.25, 0.26, 0.25, 0.48.

Pronotum subquadrate, 1.43 times as wide as long, widest at the middle; apex rather noticeably arched anteriad; base produced in middle, sinuous on each side, finely rimmed; sides rather steeply declined to lateral margins, which are very finely rimmed and micro-crenulate; front angles obtuse, hind angles nearly rectangular; disc strongly convex, highest at apical 2/5, covered with isodiametric sculpture, scattered with somewhat ovate shallow punctures, which are larger than those on frons. Scutellum subcordate, longitudinally depressed in medial part, microscopically, somewhat transversely sculptured, very sparsely scattered with microscopic punctures.

Elytra subovate, 1.33 times as long as wide, 2.85 times the length and 1.4 times the width of pronotum, widest slightly behind the middle; dorsum strongly convex in middle and almost hemispherical, highest at the middle, gently, feebly obliquely depressed in area around basal 1/4; disc clearly punctato-striate, the punctures in interior and posterior portions smaller and closer than those in lateral portions, 5th stria being close to base; intervals gently elevated, rather transversely micro-aciculate, sparsely scattered with small round punctures, which are smaller than those on pronotum; lateral margin bordered by punctate groove, feebly, obliquely explanate and finely rimmed; humeral parts swollen; apices rounded.

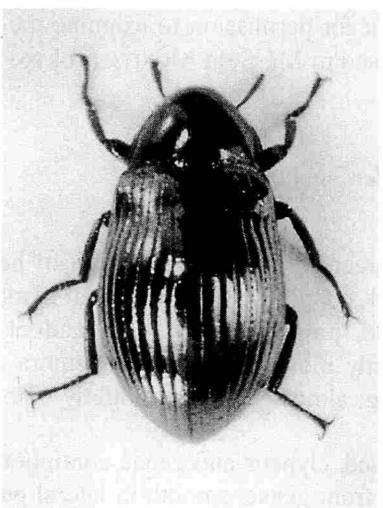

Fig. 1. Habitus of *Malayaplamius schawalleri* sp. nov., holotype, ♀.

Legs rather stout; femora punctate; tibiae rather noticeably covered with longitudinal sculpture; ratios of the lengths of pro-, meso- and metatarsomeres: 0.29, 0.18, 0.2, 0.22, 1.2; 0.25, 0.2, 0.23, 0.26, 1.24; 0.57, 0.26, 0.27, 1.28.

Body length: 4 mm.

Holotype: ♀ "BORNEO: SABAH, Kinabalu / N. P. Headquaters 1500– / 1600 m, 11.–12. XI. 1996 / leg. D. Grimm" (SMNS).

Notes. This new species possesses a distinctly thick body for a member of the genus *Malayaplamius*, so that it is easily distinguished from other named species even though the type specimen is a female.

要　　約

宇都宮由佳・益本仁雄：東南アジア産ニジゴミムシダマシ族の1新種. —— 東南アジア産ゴミムシダマシ科ニジゴミムシダマシ族(Cnodalonini)の一種を，*Malayaplamius schawalleri* sp. nov. と命名して記載した.

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Elytra, *Tokyo*, **29** (2): 422, November 15, 2001

Two Elaterid Beetles Collected from Otouto-jima Island of the Ogasawara Islands, Japan

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No elaterid beetles have hitherto been recorded from Otouto-jima Island of the Ogasawara Islands, Japan. Through the courtesy of Mr. Toshinobu MATSUMOTO, I have recently had an opportunity to examine two elaterid beetles obtained on the Island of Otouto-jima. They will be newly recorded below.

I wish to express my sincere thank to Mr. Toshinobu MATSUMOTO and Dr. Toshio KISHIMOTO for their kind offering the material.

Cryptalaus berus (CANDÈZE, 1864) [Japanese name: Ubatama-kometsuki]

1 ex., Mt. Hironeyama, 26–IV–1997, T. HASHIGUCHI leg.

Lacon (*Alaotypus*) *boninensis* ÔHIRA, 1970 [Japanese name: Ogasawara-sabikometsuki]

1 ex., near Ichinotani, 26–IV–1997, T. MATSUMOTO leg.; 1 ex., near Mt. Tenkaisan, 26–IV–1997, T. KISHIMOTO leg.; 1 ex., near Kurohama, 27–IV–1997, T. MATSUMOTO leg.; 1 ex., Ainosawa, 9–VII–1997, T. KISHIMOTO leg.

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Elytra, *Tokyo*, **29** (2): 423–434, November 15, 2001

Three New Species of the Genus *Rhagophthalmus* (Coleoptera, Rhagophthalmidae) from Southeast Asia

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Abstract Three new species of the cantharoid genus *Rhagophthalmus* are described and illustrated, *viz.*, *R. flavus* from North Thailand and Myanmar, *R. minutus* from Northeast Thailand and *R. jenniferae* from Taiwan.

Introduction

The genus *Rhagophthalmus* was originally established by MOTSCHULSKY (1854) for *R. scutellatus* from Peking, China. Since then, many species belonging to this genus have been described (FAIRMAIRE, 1988 a, b, 1896; OLIVIER, 1911; Pic, 1916, 1917, 1925; WITTMER & OHBA, 1994; WITTMER, 1997; etc.). OLIVIER (1911) revised the species of *Rhagophthalmus* then considered as a genus of the family Lampyridae, gave a generic definition and provided a key to the then known species. WITTMER and OHBA (1994) dealt with eight species from China, Myanmar and Japan with detailed illustrations of the male genitalia, and regarded *Ochotyra* PASCOE, 1862 as a junior synonym of *Rhagophthalmus*. At present, 25 species of the genus have been known from East and South Asia including India. Recently, the authors have examined the materials taken in Thailand, Myanmar and Taiwan, and have found after a careful examination, that three new species are included in the collection. In this paper, we are going to describe and illustrate them.

Materials and Methods

The materials used in the present study are described under the heading of "*Type series*" following the descriptions of the respective new species. For dissection, dried

materials were relaxed in hot water, and then, male genitalia were removed from body, mounted on slide glasses with glycerol, observed through optical microscope (OLYMPUS CH–2, max. magnification ×1,000) and sketched with the aid of an attached drawing tube. External characters were observed and sketched with a stereoscopic microscope (OLYMPUS SZH10, max. magnification ×140) equipped with a drawing tube. The abbreviations used herein are as follows: BL – length of body, from anterior margin of frons to elytral apices; HW – maximum width of head, including eyes; PL – length of pronotum along mid-line; PA – apical width of pronotum; PB – basal width of pronotum; PW – maximum width of pronotum; EL – length of elytra; EW – maximum width of elytra; EHW – humeral width of elytra; HTL – length of hind tibiae.

Description

Rhagophthalmus flavus KAWASHIMA et M. SATÔ, sp. nov.

(Figs. 1, 4, 7–9)

Male. Body moderately shiny, covered all over including appendages with golden or black subrecumbent pubescence. Head capsule entirely black; eyes blackish; antennae yellowish brown; mandibles blackish brown; maxillae and labium yellowish brown; disc of pronotum widely dark brownish, becoming much paler towards the yellowish sides; scutellum yellowish brown or pale brown; elytra yellowish or buff; legs entirely yellowish brown; ventral surface of thoraces and abdomen constantly yellowish brown.

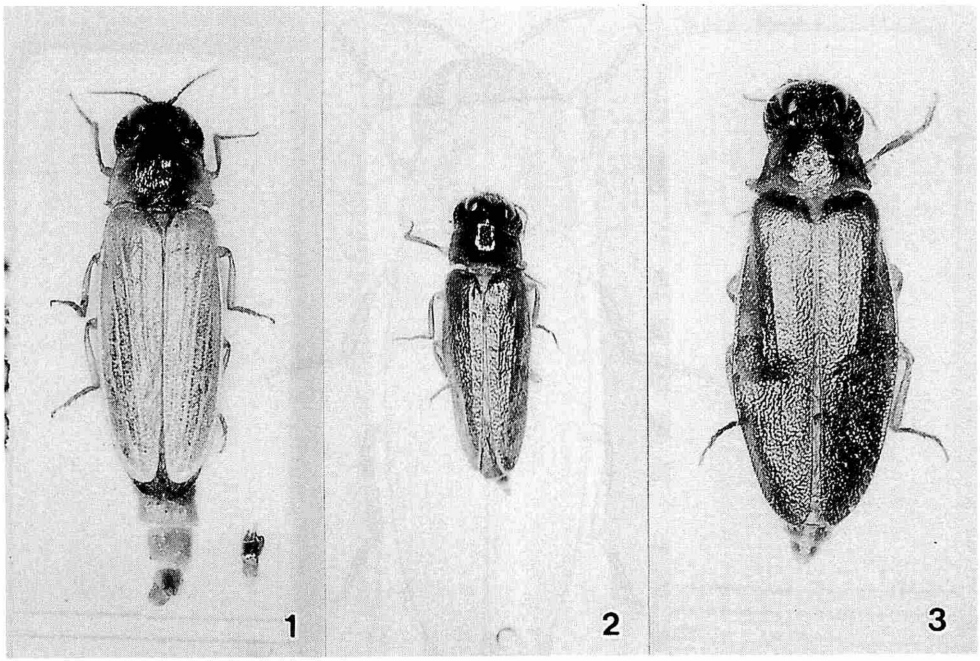
Body elongated oval or spindle-shaped, subparallel-sided.

Head large and transverse, depressed above and concave along mid-line, rather minutely and coarsely punctate on dorsal surface, clearly wider than the apical width of pronotum, but a little narrower than the basal and maximum widths.

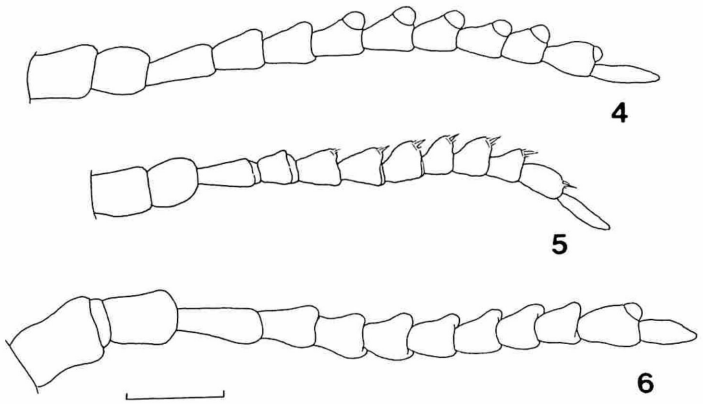
Antennae (Fig. 4) 12-segmented, short and serrate, barely reaching anterior margin of pronotum; scape short, very thick and subcylindrical, 1.27 times as long as wide; pedicel barrel-shaped; 3rd segment (1st flagellar segment) clavate and the longest; 4th and 5th (2nd and 3rd flagellar) clavate, becoming thicker towards the apices; 5th to 11th (3rd to 9th flagellar) serrated continuously; 6th to 11th (4th to 9th flagellar) each with a lens-like sensillum at the protruded antero-ventral portion; terminal segment or 12th (10th flagellar) the most slender and spindle-shaped.

Pronotum relatively large, transversely semicircular or trapezoidal in dorsal view, widest at the base; maximum width almost the same as elytral humeral width; anterior margin widely arcuate and produced anteriad; both exteriormost portions of the margin forming shallow angles; sides straight, gradually divergent towards the base; basal margin clearly sinuate on each side, and narrowly bordered in central part; dorsal surface constantly and coarsely punctate; disc feebly depresssed; PW/HW 1.16, PW/PL 1.52, PW/PA 1.22, PW/PB 1.00, PL/PW 0.66, PW/EHW 0.96.

Scutellum triangular with rounded apex, almost smooth on dorsal surface.



Figs. 1–3. Holotypes of *Rhagophthalmus* spp. — 1, *R. flavus* KAWASHIMA et M. SATÔ, sp. nov., from Myanmar; 2, *R. minutus* KAWASHIMA et M. SATÔ, sp. nov., from NE. Thailand; 3, *R. jenniferae* KAWASHIMA et M. SATÔ, sp. nov., from Taiwan.



Figs. 4–6. Right male antennae of *Rhagophthalmus* spp. — 4, *R. flavus* KAWASHIMA et M. SATÔ, sp. nov., from Myanmar; 5, *R. minutus* KAWASHIMA et M. SATÔ, sp. nov., from NE. Thailand; 6, *R. jenniferae* KAWASHIMA et M. SATÔ, sp. nov., from Taiwan. Scale: 0.25 mm.

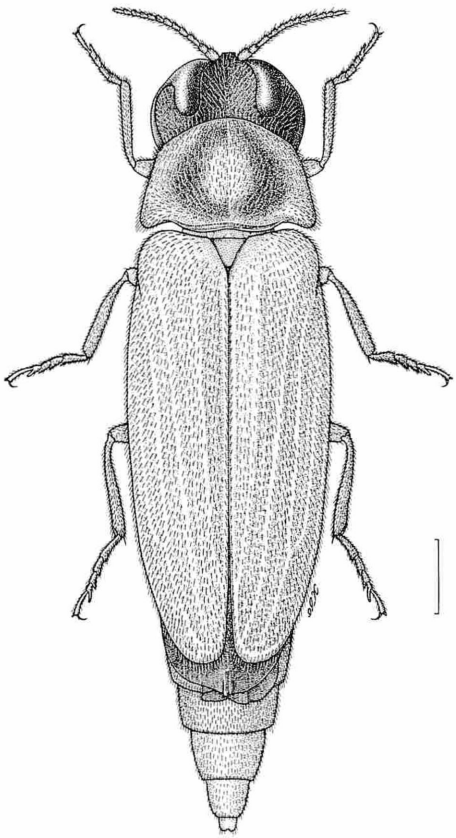
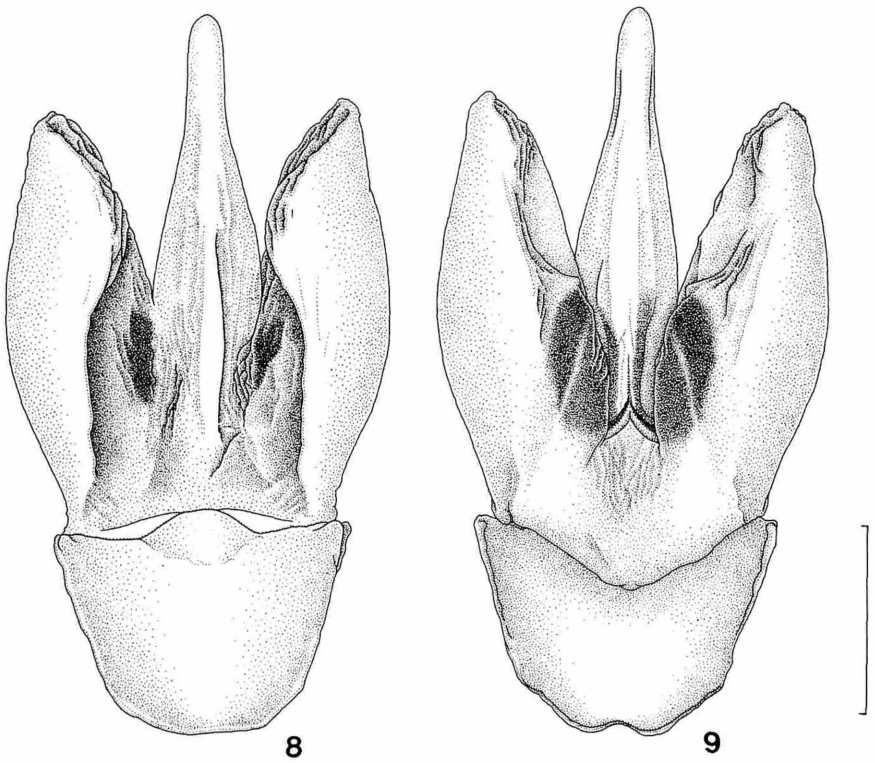


Fig. 7. Habitus of *Rhagophthalmus flavus* KAWASHIMA et M. SATÔ, sp. nov., from Myanmar. Scale: 1.0 mm.

Elytra moderately broad, sides subparallel and weakly arcuate, gradually divergent posteriad, widest before the middle, and then convergent to rounded apices, distinctly dehiscent in apical parts, narrowly bordered throughout including suture, the margin being concealed by rounded humeri; dorsal surface distinctly and irregularly rugose; each elytron with four thick costae though not sharply elevated, 2nd the longest, running throughout the length of elytra, the innermost one relatively long though attached to the sutural margin at apical fifth, 3rd also relatively long but disappearing near the humeral parts, exteriormost one the shortest, disappearing at anterior third of elytra and then connected with the 3rd at distal fourth; EL/PL 3.76, EL/EW 2.08, EW/PW 1.19.

All legs not so long but slender; tibiae almost straight though moderately incurved at the bases; tarsi relatively long, only a little shorter than the length of tibiae; 4th tarsomeres with membraneous lingulate lamellae in ventro-apical portions; 1st and



Figs. 8–9. Male genitalia of *R. flavus* KAWASHIMA et M. SATÔ, sp. nov.; dorsal view (8), ventral view (9). Scale: 0.25 mm.

5th tarsomeres the longest, almost of the same length, and a little longer than the 3rd and 4th combined. Claws small and simple, weakly dilated at the bases.

Male genitalia as shown in Figs. 8–9, weakly depressed dorso-ventrally, moderately narrow and slender, external surface moderately shiny, smooth and glabrous. Basal plate small, semicircular or cup-shaped, distal margin almost straight but arcuate and moderately produced in central part. Aedeagus long and slender, with narrowly rounded apex, gradually narrowed from the middle but subparallel-sided in distal third. Parameres spatulate, embracing aedeagus from left and right, joining at the bases on ventral side, almost straight and spindle-shaped as a whole, feebly dilated towards the apices, and widely so and separated from each other on dorsal side; external sides arcuate, inner margin on dorsum sinuate; basal halves of inner margins parallel, then gradually convergent, and abruptly divergent towards the apices; inner margins on venter almost straight or weakly arcuate, gradually divergent towards the apices, distal halves scooped out; the apices neither hooked nor inwardly bent.

Measurement in mm. BL: 8.60 (in the holotype) (range 8.40–8.60); HW: 2.15 (2.15–2.18); PL: 1.65 (1.55–1.65); PA: 2.05 (2.05–2.05); PB: 2.50 (2.50–2.50); PW:

2.50 (2.50–2.50); EL: 6.20 (6.10–6.20); EW: 2.98 (2.90–2.98); EHW: 2.60 (2.50–2.60); HTL: 1.50 (1.30–1.50).

Female. Unknown (probably wingless larviform).

Type series (all dried). Holotype: ♂, Dawna, SE. Myanmar, 1–VI~2–V–1992, collector unknown. Paratype: 1♂ (moderately teneral), Sara Buri, Thailand, 25–III–1985, native collector.

The holotype is deposited in the insect collection of Nagoya Women's University, Nagoya. The paratype is preserved in KAWASHIMA's collection.

Range. Myanmar and Thailand.

Remarks. This new species is clearly distinguished from the other members of the genus by the characteristic body coloration, the number of antennal sensillae and the shape of male genitalia. The male genitalia are rather similar to those of *R. elongatus* WITTMER, 1994, from Kwangsi [=Guangxi] Province, China, but can easily be distinguished from the latter by the apices of the parameres not incurved and hooked.

Rhagophthalmus minutus KAWASHIMA et M. SATÔ, sp. nov.

(Figs. 2, 5, 10–11)

Male. Body moderately shiny, covered all over including appendages with golden subrecumbent pubescence. Head capsule entirely black; eyes blackish; antennae yellowish brown, becoming darker towards the bases; mandibles black; maxillae and labium yellowish brown; pronotum blackish, more or less paler towards the sides, the posterior margin yellowish; scutellum yellowish brown; elytra dark brown, entirely tinged olive; femora yellowish brown; tibiae dark brown; tarsi dark brown; claws yellowish brown; ventral surface of thorax yellowish brown; abdominal sternites constantly buff.

Body spindle-shaped, almost parallel-sided.

Head large and transeverse, not depressed above, rather minutely and coarsely punctate on dorsal surface, a little wider than the apical width of pronotum, almost as wide as the maximum width of pronotum.

Antennae (Fig. 5) 12-segmented, rather long and serrate, reaching anterior margin of pronotum; scape short cylindrical, 1.25 times as long as wide; pedicel barrel-shaped; 3rd segment (1st flagellar segment) clavate and the longest, becoming thicker towards the apex; 4th to 11th (2nd to 9th flagellar) serrated continuously; 5th to 11th (3rd to 9th flagellar) each with minute spine-like sensilla at the protruded antero-ventral portion; terminal segment or the 12th (10th flagellar) the most slender and spindle-shaped.

Pronotum relatively large, trapezoidal or transversely subquadrate in dorsal view, widest before the base, across basal third to fourth; maximum width a little narrower than the elytral humeral width; anterior margin widely arcuate and weakly produced anteriad; both exteriormost portions of the margin forming shallow angles; sides feebly arcuate; basal margin shallowly sinuate on both sides, narrowly bordered in central

part; dorsal surface constantly and coarsely punctate; disc feebly depressed; PW/HW 1.73, PW/PL 1.65, PW/PA 1.12, PW/PB 1.02, PL/PW 0.61, PW/EHW 0.91.

Scutellum triangular or tongue-shaped, coarsely punctate on dorsal surface.

Elytra fairly narrow, sides almost parallel, widest at basal third to fifth, and then gradually convergent to rounded apices, distinctly dehiscent in apical parts, narrowly bordered throughout including suture, the margin being concealed by rounded humeri; dorsal surface distinctly and irregularly rugose; each elytron with three thick costae, which are not sharply raised, middle one the longest and distinct, running for almost whole length of elytra but disappearing at apical parts, innermost one long but a little shorter than the middle one, disappearing at apical part, exteriormost one the shortest, very weak and almost obsolete. EL/PL 4.51, EL/EW 2.23, EW/PW 1.24.

All legs not so long and relatively thick, tibiae almost straight though incurved at the bases; tarsi relatively long, only a little shorter than the length of tibiae; 5th tarsomere the longest, almost of the same length as the combined length of the 2nd to 4th; 4th tarsomere protruded on ventro-apical portions. Claws small and simple, weakly dilated at the bases.

Male genitalia as shown in Figs. 10–11, weakly depressed dorso-ventrally, fairly narrow and slender; external surface moderately shiny, smooth and glabrous. Basal plate elongated cup-shaped, distal margin widely arcuate and anteriorly produced. Aedeagus long and slender, with rounded apex, sides gradually convergent from basal part. Parameres spatulate, spindle-shaped as a whole, embracing aedeagus from left and right, joining at the bases on ventral side, external sides arcuate, gradually convergent towards the apices, and separated from each other on dorsal side; inner margins of dorsum sinuate, subparallel in basal third, gradually convergent towards the apices, forming an arch and protruded, approaching to each other, and almost straight in apical third, and regularly and gradually convergent towards the apices; inner margins of venter also sinuate, gradually dilated towards apices at the bases, subparallel on central parts, and then, forming expanded and rounded apices.

Measurement in mm. BL: 6.60 (in the holotype)(range 5.80–6.60); HW: 1.65 (1.50–1.65); PL: 1.05 (0.93–1.05); PA: 1.55 (1.35–1.55); PB: 1.70 (1.45–1.70); PW: 1.73 (1.45–1.73); EL: 4.80 (4.30–4.80); EW: 2.15 (1.90–2.15); EHW: 1.90 (1.60–1.93); HTL: 1.05 (0.95–1.10).

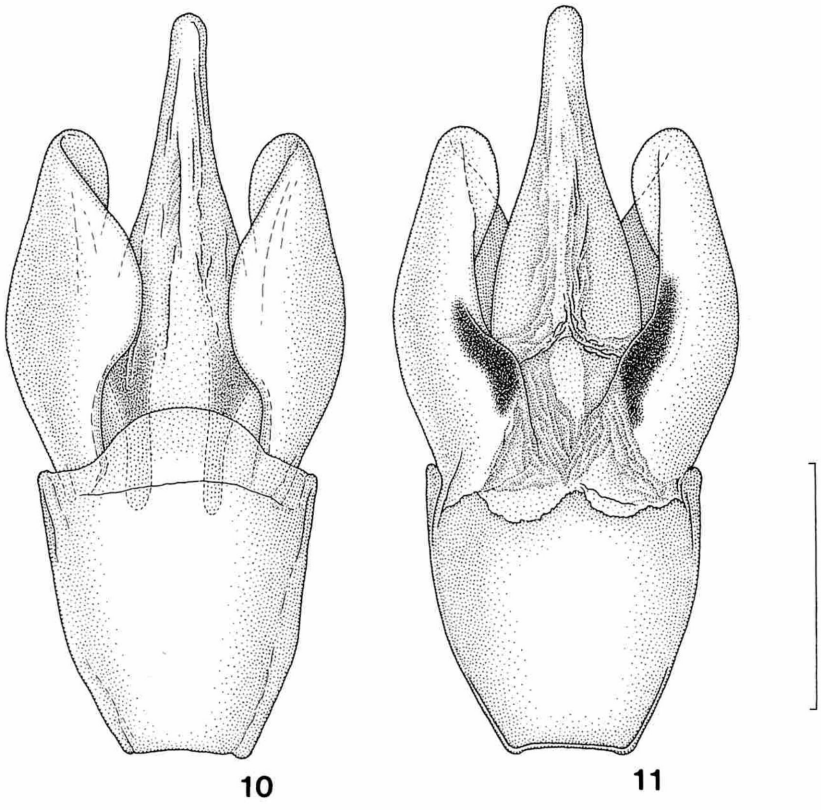
Female. Unknown (probably wingless larviform).

Type series (all dried). Holotype: 1♂, Lam Chee Yai, near Ban Lon, Kohn Kaen Province, NE. Thailand, 16–III–2000, M. SATÔ leg. Paratypes: 3♂♂, same locality and data as for the holotype, T. KISHIMOTO & M. SATÔ leg.

The holotype and two paratypes are deposited in the insect collection of Nagoya Women's University, Nagoya. The other paratype is preserved in KAWASHIMA's collection.

Range. NE. Thailand.

Remarks. This new species is one of the small species of the genus together with *R. filiformis* E. OLIVIER, 1911, from Ceylon, but can easily be distinguished from



Figs. 10–11. Male genitalia of *R. minutus* KAWASHIMA et M. SATÔ, sp. nov.; dorsal view (10), ventral view (11). Scale: 0.25 mm.

the latter by the body coloration and relatively short and wide body. The male genitalia are similar to those of *R. elongatus* WITTMER, 1994, from China and *R. flavus* sp. nov., but can easily be distinguished from the latter two species by the apices of parameres rounded and expanded.

All individuals flew to a torch at night at the river side in a thick forest.

Rhagophthalmus jenniferae KAWASHIMA et M. SATÔ, sp. nov.

(Figs. 3, 6, 12–13)

Male. Body moredately shiny, covered all over including appendages with golden subrecumbent pubescence. Head capsule entirely black; eyes blackish; antennae yellowish brown; mandibles brownish, darker towards the blackish apices; maxillae and labium yellowish brown; pronotum blackish, becoming more or less paler towards the sides; scutellum yellowish brown; elytra dark brown, entirely tinged olive;

femora yellowish brown; tibiae dark brownish; tarsi blackish brown; claws dark brown; ventral surface of thoraces yellowish brown; abdominal sternites brownish.

Body elongated oval, gradually dilated towards the distal third of elytra, sides not subparallel.

Head large and transverse, depressed above and concave along the mid-line, rather minutely and coarsely punctate on dorsal surface, evidently wider than the apical width of pronotum, but a little narrower than the basal and maximum widths of pronotum.

Antennae (Fig. 6) 12-segmented, very short and serrate, barely or not reaching anterior margin of pronotum; scape cylindrical and thick, feebly constricted at the middle, 1.26 times as long as wide; pedicel short cylindrical, 1.27 times as long as wide; 3rd segment (1st flagellar segment) clavate and the longest, becoming thicker towards the apex; 4th to 11th (2nd to 9th flagellar) serrate continuously, only 11th with lens-like sensillum at the protruded antero-ventral portion; terminal segment or the 12th (10th flagellar) the most slender and spindle-shaped.

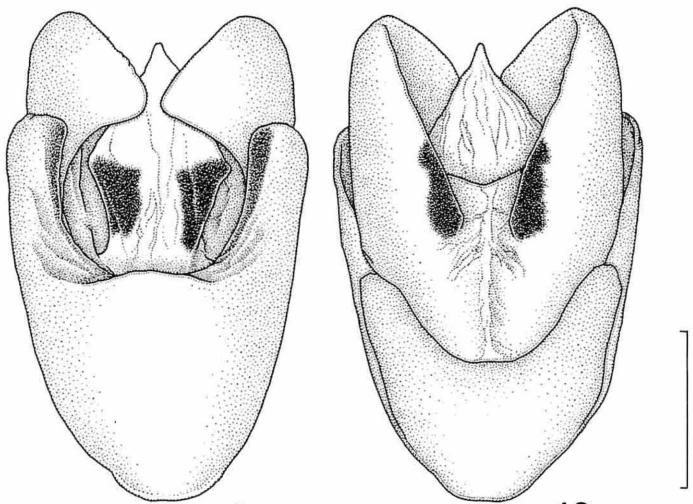
Pronotum relatively large, trapezoidal in dorsal view, widest at the base; the maximum width a little narrower than the elytral humeral width; anterior margin widely arcuate and produced anteriad, both exterior portions of the margin forming shallow angles; sides almost straight but moderately curved exteriorly just before the base; basal angles projected outwards; basal margin sinuate on both sides, narrowly bordered in central part; dorsal surface constantly and densely punctate; disc feebly depressed; PW/HW 1.15, PW/PL 1.66, PW/PA 1.29, PW/PB 1.00, PL/PW 0.60, PW/EHW 0.75.

Scutellum triangular or lingulate, closely punctate on dorsal surface.

Elytra fairly broad, widest at apical two-fifths, and then narrowed to moderately pointed apices, dehiscent in apical parts; sides distinctly divergent posteriad, narrowly bordered throughout including suture, the margin being concealed by rounded humeri; dorsal surface distinctly and irregularly rugose; each elytron with three vague costae, the middle one the longest and distinct, running throughout the length of elytra, though the apical parts disappear, innermost one moderately obsolete, disappearing at about middle, exteriormost one short, very weak and obsolete; EL/PL 4.75, EL/EW 2.00, EW/PW 1.43.

All legs not so long but slender; tibiae almost straight though incurved at the bases; tarsi relatively long, only a little shorter than the lengths of respective tibiae; 4th tarsomeres with membraneous ligulate lamellae on ventro-apical portions; 1st and 5th tarsomeres almost of the same length, faintly longer than the combined length of 3rd and 4th. Claws small and simple, weakly dilated at the bases.

Male genitalia as shown in Figs. 12–13, weakly depressed dorso-ventrally, fairly broad, short and rounded; external surface moderately shiny, smooth and glabrous. Basal plate thick U-shaped on dorsum as a whole, but cup-shaped in basal half; distal margin nearly straight or feebly sinuate, with both sides prolonged towards the apices and covering the basal parts of parameres; prolonged parts almost straight, with rounded apices, which are feebly distant from each other. Aedeagus wide and flattened



Figs. 12–13. Male genitalia of *R. jenniferae* KAWASHIMA et M. SATÔ, sp. nov.; dorsal view (12), ventral view (13). Scale: 0.25 mm.

dorso-ventrally, subrhomboidal, with pointed apex. Parameres spatulate, embracing aedeagus from left and right, rounded triangular on dorsum, internal corners approaching to each other from left and right; external sides on venter more or less arcuate, gradually convergent towards the apices; inner margins on venter straight, gradually convergent towards the base.

Measurement in mm. BL: 10.00 (in the holotype) (range 10.00–11.00); HW: 2.30 (2.30–2.30); PL: 1.60 (1.60–1.65); PA: 2.05 (2.05–2.25); PB: 2.65 (2.65–2.85); PW: 2.65 (2.65–2.85); EL: 7.60 (7.60–8.50); EW: 3.80 (3.80–3.80); EHW: 2.80 (2.80–3.15); HTL: 1.75 (1.75–1.90).

F e m a l e. Unknown (probably wingless larviform).

Type series (all dried). Holotype: 1♂, Fenchihu, Chiai Hsien, Taiwan, 25~26–IV–1972, M. SAKAI leg. Paratypes: 1♂, same data as for the holotype; 2♂♂, Puli, Nantou Hsien, Taiwan, 10–V–1913, M. MAKI leg.

The holotype is deposited in the insect collection of Nagoya Women's University, Nagoya. The paratypes are preserved in the collection of the Department of Entomology, National Taiwan University and in KAWASHIMA's collection.

Range. Taiwan.

Remarks. This new species is very closely allied to *R. ohbai* WITTMER, 1994, from the Yaeyama Islands, Japan, but differs from the latter in relatively large and robust body. The male genitalia are also closely similar to those of *R. ohbai* (WITTMER et OHBA, 1994; OHBA *et al.*, 1996), but wider and shorter, width of both the parameres a little narrower than width of the basal plate, exterior margins of parameres not straight and feebly arcuate and incurved. The adult specimens of the species were collected in

the spring in contrast to the fact that the adults of *R. ohbai* were observed in the winter. The male genitalia are also similar to those of *R. scutellatus* MOTSCHULSKY, 1854, the type species of the genus, from Beijing, China, but differs from it by having more straight parameres.

This species is named after Ms. Jennifer LAI of National Taiwan University in honor of her contribution to the Taiwanese Lampyridae.

Acknowledgement

The authors wish to express their sincere thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his critically reading the original manuscript and helpful advice, and to Dr. Toshio KISHIMOTO of the Laboratory of Insect Resources, Tokyo University of Agriculture, Atsugi, Kanagawa, Ms. Jennifer LAI of the Department of Entomology, National Taiwan University, and Dr. Masahiro SAKAI of the Entomological Laboratory, Ehime University for their kind support and help.

要　約

川島逸郎・佐藤正孝：イリオモテボタル属の3新種の記載．—— イリオモテボタル属（オオメボタル属）は，これまでにインドから東南アジア・中国大陸・日本にかけて25種が記載されているが，分類学的研究は十分でなく，近年でも新種が追加されている状況にある．今回，筆者らが実見することのできた標本を詳しく検討したところ，色彩や外部形態，雄交尾器の形状から判断して，3新種が認められたので，本論文において以下のように命名記載した．すなわち *Rhagophthalmus flavus* KAWASHIMA et M. SATÔ（タイ，ミャンマー），*R. minutus* KAWASHIMA et M. SATÔ（タイ北東部），*R. jenniferae* KAWASHIMA et M. SATÔ（台湾）である．

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Elytra, Tokyo, **29** (2): 434, November 15, 2001

Occurrence of *Lucidina biplagiata* (Coleoptera, Lampyridae) on Teuri-tô Island, off Hokkaido, Japan

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A middle-sized lampyrine beetle, *Lucidina biplagiata* (MOTSCHULSKY, 1866), is widely distributed in the region from the Kuril Islands in the northeast to Taiwan in the southwest including Japan. I had an opportunity to examine new materials of this species through the courtesy of Mr. T. SHIMADA. In this brief report, I will record it as a new locality of this species.

Materials examined. 3♂♂, 2♀♀, Benten, Teuri-tô Is., off NW. Hokkaido, 7~8–VII–2001, T. SHIMADA leg.

I am indebted to Mr. Takashi SHIMADA of the Laboratory of Insect Resources, Tokyo University of Agriculture, Atsugi, Kanagawa, for his supplying with the materials.

Elytra, *Tokyo*, **29** (2): 435–439, November 15, 2001

A New Species of the Genus *Miridiba* (Scarabaeidae, Melolonthinae, Melolonthini) from the Yaeyama Islands, Southwest Japan

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Abstract A new rhizotrogine species, *Miridiba hirsuta* is described from both Ishigakijima and Iriomotejima Islands of the Ryukyus, Southwest Japan.

In 1988, I recorded *Miridiba trichophora* (FAIRMAIRE, 1891) from Iriomotejima Island and described its specific characters in Japanese. Later, I had an opportunity to examine three specimens of this species from Fokien [=Fujian] in China, compared the specimens from the Ryukyus with those from China, and commented that the individuals from the Ryukyus belong to *Miridiba trichophora* (FAIRMAIRE, 1891) though a few slight differences were recognized between the specimens from the two areas (ITOH, 1990). At present, I have obtained further individuals not only from Iriomotejima but also from Ishigakijima Island through the courtesy of Mr. Ryuji FUKAISHI. As the result of my additional scrutiny, I have reached the conclusion that the Ryukyuan individuals may be recognized as a new species though the differences are rather slight between them and the individuals of *Miridiba trichophora* from China. Thus, I am going to describe herein the new species from the Ryukyus under the name of *Miridiba hirsuta* T. ITOH, sp. nov.

Before going further, I would like to express my cordial thanks to Mr. R. FUKAISHI for his kind offer of materials employed in this study.

Miridiba hirsuta T. ITOH, sp. nov.

[Japanese name: Yaeyama-kuriiro-kogane]
(Figs. 1–9)

Miridiba trichophora: ITOH, 1988, *Lamellicornia*, *Tokyo*, (4): 21–22; 1990, *ibid.*, (6): 5–6.

Description. Length: 16.3–20.5 mm.

Male. Head, mouth parts, pronotum, scutellum, pro- to metasterna, metacoxae, tibiae and tarsi reddish brown to dark brown, antennae, maxillary palpi, elytra, abdomen and femora paler, light brown to chestnut brown though the abdomen and femora are sometimes dark blackish brown. Whole body bluntly shining and densely covered with short or long, semirecumbent yellowish hairs.

Head wide; clypeus densely and coarsely punctate, very weakly emarginate at the

middle of anterior margin or almost straight at anterior margin, rounded at each antero-lateral corner and distinctly reflexed along anterior margin, with fronto-clypeal suture fine and arcuate anteriorly; canthus narrow with some long thick hairs; frons flattened, reticulately punctate with short erect yellowish hairs; vertex with carina gently curved posteriad; occiput coarsely and irregularly punctate to the level of posterior margin of eye, with the punctures bearing short, procumbent hairs; antennae 9-segmented with 3–segmented club, which is longer than the antennal shaft, 5th segment triangular, 6th very slightly lamellate; labrum deeply excavated on ventral side as a pair of tusks; mentum transverse and quadrate, widely concave in central area, emarginate at the middle of anterior margin, gently produced along lateral margins, with a pair of longitudinal rows of short, thick, bent and recumbent hairs, which are directed toward the median line.

Pronotum transverse and convex, ratio of length to width 0.65–0.68 (mean 0.67, n=3); disc densely haired and densely punctate with small, inconspicuous impression in each latero-median portion; punctures dense except in central area, composed of two different sized ones; anterior margin gently emarginate, thickly rimmed; lateral margin gently curved behind the middle in lateral view, straight and not serrate in anterior half, straight and finely serrate in posterior half; posterior margin gently produced posteriad, slightly rimmed only near posterior angle; anterior angle subrectangular, posterior one blunt and rounded. Scutellum widely triangular, about twice as wide as long, and punctate in various way: 1) hardly punctate; 2) forming a pair of patches of

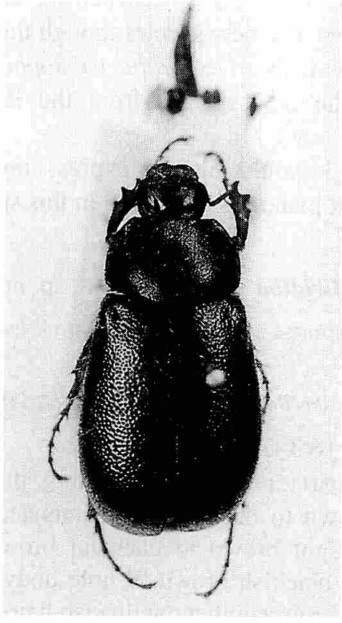


Fig. 1. *Miridiba hirsuta* sp. nov.; habitus, ♂.

punctures; 3) forming V-shaped patch of punctures.

Elytra smooth, densely and feebly rugosely punctate, more or less with short semirecumbent hairs, not costate except for obscurely raised sutural costa; rim recognizable to the level of 5th abdominal sternite in dorsal view; marginal membrane recognizable to sutural angle. Pygidium triangular, gently convex, densely haired, coarsely and densely punctate.

Prosternum with a bluntly triangular post-coxal process. Metasternum densely covered with long yellowish hairs, raised and distinctly carinate medially behind mesocoxae, thence finely furrowed to posterior end of metasternite. Abdomen sparsely haired in central area, densely haired in almost all parts of 2nd sternite, lateral areas of 3rd to 4th and whole areas of 5th and 6th.

Legs robust; metacoxa quadrate, rimmed, densely with long recumbent hairs and rectangular at postero-lateral corners; femur stout, coarsely punctate, mesofemur almost straight along upper margin, metafemur swollen, ratio of length to width 0.39–0.40 (mean 0.39, n=3); protibia stout, sharply tridentate, with 3rd (=basal) denticle distinct and at basal 0.48–0.54 (mean 0.51, n=3); apical spur of protibia slender and sharp, occurring from socket against position of emargination between 2nd and 3rd denticles, not reaching half the 1st tarsal segment; mesotibia with at least two remarkable spines on dorsal surface, also with distinct oblique ridge past the middle; metatibia rather strongly widened apicad, with the same ridge as that on mesofemur and at least three spines on dorsal surface, and with apical two spurs of different length, the longer one of which is longer than 1st metatarsal segment; tarsi slender, with each of 1st to 4th segments of pro- and mesotarsi bearing a tuft of short yellowish hairs apico-ventrally, 1st metatarsal segment distinctly shorter than the 2nd; claws each gently bent apicad, with vertical denticle medially.

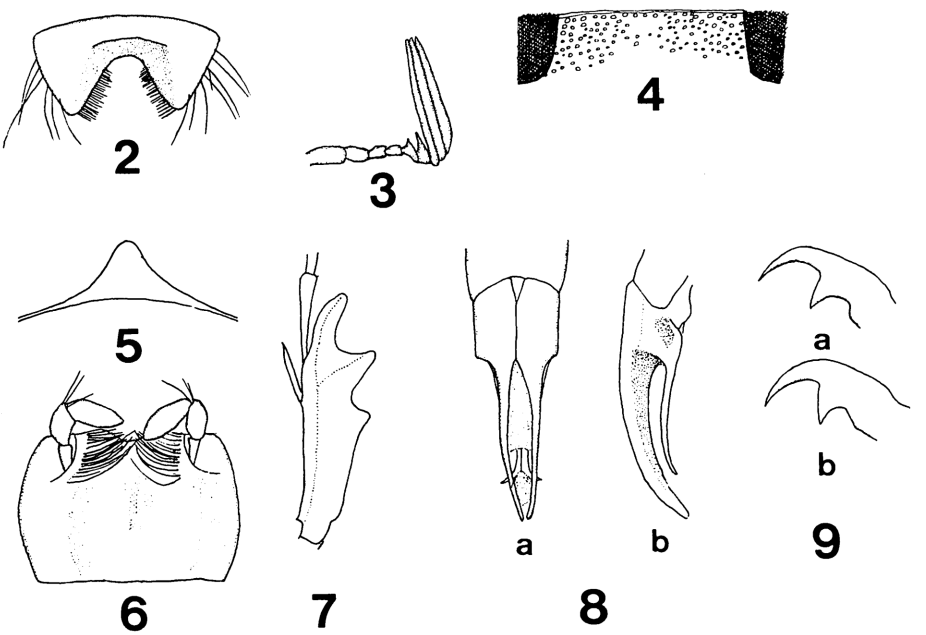
Male genitalia with parameres branched, lower branches thin, shorter than upper ones, bent outwards apicad in dorsal view, upper branches gradually bent toward apex and bluntly pointed apicad in lateral view.

Female. Antennal club shorter than antennal shaft; protibia stout, metafemur distinctly stout, longer one of metatibial spurs stout and widest at apical 1/3, claw of protarsus feebly strongly bent. Arithmetic data as follows: ratio of pronotal length to width 0.63–0.64 (mean 0.63, n=3); ratio of metafemoral width to length 0.43–0.46 (mean 0.45, n=3); 3rd protibial denticle at basal 0.44–0.49 (mean 0.46, n=3).

Specimens examined. Holotype: 1♂, Omoto-rindô, Is. Ishigakijima, Okinawa Pref., 22–II–2001, R. FUKAISHI leg. (OMNH TI 142). Paratypes: 1♀, same data as for holotype; 1♀, same locality, 10–III–2001, R. FUKAISHI leg.; 1♀, same locality, 20~27–III–2000, R. FUKAISHI leg.; 1♂, Sonai, Iriomotejima Is., Okinawa Pref., 26–III–1982, M. SAWAI leg.; 1♂, same locality, 11–III–1976, H. ARIMOTO leg. The holotype is deposited in the Osaka Museum of Natural History, Osaka City.

Distribution. Ishigakijima Is., Iriomotejima Is. (the Ryukyus, Southwest Japan).

Remarks. The present new species is closely allied to *M. trichophora* (FAIRMAIRE) from China, but is distinguishable from the latter by the following points: 1)



Figs. 2–7. *Miridiba hirsuta* sp. nov., ♂. —— 2, Labrum; 3, antenna; 4, occiput; 5, prosternal post-coxal process; 6, mentum; 7, protibia; 8, male genitalia (a: dorsal view; b: lateral view); 9, claw of protarsus (a: ♂; b: ♀).

body generally larger; 2) male genitalia with upper branches of parameres slightly sharper apicad in lateral view; 3) antennal club feebly more elongate in male.

As to the ecological note, the adult pair of male and female individuals are found copulating on the ventral surface of leaves of *Fraxinus griffithii* in Ishigakijima Island. Adult chafers emerge in February to April.

要　　約

伊藤　武：琉球列島のクリイロコガネの1新種．—— 琉球列島のクリイロコガネの1新種 *Miridiba hirsuta* T. ITOH（ヤエヤマクリイロコガネ）を，石垣島と西表島より記載した．筆者は，1988年と1990年に，本種を中国に産する，*Miridiba trichophora* (FAIRMAIRE, 1891) に相当するものと報告したが，その後，数多くの標本を検することができ，再検討した結果，中国のものとは軽微な差異によって新種として取り扱えると判断し，記載した．本種は，石垣島ではシマトネリコ *Fraxinus griffithii* C. B. CLARKE, 1882の葉裏にて交尾するものが観察されており，成虫は2月から4月にかけて発生活動する．

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——— 1990. On *Miridiba trichophora* (FAIRMAIRE, 1891). *Ibid.*, **6**: 5–6. (In Japanese.)

Elytra, Tokyo, **29** (2): 439, November 15, 2001

A Food Habit of *Onthophagus* (*Pseudonthophagus*) *penicillatus* HAROLD (Coleoptera, Scarabaeidae)

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Onthophagus (*Pseudonthophagus*) *penicillatus* HAROLD, 1879, originally described from Burma, is widely distributed in Southeast Asia, that is, northern India, Laos, southern Vietnam, southern China, Borneo and Sumatra. The author collected this species from a large-sized dead millipede in Northeast Thailand. The millipede is very common in the forest of this area, so that the insect might depend on this as one of its foods.

Collecting data. 1 ex., Wang Nam Kieo, Nakhon Ratchasima, NE. Thailand, 29~30–VIII–2000, K. MASUMOTO leg.; 3 exs., same data and locality, Y. UTSUNOMIYA leg.

This is the first record of *Onthophagus* (*Pseudonthophagus*) *penicillatus* HAROLD, 1879, from Thailand.

Reference

HAROLD, E. VON, 1879. Diagnosen neuer Arten. *Coleopt. Hefte, München*, **16**: 225–232.

Elytra, *Tokyo*, **29** (2): 440, November 15, 2001

A Brief Note on the Cantharid Fauna (Coleoptera, Cantharidae) of Teuri and Yagishiri Islands off Northwestern Hokkaido, Japan

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Teuri and Yagishiri are small islands lying off northwestern Hokkaido, Japan. Up to the present, only one species of Cantharidae, "*Cantharis badia*" (=*Stenothemus badius* (Kiesenwetter)) has been recorded from these islands (Kumata, 1984), and no additional records have been made until now.

Recently, some cantharid specimens were collected from these islands by Mr. Takashi Shimada, and I was able to examine them through his courtesy. As the result of my examination, they are classified into two species new to these islands, which will be recorded in this short paper. All the three cantharid species known from Teuri and Yagishiri Islands are common to the mainland of Hokkaido.

1. *Podabrus* (*Asiopodabrus*) *ainu* Nakane et Makino

1 ♀, Benten, Teuri Is., Haboro-chô, Hokkaido, Japan, 9–VII–2001, T. Shimada leg.

2. *Trypherus niponicus* (Lewis)

7 ♂♂, 2 ♀♀, Tomiiso, Teuri Is., Haboro-chô, Hokkaido, Japan, 9–VII–2001, T. Shimada leg. 1 ♂, 1 ♀, Shirahama, Yagishiri Is., Haboro-chô, Hokkaido, Japan, 9–VII–2001, T. Shimada leg.

All the specimens recorded above are preserved in the collection of Kurashiki Museum of Natural History.

I thank Mr. Takashi Shimada of Tokyo University of Agriculture for his kindness in submitting the specimens to me for study, and Mr. Shigehisa Hori of the Historical Museum of Hokkaido, Sapporo, for his kind support in consulting a useful literature.

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Elytra, *Tokyo*, **29** (2): 441–445, November 15, 2001

Notes on the Genus *Ceracupes* (Coleoptera, Passalidae) from Vietnam, with a New Record of *C. arrowi* HELLER

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Abstract *Ceracupes arrowi* HELLER is recorded from Vietnam for the first time and its microhabitat is discussed. A key to the Vietnamese species of *Ceracupes* KAUP and explanatory photographs are also provided.

Up to the present, two species of the genus *Ceracupes* KAUP (Coleoptera, Passalidae), *C. fronticornis* (WESTWOOD) and *C. chingkini* OKANO, have been recorded from Vietnam (HINCKS & DIBB, 1935; KON & JOHKI, 1995). When we examined a series of specimens of Passalidae from Mt. Tamdao, Vietnam, we found one male specimen of *C. arrowi* HELLER among them. This is the first record of this species from Vietnam.

We briefly describe the male of *Ceracupes arrowi* from Vietnam and discuss on its microhabitat. In addition, we provide explanatory photographs and a key to the Vietnamese species of *Ceracupes*.

Ceracupes arrowi HELLER

(Figs. 1, 4)

Ceracupes arrowi HELLER, 1911, Annls. Soc. ent. Berg., **55**, p. 256.

Brief description of the male specimen from Vietnam. Body length: 25.0 mm (from tip of central tubercle to tip of elytron). Upper tooth of mandible distinctly

longer than central tubercle in dorsal view. Central tubercle with bifid apex, which is not so divergent distally; ventral surface of central tubercle concave even in anterior portion close to apex; lower margin of central tubercle without distinct tubercle near base in lateral view. Anterior intermediate and lateral areas of metasternum punctured and hairy.

Penis rounded, sclerotized and finely rugose on ventral side, less sclerotized on dorsal side, with orifice at the center of dorsal side. Tegmen consisting of one piece, with lateral margin concave in ventral view.

Specimens examined. 1♂, Mt. Tamdao, Vietnam, 9–I–1992; 1♂, 2♀♀, Parin, Taiwan, 13–VI; 2♂♂, 2♀♀, Nanshanshi, Taiwan, 23–VIII–1986, M. KON & Y. JOHKI leg.

Distribution. Taiwan, Vietnam (new record).

Notes. No noticeable difference is found between the specimens from Taiwan and Vietnam in the external morphology and male genitalia.

Ceracupes fronticornis (WESTWOOD)

(Figs. 2, 5)

Passalus fronticornis WESTWOOD, 1842, Ann. Mag. nat. Hist., **8**, p. 124.

Specimens examined. 1♂, Mt. Tamdao (800–1,000 m), Vietnam, 2–IX–1990; 2♂♂, 2♀♀, ditto, VII–1992.

Distribution. Eastern Himalayas, Myanmar, Thailand, Vietnam.

Ceracupes chingkini OKANO

(Figs. 3, 6)

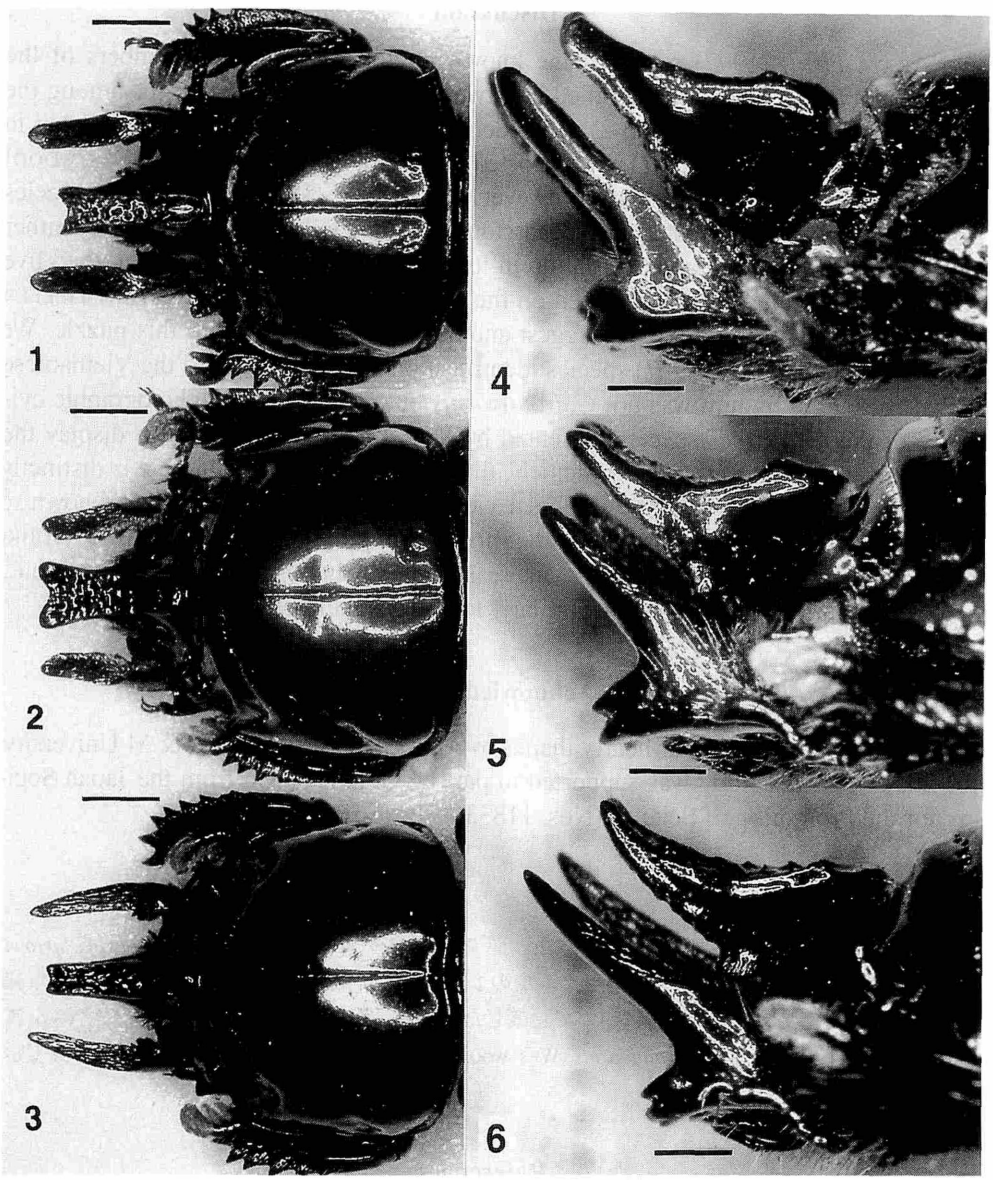
Ceracupes chingkini OKANO, 1988, Entomo Shirogane, (1), p. 2.

Specimen examined. 1♀, Mt. Tamdao, Vietnam, 7–V–1992.

Distribution. Myanmar, Thailand, Vietnam, China (Guangxi), Taiwan.

Key to the Vietnamese Species of *Ceracupes*

1. Anterior intermediate and lateral areas of metasternum impunctate and hairless, body length 26.1 mm ..... *C. chingkini* OKANO.
— Anterior intermediate and lateral areas of metasternum punctured and hairy .... 2.
2. Upper tooth of mandible almost as long as central tubercle in dorsal view, body length 22.1–27.3 mm ..... *C. fronticornis* (WESTWOOD).
— Upper tooth of mandible distinctly longer than central tubercle in dorsal view, body length 25.0 mm ..... *C. arrowi* HELLER.



Figs. 1–6. —— 1–3. Head and pronotum of *Ceracupes* spp. from Vietnam in dorsal view, scale 2 mm; 1, *C. arrowi* HELLER; 2, *C. fronticornis* (WESTWOOD); 3, *C. chingkini* OKANO. —— 4–6. Head of *Ceracupes* spp. from Vietnam in left lateral view, scale 1 mm; 4, *C. arrowi* HELLER; 5, *C. fronticornis* (WESTWOOD); 6, *C. chingkini* OKANO.

Discussion

ARAYA *et al.* (1997) reviewed the known microhabitats of the members of the genus *Ceracupes*, which are classified into two types, i.e., 1) in the detritus among the rhizomes of epiphytic ferns and 2) in the detritus-like wood substance accumulated in tree trunks or logs. KABAKOV (1967) reported that *Ceracupes fronticornis* (WESTWOOD) lives in epiphytic ferns in Vietnam. However, ARAYA *et al.* (1997) collected this species from the detritus accumulated in a dead stump in Thailand, and suggested that either *C. fronticornis* has geographic variation in its microhabitats, or it is facultative to live in both types of microhabitats. Based on the present new record of *C. arrowi* HELLER from Vietnam, we would like to suggest another potential solution to this puzzle. We suspect that KABAKOV's (1967) species identification was incorrect and the Vietnamese species observed by him was not *C. fronticornis* but *C. arrowi*. The photographic evidence of the *Ceracupes* species presented by KABAKOV (1967) appears to display the diagnostic character of *C. arrowi*; namely, the upper tooth of the mandible is distinctly longer than the central tubercle in dorsal view. *Ceracupes arrowi* has been known to live in colonies in the detritus among the rhizomes of epiphytic ferns in Taiwan (JOHKI & KON, 1987, 1989). Therefore, it seems reasonable to suppose that the Vietnamese *C. arrowi* may inhabit a microhabitat similarly to its Taiwanese counterpart.

Acknowledgments

We wish to express our hearty thanks to Alan GILLOGLY, Texas A & M University, for literature. This study was supported in part by Grants-in-Aid from the Japan Society for the Promotion of Science (Nos. 11833007, 11833014).

要　　約

近　雅博・荒谷邦雄・常喜　豊：ベトナムのミツノクロツヤムシ属 *Ceracupes*, *C. arrowi* HELLER の新記録．—— ミツノクロツヤムシの1種 *Ceracupes arrowi* HELLER をベトナムから初めて記録し，その微小生息場所について論議した．また，ベトナム産のミツノクロツヤムシ属の3種，*C. arrowi* HELLER, *C. fronticornis* (WESTWOOD), *C. chingkini* OKANO の頭部の特徴を写真で示し，検索表を作成した．

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KON, M., & Y. JOHKI, 1995. The male genitalia of the genus *Ceracupes* (Coleoptera, Passalidae), with new records of *Ceracupes chingkini* from Thailand and Vietnam. *Spec. Bull. Jpn. Soc. Coleopterol., Tokyo,* (4): 371–375.
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Elytra, Tokyo, **29** (2): 445–446, November 15, 2001

A New Record of *Leptaulax sarawakus* IWASE (Coleoptera, Passalidae) from Mt. Trusnadi, Sabah, Borneo, with Reference to Sexual Dimorphism

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Leptaulax sarawakus was described by IWASE (1996) from Mt. Serapi, Sarawak, Borneo. Recently, one of the authors (KASHIZAKI) collected some specimens of *L. sarawakus* from Mt. Trusmadi, Sabah, Borneo. This is the first record of this species from the other locality than the type locality.

Leptaulax sarawakus IWASE

Leptaulax sarawakus IWASE, 1996, Jpn. J. syst. Ent., **2**, p. 227.

Specimens examined. 1♂ (holotype), Mt. Serapi, Sarawak, Borneo, IX–X 1989; 1♀ (paratype), ditto; 2♂♂, 2♀♀, Mt. Trusmadi, Sabah, Borneo, 6–II–2000, A. KASHIZAKI leg.

Notes. The specimens from Mt. Trusmadi differ a little from the type series by exhibiting sexual dimorphism as follows: in the specimens from Mt. Trusmadi, the sixth visible abdominal sternite is almost hairless in males and densely hairy at the middle in females, whereas it is densely hairy in both the holotype (male) and the female paratype from Mt. Serapi, Sarawak. In addition, there is a slight difference in females: sixth visible abdominal sternite entirely punctate in the females from Mt. Trusmadi, Sabah, whereas impunctate at the posterior middle in the female paratype.

Generally, sexual dimorphism is not evident in Passalidae (ARROW, 1950), although a few species have been known to have sexual dimorphism: in *Leptaulax formosanus*, the female is hairy on the sixth visible abdominal sternite, though it is hairless in the male (DOESBURG, 1942); in *Paxilus leachi*, *P. borelli* and *P. camerani*, female with long setae at the humerus whereas male with very short setae (DOESBURG JR., 1974). The pattern of sexual dimorphism reported for *L. sarawakus* from Mt. Trusmadi is the same as obseved for *L. formosanus*. However, it is important to note that *L. sarawakus* has the geographic variation as regards sexual dimorphism.

In closing this brief report, we express our hearty thanks to P. REYES-CASTILLO for literature. Thanks are also due to S. NOMURA and M. FUJIOKA for giving us the opportunities of examining the holotype and the female paratype specimens of *Leptaulax sarawakus* IWASE. This study is supported in part by a Grant-in-Aid from the Japan Society for the Promotion of Science (No. 11833014).

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Elytra, *Tokyo*, **29** (2): 447–463, November 15, 2001

The Far East Species of the Genus *Rybinskiella* (Coleoptera, Leiodidae, Cholevinae), with Discussions on their Taxonomic Position and Natural History

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Abstract Two species belonging to the genus *Rybinskiella* REITTER from the Far East are dealt with. *Rybinskiella levushkini* IABLOKOFF-KHNZORIAN is redescribed and *Rybinskiella peninsularis* sp. nov. from South Korea is described as new. Their taxonomic position and natural history are discussed.

Introduction

So far as we are aware, the cholevine genus *Rybinskiella* REITTER includes eleven species in three subgenera from the Palearctic Region at the present. From the Far East including the Korean Peninsula, additional specimens of *Rybinskiella levushkini* IABLOKOFF-KHNZORIAN and a new species are obtained as below.

Rybinskiella levushkini was described only in Russia as the only member of the newly established subgenus *Eurybinskiella* IABLOKOFF-KHNZORIAN, 1970, on the basis of two males and three females collected by S. I. LYOVUSHKIN from Belyi Dvoretz Cave (Primorskyi Kray, Russia) on August 16, 1966. In his "Revision der Gattung *Rybinskiella*," FRANK (1988) cited the original description of this species as a German translation with original drawings. Although he did not add any new morphological features to it, his speculation was that the species actually belongs to the genus *Catops*.

Besides, its type locality was incorrectly considered by him to be Armenia, not Primorskyi Kray, Russia.

In October of 1991, the first author received a small collection of beetles for taxonomic study from Dr. S. LYOVUSHKIN, who carried out a biospeleological exploration of several caves in Primorskyi Kray, Russia, in 1966–1967 at his post-graduate age. LYOVUSHKIN's material from Belyi Dvoretz Cave contained three specimens of *R. levushkini* together with some other beetles. Later, the first author visited this cave with a Russian-Japanese group of biologists in 1992 and collected by himself two additional specimens of the species. A damaged female seemingly belonging to the same species was also obtained by a pitfall trap on Mt. Litovka in the southern part of Primorskyi Kray. On the other hand, a single specimen of a new *Rybinskiella* species was found by the third author on Mt. Togyu-san of the Sobaeg Mountains in the southern part of the Korean Peninsula in the cause of his study on the Korean cholevine fauna (cf. NISHIKAWA & CHO, 2000).

As the authors were informed by one another about the occurrence of the *Rybinskiella* species in the Russian Far East and South Korea, the present cooperative study has fortunately been realized. In the present paper, we are going to redescribe the poorly known species, *R. levushkini*, and to describe the new species under the name *Rybinskiella peninsularis*. Besides, discussions will be made on their taxonomic position and natural history.

The abbreviations used in this paper are as follows: HL – length of head measured from the apical margin of clypeus to the hind margin of tempora; HW – greatest width of head; PA – width of pronotal apex; PW – greatest width of pronotum; PB – width of pronotal base; PLt – maximum length of pronotum; PLm – length of pronotum, measured along mid-line; EL – length of elytra; EW – greatest width of elytra; L – maximum length measured from the apical margin of mandibles to the apices of elytra; Ls – total of HL+PLt+EL; M – arithmetic mean; IBPV – Institute of Biology and Pedology, the Far East Branch of the Russian Academy of Sciences, Vladivostok, Russia; NHMHU – Natural History Museum, Hannam University, Daejeon, Korea.

Descriptions

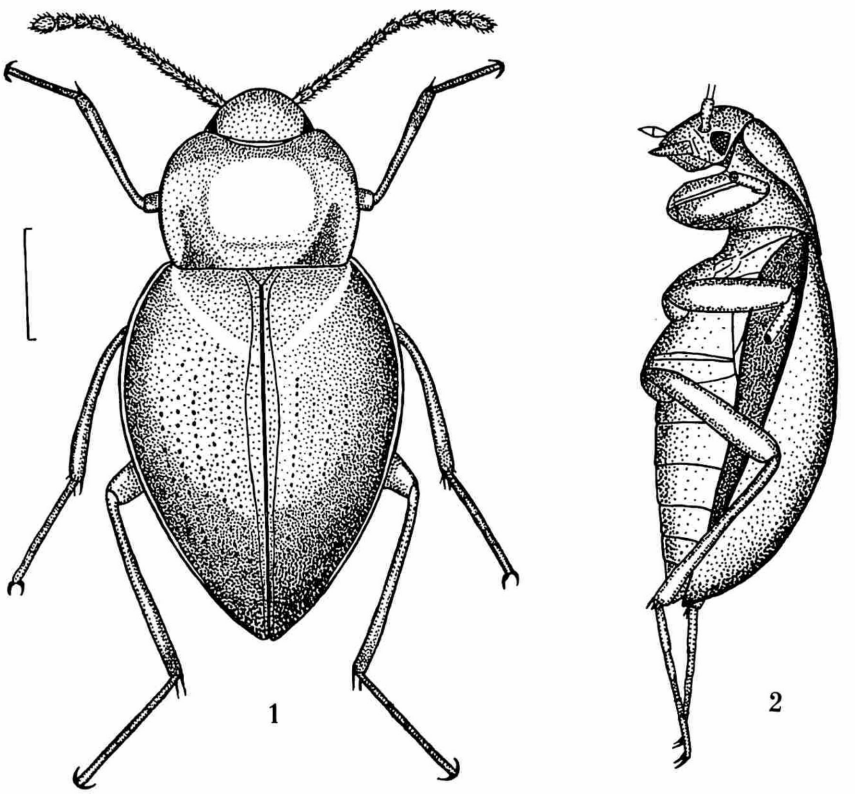
Rybinskiella (*Eurybinskiella*) *levushkini* IABLOKOFF-KHNZORIAN, 1970

(Figs. 1–16)

Rybinskiella (*Eurybinskiella*) *levushkini* IABLOKOFF-KHNZORIAN, 1970, Zool. Sb., Erevan, **15**, pp. 51–54, figs. 2 a–z; type locality: Belyi Dvoretz Cave, Primorskyi Kray, Russia; type depository: Institute of Zoology, Armenian Academy of Sciences, Erevan. —— NEWTON, 1998, Phylog. Evol. Subterranean Endogean Cholevidae, Torino, p. 109. —— PERREAU, 2000, Mém. SEF, Paris, **4**, p. 146.

Rybinskiella levushkini: FRANK, 1988, Ent. basil., **12**, pp. 268, 275, figs. 1, 5 A–H.

Male and female. Length 4.30–5.80 mm, width 2.50–2.90 mm. Body wholly dark reddish brown; antennae, palpi, propleura, elytral epipleura, tibiae and tarsi light



Figs. 1–2. *Rybinskiella* (*Eurybinskiella*) *levushkini* IABLOKOFF-KHNZORIAN, 1970, from Belyi Dvoretz Cave, Primorskyi Kray, Russia. —— 1, Habitus, female (specimen 3 in Table 1); 2, same, in lateral view. Scale: 1.0 mm. (*Del.* G. Sh. LAFER.)

brown; dorsum clothed with dark reddish brown adpressed pubescence (short hairs), which are light golden brown under lateral light; head almost dull, pronotum more or less shiny, and elytra nearly dull with opalescent lustre.

Head (Fig. 3) as in *Catops*. Clypeus with transversely truncate apex. Frontoclypeal suture indistinct. Vertex moderately convex. Upper surface of head with moderately large and deep round foveae forming arched rows at vertex in some places, with hairs directed anteriad on clypeus and posteriad on frons and vertex; interspaces among the foveae shagreened, less than the diameter of each fovea. Eyes reduced, small, weakly prominent. Genae before eyes comparatively broad and high, with weak vertical impression, separated from upper side of head by fine carina. Labrum transverse, trapezoidal, with emarginate front margin and rounded front angles. Mandibles simple at inner margins. Maxillae membranous and pubescent at the apex of their outer lobe. Maxillary palpi rather long and thick, with terminal segment conical, widest at base, though narrower than the apex of penultimate one, which is dilated apicad, ob-

Table 1. Standard measurements of body parts in *Rybinskiella levushkini* (mm).

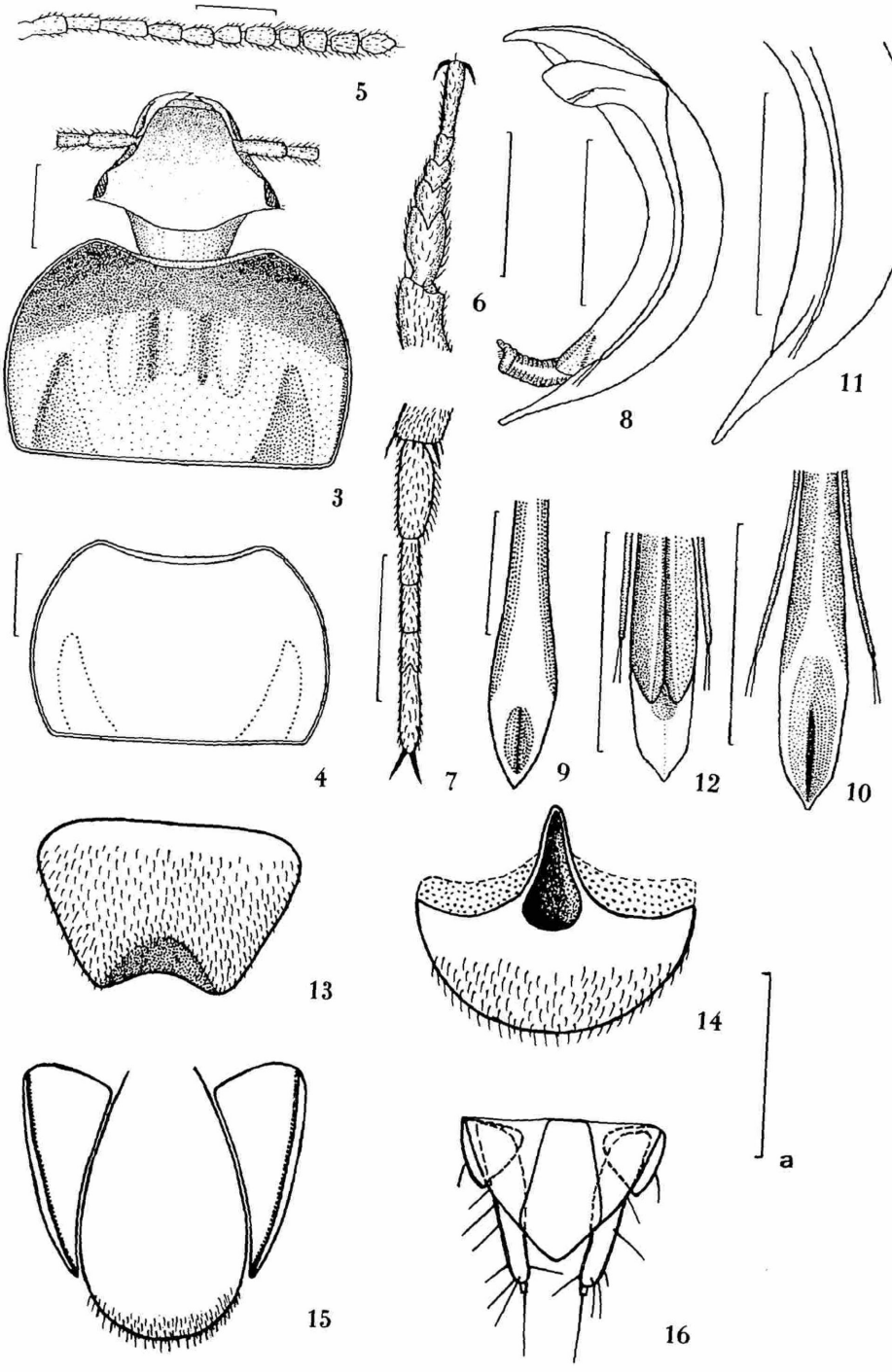
N	Sex	HL	HW	PA	PW	PB	PLt	PLm	EW	EL	L	Ls
1	m	0.58	1.04	0.95	1.80	1.60	1.20	1.15	2.50	3.30	4.50	5.08
2	f	0.65	1.10	1.10	2.10	1.90	1.31	1.25	2.90	3.70	5.80	5.66
3	f	0.60	1.05	1.00	1.82	1.55	1.25	1.20	2.60	3.30	4.30	5.15
4	m	0.60	1.08	1.00	1.90	1.70	1.30	1.15	2.60	3.50	5.20	5.40
5	m	0.55	1.05	1.00	1.90	1.70	1.25	1.20	2.60	3.40	5.00	5.20
6	f	—	—	—	—	—	—	—	2.80	3.90	—	—

Remarks. Locality of specimens 1–3 are Belyi Dvoretz Cave, Primorskyi Kray, Russia, in 1966–1967, 4–5 are from the same locality in 1992, and 6 is from Mt. Litovka. Value L depends on the mounting of each specimen: the head is directed forwards in specimens 2, 4 and 5 and it is deflexed in specimens 1 and 3. (Abbreviations are shown in the final part of the introduction.)

long, as long as the former. Labial palpi very small and slender. Submentum transverse, trapezoidal, narrowed forwards, with round apex. Antennae (Table 2, Fig. 5) relatively long (length 2.3–2.4 mm), slender, reaching basal third of elytra, pubescent throughout, dilated into a weak club beginning from segments V–VI, inserted at upper front corner of gena before each eye. Segment II almost cylindrical, about twice as long as wide, segment III weakly narrowed towards base, the longest, three times as long as wide and as long as segment XI or longer, segments IV–V nearly equal in length but the latter is weakly thicker, segment VI a little shorter and somewhat thicker than segment V, segments VII–X narrowed towards each base, segments VII and segments IX–X nearly equal in each size, segment VIII a little shorter and narrower than the neighboring segments, segment XI shortly fusiform with apex pointed.

Pronotum (Figs. 3–4) transverse, distinctly wider than head, widest at about basal third, feebly narrowed towards base, nearly flattened in transverse direction, weakly convex in longitudinal direction, PW/PLt 1.46–1.52 (M 1.51), PW/PLm 1.52–1.68 (M 1.60), PW/HW 1.73–1.91 (M 1.79), PW/PB 1.11–1.17 (M 1.13); front margin as wide as head, strongly marginate, weakly emarginate; front angles very obtuse, widely rounded, gently produced and deflexed; sides arcuate, narrowly bordered; basal margin narrowly bordered, straight, noticeably wider than front margin, PB/PA 1.55–1.73 (M 1.67); hind angles obtuse, angulate or weakly rounded at the tips; disc nearly flattened in basal half and with a weak impression at each lateral side (impressions triangularly

Figs. 3–16. *Rybinskiella* (*Eurybinskiella*) *levushkini* IABLOKOFF-KHNZORIAN, 1970. —— 3, Head and pronotum, female (specimen 2 in Table 1); 4, pronotum, male; 5, right antenna (by preparation in Canada balsam), male; 6, right protarsus, male; 7, right mesotarsus, male; 8, male genitalia, lateral view; 9, apical part of aedeagus, dorsal view; 10, apical part of aedeagus, other specimen; 11, same, lateral view; 12, same, ventral view; 13, visible seventh abdominal tergite, female, dorsal view; 14, visible seventh abdominal sternite, female, ventral view; 15, eighth abdominal segment, female, dorsal view; 16, ninth abdominal segment and female genitalia, dorsal view. Scales: 0.5 mm (a for Figs. 13–16 and the remainings for the nearest respective figures). (*Del.* G. Sh. LAFER.)


5
6
8
11
3
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a
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16

Table 2. Ratios of length and width of antennal segments in *Rybinskiella levushkini* (mm×1/4).

Sex	l/w	1	2	3	4	5	6	7	8	9	10	11
m	l	1.00	0.76	1.20	0.90	0.80	0.70	0.80	0.60	0.65	0.70	1.00
	w	0.45	0.36	0.39	0.39	0.39	0.44	0.58	0.48	0.52	0.50	0.50
f	l	1.10	0.80	1.20	0.80	0.80	0.70	0.70	0.60	0.70	0.80	1.20
	w	0.40	0.30	0.40	—	—	0.60	0.70	0.60	0.70	0.70	0.60

Remarks. Measured from a male prepared by Canada balsam, and from a dried specimen in a female.

enlarged towards base), feebly convex in middle, in one female divided by weak longitudinal impressions into three weakly visible ribs as shown in Fig. 3; broad lateral areas of disc outside of basal impressions weakly convex and faintly reflexed; surface of pronotum punctate-granulate and weakly shagreened with short adpressed hairs directed posteriad throughout, somewhat shiny. Scutellum triangular, large.

Elytra ovate and not coalescent, moderately convex with scutellar area flattened, widest at basal third, markedly tapered apicad, with apices conjointly acuminate; EL/EW 1.27–1.35 (M 1.30), EL/PLt 2.64–2.82 (M 2.72), EW/PW 1.37–1.43 (M 1.39); frontal margin covered by pronotal base almost transverse, shoulders obtuse, distinct; lateral margins narrowly marginate, at maximal width somewhat arcuate; each elytron with deep sutural stria and with traces of other eight striae, with transverse wavy rows of elongate punctures (the intervals between punctures in rows less than transverse diameter of each puncture, the distance between rows about 1.5–2.0 times as long as the longitudinal diameter of each puncture), densely shagreened in their interspaces, with short homogenous adpressed hairs; epipleura very broad, disappearing at the level of the apex of sternite VI; ventral surface of each elytron with traces of nine striae replaced by rows of fine granules but the six outer rows are distinctly striate in apical third. Hind wings strongly reduced, their rudiments reaching the level of the apex of sternite III.

Ventral surface of prothorax almost entirely occupied medially by large procoxae, which begin practically from its anterior margin and hardly reach the hind one. Procoxal cavities closed behind and inside; a low and narrow intercoxal process present though invisible. Propleura convex in front and impressed behind (in this impression knees of mid and hind legs are placed). Mesosternum somewhat long, marginate along front margin, more or less arch-shaped in front and evenly lowering posteriad. Mesepimeron reaching mesocoxal cavities, which are connected to each other in middle. Metasternum comparatively short in middle (shorter than mesosternum) and longer at sides, strongly convex in transverse direction and lowering posteriad, with small protrusion between metacoxae. Metepisternum oblong, very slender, pointed posteriad. Metepimeron faintly visible outside and behind of metepisternum. Abdomen composed of seven visible segments though the first sternite is almost fully reduced, so that the last visible sternite is sternite VII (=sternum VIII in RŮŽIČKA, 1994). Abdom-

inal sternites densely punctate and shagreened, with gentle adpressed hairs.

Legs medium-sized. Procoxae subconical, prominent, conjoined at their distal tips; mesocoxae large, more or less oval, obliquely placed, conjoined at the middle to each other; metacoxae transverse, flat, short and broad, conjoined to each other at the middle and reaching metepimera on the outside. Pro- and mesocoxae with open trochantins. Trochanters small. Femora slender, depressed; pro- and mesofemora reaching lateral margins of pronotum and elytra, respectively; metafemora protrudent a little beyond elytral margins; tibiae slender, as long as femora, mesotibiae weakly curved outwards, spurs very short. Tarsi slender, a little shorter than tibiae; in male segments I–III of protarsi dilated distinctly (segment III weaker) and furnished with adhesive appendages beneath (Fig. 6), in mesotarsi the first segment 1.5 times as wide as segment II, furnished with adhesive appendages beneath (Fig. 7). Claws simple, slender.

Aedeagus (Figs. 8–12) lanceolate at the apical part, weakly dilated in preapical portion, pointed at the apex, with oval impression and longitudinal medial furrow near apex in dorsal surface; ligulae costal, narrowly and separately rounded at each apex. Parameres narrow, hardly reaching the apices of ligulae, noticeably shorter than apex of penis, with two setae at apex.

Female genitalia (Figs. 13–16): — Visible segment VII: tergite subtrapezoidal, narrowed posteriad, with apex widely emarginate; last visible sternite with apex widely rounded; spiculum ventral elongated triangular, longitudinally impressed; the impression dilated and deepened posteriad with its hind margin arcuate. Segment VIII: tergite subovoidal, dilated towards apex, pubescent along apical margin; hemisternites elongated triangular. Segment IX: tergite widely subtriangular, membranous, with middle sclerite feebly sclerotized; hemisternites small, triangular, with one seta; coxites (styli in RŮŽIČKA, 1994) long and subcylindrical, feebly curved and feebly narrowed towards rounded apex, with three setae before apex and three or four setae on outer surface; styli minute, cylindrical, with one long seta at each apex.

Specimens examined. 1♂, 2♀♀, Belyi Dvoretz Cave (ca. 440 m in alt.) at the foot of Mt. Konstantinopol' (Partizanskyi Range), 40 km NE of Partizansk Town, southern part of Primorskyi Kray, Russia, VIII–1966~IX–1967 [apparently, 18–IX–1966], S. I. LYOVUSHKIN leg.; 2♂♂, same locality, 13–VIII–1992, G. Sh. LAFER leg.; 1♀ (elytra and abdomen), Mt. Litovka, 1,110 m alt. (a glade near the upper limit of forests), Livadiyskyi Range, 28 km westwards of Partizansk (=Sutchan) Town, Primorskyi Kray, Russia, 14~26–VI–1994, V. N. MAKARKIN & S. K. KHOLIN leg. (trap). Deposited in the IBPV.

Distribution. Russia (Partizanskyi and Livadiyskyi Ranges of the Sikhote-Alin Mountains, Primorskyi Kray).

Biological notes. The main habitat of *R. levushkini* in the Sikote-Alins is the limestone cave Belyi Dvoretz (length 120 m, capacity 1,600 m^3) which is located at the foot of Mt. Konstantinopol', only a short way above a river bed. Ten specimens including the type series were collected before in this cave. The first author collected one

beetle on the ceiling of a tight crawl and the other on a wall in the main hall. Together with *R. levushkini* were obtained in the cave 1 female of *Agonum* (*Platinidius*) *nazarovi* LAFER (Carabidae), 2 males and 1 female of *Pteroloma sibiricum* SZÉKESSY (Agyrtidae), and 12 exs. of *Gnypeta* sp. (Staphylinidae). Previously published records of animals from this cave are: *Fuxi nyujwa* PERKOVSKY, 1989 (Leiodidae), *Galloisiana kurentzovi* PRAVDIN et STOROZHENKO, 1977 (Notoptera, Grylloblattidae), and *Pacificampa birsteini* CHEVRIZOV, 1986 (Diptera). On Mt. Litovka a single specimen was collected by soil traps in a small glade in a forest of *Picea ajanensis*, *Abies nephrolepis* and *Betula lanata* and also with thickets of *Lonicera edulis* and *Pinus pumila* at the outskirts.

Apparently *R. levushkini* lives mainly in caves and in deep fissures of rocks or in heaps of rock debris, and only sporadically comes out onto the surface. Weakly reduced eyes and dark colour of body show that the species has troglophilous (not troglobiontic) habit of life.

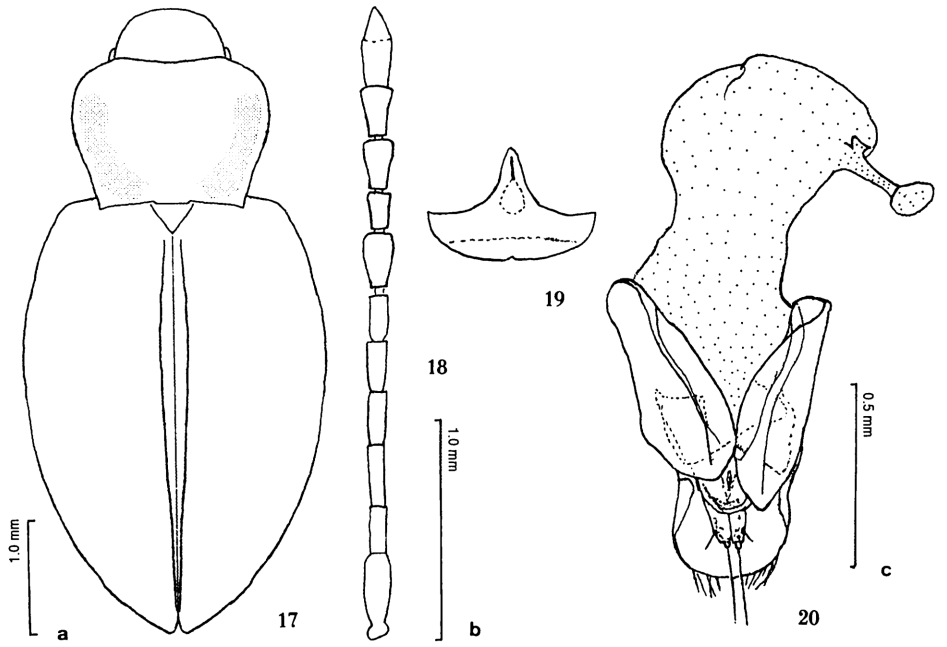
Rybinskiella* (*Eurybinskiella*) *peninsularis M. NISHIKAWA et Y. B. CHO, sp. nov.

(Figs. 17–20)

Female. Length 5.65 mm (from the apical margin of mandibles to the apices of elytra), width 2.80 mm. Body convex, with weakly acuminate apex, almost clothed with long, yellowish brown adpressed pubescence on dorsal surface. Head, scutellum and pronotum blackish brown; elytra dark reddish brown with weak opalescent lustre; antennae and legs dark reddish brown. Ventral surface blackish brown.

Head gently convex, uniformly foveolate in dorsal surface, the fovea shallow, with microsculpture formed by minute punctures, microscopically punctate in lateral fields except for eyes, almost straight at front margin, widest at the level of occipital carina (HW / HL 1.26); labrum transverse, subtrapezoidal, slightly emarginate at front margin, with close punctations; maxillary palpi with last segment as long as the penultimate one; eyes reduced, moderately prominent; horizontal diameter of eye about 4 / 7 as long as the distance between antennal socket and occipital carina. Antennae long (Fig. 18), reaching about basal 1 / 4 of elytra, with segments II–VI cylindrical, VII–X turbinate, XI lancetform. Segmental measurements (length followed by width) in the holotype as follows: I, 0.30, 0.13; II, 0.20, 0.10; III, 0.33, 0.10; IV, 0.23, 0.10; V, 0.21, 0.11; VI, 0.19, 0.11; VII, 0.26, 0.15; VIII, 0.16, 0.13; IX, 0.24, 0.15; X, 0.24, 0.15; XI, 0.33, 0.15.

Pronotum transverse, subcampanulate, gently marginate except for that of front margin distinct, widest at the middle, with base distinctly narrower than elytral base, PW / HW 1.57, PW / PLt 1.30, PW / PLm 1.40, PW / PB 1.18, PB / PA 1.36; front margin distinctly emarginate; front angles rounded; sides sinuate; basal margin bisinuate, though almost straight at the middle; hind angles obtuse, pointed; disc weakly curvate in each lateral portion, almost flat in the middle, granulate-punctate, the punctures relatively large, glabrous among the punctures. Scutellum triangular, closely punctate.



Figs. 17–20. *Rybinskiella* (*Eurybinskiella*) *peninsularis* M. NISHIKAWA et Y. B. CHO, sp. nov., from near Paengnyon-sa Temple on Mt. Togyu-san, Chŏnllabuk-do, South Korea. —— 17, Outline of body with pronotal depressions and sutural striae, female; 18, right antenna, same; 19, eighth abdominal sternite, same; 20, female genitalia, ventral view. Scales: a for Fig. 17, b for Figs. 18–19, and c for Fig. 20. (*Del.* M. NISHIKAWA.)

Hind wings full.

Elytra ovate, with weakly acuminate apices, convex, widest just before the middle, EW/PW 1.45, EL/PLt 2.60, EL/EW 1.38; sides strongly arcuate, convergent apicad, well marginate to apical 1/3; suture entire; disc with distinct sutural striae and a pair of traces of seven striae, granulate-punctate, the punctures close; microsculpture formed by transversely rugose punctures; epipleura broad, feebly depressed longitudinally at the middle, with punctations as on elytra. Pygidium punctulate, feebly emarginate at the apex with weakly sclerotized U-shaped area.

Ventral surface with prosternum punctate; mesosternum glabrous except for foveolate middle portion; metasternum setiferous, closely granulate-punctate; mesepisterna glabrous, foveolate near base; mesepimeron glabrous in basal portion. Abdominal sternites simple in shape, with transverse rugose punctations, though sternite VIII (Fig. 19) is of an anchor-like shape, microscopically punctate in apical portion, feebly notched at the middle of apical margin, with spiculum ventral triangular, nearly roundly depressed in the middle of basal portion.

Female genitalia (Fig. 20) with proctiger elliptical; coxites reaching before the apex of proctiger, with short cylindrical styli bearing a long apical setae at each apex;

ventro-medial sclerite between coxites elliptical, almost transparent except for strongly sclerotized short line longitudinally along the middle, with sensories situated at apical sides; spermatheca unsclerotized, tumid in apical portion, with a process near base.

Legs slender, with protibia feebly expanded towards apex, widest at the apex bearing two prominent spines only at its inner side; tarsi and femora simple; ratios of the lengths of pro-, meso- and metatarsi as follows: 0.28, 0.13, 0.10, 0.10, 0.35; 0.43, 0.23, 0.18, 0.15, 0.40; 0.55, 0.15, 0.18, 0.18, 0.43.

Male unknown.

Type specimen. Holotype: ♀, nr. Paengnyon-sa Temple on Mt. Togyu-san, ca. 950–980 m in alt., Seolch'on-myun, Chonllabuk-do, South Korea, 28~29–V–1999, Y. B. CHO leg. (trap). The holotype (left antennal segments VIII–XI and claws of left metatarsus are missing) is deposited in the NHMHU.

Distribution. South Korea (Sobaeg Mountains).

Comments. Though possessing obviously reduced eyes, the present new species has fully developed hind wings, which is peculiar in the genus *Rybinskiella*. It is distinguished from *R. levushkini*, other than the above differences, by the relatively long hairs of pronotum and elytra and the difference of relative ratios of body parts. However, the new species is rather similar in body form to *Rybinskiella murzini* RŮŽIČKA from Kazakhstan and *Dzungarites roubali* (LEBEDEV) from Dzungaria. When male specimens of this interesting new species are obtained by future investigations, its true affinity will become clearer by comparison of aedeagal characteristics.

Biological notes. Togyu-san (=Daeokyu-san, 1,614 m in alt.), the type locality, is sometimes called Buk Togyu-san. It rises at the southern part of the Sobaeg Mountains stretching from northeast to southwest in the central part of the Korean Peninsula, and is about 65 km distant to the southeast from Daejeon City. The mountain area containing limestone-prevailing valleys so-called Muju Gucheon-dong is protected by the Korean Government as the Togyu-san National Park.

The type specimen, a single female, was collected only near the Temple of Paengnyon-sa by a pitfall trap, which was set on a slope along a small valley with a brook. The small valley is mainly composed of loose rock debris surrounded by deciduous broadleaved trees, such as *Quercus serrata*, *Prunus lereilleana*, *Betula castata*, *Phellodendron amurense* and a few *Abies holophylla*, and *Sasa* sp. partly covering the floor (Fig. 21). This site is located near one of the main climbing routes from Paengnyon-sa to the summit of Mt. Togyu-san via Osuja-gul Cave, at an altitude of about 950–980 m. For several years, this route was closed to hikers for environmental recovery, so that a good natural condition has been preserved along it. In the spring of 2001, the second author visited this small valley including Osuja-gul Cave (ca. 1,200 m in alt.) for rediscovery of the new species, but it ended in failure.

Unfortunately, the actual microhabitat of *R. peninsularis* sp. nov. is still unknown, but the collecting site has many narrow spaces among rock and stone debris of taluses with moderately humid condition, which may furnish microhabitats for upper hypogean or cavernicolous species. It is possible that this new species dwells in such

Fig. 21. Habitat of *Rybinskiella* (*Eurybinskiella*) *peninsularis* M. NISHIKAWA et Y. B. CHO, sp. nov. Showing a talus slope with temperate forest near Paengnyon-sa Temple on Mt. Togyu-san, South Korea. (Photo by M. NISHIKAWA, 2–V–2001.)

spaces judging from its morphological appearance. On the other hand, it seems also possible that the new species may occupy a range not so much restricted geographically, since its hind wings are at least functional.

Discussions

1. A brief review on the subgenera of the genus *Rybinskiella* and the taxonomic position of the Far Eastern members.

The genus *Rybinskiella* was established by REITTER (1906, p. 243, described in 1907, p. 333) for *Choleva magnifica* RYBIŃSKY, 1902 (p. 11, pl. 2, fig. 5), from the northeastern part of the Carpathian Mountains in Central Europe. For the definition of this genus, some taxonomic studies were made by REITTER (1906, 1907, 1913), PIC (1908, 1914), PORTEVIN (1922), JEANNEL (1922, 1936), SZYMCZAKOWSKI (1956, 1970, 1971), IABLOKOFF-KHNZORIAN (1970, 1975), FRANK (1988, 1994) and RŮŽIČKA (1994). According to current classification of the family Leiodidae (NEWTON, 1998), the genus *Rybinskiella* belongs to the subtribe Catopina of the tribe Cholevini in the subfamily Cholevinae. The genus is characterized by the following features: 1) fronto-clypeal suture indistinct; 2) the so-called basket of protibiae absent; 3) pronotum narrower than elytral base, with a week depression in each latero-basal area; 4) elytra ovoid, with strongly acuminate apices; 5) epipleura markedly broad; 6) aedeagus spatulate with emarginate or bifurcate apex, or lanceolate in dorsal view. The genus has been recog-

nized as containing three subgenera, *Rybinskiella* s. str., *Sintania* and *Eurybinskiella*, which are briefly reviewed below for comparison with the Far Eastern members.

The subgenus *Rybinskiella* s. str. consists of a single species, *R. magnifica* (RYBIŃSKY), from the Carpathians. WINKLER (1924–1927, p. 291) and ROUBAL (1926, p. 10) regarded *R. magnifica* as a junior synonym of *R. daurica* (MOTSCHULSKY) (this view was followed by HATCH (1928, p. 207) and NEWTON (1998, p. 108), but we have doubt about their conspecific status like SZYMCZAKOWSKI (1956, p. 10, 1971, p. 232) and PERREAU (2000, p. 146). One of the reasons for this is the geographical distance between their type localities, the Carpathians and the Khamar-Dabans being more than 5,000 km distant from each other (Fig. 22). It is most improbable that such a narrowly specialized species should occur in two massifs incredibly remote from each other, as was rightly pointed out by JEANNEL (1936, p. 293). This subgenus is characterized by the following features: 1) pronotum small, subhexagonal, longer than width; 2) dorsal surface uniformly with adpressed short pubescence; 3) protarsi with a prominent spine at the inner corner of each apex, though the outer one is devoid of any prominent spines; 4) male protarsi and the first segment of mesotarsi hardly dilated; 5) aedeagus spatulate with slightly emarginate apex.

The subgenus *Sintania* PIC (1908, p. 59; type species: *Sintania himalayica* PIC, 1908, designated by JEANNEL (1922, p. 47)) contains *R. bodoana* REITTER from the Tianshans and other six species from the Northwest Himalayas: *R. brancuccii* FRANK, *R. heinzi* FRANK, *R. himalayica* (PIC), *R. kashmirensis* (PIC), *R. spinosa* FRANK and *R. wittmeri* FRANK. This subgenus is characterized by the following features: 1) pronotum transverse, with basal angles variably modified; 2) elytra usually bearing long erect hairs, which are uniform or sparsely intermixed with ordinary short adpressed ones; 3) male protarsi and the first segment of mesotarsi obviously dilated; 4) aedeagus variable in shape, lanceolate in *R. bodoana*, spatulate with bifurcate apex in *R. brancuccii* and *R. heinzi*, and emarginate at the apex in the remainings, where males are known; 5) parameres robust in *R. heinzi*, slender in the remainings. However, judging from the diverse features, above all in the shape of their aedeagus, careful reexamination is needed for clarifying taxonomic position of respective species (RŮŽIČKA, pers. comm.).

The subgenus *Eurybinskiella* was established by IABLOKOFF-KHNZORIAN (1970, p. 54; type species: *R. levushkini* IABLOKOFF-KHNZORIAN, 1970). According to the original description and the reexamination of the topotypical specimens of the type species made by the first author, this subgenus is distinguished from the preceding two by the following points: 1) pronotum transverse, though the basal angles are always simple; 2) dorsal surface uniformly with adpressed pubescence; 3) male protarsi and the first segment of mesotarsi obviously dilated; 4) aedeagus lanceolate, strongly arcuate in lateral view.

Rybinskiella peninsularis sp. nov., which has been known so far from a single female, should be tentatively included in this subgenus until males are available for study. The South Siberian species, *R. daurica* (MOTSCHULSKY), apparently belongs to

the subgenus *Eurybinskiella*, though reexamination of the type material is required as the original description is insufficient to illustrate its peculiarities. This species was rediscovered by BERLOV (1977) who recorded an additional specimen from the Snezhnaya River in the Khamar-Dabans, but the result of its close examination has not been published yet. Incidentally, the specimen is said to have been obtained by a baited trap set in the woods on a flood plain of a river in Sljudyanskyi District (BERLOV, *loc. cit.*). On the other hand, an undescribed species seems to be included in this subgenus. It was recently discovered from the East Sayans. Unfortunately, we were unable to examine any specimen of this species, but at least its pronotum is transverse and the elytral pubescence is adpressed (pers. comm. to the first author from A. ANISTSHENKO via O. BERLOV, Irkutsk). As regards the systematic position of *R. murzini* RŮŽIČKA from Mt. Tyshkan-Tau, Kazakhstan, PERREAU (2000) regarded it as a member of the subgenus *Sintania*.

2. Distributional Considerations.

As was mentioned in the subgeneric review, the actual distributional range of the *Rybinskiella* species has been revealed at present, sporadically extending to the Carpathians in the west, the Northwest Himalayas in the south, the East Sayans and the Khamar-Dabans in the north via the Tianshans, and to the Sikhote-Alins and the Sobaegs in the east (Fig. 22). The subgenus *Rybinskiella* s. str. is endemic to the Carpathians, and the subgenera *Sintania* and *Eurybinskiella* are distributed to the Northwest Himalayas and the Tianshans, and to the Khamar-Dabans, the Sikhote-Alins and the Sobaegs, respectively, though there still remain a few species whose subgeneric status has not been determined as yet.

They are enriched (54%) at the high altitudes of the Northwest Himalayas, which are considered to be the diversity center of the genus. The *Sintania* species mostly occur there, and show most diverse characteristics. MANI (1995) pointed out that the high altitude biota of the Northwest Himalayas are derived from the Turkmenian subregion, that is, their origin seems to be the Altai-Pamirs and the Central Tianshans. The disjunct distributional pattern is indicated in Fig. 22: *R. magnifica* isolated at the westernmost area can be recognized as a relict, which originated in Central Asia (IABLOKOFF-KHNZORIAN, 1968), and almost the same opinion was precedently proposed by SZYMCZAKOWSKI (1964). A generalized hypothesis given by MANI (1968) is that the fundamental element of the European fauna is of the Angaran origin. Though the only known completely alate species, *R. peninsularis* sp. nov., was discovered from the Sobaegs in the Korean Peninsula, it is highly possible that the same species or its close relatives will be found on other mountains of the same peninsula. The Changpai Mountains at its northern end are bounded by the Sikhote-Alins in the Russian Far East and the Transbaikalia, the latter of which harbour at least two congeners.

Probably, the Asian congeners are allopatric but seem to occur along the mountain systems, the so-called Great Transasian Mountain Way (cf. SHILENKOV, 1992). Such a distributional pattern fit in with the Euro-West-Asiatic type (cf. MANI, 1968),

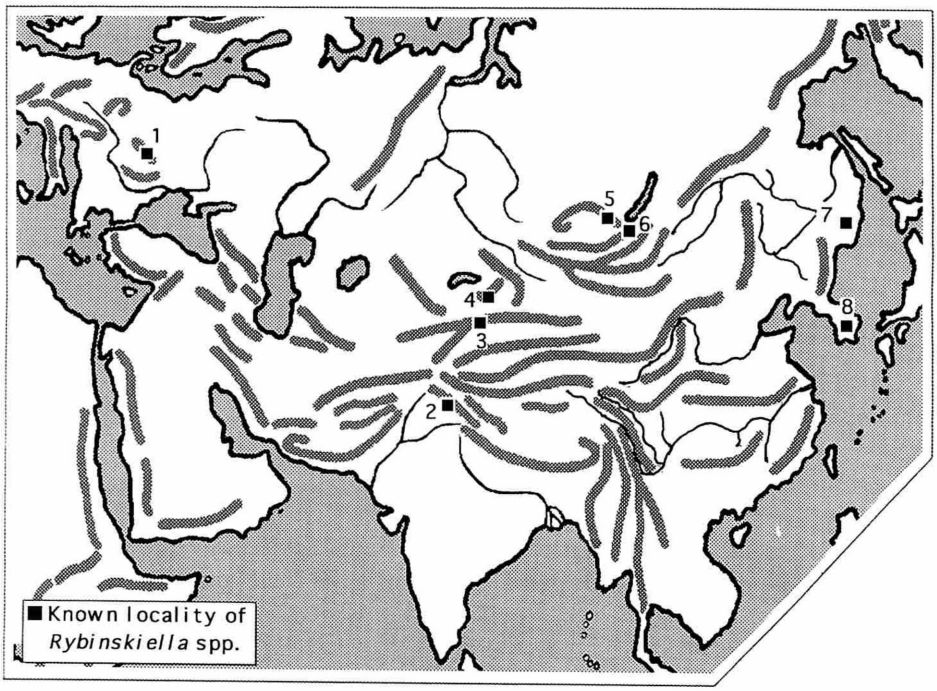


Fig. 22. Geographical distribution of *Rybinskiella* spp. —— 1, *R.* (s. str.) *magnifica* (RYBIŃSKI), Carpathian Mts.; 2, *R.* (*Sintania*) *brancuccii* FRANK, *R.* (*S.*) *heinzi* FRANK, *R.* (*S.*) *himalayica* (PIC), *R.* (*S.*) *kashmirensis* (PIC), *R.* (S.) *spinosa* FRANK and *R.* (*S.*) *wittmeri* FRANK, Northwest Himalayas; 3, *R.* (*S.*) *bodoana* REITTER, Tianshan Mts.; 4, *R.* (*S.*) *murzini* RŮŽIČKA, Mt. Tyshkan-Tau; 5, *R.* sp., East Sayan Mts.; 6, *R.* (*Eurybinskiella*) *daurica* (MOTSCHULSKY), Khamar-Daban Mts.; 7, *R.* (*E.*) *levushkini* IABLOKOFF-KHNZORIAN, Sikhote-Alin Mts.; 8, *R.* (*E.*) *peninsularis* M. NISHIKAWA et Y. B. CHO, sp. nov., Sobaeg Mts. (Modified from the original map with principal mountain and drainage systems by MANI (1968, fig. 45).)

and is generally recognized as the result of the Pleistocene climatic events, which was summarized by SHILENKOV (1992) in relation to the high altitude carabid fauna of the South Siberian Mountains. Judging from the synthetic knowledge based on previous zoogeographical hypotheses, the origin of the *Rybinskiella* species seems also to be sought in Central Asia including the westernmost corner of China.

On the other hand, the *Rybinskiella* species have generally been recognized as high mountain inhabitants as was repeatedly mentioned in this discussion; they usually occur between 1,700–1,850 m in altitude in the Carpathians (also above 2,030 m (RŮŽIČKA, pers. comm.) and above 2,000 m in the Rodnei Mountains, Rumania (CSIKI, 1951)), 2,350–3,600 m in the Northwest Himalayas and 2,300–3,600 m in the Tianshans including the Tersky Ala-Too (=Terskei Alatau) Mountains (cf. REITTER, 1913; FRANK, 1988, 1994; RŮŽIČKA, 1994). In contrast, *R. murzini* was found at an altitude of 1,500 m on Mt. Tyshkan-Tau, Kazakhstan, and *R. peninsularis* sp. nov. was obtained

from the lowest epigean site (950–980 m in alt.), which is a talus slope with temperate forest (Fig. 21). *Rybinskiella levushkini* was also obtained from an epigean habitat (1,110 m in alt.), though it seems to become a cave dweller at lower altitude (ca. 440 m in alt.). Anyway, the differences in their vertical distribution and habitat at each locality also support the influence of climatic changes upon the formation of their distribution.

Postscript

After the completion of the preparation of this paper, sufficient number of specimens including males of *Rybinskiella peninsularis* sp. nov. were taken from several caves lying in the Taebaeg Mountains of Gangwon-do, South Korea. The result of their study will be reported in a separate paper.

Acknowledgements

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要　　約

German Sh. LAFER・西川正明・趙　永福：極東地方産*Rybinskiella*属（タマキノコムシ科チビシデムシ亜科）の種とそれらの分類学的位置および自然史に関する論議．—— ちょうど20年前に沿海州の洞窟を基準産地として記載されたが，実体のはっきりしなかった*Rybinskiella levushkini* IABLOKOFF-KHNZORIANを，基準標本とおそらく同じ時期に採集された標本および，新たに基準産地および近隣の山岳地帯から得られた標本とに基づいて再記載し，FRANK (1988)の本種に関する見解を訂正した．一方，韓国の低山地帯から本属の有翅の種が得られたので，*Rybinskiella peninsularis* sp. nov.と命名して記載した．有翅種の朝鮮半島からの発見は予想外のことであり，同属種のうちでは，洞窟を除き，もっとも低い標高から発見された種となる．続いて，既知亜属の特徴を概観し，*Eurybinskiella*亜属を認めたうえで，雄が未知の*R. peninsularis* sp. nov.についても暫定的に同亜属に所属させた．あわせて同亜属と考えられるトランスバイカル

地方産の2種（*R. daurica* (MOTSCHULSKY)と1未記載種）に関する最新の知見を付記した．また，極東地方産2種の産地の自然環境を記載のあとに記述し，それぞれの生息場所を特定あるいは推定した．最後に，カルパート山脈，北西ヒマラヤ山脈，天山山脈，中央アジアの山岳地帯，東サヤン山脈，ハマダバン山脈，そしてシホテアリン山脈と小白山脈に分布する本属種の分布様式と起原について考察した．

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Elytra, Tokyo, **29** (2): 464, November 15, 2001

New Record of *Rismethus ryukyuensis* (Coleoptera, Elateridae) from the Island of Lutao, Taiwan

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Rismethus ryukyuensis was described by ÔHIRA (1999) on the basis of a large number of specimens collected from Amami-Ôshima Is., Tokunoshima Is., Ishigaki-jima Is., Hateruma-jima Is. and Yonaguni-jima Is. of the Nansei Islands. In the spring of 2000, I had an opportunity to make a collecting trip to Lutao Island off the southeastern coast of Taiwan and succeeded in obtaining a series of this species. I am going to record it for the first time from Lutao Island as below.

Rismethus ryukyuensis ÔHIRA, 1999

Meristhus scobinula: CANDÈZE, 1873, Mém. Soc. Sci. Liège, (2), **5**: 5 (Japon) [nec CANDÈZE, 1857].
Rismethus sp.: HAYEK, 1973, Bull. Br. Mus. nat. Hist., (Ent.), Suppl., (20): 239 (Japan).
Rismethus ryukyuensis ÔHIRA, 1999, Elytra, Tokyo, **27**: 409–411, fig. 1 (Ishigaki-jima Is., Amami-Ôshima Is., Tokuno-shima Is., Hateruma-jima Is. and Yonaguni-jima Is.)

Specimens examined. 30 exs., Da Bai Sha [大白沙], Lutao Is. [緑島], Taiwan, 25–III–2000, W. SUZUKI leg.

Distribution. Japan: Kyushu (Nagasaki, Kumamoto), Nansei Isls. (Yakushima Is., Kuchierabu-jima Is., Takara-jima Is., Nakanoshima Is., Amami-Ôshima Is., Kikai-jima Is., Tokunoshima Is., Ishigaki-jima Is., Hateruma-jima Is., Tarama-jima Is., Iriomote-jima Is., Yonaguni-jima Is.). Taiwan: Lutao Is. (new record).

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Elytra, Tokyo, **29** (2): 465–475, November 15, 2001

Four New Species of Apterous *Lathrobium* (Coleoptera, Staphylinidae) from Central Honshu, Japan

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Abstract Four new apterous species of the staphylinid genus *Lathrobium* are described under the names *L.* (s. str.) *tahirai*, *L.* (s. str.) *kanayamaense*, *L.* (s. str.) *nidoagense* and *L.* (s. str.) *nikkoense*. They were obtained by sifting dead leaves accumulated in deciduous broadleaved forests in mountain areas of central Honshu, Japan.

Examining the specimens of apterous *Lathrobium* from Japan, I have found a number of interesting species. They were obtained by sifting dead leaves accumulated in deciduous broadleaved forests in four different mountain areas of central Honshu, Japan. They are similar in colour and facies to *Lathrobium yozawanum* Y. WATANABE (1980, p. 24), though more closely similar to *Lobrathium riozoi* Y. WATANABE (1972, p. 117) in body size and morphological features. It is therefore probable that they form a particular species-group in view of their small body and yellowish or reddish brown colour.

After a careful examination, it has become clear that they are classified into four species, all of which are new to science. They will be described in the present paper. All the type specimens of the new species to be described are deposited in the collection of the Laboratory of Insect Resources, Tokyo University of Agriculture.

Before going further, I wish to express my hearty thanks to Dr. Shun-Ichi UÉNO, Visiting professor at Tokyo University of Agriculture, for his kind advice on the present study. Deep gratitude is also due to Mr. Yoshiaki TAHIRA, Shizuoka, for his kindness in supplying me with the specimens used in this study.

Lathrobium (s. str.) ***tahirai*** Y. WATANABE, sp. nov.

[Japanese name: Tahira-chibi-kobanenaga-hanekakushi]

(Figs. 1–4)

Body length: 4.1–4.2 mm (from front margin of head to anal end); 1.7–1.8 mm (from front margin of head to elytral apices).

Body elongate, parallel-sided and depressed above; apterous; colour brownish yellow and moderately shining, with palpi and legs somewhat paler.

Male. Head subquadrate, slightly elevated medially, as long as or slightly

longer than broad (length/width=1.05), widest at the base and very slightly narrowed anteriad; lateral sides feebly arcuate; surface sparingly, coarsely and setiferously punctured, the punctures becoming much sparser and less coarse in vertexal area, and covered with microscopic coriaceous ground sculpture; eyes very small and nearly flat, their longitudinal diameter about one-fourth as long as postocular part. Antennae relatively short, not reaching the middle of pronotum and not thickened towards the apical segment, three proximal segments polished, 4th subopaque and the remainings opaque; 1st segment robust and strongly dilated apicad, 1.5 times as long as broad, 2nd constricted at the base, a little longer than broad (length/width=1.17) but remarkably shorter (2nd/1st=0.58) and apparently narrower (2nd/1st=0.75) than 1st, 3rd somewhat longer than broad (length/width=1.33) but a little shorter (3rd/2nd=0.75) and slightly narrower (3rd/2nd=0.93) than 2nd, 4th to 10th moniliform and nearly equal in both length and width to one another, each almost as long as broad, 11th fusiform and about twice as long as broad, twice as long as though as broad as the 10th, subacuminate at the tip.

Pronotum oblong and moderately elevated medially, widest just behind anterior angles and slightly narrowed posteriad, apparently longer than broad (length/width=1.30), distinctly longer (pronotum/head=1.24) than though almost as broad as head; lateral sides almost straight except near anterior and posterior angles, anterior margin broadly though slightly emarginate at the middle, posterior margin subtruncate, anterior angles obtuse and not visible from above, posterior ones narrowly rounded; surface much more closely and more finely punctured than in head except for a narrow median smooth space throughout the length of pronotum. Scutellum small and subtriangular, almost impunctate on the surface. Elytra quadrate though slightly dilated posteriad and somewhat depressed above, a little broader than long (width/ length=1.10), distinctly shorter (elytra/pronotum=0.77) but somewhat broader (elytra/pronotum=1.10) than pronotum; lateral sides nearly straight; posterior margin broadly emarginate at the middle, posterior angles broadly rounded; surface closely, roughly punctured and sparingly covered with fine brownish pubescence. Legs relatively short; profemur markedly thickened, though abruptly constricted near the apex and excavated on the inner face in apical half, so that the basal part of the excavation forms a blunt subtriangular tooth; meso- and metafemora normal; protibia somewhat dilated apicad and hollowed in basal half on the inner face, meso- and metatibiae normal; protarsus with 1st to 4th segments strongly dilated, meso- and metatarsi thin.

Abdomen elongate and gradually dilated from 3rd to 7th segment, and then abruptly narrowed towards the anal end, 3rd to 7th tergites each transversely depressed along the base and closely, finely and superficially punctured, and closely covered with fine brownish pubescence; 8th and 9th tergites each more sparingly and more finely punctured than in the preceding tergites; 8th sternite subtriangularly excised at the middle of posterior margin and slightly, longitudinally depressed along the middle in front of the excision; 7th sternite slightly emarginate at the middle of posterior margin and provided with a shallow, long horseshoe-shaped depression before the emargina-

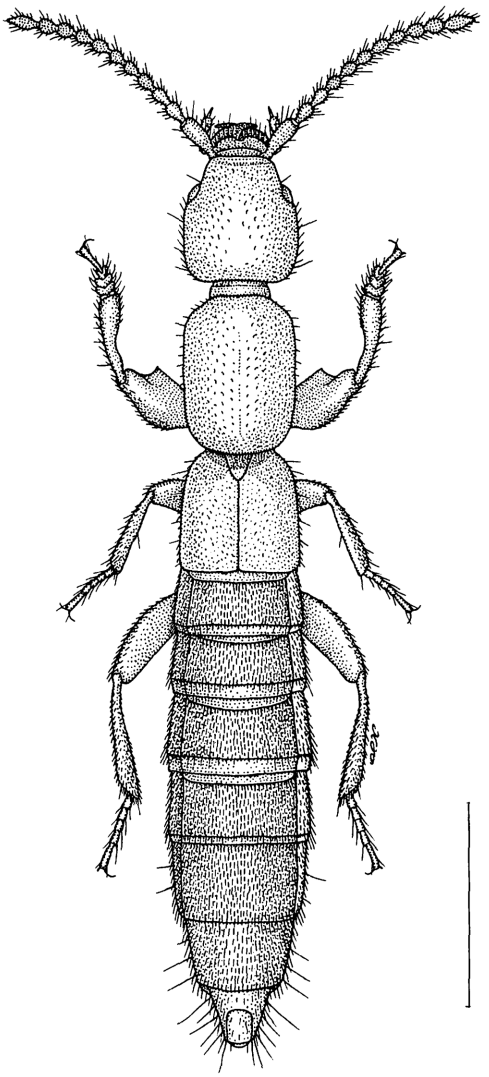
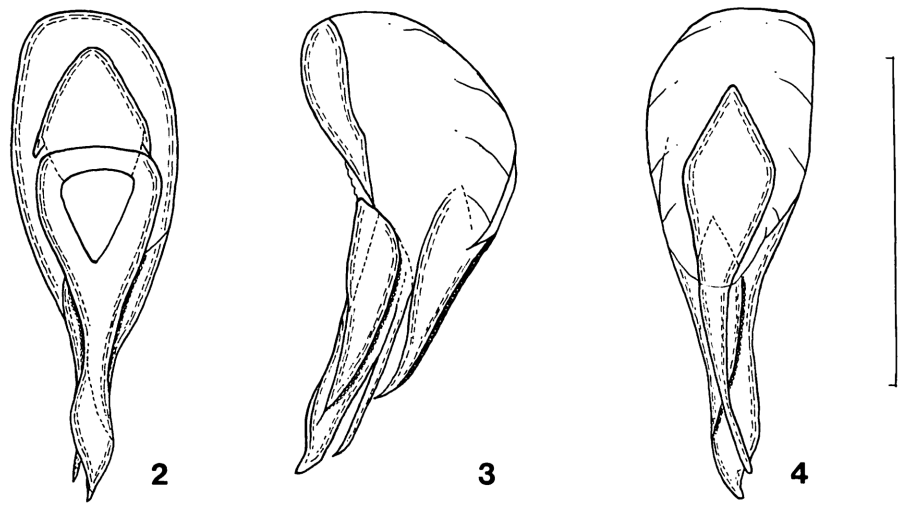


Fig. 1. *Lathrobium* (s. str.) *tahirai* Y. WATANABE, sp. nov., ♂, from Mt. Mitsumine of Shizuoka in central Honshu, Japan. Scale: 1.0 mm.

tion; 6th sternite also depressed at the middle in front of posterior margin, the depression being much smaller and shallower than that of 7th sternite.

Genital organ somewhat spindle-shaped, well sclerotized except for membraneous ventral side of median lobe. Median lobe somewhat shorter than fused paramere, with ventral sclerotized piece elongate, widest at basal fourth and much strongly narrowed apicad than basad. Fused paramere asymmetrical in apical half, broadly constricted at the median part though dilated posteriad and forming a somewhat nib-shaped apical part, which is a little broader than median lobe, apex curved to right side as seen from dorsal side.



Figs. 2–4. Male genital organ of *Lathrobium* (s. str.) *tahirai* Y. WATANABE, sp. nov.; dorsal view (2), lateral view (3), and ventral view (4). Scale: 0.5 mm.

Female. Similar in general appearance to male, but different from it in the following points: first to fourth protarsal segments not so dilated, 8th abdominal sternite narrowed towards the apex which is narrowly rounded.

Type series. Holotype: ♂, allotype: ♀, Mt. Mitsumine, Shizuoka, Honshu, Japan, 11–X–1982, Y. TAHIRA leg. Paratypes: 3♂♂, same data as for the holotype.

Distribution. Japan (central Honshu).

Remarks. The present new species is remarkably different from the other apterous members of *Lathrobium* in light coloration and much smaller body size.

Bionomics. The type specimens were obtained by sifting dead leaves accumulated in a deciduous broadleaved forest, consisting of *Fagus crenata*, *Quercus crispula*, *Stewartia monadelpha* and *Acer* spp., on Mt. Mitsumine in Shizuoka at an altitude of 1,350 m.

Etymology. This new species is named after Mr. Yoshiaki TAHIRA, Shizuoka, who kindly supplied me with the specimens of the type series.

Lathrobium (s. str.) ***kanayamaense*** Y. WATANABE, sp. nov.

[Japanese name: Kanayama-chibi-kobanenaga-hanekakushi]

(Figs. 5–7)

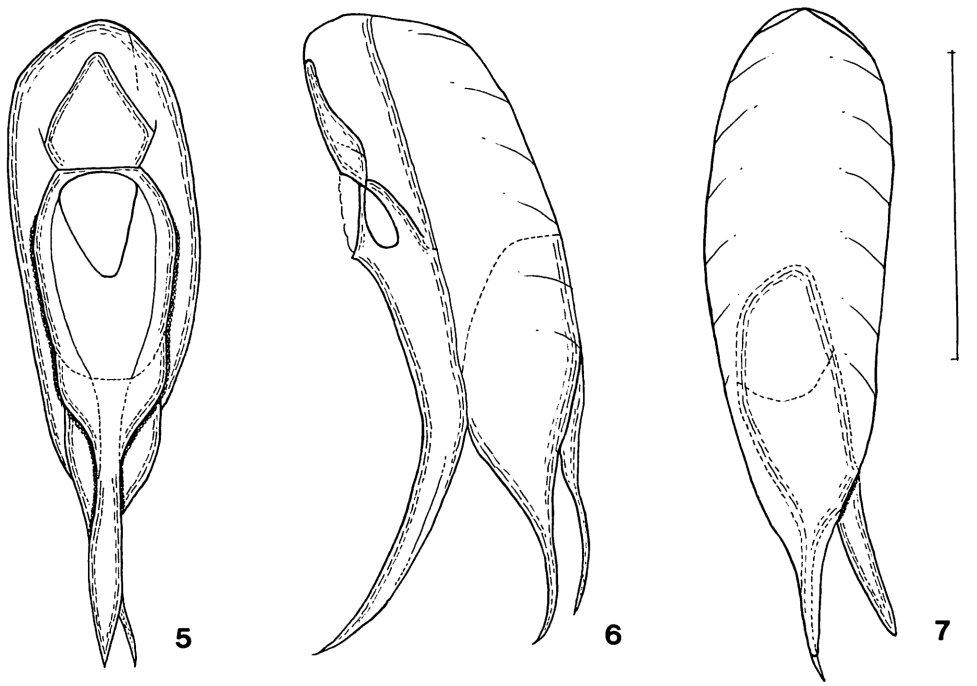
Body length: 4.6–4.9 mm (from front margin of head to anal end); 2.0–2.1 mm (from front margin of head to elytral apices).

Similar in facies to the preceding species, but can be readily distinguished from it by the body larger, and the head, elytra and abdomen reddish brown.

Male. Head subtrapezoidal and somewhat depressed above, as long as broad, widest before posterior angles and narrowed anteriad; lateral sides gently arcuate; surface sparingly and coarsely punctured, the punctures becoming much sparser in vertexal area, and covered with microscopic coriaceous ground sculpture all over; eyes small and almost flat, their longitudinal diameter about one-fourth as long as postocular part. Antennae relatively short, not reaching the middle of pronotum, slightly thickened towards the apicalmost segment, two proximal segments polished, 3rd and 4th subopaque, the remainings opaque; 1st segment robust, dilated apicad, twice as long as broad, 2nd constricted at the base, a little longer than broad (length/width=1.33), remarkably shorter (2nd/1st=0.50) and somewhat narrower (2nd/1st=0.75) than 1st, 3rd slightly longer than broad (length/width=1.07), somewhat shorter (3rd/2nd=0.75) and slightly narrower (3rd/2nd=0.93) than 2nd, 4th equal to 3rd in both length and width, 5th to 7th almost equal in both length and width to one another, each nearly as long as broad and equal in length to, though slightly broader than (each of 5th to 7th/4th=1.07), 4th, 8th and 9th equal in both length and width to each other, each a little broader than long (width/length=1.10) and as long as though somewhat broader (8th or 9th/7th=1.10) than 7th, 10th somewhat transverse (width/length=1.17), as long as though slightly broader (10th/9th=1.17) than 9th, 11th apparently longer than broad (length/width=1.71), twice as long as though as broad as 10th, subacuminate at the apex.

Pronotum oblong though slightly narrowed posteriad and moderately elevated medially, distinctly longer than broad (length/width=1.27), apparently longer (pronotum/head=1.38) and somewhat broader (pronotum/head=1.04) than head; lateral sides almost straight except near anterior and posterior angles, anterior margin arcuate but feebly emarginate at the middle, posterior margin nearly truncate, anterior angles obtuse and invisible from above, posterior ones narrowly rounded; surface more closely and more coarsely punctured than in head except for a narrow median smooth space throughout the length of pronotum, coriaceous ground sculpture wanting. Scutellum small and subtriangular, surface provided with a few minute setiferous punctures and microscopic coriaceous ground sculpture. Elytra oblong though slightly dilated posteriad, slightly transverse (width/length=1.04), distinctly shorter (elytra/pronotum=0.79) but slightly broader (elytra/pronotum=1.04) than pronotum; lateral sides nearly straight, posterior margin nearly straight though feebly emarginate at the middle; posterior angles broadly rounded; surface sparingly and obscurely punctured and covered with fine brownish pubescence. Legs relatively short, similar in structure to those of the preceding species.

Abdomen elongate and almost parallel-sided from 3rd to 7th segment, and then abruptly narrowed towards the anal end, 3rd to 8th tergites each closely, finely and superficially punctured and covered with fine brownish pubescence; 8th sternite subtriangularly excised at the middle of posterior margin and narrowly, longitudinally flattened in front of the excision; 7th sternite shallowly emarginate at the middle of posterior margin and provided with a long horseshoe-shaped depression before the emargina-



Figs. 5–7. Male genital organ of *Lathrobium* (s. str.) *kanayamaense* Y. WATANABE, sp. nov.; dorsal view (5), lateral view (6), and ventral view (7). Scale: 0.5 mm.

tion.

Genital organ spindle-shaped and sclerotized except for membraneous ventral side of median lobe. Median lobe widest near the middle and gradually narrowed basad though abruptly narrowed in apical fifth, with ventral sclerotized piece elliptical in basal half though abruptly narrowed in apical half. Fused paramere slightly longer than median lobe, abruptly narrowed in apical half to the acutely pointed apex as seen from dorsal side and strongly curved dorsad in posterior half in profile.

Female. Similar in general appearance to male, but different from it in the following points: 1st to 4th protarsal segments not so widely dilated; abdomen with 8th sternite abruptly narrowed in apical third to the apex which is narrowly rounded.

Type series. Holotype: ♂, allotype: ♀, Kanayama-daira, Yamanashi Pref., Honshu, Japan, 30–V–1993, Y. WATANABE leg. Paratypes: 2♀♀, same data as for the holotype; 1♂, 3♀♀, same locality and same collector as for the holotype, 29–V–1993.

Distribution. Japan (central Honshu).

Bionomics. The type specimens were obtained by sifting dead leaves in a deciduous broadleaved forest at an altitude of 1,520 m.

Etymology. The specific epithet of this new species is given after the type locality "Kanayama-daira" in Yamanashi Prefecture.

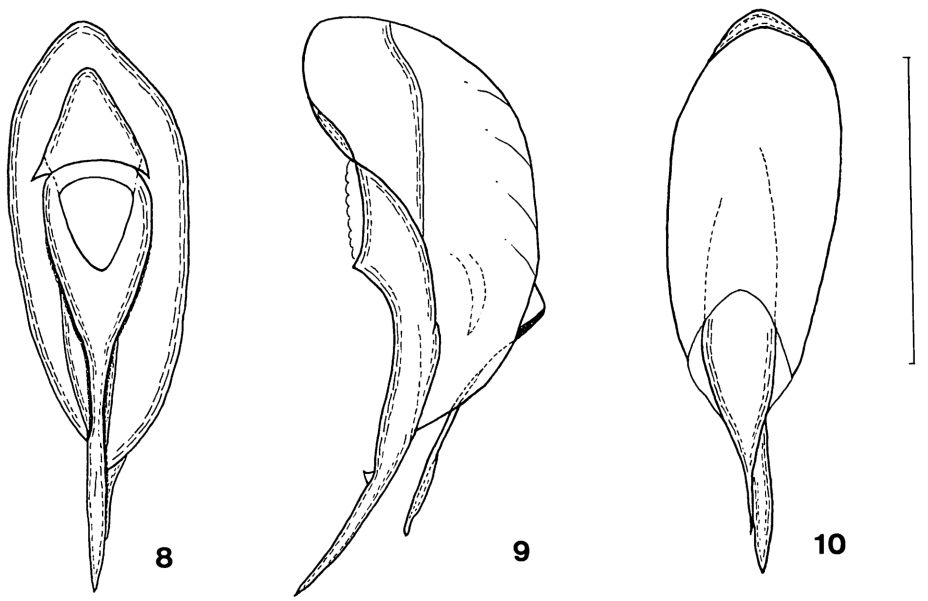
Lathrobium (s. str.) ***nidoagense*** Y. WATANABE, sp. nov.

[Japanese name: Nidoage-chibi-kobanenaga-hanekakushi]

(Figs. 8–19)

Body length: 3.7–3.8 mm (from front margin of head to anal end); 1.9–2.1 mm (from front margin of head to elytral apices).

Male and female. Closely similar in facies and colour to *L. kanayamaense*, but can be distinguished from it by the somewhat smaller body and the following points: head slightly longer than broad (length/width=1.02), widest at basal third and somewhat less narrowed anteriad than in *L. kanayamaense*, postocular part relatively short, about 3.5 times as long as the longitudinal diameter of eye, lateral sides more distinctly arcuate, surface covered with similar punctures to though much weaker coriaceous ground sculpture than in *L. kanayamaense*; pronotum oblong, less narrowed posteriad than in *L. kanayamaense*, surface less coarsely punctured except for a narrow median smooth space through the length of pronotum; elytra more transverse (width/length=1.08) and a little broader than pronotum (elytra/pronotum=1.08), posterior margin nearly truncate, surface sparingly and obtusely punctured as in *L. kanayamaense*; abdomen with 8th sternite triangularly excised at the middle of posterior margin and provided with a short longitudinal carina before the excision, each side of the carina somewhat depressed above, 7th sternite shallowly and broadly emarginate at the middle of posterior margin and subtriangularly depressed in front of the emar-



Figs. 8–10. Male genital organ of *Lathrobium* (s. str.) *nidoagense* Y. WATANABE, sp. nov.; dorsal view (8), lateral view (9), and ventral view (10). Scale: 0.5 mm.

gination.

Male genital organ spindle-shaped and well sclerotized except for membraneous ventral side of median lobe. Median lobe broader except for apical part and distinctly shorter than fused paramere, with ventral sclerotized piece apparently narrowed towards the apex which is slightly curved ventrad in profile. Fused paramere elongate, constricted near the middle and strongly dilated basad, with the apical half forming a spearhead in dorsal view.

Type series. Holotype: ♂, allotype: ♀, near Nidoage, Gunma Pref., Honshu, Japan, 12–VIII–1962, Y. WATANABE leg. Paratypes: 1♂, 1♀, same data as for the holotype; 3♂♂, 2♀♀, same locality and collector as for the holotype, 11–VIII–1962; 1♂, same locality and collector as for the holotype, 13–VIII–1962.

Distribution. Japan (central Honshu).

Bionomics. All the type specimens were obtained by sifting dead leaves in a deciduous broadleaved forest at an altitude of 1,160 m.

Etymology. The specific name of the present new species is given after the type locality "Nidoage" on the Asama Plateau.

Lathrobium (s. str.) ***nikkoense*** Y. WATANABE, sp. nov.

[Japanese name: Nikkô-chibi-kobanenaga-hanekakushi]

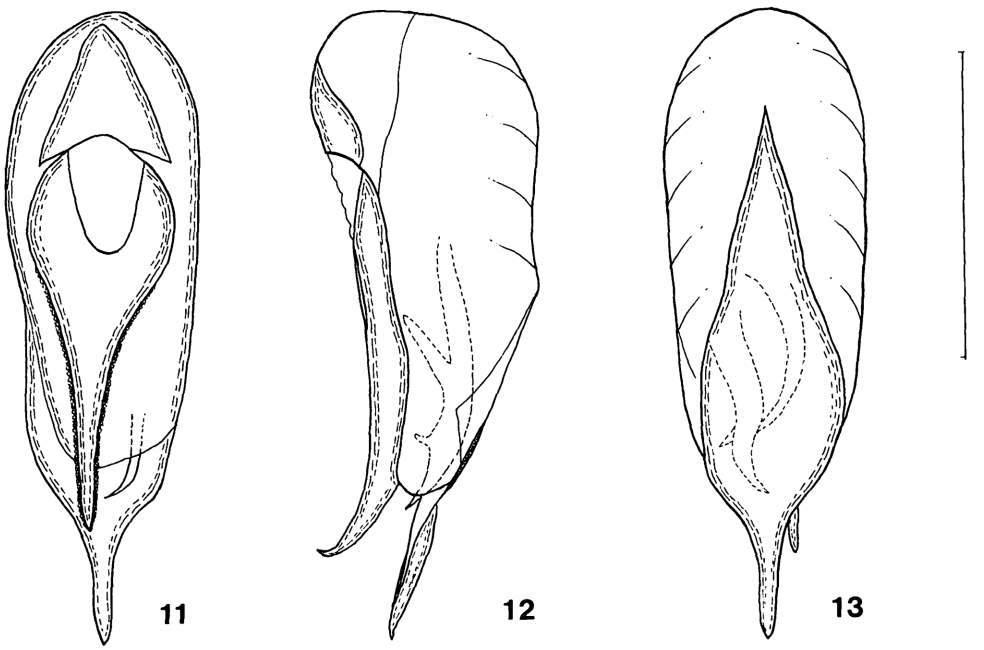
(Figs. 11–16)

Body length. 4.6–5.1 mm (from front margin of head to anal end); 2.0–2.4 mm (from front margin of head to elytral apices).

Male and female. Similar in general appearance to the two preceding species, but markedly different from them in the configuration of male genital organ.

Head as long as broad, less narrowed anteriad and more convex medially than in *L. kanayamaense*, lateral sides less arcuate than in *L. nidoagense*, surface more coarsely and somewhat more numerously punctured though covered with microscopic ground sculpture as in the two preceding species. Antennae similar in configuration to those of the two preceding species. Pronotum more distinctly narrowed posteriad than in the two preceding species, distinctly longer than broad (length/width=1.38), as broad as though apparently longer than head (pronotum/head=1.38), surface similarly punctured as in *L. kanayamaense*. Elytra subtrapezoidal, more similar in configuration to those of *L. kanayamaense* than to those of *L. nidoagense*, and similarly punctured on the surface as in *L. kanayamaense*. Abdomen with 8th sternite triangularly excised at the middle of posterior margin and provided with a narrow, shallow and longitudinal depression in front of the excision, 7th sternite subtruncate or slightly emarginate at the middle of posterior margin and slightly depressed before the emargination.

Male genital organ long elliptical and slightly asymmetrical as seen from dorsal side, median lobe remarkably broader and longer than fused paramere, with ventral sclerotized piece spindle-shaped, widest near apical third and more strongly narrowed apicad than basad, apical part forming a spearhead; fused paramere abruptly narrowed



Figs. 11–13. Male genital organ of *Lathrobium* (s. str.) *nikkoense* Y. WATANABE, sp. nov., from near Marunuma of Oku-Nikkô in Gunma Pref.; dorsal view (11), lateral view (12), and ventral view (13). Scale: 0.5 mm.

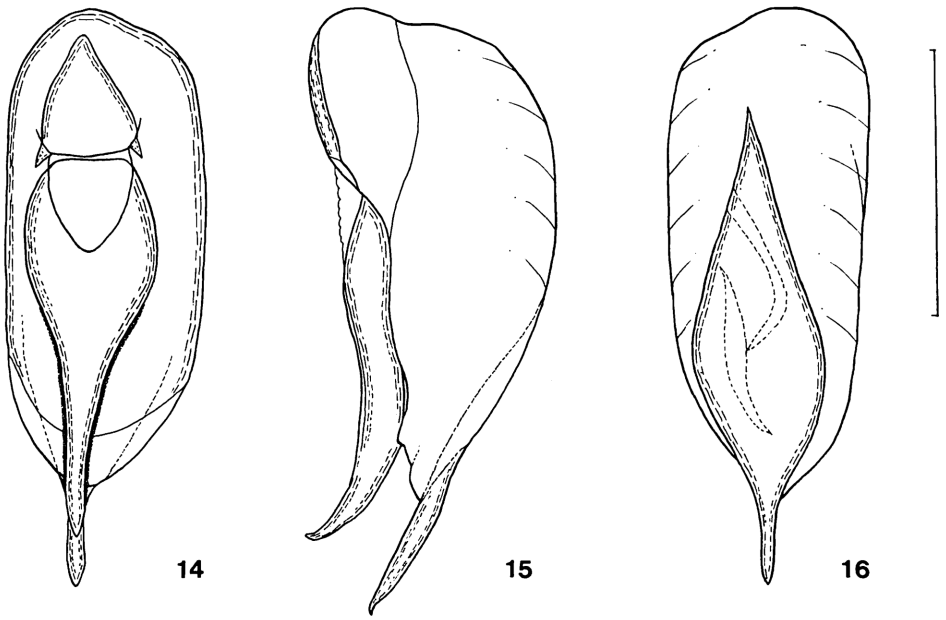
in apical three-fourths towards the apex which is acutely pointed and strongly curved ventrad in profile.

Type series. Holotype: ♂, allotype: ♀, near Marunuma, Oku-Nikkô, Gunma Pref., Honshu, Japan, 7–IX–1965, Y. WATANABE leg. Paratypes: 1♂, 2♀♀, same data as for the holotype; 2♂♂, 3♀♀, near Sugenuma, Oku-Nikkô, Gunma Pref., Honshu, Japan, 25–VIII–1964, Y. WATANABE leg.; 4♂♂, 4♀♀, Pass Konsei-tôge, Oku-Nikkô, Gunma Pref., Honshu, Japan, 26–VIII–1964, Y. WATANABE leg.

Further specimens examined. 1♂, 1♀, near Miike-goya, Fukushima Pref., Honshu, Japan, 27–VIII–1966, Y. WATANABE leg.; 2♂♂, near Oze-numa, Fukushima Pref., Honshu, Japan, 23–VI–1990, Y. & M. WATANABE leg.

The specimens obtained near Miike-goya at an altitude of 1,500 m slightly differ from the type specimens in configuration of the median lobe of male genital organ, which is relatively short and the fused paramere more robust. On the contrary, the specimens obtained near Oze-numa at an altitude of 1,720 m are similar to the type specimens in configuration of the fused paramere, though similar to the specimens from near Miike-goya in configuration of the median lobe. However, these differences are considered to be an infraspecific variation.

Distribution. Japan (central Honshu).



Figs. 14–16. Male genital organ of *Lathrobium* (s. str.) *nikkoenese* Y. WATANABE, sp. nov., from near Miike-goya of Aizu in Fukushima Pref.; dorsal view (14), lateral view (15), and ventral view (16). Scale 0.5 mm.

Bionomics. The type series is obtained by sifting dead leaves in deciduous broadleaved forests of three different areas of Oku-Nikkô at an altitude from 1,500 to 2,000 m.

Etymology. The specific name of this new species is derived from Oku-Nikkô in which the type series was obtained.

要　　約

渡辺泰明：本州中部から採集された後翅の退化した*Lathrobium*属の4新種．—— 日本産の後翅が退化した*Lathrobium*属を検討している過程において，体長が4mm内外の小型で，全体が黄褐ないし赤褐色を呈する特長的な1種群を見いだした．この種群は一見したところドウケツコバネナガハネカクシを思わせるが，形態的概観は*Lobrathium*属のチビアカナガハネカクシに類似している．そして，詳細に検討した結果，この種群は4種に分けられ，いずれも未記載種であることが判明したので，下記のとおり命名・記載した．

1. *Lathrobium* (s. str.) *tahirai* Y. WATANABE　タヒラチビコバネナガハネカクシ

本種は，静岡市三ッ峰の標高1,350m地点で，落葉広葉樹林の林床に堆積した落葉をふるって採集された．全体が黄褐色を呈し，体長が4mmほどの小型種で，コバネナガハネカクシ種群に含まれる既知の種からは一見して区別される．

2. *Lathrobium* (s. str.) *kanayamaense* Y. WATANABE カナヤマチビコバネナガハネカクシ

この種は，山梨県金山平の標高1,520m地点で，落葉広葉樹林の林床に堆積した落葉をふるって採集された．形態的概観は前種に類似しているが，全体赤褐色を呈し，体がやや大きいこと，また雄交尾器の形状が明らかに異なることによって容易に区別される．

3. *Lathrobium* (s. str.) *nidoagense* Y. WATANABE ニドアゲチビコバネナガハネカクシ

この種は，浅間高原の二度上で，標高1,160m地点の落葉広葉樹林の林床に堆積した落葉をふるって採集された．色彩および形態的概観は前種に類似しているが，やや小型で，頭部は幅よりわずかに長く，表面の微細構造がより弱いこと，前胸背板は後方への狭りがより弱く，表面の点刻がより粗くないこと，翅鞘はより強く横位で，前胸背板よりもいくぶん幅広いこと，そして雄の腹部第二次性徴および交尾器の形状が明らかに異なることで区別される．

4. *Lathrobium* (s. str.) *nikkoense* Y. WATANABE ニッコウチビコバネナガハネカクシ

奥日光の丸沼，菅沼および金精峠の標高1,500–2,000mにかけての落葉広葉樹林の林床に堆積した落葉をふるって採集された．本種は前記の2種に形態的概観が類似しているが，雄の腹部第二次性徴および交尾器の形状が異なることで容易に区別される．なお，会津の御池小屋附近で採集された個体は，雄交尾器の中葉が基準標本のものに比べてやや短く，側葉がより強壮であること，また尾瀬沼附近で採集された個体は，側葉は基準標本と同様な形状を呈するが，中葉は御池小屋附近で採集された個体のものに類似している．しかし，これらの差異は同一種内の変異と考えられる．

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Elytra, *Tokyo*, **29** (2): 476, November 15, 2001

Additional Collecting Record of *Lathrobium kishuense* (Coleoptera, Staphylinidae) from the Kii Peninsula of Honshu, Japan

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Lathrobium (s. str.) *kishuense* Y. WATANABE (1991, p. 145), one of the group of *Lathrobium* (s. str.) *nomurai* NAKANE (1955, p. 29), was originally described based on three male and one female specimens obtained at the Asarano-tani of Susami-chô in Wakayama Prefecture. Since then, this species has not been reported from other localities of Japan. Recently, I had an opportunity to examine eight specimens of this species. Its collecting data are as follows:

3♂♂, 4♀♀, Tsutsumi-dani, Shôgun-gawa, Hikigawa-chô, Wakayama Pref., Honshu, Japan, 2–VIII–2001, S. TANAKA leg.; 1♂, same locality and collector as above, 5–V–2001. All the specimens were obtained from upper hypogean habitats at an altitude of 430 m.

I thank Mr. Shotaro TANAKA, Wakayama, for his kindness in giving me the specimens.

References

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WATANABE, Y., 1991. Four new species of the group of *Lathrobium harimanum* (Coleoptera, Staphylinidae) from Japan. *Bull. natn. Sci. Mus.*, *Tokyo*, (A), **17**: 145–156.

Elytra, *Tokyo*, **29** (2): 477–480, November 15, 2001

A New *Trichotichnus* (Coleoptera, Carabidae) from the Southern Japanese Alps

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Abstract A new harpaline species, *Trichotichnus* (*Trichotichnus*) *hasensis* sp. nov., is described from the Southern Japanese Alps, central Honshu, Japan. It is mainly characterized by structure of the aedeagus.

Since the revisional study of the group of *Trichotichnus leptopus* (MORITA, 1997) was published, additional materials have rapidly been amassed at my hands. However, most of them have been known from only two or three examples, or only from females from one locality, so that I have been unable to decide with confidence their true systematic status. Recently, a long series of specimens of a single species were collected at the same place and on the same date on the Southern Japanese Alps and were submitted to me for study. It must be a new species, and I am going to introduce it into science in the present paper.

The description is short, because the members of the group of *T. leptopus* are very similar to one another and because slight differences in the shape of body parts can be expressed appropriately neither by measurements nor by ratios.

The abbreviations used herein are the same as those explained in my previous papers.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO for critically reading the original manuscript of this paper. My thanks are also due to Mr. Hanmei HIRASAWA for supplying me with material.

Trichotichnus* (*Trichotichnus*) *hasensis MORITA, sp. nov.

[Japanese name: Hase-tsuya-gomokumushi]

(Figs. 1–5)

Diagnosis. Body large; antennal segment I thick; elytra with straight basal borders; aedeagal inner sac with an elongate copulatory piece and a teeth-patch.

Description. L 10.8–12.0 mm. Head as in *T. spinifer* KASAHARA (1994, p. 75), but the eyes are usually larger; mentum tooth usually moderately rounded or obliquely truncated at the tip; antennal segment I rather thick, width/length=0.35–0.43 (M 0.39) in 21♂♂; relative lengths of antennal segments as follows:— I : II : III : IV : V : VI :

XI=1 : 0.45 : 0.97 : 0.97 : 0.95 : 0.90 : 0.99.

Pronotum with dense punctures on the basal part; PW/HW 1.42–1.48 (M 1.45), PW/PL 1.39–1.48 (M 1.44), PW/PA 1.43–1.51 (M 1.47), PW/PB 1.23–1.31 (M 1.27), PA/PB 0.83–0.89 (M 0.86) in 20♂♂. Elytra with straight basal borders; WL/EL 0.25–0.26; setiferous dorsal pore situated a little before the middle; EW/PW 1.27–1.34 (M 1.29), EL/EW 1.48–1.60 (M 1.55), EB/EW 0.67–0.70 (M 0.68) in 20♂♂; TL/HW 1.14–1.33 (M 1.22) in 18♂♂. Anal sternite widely arcuate, and with a pair of setae.

Aedeagus elongate with rather large basal part; viewed laterally, aedeagus high at about middle, and with produced apical lobe; viewed dorsally, apical lobe slightly inclined to the right, simply rounded and usually weakly bordered at apex; inner sac armed with an elongate copulatory piece (*cp*) and a teeth-patch (*t*), and covered with poorly sclerotized scales or minute spinules; copulatory piece (*cp*) situated at ventral side of the teeth-patch (*t*) and a little inside of right wall of aedeagus; viewed right lat-

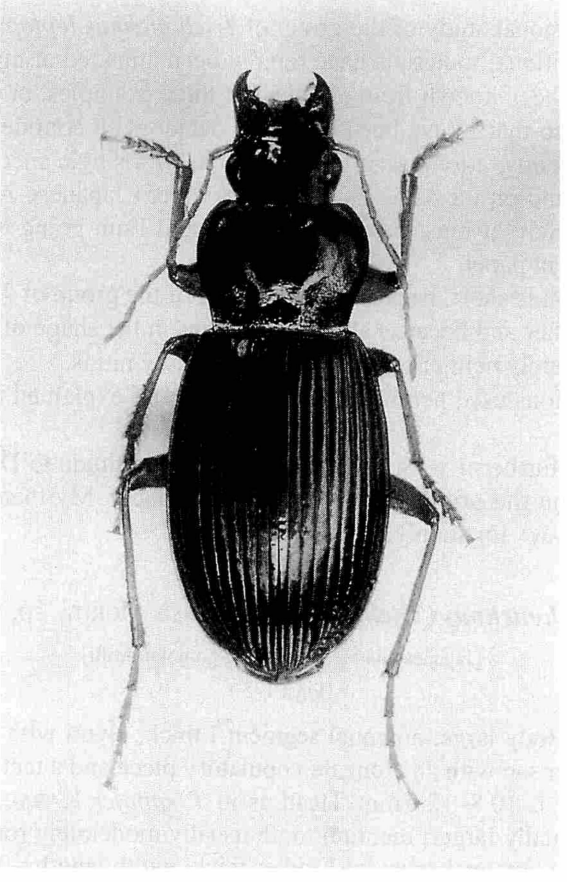
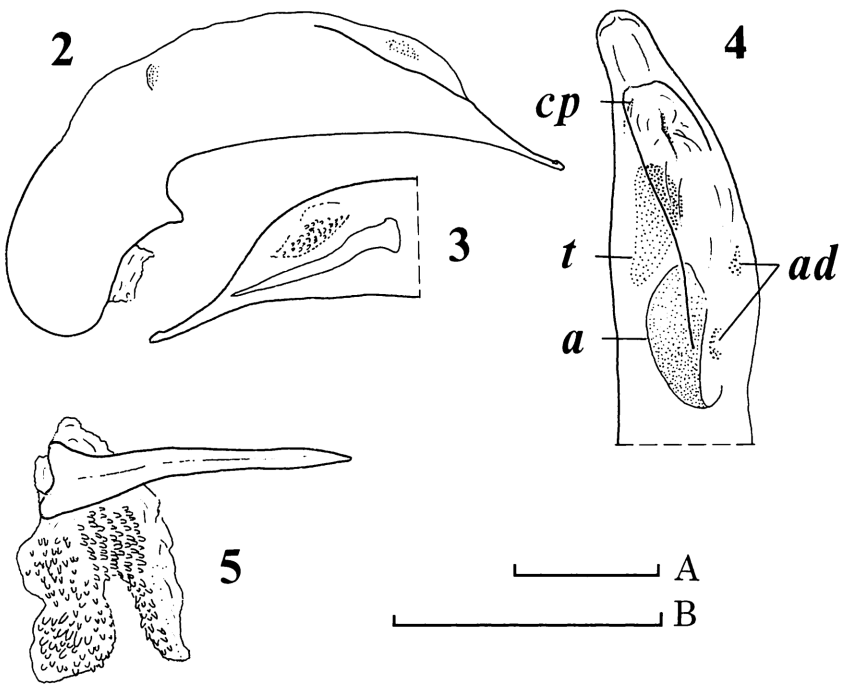


Fig. 1. *Trichotichnus* (*Trichotichnus*) *hasensis* MORITA, sp. nov., ♂, from Utajuku.



Figs. 2–5. *Trichotichnus* (*Trichotichnus*) *hasensis* MORITA, sp. nov., from Utajuku. —— 2, Aedeagus, left lateral view; 3, apical part of aedeagus, right lateral view; 4, aedeagus, dorsal view; 5, copulatory piece. —— *cp*, copulatory piece; *t*, teeth-patch; *a*, field *a*; *ad*, additional teeth-patches. Scales: 1 mm; A for 2–4; B for 5.

erally, basal part of copulatory piece wide and briefly straight, and abruptly and very briefly bent ventrad, and then becoming thinner towards the apex; teeth-patch consisting of sparse scales and spinules, which are rather heavily sclerotized; in 1 specimen, two small additional teeth-patches (*ad*) present as shown in Fig. 4; dorso-proximal part of inner sac consisting of moderately sclerotized and minute spinules, here called field *a* (*cf. a* in Fig. 4), but the folding pattern of the inner sac resembles those of the relative species.

The male genitalia of eight specimens were examined.

Variation in elytral dorsal pore. The setiferous dorsal pore is present on interval III and joining stria 2, or on stria 2, rarely on interval III. Of the 43 specimens of the type series, eight have an additional pore on one side, usually on interval III and joining stria 2, rarely on stria 2.

Variation of anal sternite. In one specimen, the apex of the anal sternite is shallowly emarginate at the apex. Five specimens have an additional seta on one side.

Female unknown.

Type series. Holotype ♂, Utajuku, 5~8–VI–2000, H. HIRASAWA leg. (NSMT).

Paratypes 11♂♂ (incl. teneral 1♂), Utajuku, 5~8–VI–2000, H. HIRASAWA leg.; 1♂, Yabusawa, 5~8–VI–2000, H. HIRASAWA leg.; 30♂♂, Utajuku, 3–VI–2001, H. & I. HIRASAWA leg.

Type locality. Utajuku, about 1,700 m alt., and Yabusawa, Hase-mura, Nagano Prefecture, Central Japan.

Notes. This new species is closely allied to *T.* (*T.*) *spinifer* KASAHARA (1994, p. 75) from Shizuoka Prefecture. It is, however, distinguished from it by the following points: elytra with straight basal border and aedeagal inner sac with a teeth-patch and more heavily sclerotized field "*a*".

要　　約

森田誠司：南アルプス産ツヤゴモクムシの1新種．—— 南アルプス北沢峠の北西に位置する歌宿付近で採集されたツヤゴモクムシの1新種を記載した．この種は，体形，交尾器などからみて，静岡県から記載されたテンリュウツヤゴモクムシ *T.* (*T.*) *spinifer* KASAHARA に近縁であるが，上翅基縁が直線であることのほか，陰茎内部の先端部に存在する長い交尾片の背面に大きいキチン化した，コケとトゲの束があること，内袋背面基部の部分がより強くキチン化すること，などで識別される．

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MORITA, S., 1997. The group of *Trichotichnus leptopus* (Coleoptera, Carabidae) of Japan. *Elytra*, *Tokyo*, **25**: 521–585.

Elytra, Tokyo, **29** (2): 481–485, November 15, 2001

A New Species of the Group of *Trechiama oni* (Coleoptera, Trechinae) from Okayama Prefecture, Western Honshu, West Japan

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Abstract A new member of the group of *Trechiama oni* is described from the northeastern part of Okayama Prefecture, western Honshu, West Japan, under the name of *Trechiama yamashitai*. Although this new species is closely related to *T. yukikoae*, it is easily distinguished from the latter species by the strongly constricted pronotal base, and the sharper and more protruding pronotal hind angles. The most remarkable difference is that *T. yamashitai* has a well developed copulatory piece in the inner sac of aedeagus, while *T. yukikoae* is devoid of it.

The group of *Trechiama oni* is distributed on the Chûgoku Hills, the northwestern part of the Kii Peninsula, Awaji-shima Island, and the northeastern part of Shikoku Island. *Trechiama yukikoae* S. UÉNO (1985a, pp. 168, 178, figs. 9–11), a member of the group of *T. oni*, was described from the Wakasugi-tôge in Nishiawakura-son, the northeastern corner of Okayama Prefecture. Although it was tentatively included in the *fujitai* complex which is one of the subgroups of the *oni* group, it was recognized as an isolated species from the other members of this complex in view of its narrow and parallel-sided hind body and the peculiar structure of the male genitalia. Neither *T. yukikoae* nor its relatives have been additionally recorded from elsewhere after the original description. Recently, several specimens of *Trechiama* with resemblance to *T. yukikoae* were brought about from the southeastern side of Mt. Nagi-no-sen in Nagichô, about 20 km west-southwest of the Wakasugi-tôge, by Mr. Shun-Ichi YAMASHITA. After a dissection study of the male genitalia, it has become clear that this is a distinct new species. In this paper, I am going to describe it under the name of *T. yamashitai*.

The abbreviations used herein are as follows: HW – greatest width of head; PW – greatest width of pronotum; PL – length of pronotum, measured along the midline; PA – width of pronotal apex; PB – width of pronotal base; EW – greatest width of elytra; EL – greatest length of elytra; M – arithmetic mean.

I would like to thank Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his continuous guidance, and Messrs. Shun-Ichi YAMASHITA, Yoshihide OKUDA and Akinao SÔMA of the Kansai Trechine Research Group for their kind support throughout this study.

Trechiama (s. str.) *yamashitai* ASHIDA, sp. nov.

[Japanese name: Nagi-mekura-chibigomimushi]
(Figs. 1–5)

Trechiama sp.: ASHIDA, 2000, Checklist of Trechinae from Japan, vers. VIII, Kyoto, p. 11.

Length: 5.05–5.65 mm (from apical margin of clypeus to apices of elytra).

Closely related to *T. yukikoae* of the group of *T. oni*, but externally distinguished from the latter species by the smaller and slenderer body, more strongly contracted pronotal base, and sharper and more protruding pronotal hind angles. Also similar to *T. yukikoae* in the basic structure of the male genital organ, but easily distinguished by the presence of a well developed copulatory piece in the inner sac.

Color reddish brown with yellowish brown appendages. Body smaller on an average and slenderer than in *T. yukikoae*. Head similar to that of *T. yukikoae* though obviously narrower; antennae somewhat slenderer; remnants of eyes distinct as in *T. yukikoae* though smaller. Pronotum cordate, wider than length, widest at two-thirds from base, and more strongly contracted behind than in *T. yukikoae*; PW/HW 1.34–1.43 (M 1.40), PW/PL 1.11–1.20 (M 1.15), PW/PA 1.38–1.48 (M 1.42), PW/PB

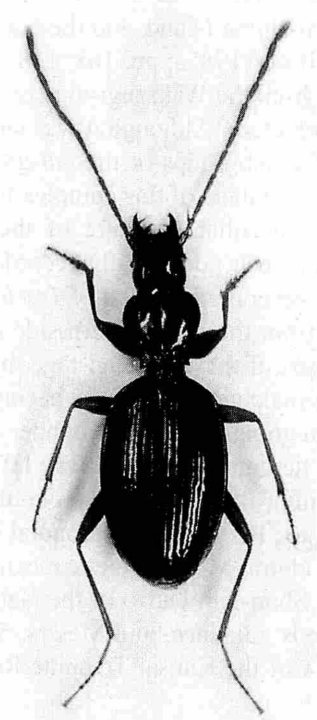
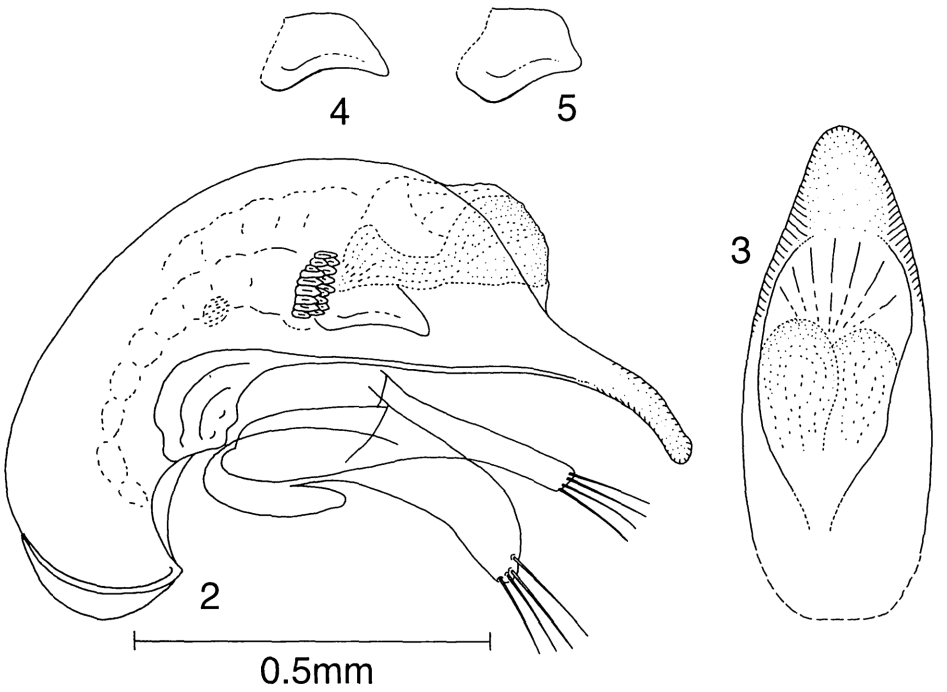


Fig. 1. *Trechiama yamashitai* ASHIDA, sp. nov., ♂, from Jabuchi-no-taki in Nagi-chô; dorsal view.



Figs. 2–5. Male genitalia of *Trechiama yamashitai* ASHIDA, sp. nov., ♂, from Jabuchi-no-taki in Nagichô; left lateral view (2), apical part of aedeagus, dorso-apical view (3), separated copulatory piece, left lateral view (4), and the same, left dorso-lateral view (5).

1.43–1.52 (M 1.50); surface as in *T. yukikoae* though the median line is deeper and clearer; sides strongly arcuate in front, deeply sinuate between one-seventh and one-eighth from base, and then widely divergent again towards hind angles, which are sharp and protrude postero-laterally; postangular seta absent; base obviously emarginate at the median part, and more or less narrower than apex, PB/PA 0.92–1.00 (M 0.95). Elytra similar to those of *T. yukikoae*, but smaller and less ample, particularly in apical part; EW/PW 1.60–1.75 (M 1.68), EL/PL 2.78–3.00 (M 2.92), EL/EW 1.47–1.59 (M 1.52); prehumeral borders, shoulders, sides, striation and chaetotaxy as in *T. yukikoae*; setiferous dorsal pores on stria 5 located at 1/9–1/8 and 1/2–4/7 from base, respectively. Legs slenderer than in *T. yukikoae*.

Male genital organ basically similar to that of *T. yukikoae* in external characters, but clearly different in the structure of inner armature. Aedeagus fairly large and robust, about one-third as long as elytra, with ample basal part and long flattened apical lobe; basal part larger and more strongly curved ventrad than in *T. yukikoae*, with fairly large basal orifice, whose sides are more deeply emarginate; sagittal aileron narrow and hyaline as in *T. yukikoae*; viewed laterally, apical part similar to that of *T. yukikoae*; viewed dorsally, apical lobe somewhat narrower than in *T. yukikoae*. Inner

sac armed with two sclerotized teeth-patches and a well developed copulatory piece; left proximal teeth-patch small, formed by heavily sclerotized teeth; dorso-apical teeth-patch much larger than the left proximal one, extending from left lateral to dorsal, though consisting of smaller and rather lightly sclerotized teeth; copulatory piece lying below the proximal teeth-patch, moderately sclerotized, pentagonal with the left margin sinuate, with the tip produced ventro-apically. Styles as in *T. yukikoae*.

Type series. Holotype: ♂, 14–V–2000, H. ASHIDA leg. Allotype: ♀, the same data as for holotype. Paratypes: 1♀, 26–V–1999, S. YAMASHITA leg.; 2♀♀, 6–VII–1999, S. YAMASHITA leg.; 2♂♂, 1♀, 7–X–1999, S. YAMASHITA leg.; 1♂, 1♀, 14–V–2000, H. ASHIDA leg.; 2♀♀, 4–VII–2000, S. YAMASHITA leg.; 2♂♂, 1♀, 15–IX–2000, Y. OKUDA & A. SÔMA leg. The holotype and allotype will be preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Type locality. Jabuchi-no-taki (alt. 520 m) at the southeastern side of Mt. Nagi-no-sen (1,240 m in height), in Nagi-chô of Okayama Prefecture, western Honshu, West Japan.

Further record. 1♀, 20–VIII–1998, S. YAMASHITA leg. Locality: Maguwa, Nagi-chô, Okayama Prefecture.

Notes. The *fujitai* complex of *Trechiama* so far consists of eight species, and has been known from the northeastern corner of Okayama Prefecture and the western part of Hyôgo Prefecture. Among them, *T. yukikoae* was recognized as an isolated species, because of the unique characteristics of the body and the male genital organ, and of the coexistence with *T. moritai*, a member of the same complex (UÉNO, 1985 a). Since *T. yamashitai* is obviously related to *T. yukikoae* as described above, these two species may form a separate species-group from the *fujitai* complex.

Jabuchi-no-taki, the type locality of the present species, is located 21 km west-southwest of the Wakasugi-tôge, the type locality of both *T. yukikoae* and *T. moritai*; 22 km west by north of Ruri-dera in Nankô-chô, that of *T. fujitai*; and 24 km north-northwest of Kamiakisato in Kôzuki-chô, that of *T. carinatus*. Thus, *T. yamashitai* is at present the westernmost species of the *fujitai* complex. Jabuchi-no-taki is about 23 km east by north of Yamoto in Kagamino-chô, the type locality of *T. angustus*, and about 25 km southeast of the Nakatsukô-gawa Valley in Kamisaibara-son, the type locality of *T. yamajii*, both of which belong to other complexes of the group of *T. oni*.

There are waterfalls called Jabuchi-no-taki in the valley where *T. yamashitai* was found. The type specimens were obtained from the upper hypogean zone at the stream-side around the waterfalls. One female specimen obtained from Maguwa, about 2 km east of Jabuchi-no-taki, could not be distinguished from the type specimens.

要　　約

芦田　久：岡山県より見いだされたナガチビゴミムシ属オニメクラチビゴミムシ群の1新種. —— 岡山県奈義町那岐山南東麓の蛇淵の滝より，オニメクラチビゴミムシ群の1新種，ナギメクラチビゴミムシ *Trechiama yamashitai* sp. nov. を記載した．本種は，岡山県西粟倉村若杉

峠から記載されたユキコメクラチビゴミムシ *T. yukikoae* S. UÉNO に近似するが，前胸後半が強くせばまる点，後角が鋭く外側に突出する点により区別される．また，ユキコメクラチビゴミムシでは雄交尾器内袋中に交尾片を欠くのに対し，本種ではよく発達した交尾片を内蔵することにより容易に識別される．ユキコメクラチビゴミムシは，その特異な形態からフジタメクラチビゴミムシ系の中では孤立した種であると考えられている．ユキコメクラチビゴミムシと本種は，フジタメクラチビゴミムシ系から派生した独自の一群を形成する可能性もあるが，ここでは従来の扱いに準じフジタメクラチビゴミムシ系に含めておく．

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——— & M. MORI, 2000. A new upper hypogean *Trechiama* (Coleoptera, Trechinae) from near the southwestern corner of Hyôgo Prefecture, West Japan. *Ibid.*, **28**: 31–36.

Elytra, *Tokyo*, **29** (2): 486, November 15, 2001

Aleochara (*Xenochara*) *fumata* GRAVENHORST (Coleoptera, Staphylinidae, Aleocharinae), New to Japan

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Aleochara (*Xenochara*) *fumata* GRAVENHORST, 1802, was originally described from Germany, and had been known only from the western Palearctic and Nearctic Regions (KLIMASZEWSKI, 1984, etc.) until PACE (1993) recorded it from China as the first record from the eastern Palearctic Region. I recently collected 12 specimens of this species in Fukushima-ken, Japan, and will record it as new to Japan in the present report.

Before going further, I wish to express my sincere gratitude to Dr. Christian MAUS (Institut für Biologie I (Zoologie), Freiburg) for his identification of this species.

Aleochara (*Xenochara*) *fumata* GRAVENHORST, 1802

Aleochara fumata GRAVENHORST, 1802, 92.
Aleochara (*Xenochara*) *fumata*: KLIMASZEWSKI, 1984, 51.

New record. 12 exs.: Kashi-onsen (800 m alt.), Nishigô-mura, Fukushima-ken, Honshu, 17–VI–1998, M. MARUYAMA leg.

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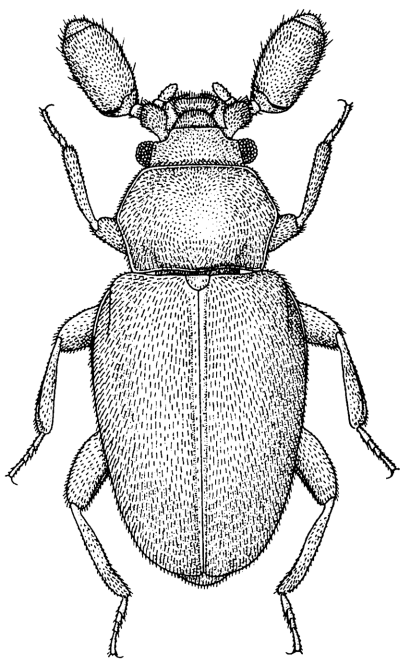

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