Elytra, *Tokyo*, **22** (1): 1–14, May 15, 1994

A Preliminary Revision of the Species-complex of *Carabus* (*Apotomopterus*) *sauteri* (Coleoptera, Carabidae)

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Abstract Five Chinese species belonging to the subgenus *Apotomopterus* of the genus *Carabus* (s. lat.), namely, *C.* (*A.*) *changi* HAUSER, *C.* (*A.*) *kleinfeldianus* DEUVE, *C.* (*A.*) *phami* DEUVE, *C.* (*A.*) *eleganticollis* DEUVE et IMURA, and *C.* (*A.*) *yunkaicus* DEUVE, are downgraded to the subspecies of *C.* (*A.*) *sauteri* ROESCHKE, with description of a new subspecies from South Taiwan under the name of *C.* (*A.*) *s. shimizuianus* nov.

All the species belonging to the subgenus *Apotomopterus* of the genus *Carabus* (s. lat.) have a well developed chitinous piece, named spinula[1], at the dorsal base of endophallus, as the basic structure of male genital organ. Although its taxonomic importance has not always been taken into account by previous authors, this small sclerite is peculiar in size and shape according either to species or to subspecies, and seems useful for identification and classification of lower taxa. On the basis of this genitalic character, taxonomic relationship among the members of the same subgenus should be reconstructed, at least partly.

In *Carabus* (*A.*) *sauteri*, which was described by ROESCHKE (1912, p. 4) from the central part of Taiwan, the spinula is well-developed, spine- or peg-like in shape, and is obliquely situated a little to the left of the mid-line at the dorsal base of endophallus. Although once regarded by BREUNING (1932, p. 206) as a synonym of *C.* (*A.*) *changi* HAUSER, this species is now widely known to be distinct, since the same author recognised so in his other article (1957, p. 275). However, little has been revised on its taxonomic status based upon the morphology of genitalia, above all of the spinula, by contrast with its relatives distributed in the southeastern part of the Chinese Continent.

Through my recent study on the detailed structure of male genital organ, I have become aware of the fact that several forms of continental *Apotomopterus* hitherto described as independent species are in fact not so remarkably different from *C.* (*A.*) *sauteri*, and have come to the conclusion that they should be unified into a single taxon at the species level. So far as I have examined, the following five taxa are considered to be conspecific with the Taiwanese species: *C.* (*A.*) *changi* HAUSER, *C.* (*A.*) *kleinfeldi-*

1) Terms used for this small sclerite are different according to authors, *e.g.*, "phanère" or "épine chitinisée" (MEURGUES et LEDOUX, 1966), "dente sclerificato" (STULANI, 1967), "ligula" (ISHIKAWA, 1973), "sclérite basal" (DEUVE, 1988, 1990; DEUVE et IMURA, 1990), "sclérite dentiforme" (DEUVE, 1991; DEUVE et IMURA, 1991), "spinula" (DEUVE et IMURA, 1993), etc. Here I am adopting, though provisionally, the term "spinula."

anus DEUVE, *C.* (*A.*) *phami* DEUVE, *C.* (*A.*) *eleganticollis* DEUVE et IMURA, and *C.* (*A.*) *yunkaicus* DEUVE.

In this paper, I am going to downgrade all of them to the subspecies of *C.* (*A.*) *sauteri* which has the priority over the other five names. In addition, I will describe a new subspecies of the latter from the southern part of Taiwan under the name of subsp. *shimizuianus* nov. As the result, ROESCHKE's species is classified into seven subspecies.

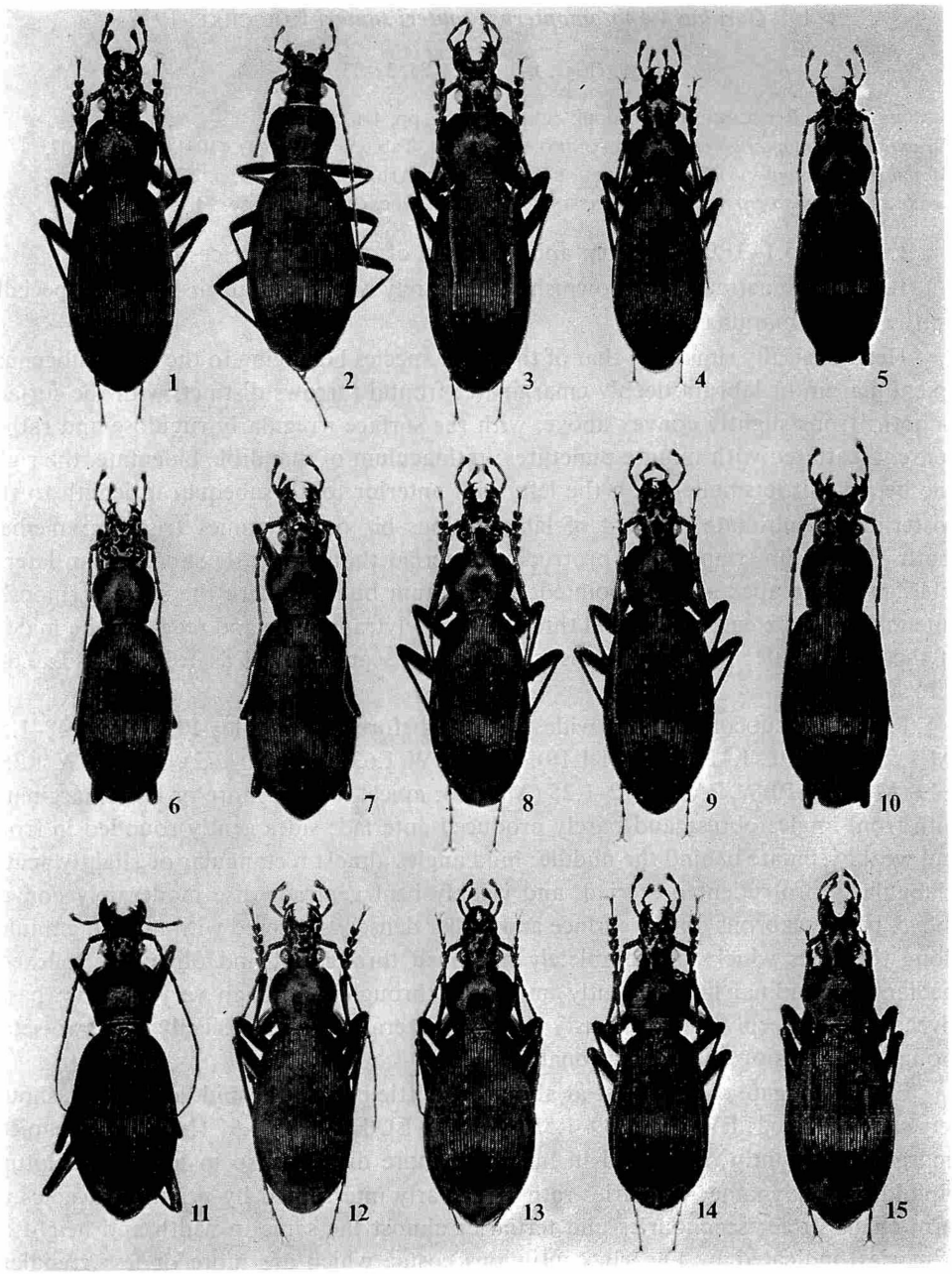
I have been unable to examine some other taxa[2] which seem very similar at least superficially to the species under consideration. Besides, our knowledge is still too poor about the Carabina distributed in China and the neighbouring areas to make a satisfactory discussion on the geographical variation of such a polytypical species. For these reasons, I will only give a preliminary revision in this paper.

The abbreviations used herein are the same as those explained in my previous papers except for the following ones which will additionally be employed in the present paper: IZP – Institute of Zoology, Academia Sinica, Pekin; IZSP – Institute of Zoology, St.-Petersburg; ZMA – Instituut voor Taxonomische Zoölogie (Zoölogisch Museum), Amsterdam; DEI – Deutsches Entomologisches Institut.

Before going further, I wish to express my deep appreciation to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, not only for critically reading the manuscript of this paper but also for permitting me to examine the specimens from the Tian-mu Shan Mts. brought by the Sino-Japanese Cooperative Study on Soil Fauna of Subtropical Forest in China made in 1989. In having the loan of the holotype specimens of *Apotomopterus* carabid beetles, I am greatly indebted to the following three doctors: Dr. Ben BRUGGE of the Instituut voor Taxonomische Zoölogie, Zoölogisch Museum – Universiteit van Amsterdam (*C. changi* and *C. phami*), Dr. Frank KLEINFELD, Fürth (*C. kleinfeldianus*), and Dr. Lothar ZERCHE of the Deutsches Entomologisches Institut (*C. sauteri*). Deep gratitude is also due to Messrs. Bernard LASSALLE, Kiyoyuki MIZUSAWA, Seiji MORITA, Hiroyuki SAKAINO, Shôhei SHIMIZU, and Motohiko TANIKADO for their kind help in various ways.

2) *E.g.*, *Carabus* (*Apotomopterus*) *gracilithorax* DEUVE, 1989 (only 1 ♀ is known from Guangxi, in coll. IZP), *C.* (*A.*) *guangdongicus* DEUVE, 1991 (only 1 ♀ is known from Gunagdong, in coll. IZP), *C.* (*A.*) *cheni* DEUVE, 1991 (only 1 ♂ is known from Yunnan, in coll. IZSP), *C.* (*A.*) *tianpingensis* DEUVE et YU, 1992 (only 1 ♂ is known from Hunan, in coll. IZP), etc.

Figs. 1–15. *Carabus* (*Apotomopterus*) *sauteri* subspp. —— 1–3, Subsp. *sauteri* ROESCHKE, 1, ♂, from Mt. Kuan-tao Shan, C. Taiwan; 2, ♀ (holotype), from Shui-she-liao, C. Taiwan; 3, ♂, from Mt. La-la Shan, N. Taiwan; 4, subsp. *shimizuianus* IMURA, nov., ♂ (holotype), from Mt. Nan-feng Shan, S. Taiwan; 5, subsp. *changi* HAUSER, ♂ (holotype), from Mt. Yun-ling Shan, Fujian Prov., China; 6–9, subsp. *kleinfeldianus* DEUVE, 6 (♂)–7 (♀), from the Tian-mu Shan Mts., Zhejiang Prov., China, 8 (♂)–9 (♀), from Mt. Huang Shan, Anhui Prov., China; 10–11, subsp. *phami* DEUVE, from Kienchang (=Nan-cheng), Jiangxi Prov., China, 10, ♂ (holotype), 11, ♀; 12–13, subsp. *eleganticollis* DEUVE et IMURA, from Mt. Lu Shan, Jiangxi Prov., China, 12, ♂ (holotype), 13, ♀ (allotype); 14–15, subsp. *yunkaicus* DEUVE, from Mt. Miao'er Shan, Guangxi Prov., China, 14, ♂, 15, ♀.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1. *Carabus* (*Apotomopterus*) *sauteri sauteri* ROESCHKE, 1912

(Figs. 1–3, 16, 24–25, 32–33)

Carabus Sauteri ROESCHKE, 1912, Suppl. ent., Berlin, **1**, pp. 4–6.
Carabus (*Apotomopterus*) *changi*: BREUNING, 1932, Best.-Tab. eur. Coleopt., (104), pp. 204–207.
Carabus (*Apotomopterus*) *Sauteri*: BREUNING, 1957, Ent. Arb. Mus. Frey, **8**, p. 275.
Carabus (*Apotomopterus*) *sauteri*: BREUNING, 1966, Bull. Soc. ent. Mulhouse, **24**, p. 23.

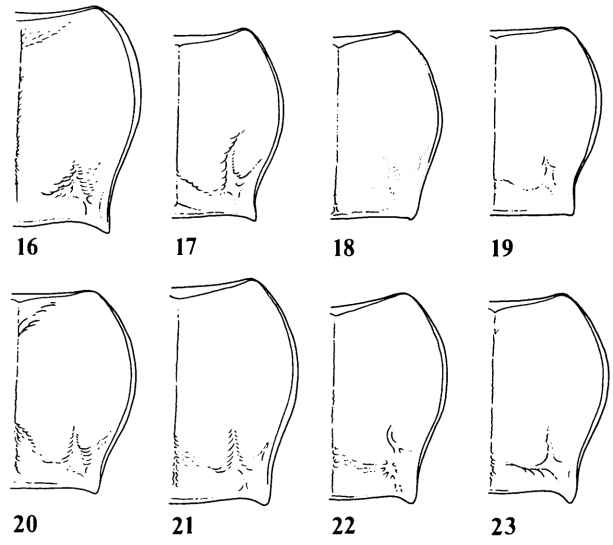
Length: 25.1–31.0 mm (from apical margin of clypeus to apices of elytra).

Black or sometimes red-brownish black, rarely with faint purplish lustre especially on the elytral margins.

Head basically similar to that of the other species belonging to the same subgenus; apical margin of labrum deeply emarginate; frontal furrows distinct, with the surface smooth; frons slightly convex above, with the surface irregularly rugulose and rather densely scattered with minute punctures; retinaculum of mandible bidentate, the right one being a little smaller than the left, with anterior tooth subequal in length to the posterior; penultimate segment of labial palpus bi- or sometimes trisetose; median tooth of mentum triangularly protrudent anteriad though a little shorter than lateral lobes, with the apex sharply pointed; submentum bisetose, with the surface smooth; antennae long, extending to basal three-fifths of elytra in male and reaching the middle of them in female; relative lengths of scape and segments 2–4 as follows:— 1 : 0.68 : 1.15 : 0.88.

Pronotum subcordate and widest a little before the middle; PW/HW 1.48–1.57 (M 1.52), PW/PL 1.12–1.27 (M 1.19), PW/PAW 1.63–1.83 (M 1.72), PW/PBW 1.38–1.49 (M 1.44), PBW/PAW 1.12–1.25 (M 1.19); apical margin more or less emarginate, with front angles obtuse and barely produced anteriad; sides gently rounded in front and weakly sinuate behind the middle; hind angles almost rectangular or slightly acute, triangularly protrudent posteriad, and weakly bent ventrad; disc moderately convex above, being scabrous on the surface and rather densely scattered with minute granules along the sides which are completely margined throughout and obviously reflexed; median longitudinal line evidently impressed throughout though very narrow; basal foveae not so deeply but obviously concave; lateral margins basically with two setae though the anterior one is occasionally absent.

Elytra elongate oval, widest at about or a little behind the middle, with the shoulders rather effaced; EW/PW 1.39–1.55 (M 1.49), EL/EW 1.85–1.97 (M 1.92); preapical emargination faintly recognised in male and more distinctly so in female; sculpture triploid, homodyname; primaries rather regularly interrupted by primary foveoles to form chain-striae; secondaries and tertiaries almost the same in width and height as primaries, indicated by linearly continuous costae which are more or less crenulate near bases and from apical halves to thirds; striae between intervals irregularly scattered with small granules; umbilicate series indicated by a regularly set row of granules extending nearly to elytral apices, outside of which are recognised two or three rows of minute granules.



Figs. 16–23. Pronotum (♂, right half in dorsal view) of *Carabus* (*Apotomopterus*) *sauteri* subspp. —— 16, Subsp. *sauteri* ROESCHKE, from Mt. Kuan-tao Shan; 17, subsp. *shimizuianus* IMURA, nov. (holotype), from Mt. Nan-feng Shan; 18, subsp. *changi* HAUSER (holotype), from Mt. Yun-ling Shan; 19–20, subsp. *kleinfeldianus* DEUVE, 19, from the Tian-mu Shan Mts., 20, from Mt. Huang Shan; 21, subsp. *phami* DEUVE (holotype), from Kienchang (=Nan-cheng); 22, subsp. *eleganticollis* DEUVE et IMURA (holotype), from Mt. Lu Shan; 23, subsp. *yunkaicus* DEUVE, from Mt. Miao'er Shan.

Pro- and mesepisterna smooth, metepisterna and sides of sternites rather densely punctate; sternal sulci completely and prominently carved; metacoxa trisetose.

Aedeagus long and slender, with the basal part weakly curved ventrad, median portion subcylindrical, almost parallel-sided or faintly swollen on the ventral side a little before the middle, apical lobe moderately elongate, gently curved ventrad, slightly compressed and subtriangularly pointed; spinula strongly sclerotized and peg-like in shape, approximately 4 times as long as wide, widest at the base, then gradually or rather acutely narrowed towards apex which is abruptly hooked ventrad to form triangularly shaped small spine with the tip sharply pointed; dorsal surface of spinula eithe almost smooth or more or less rugulose obliquely.

Type depository. DEI.

Type locality. "Suisharyo" (=Shui-she-liao, 1,150 m alt, situated on the western slope of the Ali Shan Mts. in Chu-chi Hsiang of Chi-ai Hsien, central Taiwan).

Specimens examined. 1 ♀ (holotype of *C. sauteri*), "Suisharyo, Formosa, H. SAUTER, 1911"/"7. XII"/"TYPUS"/"Holotypus"/"*Apotomopterus sauteri* mihi, nov. sp., Typ."/"coll. DEI, Eberswalde"; 1 ♂, 3 ♀♀, Mt. Kuan-tao Shan in Jen-ai Hsiang of Nan-tou Hsien, central Taiwan, 1–V–1990, C.-C. Lo leg.; 2 ♂♂, 3 ♀♀, same locality, 5–V–1991, M. TANIKADO leg.; 2 ♀♀, Nan-shan-hsi Valley, I–1970's; 3 ♂♂, 3 ♀♀. central Taiwan (no more available data), III～XII–1986; 1 ♂, Mt. La-la Shan, Tao-yuan Hsien, northern Taiwan, 22–VI–1980, H. SAKAINO leg.

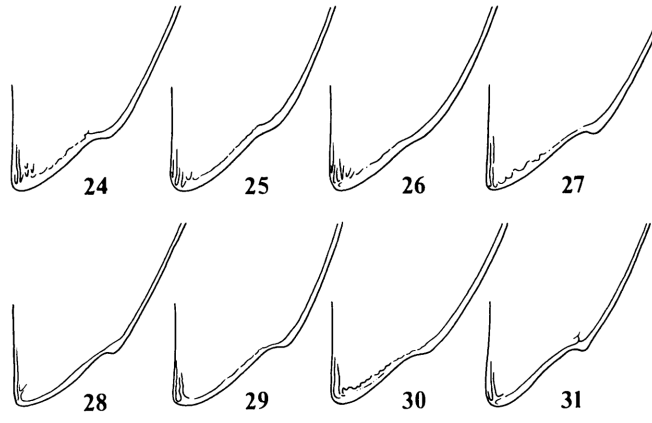
Notes. In central and northern Taiwan, this species appears to vary a little in external features according to localities. In the holotype specimen from Shui-she-liao (Fig. 2), the basal foveae of the pronotum are very shallow, the elevated parts of elytral intervals are rather distinctly prominent, and the preapical emargination of the elytra is rather deep (cf. Fig. 24). However, in the specimens from Mt. Kuan-tao Shan (Fig. 1), about 70 km distant to the north by east from the type locality, the basal foveae of the pronotum are deeper (cf. Fig. 16), the elytral sculpture is smoother, and the preapical emargination is shallower (cf. Fig. 25). Besides, as shown in Fig. 3, the La-la Shan specimen is also peculiar in facies, which is characterised by larger size, large and strongly convex pronotum, and comparatively slender elytra, though a single male specimen I was able to examine is not sufficient for a discussion on its true taxonomic position. Further investigations are therefore needed for solving the problem of geographical and individual variations of this species even in the Island of Taiwan.

2. *Carabus* (*Apotomopterus*) *sauteri shimizuianus* IMURA, subsp. nov.

(Figs. 4, 17, 26, 34)

Length: 25.3–28.5 mm (from apical margin of clypeus to apices of elytra).

Distinguished from the nominotypical subspecies by the following points: size a little smaller; pronotum slenderer, with the sides more strongly contracted before hind angles which are narrower and a little less strongly protrudent posteriad, and disc a little more weakly rugulose; elytra also slenderer, with the sides nearly parallel-sided, and shoulders more effaced; elytral sculpture with primary foveoles a little deeper,



Figs. 24–31. Right elytron (♀, apical part in dorsal view) of *Carabus* (*Apotomopterus*) *sauteri* subspp. —— 24–25, Subsp. *sauteri* ROESCHKE, 24 (holotype), from Shui-she-liao; 25, from Mt. Kuan-tao Shan; 26, subsp. *shimizuianus* IMURA, nov., from Mt. Nan-feng Shan; 27–28, subsp. *kleinfeldianus* DEUVE, 27, from the Tian-mu Shan Mts., 28, from Mt. Huang Shan; 29, subsp. *phami* DEUVE, from Kienchang (=Nan-cheng); 30, subsp. *eleganticollis* DEUVE et IMURA, from Mt. Lu Shan; 31, subsp. *yunkaicus* DEUVE, from Mt. Miao'er Shan.

elevated part of each interval a little less strongly crenulate; preapical emargination of elytra in female shallower. Apical lobe of aedeagus usually a little more strongly bent ventrad and a little more sharply pointed. Spinula a little slenderer and less acutely narrowed to the apex.

Type series. Holotype: ♂, allotype: ♀, 30–VII–1984 (NSMT). Paratypes: 3 ♂♂, same data as for the holotype; 1 ♀, same locality as for the holotype, 22–VII–1983, in coll. Y. IMURA and S. SHIMIZU.

Type locality. Mt. Nan-feng Shan, ca. 1,000 m alt., near Liu-kuei in Kaohsiung Hsien, southern Taiwan.

Notes. The type locality, Mt. Nan-feng Shan near Liu-kuei, may be the southern limit of the distributional range of the species. This new subspecies is named after Mr. Shôhei SHIMIZU who kindly submitted most of the type series to me for study.

3. ***Carabus* (*Apotomopterus*) *sauteri changi*** HAUSER, 1913, stat. nov.

(Figs. 5, 18, 35)

Apotomopterus Tientei subsp. *Changi* HAUSER, 1913, Dt. ent. Z., **1913**, pp. 468, 469.
Carabus (*Apotomopterus*) *changi*: BREUNING, 1932, Best.-Tab. eur. Coleopt., (104), pp. 204–207.

Length: 23.3 mm (from apical margin of clypeus to apices of elytra).

More closely allied to subsp. *shimizuianus* nov. than to the nominotypical subspecies, but different from both of them in the following points: size smaller; median tooth of mentum longer, almost the same in length as lateral lobes, with the apex very sharply pointed; sides of pronotum less strongly sinuate behind the middle; hind angles of pronotum barely protrudent postero-laterad and more strongly bent ventrad, with the postero-lateral margins not divergent but obviously convergent backwards in dorsal view; pronotal disc more weakly scabrous, with the basal foveae much shallower; elytra slenderer, widest at about apical third, with shoulders more effaced; striae between elytral intervals either very sporadically or barely granulate; prepisterna and sides of sternites far more weakly punctate; apical lobe of aedeagus a little longer and slenderer; spinula also slenderer, rather abruptly narrowed towards apex which is faintly but obviously hooked ventrad, with the dorsal surface hardly rugulose.

Type depository. ZMA.

Type locality. Eastern slope of Mt. Yun-ling Shan, Fujian Province, Southeast China.

Specimen examined. 1 ♂ (holotype of *C. changi* HAUSER), "♂, Yunlingshan, Koatung, Ch., XI. 1912"/"*A. changi*, G.H. Type"/"TYPE"/"*changi* t, BREUNING, c."/ "Collectie C. & O. VOGT, Acq. 1960".

Notes. In the first volume of his monograph, BREUNING (1932, p. 206) tentatively treated *C. sauteri* as a synonym of *C. changi*, though he was aware of the fact that the former (described in 1912) had the priority over the latter (described in 1913), because he was unable to see any specimen of ROESCHKE's species at that time. Later, he (1957, p. 275 and 1966, p. 23) succeeded in examining specimens of the former, at first

a female from Mt. Rarasan (=La-la Shan), then a male from Mt. Hinohi yama (misreading of Hinoki-yama=Kuai Shan), and concluded that the Taiwanese form was specifically different from the continental one. In my view, however, the two taxa should belong to the same species, judging from close similarity in conformation of the male genitalia, above all in that of the spinula.

4. *Carabus* (*Apotomopterus*) *sauteri kleinfeldianus* DEUVE, 1991, stat. nov.

(Figs. 6–9, 19–20, 27–28, 36–37, 41)

Carabus (*Apotomopterus*) *kleinfeldianus* DEUVE, 1991, Entomologiste, **47**, p. 20. figs. 7, 16.

Length: 25.3–28.0 mm (from apical margin of clypeus to apices of elytra).

Allied to subsp. *changi*, but distinguished from it by the following points: size larger; eyes also a little larger and more strongly protrudent laterad; pronotum with the widest part situated at a level a little more forwards, and hind angles barely protrudent posteriad; elytra with secondary and tertiary intervals more strongly crenulate in posterior halves, and striae between intervals a little more prominently granulate; apical lobe of aedeagus a little longer; spinula with the apical part a little stouter and more distinctly hooked ventrad.

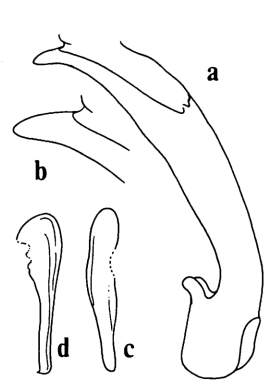
Type depository. Private collection of F. KLEINFELD, Fürth, Germany.

Localities. Mt. Tian-mu Shan (Zhejiang Province) and Mt. Huang Shan (Anhui Province), East China.

Specimens examined. 1 ♂ (holotype of *C. kleinfeldianus* DEUVE), "Chine, Zhejiang, Tienmu Shan (=Tian-mu Shan), SUENSON, 29-VI-1937" in coll. F. KLEINFELD; 1 ♂, 1 ♀, above Laodian, 1,170 m alt., Mt. Xi Tian-mu Shan, Zhejiang Province, 4–IX–1989, S. UÉNO leg. in coll. Y. IMURA; 3 ♂♂, 6 ♀♀, Mt. Huang Shan, 700–1,000 m alt., Anhui Province, 1 ~4–VIII–1992, in colls. K. MIZUSAWA and Y. IMURA.

Notes. The present subspecies was originally described by DEUVE as an independent species based upon an old specimen preserved in the private collection of F. KLEINFELD. Through his courtesy, I was able to examine the holotype specimen. Before then, a pair from the same mountain range have already been brought to me by Dr. Shun-Ichi UÉNO in 1989. After a careful examination, I have come to the conclusion that these specimens are specifically identical with *C. sauteri*, though rather peculiar in large and strongly prominent eyes and barely protrudent hind angles of

Figs. 32–40. Male genital organ of *Carabus* (*Apotomopterus*) *sauteri* subspp. —— 32–33, Subsp. *sauteri* ROESCHKE, 32, from Mt. Kuan-tao Shan, 33, from Mt. La-la Shan; 34, subsp. *shimizuianus* IMURA, nov. (holotype), from Mt. Nan-feng Shan, 35, subsp. *changi* HAUSER (holotype), from Mt. Yun-ling Shan; 36–37, subsp. *kleinfeldianus* DEUVE, 36, from the Tian-mu Shan Mts., 37, from Mt. Huang Shan; 38, subsp. *phami* DEUVE (holotype), from Kienchang (=Nan-cheng); 39, subsp. *eleganticollis* DEUVE et IMURA, from Ku-ling, Mt. Lu Shan; 40, subsp. *yunkaicus* DEUVE, from Mt. Miao'er Shan; a, aedeagus in right lateral view; b, ditto (apical part) in right lateral view; c, spinula in dorsal view; d, ditto in basal view. Scale: 2 mm for a, 1 mm for b, 1.5 mm for c and d.



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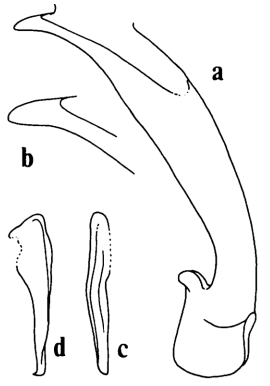

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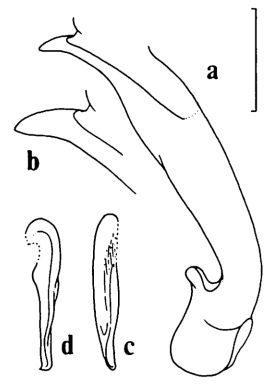

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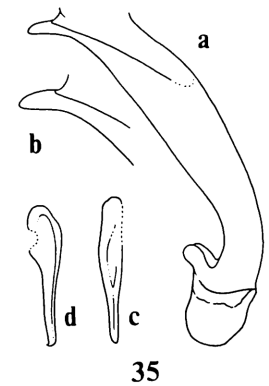

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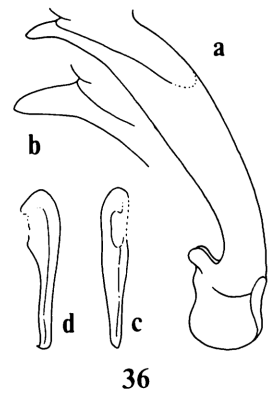

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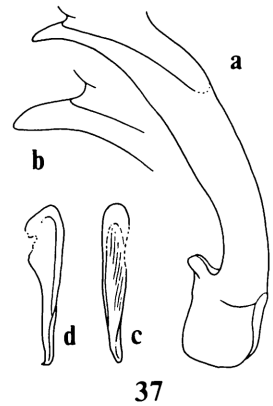

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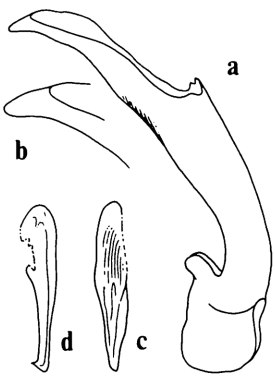

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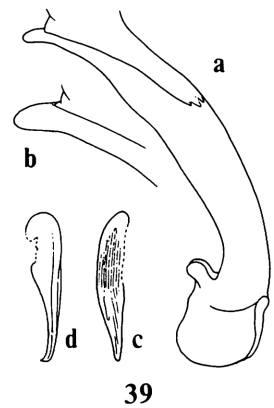

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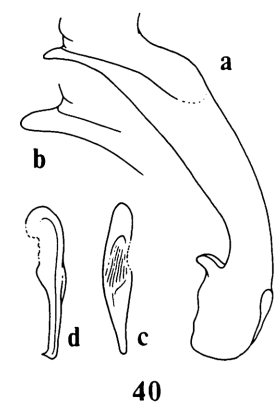

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pronotum, etc. It is shown in Figs. 36 and 41 that the Laodian specimen is a little different in the shape of aedeagus from the holotype specimen; in the former, the apical lobe is a little less strongly bent ventrad, and the dorsal margin is less strongly rounded. Since only the male type and another male specimen are now available for study, it is difficult to decide if the difference is geographical or individual.

In addition, I was able to examine a short series of the same form from Mt. Huang Shan situated at the southern part of Anhui Province, which is about 120 km distant to the west from the type locality of the present subspecies. Though somewhat different in datails, the Huang Shan specimens almost agree with the diagnostic characters of subsp. *kleinfeldianus*.

5. *Carabus (Apotomopterus) sauteri phami* DEUVE, 1988, stat. nov.

(Figs. 10–11, 21, 29, 38)

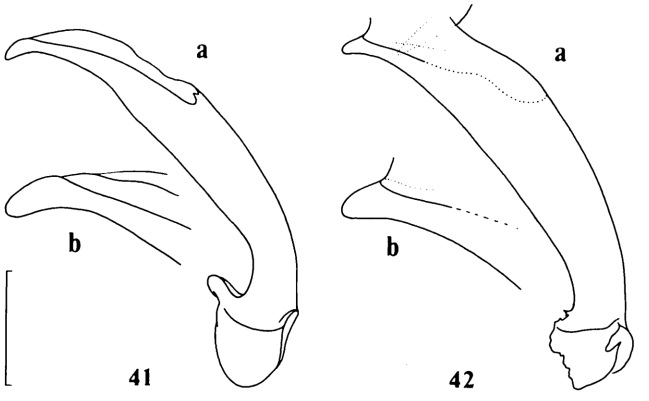
Carabus (Apotomopterus) phami DEUVE, 1988, Revue fr. Ent., (n.s.), **10**, pp. 249–251, figs. 1, 8.

Length: 27.3–27.5 mm (from apical margin of clypeus to apices of elytra).

Most closely allied to the nominotypical subspecies, but distinguished from it by the following points: pronotum a little slenderer, with the lateral margins less strongly rounded, basal foveae shallower; elevated parts of elytral intervals hardly crenulate; central part of aedeagus weakly rugulose on the ventral side; spinula a little robuster, with the dorsal surface more distinctly rugulose, its apex more strongly hooked ventrad to form a remarkable triangular spine.

Type depository. ZMA.

Localities. Kienchang (=Jianchang=Nan-cheng at present, situated at the eastern part of Jiangxi Province near the Fujian borders), Southeast China.



Figs. 41–42. Male genital organ of *Carabus (Apotomopterus) sauteri* subspp. —— 41, Subsp. *kleinfeldianus* DEUVE (holotype), from Mt. Tien-mu Shan; 42, subsp. *eleganticollis* DEUVE et IMURA (holotype), from Mt. Lu Shan; a, aedeagus in right lateral view; b, ditto (apical part) in right lateral view. Scale: 2 mm for a, 1 mm for b.

Specimens examined. 1 ♂ (holotype of *C. phami* DEUVE), "Kiangsi, Kienchang"/ "*Apot. cyanopterus*, G.H."/"Collectie C. & O. VOGT, Acq. 1960"/"HOLOTYPE"/ "*Apotomopterus phami* n.sp., Th. DEUVE det., 1988"; 1 ♀, Kiang-si, Kienchang, *changi* t. BREUNING c., Collectie C. & O. VOGT, Acq. 1960. (ZMA).

Notes. DEUVE (1988, pp. 249–251) described this taxon as a distinct species on the basis of an old specimen preserved in ZMA as "*Apotomopterus cyanopterus* HAUSER" [=*cyanipennis* BREUNING]. In the original description, the author compared it with *C. lushanensis* [sic] HAUSER and *C. cyanipennis* BREUNING. However, my recent examination of the holotype specimen proved that this race agree with the specific characters of *C. sauteri*, not only in the external features but also in the shape of genitalia including spinula. It is therefore downgraded to a subspecies of the latter. The female specimen from the same locality preserved in ZMA is considered to be consubspecific with it.

6. ***Carabus* (*Apotomopterus*) *sauteri eleganticollis*** DEUVE et IMURA, 1991, stat. nov.

(Figs. 12–13, 22, 30, 39, 42)

Carabus (*Apotomopterus*) *eleganticollis* DEUVE et IMURA, 1991, Elytra, Tokyo, **19**, pp. 142–144, figs. 1, 5.

Length: 25.2–27.7 mm (from apical margin of clypeus to apices of elytra).

Most closely similar to subsp. *kleinfeldianus* in general appearance, but easily distinguishable from it by the following points: hind angles of pronotum more strongly and triangularly protrudent posteriad; pronotal disc more weakly rugulose; striae between elytral intervals more prominently granulate near bases and apices; preapical emargination of elytra in female a little shallower; apical lobe of aedeagus shorter and less strongly bent ventrad, with the apex rather broadly rounded; spinula rather acutely narrowed towards apex in dorsal view, and more strongly hooked ventrad in basal view.

Type depository. NSMT.

Type locality. Mt. Lu Shan, northern end of Jiangxi Province near the Anhui borders, Southeast China.

Specimens examined. 1 ♂ (holotype of *C. eleganticollis* DEUVE et IMURA), Mt. Lu Shan, Jiangxi Province, China, X–1987"; 1 ♂, 9 ♀♀ (paratypes of the same species), same data as for the holotype, in coll. Y. IMURA; 1 ♂, "Ku-ling (name of a resort situated at an elevation of 1,100 m on Mt. Lu Shan), 1–VII–36, Musée Heude" in coll. K. MIZUSAWA.

Notes. In the original description of *C.* (*A.*) *eleganticollis*, the authors used its genitalia as one of the important diagnostic characters. However, the two males belonging to the type series are more or less teneral, and the aedeagus is considerably swollen and somewhat deformed after soaking in the mixture of ethanol and lactic acid. I cannot but regard such insufficient condition of genitalia as being available for reliable diagnosis. Through the courtesy of Mr. K. MIZUSAWA, I was recently given an

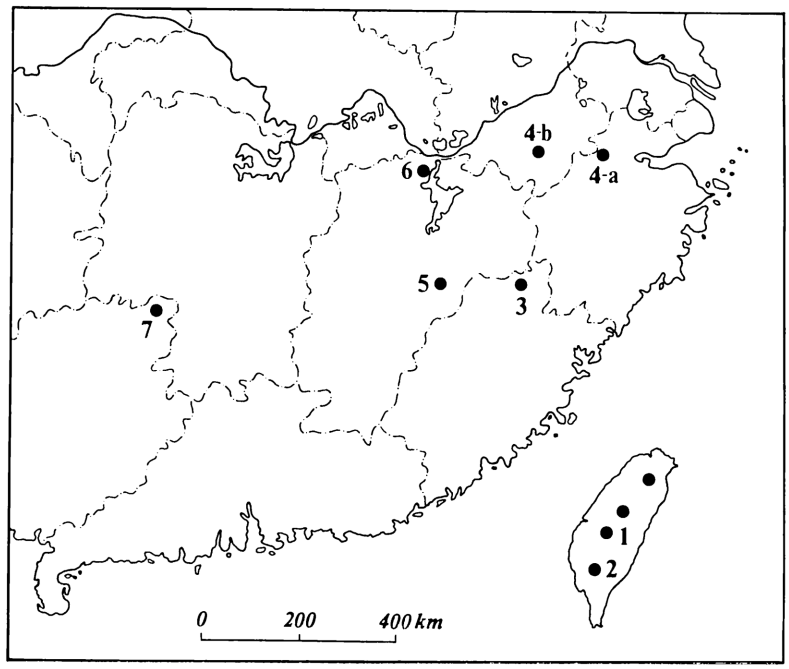


Fig. 43. Map showing the distribution of *Carabus* (*Apotomopterus*) *sauteri* in East Asia. —— 1, Subsp. *sauteri* ROESCHKE; 2, subsp. *shimizuianus* IMURA, nov. (Mt. Nan-feng Shan); 3, subsp. *changi* HAUSER (Mt. Yun-ling Shan); 4, subsp. *kleinfeldianus* DEUVE (a, Tian-mu Shan Mts., b, Mt. Huang Shan); 5, subsp. *phami* DEUVE (Kienchang=Nan-cheng); 6, subsp. *eleganticollis* DEUVE et IMURA (Mt. Lu Shan); 7, subsp. *yunkaicus* DEUVE (Longsheng Xian, Guangxi).

opportunity to examine a mature male from the type locality. Its aedeagus and spinula are as illustrated in Fig. 39. Judging from a close similarity in the basic structure of genitalia, the Lu Shan form is also considered to be a geographical race of *C. sauteri*.

7. *Carabus* (*Apotomopterus*) *sauteri yunkaicus* DEUVE, 1991, stat. nov.

(Figs. 14–15, 23, 31, 40)

Carabus (*Apotomopterus*) *yunkaicus* DEUVE, 1991, Bull. Soc. ent. Fr., **96**, pp. 224, 226, fig. 3.

Length: 25.5–27.5 mm (from apical margin of clypeus to apices of elytra).

Most closely allied to subsp. *eleganticollis*, but distinguished from it by the following points: dorsal surface faintly but obviously bearing dark bluish tinge; antennae longer, extending to basal five-sevenths of elytra in male; hind angles of pronotum a little more strongly protrudent posteriad and more sharply pointed; shoulders a little more effaced; elevated parts of primary intervals a little more strongly raised; preapical emargination of elytra in female deeper; aedeagus a little shorter and robuster, with the apical lobe a little slenderer; apical tip of spinula more strongly hooked to form a

triangular spine.

Type depository. IZP.

Type locality. Longsheng Xian, 1,420 m alt., Guangxi, South China.

Specimens examined. 1 ♂, 1 ♀, Mt. Miao'er Shan, 1,500 m alt., Longsheng Xian, Northeast Guangxi, VI–1993, in colls. Y. IMURA (♂) and K. MIZUSAWA (♀).

Notes. Though unable to see the holotype specimen now preserved in Beijing, I was recently able to examine specimens of the same species from Mt. Miao'er Shan situated in the same prefecture as the type locality. A careful examination of these specimens led me to the conclusion that the Guangxi race is also referable to *C. sauteri*. The long antennae, which extend to basal five-seventhes of elytra in male, is its most noticeable subspecific character.

要　　約

井村有希：ザウテルトゲオサムシ群の再検討（予報）．—— ザウテルトゲオサムシ *Carabus* (*Apotomopterus*) *sauteri* は，ROESCHKE により 1912 年，台湾中部の水社寮から記載され，BREUNING (1957) いらい，台湾特産の独立種として扱われている．いっぽう，対岸の中国大陸南東部からも，いっけん本種によく似たトゲオサムシが何種か記載されていて，筆者は以前より，これらのうちのいくつかは台湾の種と同じものではないか，という疑問を抱いてきた．こんかい，おもに交尾器の研究に基づいて検討を加えた結果，中国大陸から独立種として記載されている以下の 5 種は，*C. sauteri* と同種であろうという結論が得られた．*C. changi* HAUSER, *C. kleinfeldianus* DEUVE, *C. phami* DEUVE, *C. eleganticollis* DEUVE et IMURA, *C. yunkaicus* DEUVE．本論文では，これら 5 種すべてを，記載年において先行する *C. sauteri* の亜種とみなし，その主たる根拠となる陰茎および内袋基棘 spinula (＝舌状片 ligula, *sensu* ISHIKAWA) の形態を図示した．また同時に，台湾南部，六亀近郊の南峰山から，新亜種 *shimizuianus* nov. を記載した．この結果，現時点において本種は 7 亜種に分類されることになるが，検し得た標本数が少ないうえ，大陸産の近似種すべてについて検討を加えることができたわけではないので，本研究はあくまで予報とするにとどめておきたい．

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Elytra, Tokyo, **22** (1): 14, May 15, 1994

A New Record of *Cychrus sinicus* (Coleoptera, Carabidae) from the Northern Slope of the Qinling Mountains in Shaanxi Province, Central China

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Cychrus sinicus DEUVE (1989, p. 229, figs. 2, 4) is one of the least known species of the genus *Cychrus* in China, described on the basis of a single male specimen from Ningshan situated on the southern slope of the Qinling Mountains in Shaanxi Province. Recently, I had an opportunity to examine three males of this species obtained from the northern slope of the same mountain range. The collecting data are as given below:

3♂♂, near Banfangzi, ca. 1,300 m alt., S. of Zhouzhi Xian, Shaanxi Province, Central China, 13～23-V-1993, in coll. Y. IMURA.

So far as judged from the original description, the Banfangzi specimens almost agree with the nominotypical form in both the external and genitalic features. The above specimens were collected together with the following carabid beetles: *Carabus* (s. str.) *pseudolatipennis* DEUVE, *C.* (s. str.) *vigil pseudoparis* DEUVE, *C.* (*Lasiocoptolabrus*) *sunwukong* IMURA, and *Calosoma inquisitor* LINNÉ.

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Elytra, Tokyo, **22** (1): 15–20, May 15, 1994

Taxonomic Notes on *Acoptolabrus* (Coleoptera, Carabidae) Recently Described from the Oshima Peninsula in Southwestern Hokkaido, Northeast Japan

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Abstract New names of *Acoptolabrus* (Carabidae) recently given by NAKAJIMA (1993) are scrutinized, and are regarded as junior synonyms of previously described taxa.

Near the end of 1993, a special publication was issued from the Hakodate Entomological Society under the title "The Subgenus *Acoptolabrus* of the Genus *Damaster* from Oshima Peninsula." Its main subject is to introduce the results of survey on distribution and variation of carabid beetles belonging to the subgenus *Acoptolabrus* from the Oshima Peninsula in southwestern Hokkaido, Northeast Japan, made under the leadership of Kouji NAKAJIMA, the chief author and the editor of this journal, but the paper also contains descriptions of new taxa.

On pages 80–84 in the first part, three new taxa consisting of a "new species" and two "new subspecies" are described in Japanese with English translation, though the latter contains not a few misspellings, inappropriate syllabifications, and grammatical errors. Of these, *Damaster* (*Acoptolabrus*) *ninetopa* (described under the genus *Damaster* on p. 80 but as a member of the genus *Acoptolabrus* on p. 4) does not belong to a reproductively isolated new species but is considered to be an assemblage of morphologically unstable individuals occurring in a limited area between the distributional ranges of two allied species, *Carabus* (*A.*) *munakatai* and *C.* (*A.*) *gehinii*, and their natural hybrids. On the other hand, both *D.* (*A.*) *munakatai hashinaukamui* and *D.* (*A.*) *m. okikulumi* should be regarded as junior synonyms of the nominotypical subspecies of *C.* (*A.*) *munakatai*, because of the minimal morphological differences from the latter.

Much more problematical namings were made in the postscript (p. 102), where fourteen new scientific names (10 "new species" and 4 "new subspecies", containing a new homonym) were suggested. They look like *nomina nuda* and the numerals given after respective names merely show the years when the populations concerned were recognised, not years of publication of their descriptions. However, descriptions and other data are given in the first part (pp. 30–43), even though poor and inappropriate, and under Article 11 of the International Code of Zoological Nomenclature, these names may stand on the verge of availability. Anyway, all of them are either mere synonyms or a name given to a presumable natural hybrid between *Acoptolabrus* and

Damaster.

These new synonyms and/or taxonomic accounts of these "taxa" are given below in order to clarify relation between these names and previously described taxa, and to avoid unnecessary confusion in the future.

1. *Carabus* (*Acoptolabrus*) *gehinii gehinii* FAIRMAIRE, 1876

Carabus gehinii FAIRMAIRE, 1876, Pet. nouv. ent., **2**: 37; type area: "Japon".

Damaster (*Acoptolabrus*) *gehinii gehinii*: IMURA, 1989, Ill. Sel. Ins. World, (B), p. 9, pl. 1, figs. 34–55.

Acoptolabrus gehini [sic] *tagawai* K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Mt. Shamanbé-yama (Yamakoshi-gun, SW Hokkaido). **[Syn. nov.]**

Acoptolabrus gehini [sic] *shinnai* K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: low altitudinal area of Shimamaki-mura (on the right bank of Riv. Ôhira-gawa, Shimamaki-gun, SW Hokkaido). **[Syn. nov.]**

2. *Carabus* (*Acoptolabrus*) *munakatai munakatai* (ISHIKAWA, 1968)

Damaster (*Acoptolabrus*) *munakatai* ISHIKAWA, 1968, Bull. natn. Sci. Mus., Tokyo, **11**, pp. 146–148, fig. 3; type locality: Mt. Daisengen-dake, Hokkaido (Matsumae).

Carabus (*Acoptolabrus*) *munakatai furumii* MANDL, 1981, Z. ArbGem. öst. Ent., **33**, pp. 89–91, figs. B–D; type locality: Mt. Kariba, 600–800 m (Shimamaki-gun, SW Hokkaido).

Carabus (*Acoptolabrus*) *munakatai munakatai*: IMURA, 1991, Ill. Sel. Ins. World, (B), pp. 17–21, pl. 1, figs. 1–50, pl. 2, figs. 1–10.

Damaster (*Acoptolabrus*) *munakatai hashinaukamui* K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, pp. 82–83; type locality: Pass Umezuke-touge (Kamiiso-gun ~ Hiyama-gun, SW Hokkaido). **[Syn. nov.]**

Acoptolabrus hashinaukamui K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Pass Umezuké-tôgé (=Umezuke-touge). **[Syn. nov.]**

Acoptolabrus hashinaukamui suganoe K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Pass Nakayama-tôgé (Kameda-gun ~ Hiyama-gun, SW Hokkaido). **[Syn. nov.]**

Damaster (*Acoptolabrus*) *munakatai okikulumi* K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, pp. 83–84; type locality: Mt. Otobe-dake (Nishi-gun ~ Yamakoshi-gun, SW Hokkaido). **[Syn. nov.]**

Acoptolabrus okikulumi K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Mt. Otobé-daké (=Otobe-dake). **[Syn. nov.]**

Acoptolabrus okikulumi tagawai K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: near Atsu-un Tunnel (Yamakoshi-gun ~ Hiyama-gun, SW Hokkaido). **[Syn. & hom. nov.]**

Acoptolabrus munakatai kunikanei K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Mt. Shirakami-daké (Matsumae-gun, SW Hokkaido). **[Syn. nov.]**

Acoptolabrus icalari K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Pass Unseki-tôgé (Yamakoshi-gun ~ Nishi-gun, SW Hokkaido). **[Syn. nov.]**

Acoptolabrus shiuni K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Seiyôbetsu (Yamakoshi-gun, SW Hokkaido). **[Syn. nov.]**

Acoptolabrus kimunkamui K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Mt. Yûrappu-daké (Nishi-gun ~ Kudoo-gun ~ Setana-gun, SW Hokkaido). **[Syn. nov.]**

Acoptolabrus teunni K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Mt. Matsukura-yama (Kudoo-gun, SW Hokkaido). **[Syn. nov.]**

Acoptolabrus pilicasius K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Chiwasé (Shimamaki-gun, SW Hokkaido). **[Syn. nov.]**

Acoptolabrus ponlui K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: middle reaches of the Riv. Ôhira-gawa drainage (Shimamaki-gun, SW Hokkaido). **[Syn. nov.]**

Although NAKAJIMA proposed various new names for populations from locality to locality, they are not so clearly different from the nominotypical subspecies of *Carabus* (*Acoptolabrus*) *munakatai* in every feature except for coloration, and should be placed in junior synonyms of the latter. Needless to say, it is impossible to divide this taxon into two or more species. Of these, however, "*A. ponlui*" from the middle reaches of the Riv. Ôhira-gawa, or at least a part of it, may belong to the same category as that to be mentioned in the 4th section of the present paper.

3. *Carabus* (*Acoptolabrus*) *munakatai nishijimai* IMURA, 1991

Carabus (*Acoptolabrus*) *munakatai nishijimai* IMURA, 1991, Ill. Sel. Ins. World, (B), p. 21, pl. 2, figs. 11–30; type locality: Mt. Ôbira-yama, 800–900 m alt. on SW slope, Shimamaki-gun (SW Hokkaido).

Acoptolabrus pulepilica K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Mt. Ôhira-yama (=Ôbira-yama=Obira-yama). **[Syn. nov.]**

4. Population of *Acoptolabrus* from the Low Altitudinal Area of Shimamaki

Carabus (*Acoptolabrus*) *munakatai*, a population from the low altitudinal area of Shimamaki: IMURA, 1991, Ill. Sel. Ins. World, (B), p. 21, pl. 2, figs. 31–50.

Acoptolabrus ninetopa K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 4, fig. 6; type locality: Ôhira, Shimamaki-gun (SW Hokkaido).

Damaster (*Acoptolabrus*) *ninetopa* K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, pp. 80–82.

Acoptolabrus origin K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: low altitudinal area of Shimamaki (SW Hokkaido).

It is true that a unique population of *Acoptolabrus* is found from several limited localities between the Riv. Ôhira-gawa and the Riv. Tomari-gawa of Shimamaki-mura on the coast of the Japan Sea, which lie in the intervening area between the distributional ranges of two allied species, *Carabus* (*Acoptolabrus*) *munakatai* and *C.* (*A.*) *gehinii*. It was IMURA (1984, p. 248) who first recorded an *Acoptolabrus* from this population, and its morphological peculiarity was subsequently described by such authors as MORI (1986, p. 64), IMURA (1989, p. 154; 1991, p. 21), and SHIMIZU (1993, pp. 5, 6).

Most individuals from the same localities are basically identical with *C.* (*A.*) *munakatai nishijimai*, though a little larger in the size and considerably variable not only in the coloration but also in the shape of the pronotum and the sculptural condi-

tion of the elytra. In fact, some individuals are either morphologically intermediate between *C.* (*A.*) *munakatai* and *C.* (*A.*) *gehinii* or even not clearly distinguishable from each of them, which suggests that the population consists of natural hybrids between the two species, at least partly. Different variability in these hybrids may suggest the occurrence of backcrossing.

In some groups of the Carabina, it is known that natural hybridization between two allied species occurs in the area where their ranges overlap (cf. KUBOTA, 1988, 1991). However, such a situation as observed between *C.* (*A.*) *munakatai* and *C.* (*A.*) *gehinii* in Shimamaki-mura may be comparable with that reported in the parapatric species of apterous cerambycid beetles belonging to the genera *Parechthistatus* and *Mesechthistatus* in Honshu (cf. TAKAKUWA, 1987, pp. 207–229; 1988, pp. 156–164).

Anyway, there is little taxonomic significance in giving a name to such a population.

5. Natural Hybrid between *Carabus* (*Acoptolabrus*) *munakatai* and *C.* (*Damaster*) *blaptoides rugipennis*

Neodamaster lamtui K. NAKAJIMA, 1993, *Acoptolabrus* from Oshima Pen., Hakodate, p. 102; type locality: Chiwasé (Shimamaki-gun, SW Hokkaido).

I have already reported two cases of natural hybrids between *Acoptolabrus* and *Damaster* with the comments for three other presumable ones (IMURA, 1989, pp. 67–71), though my paper was apparently overlooked by NAKAJIMA. It is highly plausible that the "new species" named *Neodamaster lamtui* by him belongs to the same category as that reported in my paper. This can be judged from the colour illustration (p. 22, pl. 9, fig. 15) given in NAKAJIMA's paper under consideration. Although it was described under a new genus, the generic name is unavailable according to Article 13 of the International Code of Zoological Nomenclature.

In closing this short article, I wish to express my sincere thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, Counsellor of the International Commission on Zoological Nomenclature, for his kind suggestion and reviewing the manuscript. Special thanks are due to Mr. Toshio INOMATA for kindly notifying me of the publication in question and for giving me invaluable advice. I am also greatly indebted to the following gentlemen for their kindness in permitting me to examine the specimens of *Acoptolabrus* from various localities of the southwestern part of Hokkaido: Dr. M. BRANCUCCI, Dr. Y. NISHIJIMA, Dr. Y. YASUDA, Messrs. M. ARAI, T. ARAKI, Y. FURUMI, K. HIOKI, M. KAWATA, H. KEZUKA, S. MANO, Y. MIMURA, T. MIZUNUMA, K. MIZUSAWA, T. OKUMURA, S. SHIMIZU and R. YAMAZAKI.

要　約

井村有希：北海道渡島半島からさいきん記載されたクビナガオサムシ類の分類学的評価．—— 1993年 12 月に函館昆虫同好会から発行された“渡島半島の *Acoptolabrus* 亜属”のなかで，著者の中嶋康二氏は，同半島に産するクビナガオサムシに対し多数の新名を与えた．しかしながら，その“記載”はきわめて問題の多い方法によってなされているうえ，それらのすべてが既知の分類単位の同物異名として処理されるべきもの，あるいは雑種と思われる個体（群）に対して与えられた名称である．本論文では，これらの異名を整理するとともに，雑種（群）については，その分類学的評価を与えた．同地域のクビナガオサムシ類に関しては，すでに複数の研究者により，その変異の状況がかなりよく検討されている．にもかかわらず，いまさらながら各産地ごとに新種，新亜種名を与えてみたり，あるいは必要な文献も参照せず，あきらかな雑種（群）に命名するような行為は，分類学的に意味がないばかりか，いたずらに混乱を招くだけである．さらに，命名規約の趣旨もじゅうぶん理解しないまま，このように問題の多いかたちで新名を世に問おうとする姿勢じたい，厳にいましめられるべきであろう．

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Elytra, Tokyo, **22** (1): 20–22, May 15, 1994

Subspecific Affinity of the Mongolian Population of *Necydalis major* (Coleoptera, Cerambycidae, Necydalinae)

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Necydalis major is the most widespread species of the cerambycid genus *Necydalis* and is distributed in the Palearctic Region from the Atlantic to the Pacific sides. The range of the species in North and East Asia nearly continues along the subfrigid forests between the Altai Mountains and Amur Basin, and partially extends its distribution to the Korean Peninsula, Sakhalin and Hokkaido. Its nominotypical race, *N. major major*, occupies most part of the specific range, only with the exception of Hokkaido which is occupied by a different subspecies, *N. major aino*. This is rather strange, since the cerambycid fauna of Hokkaido is basically common to that of the Russian Far East. It is, however, beyond doubt that *Necydalis major aino* is subspecifically independent because of such peculiarities as robuter body form and closer denser punctuation on the pronotum. This subspecies was once regarded as an independent species by HAYASHI (1984).

In the late summer of 1993, I had an opportunity to see the coleopteran fauna in the suburbs of Ulaan Baator, Mongolia. Fortunately, I was able to obtain a female specimen of *N. major* by cooperation with a member of the tourist party. The collecting site was located in a valley of Mt. Bogdo Han, at the southern edge of the Hentiyn Mountains. In the valley, a *Picea* forest grew on the slope, and there were many white birches along

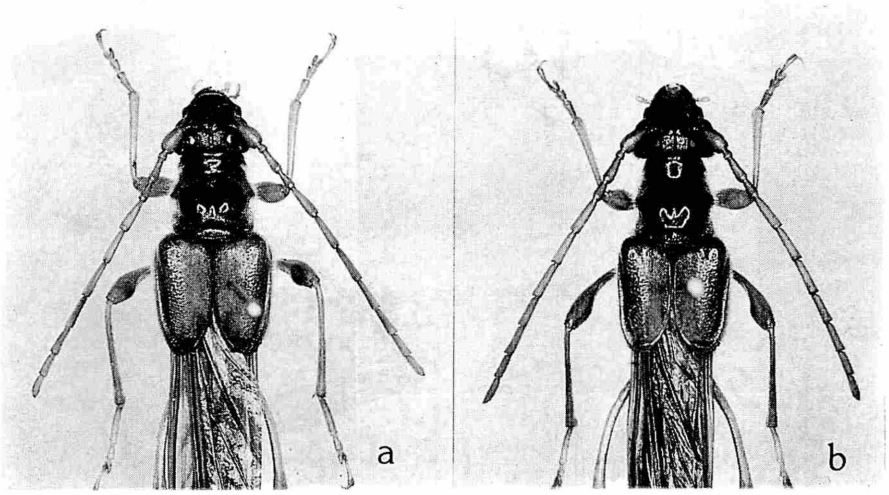

Fig. 1. Fore bodies of *Necydalis major* subspp., ♀. —— a, *N. m. aino* KUSAMA from Mongolia; b, *N. m. major* LINNÉ from France.

the stream. The insect was found on the trunk of an old white birch in the late afternoon. The collecting data are as follows: 1 ♀, Mt. Bogdo Han, Ulaan Baator, Mongolia, 18–VIII–1993, K. HATTÔ leg. (T. NIISATO coll.).

After a careful examination, it has become apparent that the Mongolian specimen shows closer relationship to *N. major aino* than to the nominotypical subspecies. It has broad robust body with closely punctured pronotum especially in the anterior and posterior parts, and densely covered with golden pubescence, as in Hokkaido specimens. This is the first record of the species from Mongolia as well as of subsp. *aino* from continental part of Asia. It cannot be said at present, though most probable, that the range of *N. major aino* extends to the eastern side of the Amur Basin, including the Korean Peninsula and Sakhalin. It is to be hoped that the distributional patterns of the two subspecies of *N. major* in East and North Asia will be clarified in near future by further careful examinations.

In closing this short report, I would like to thank Ms. K. HATTÔ for her kind help in the field work.

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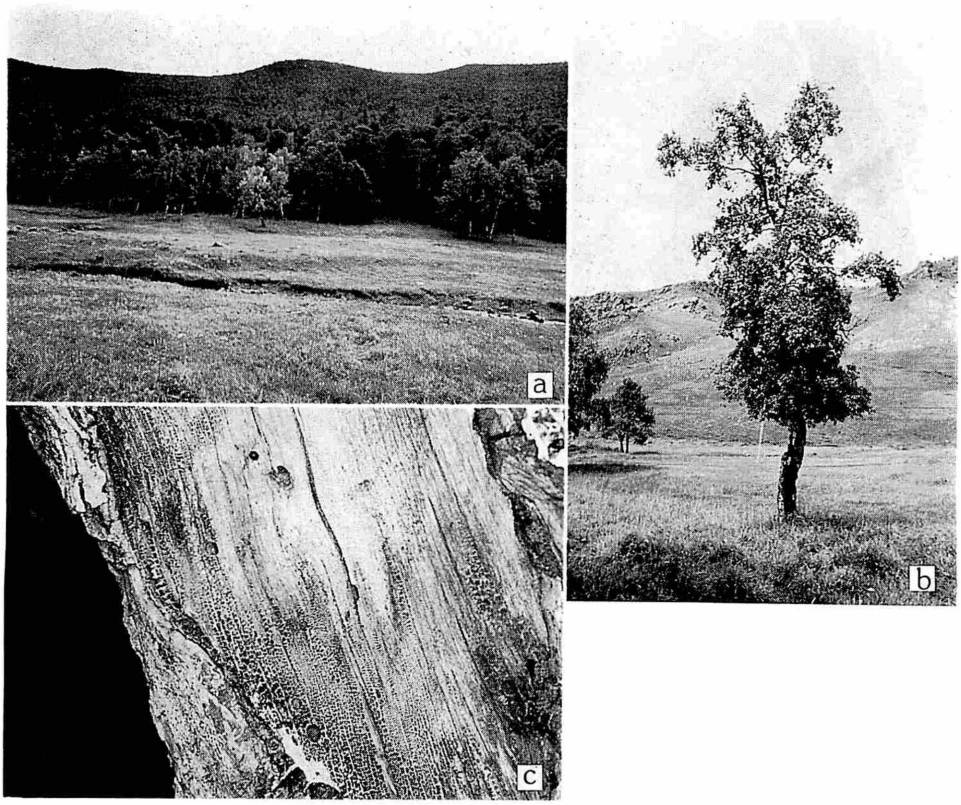

Fig. 2. Habitat of *Necydalis major aino* KUSAMA on Mt. Bogdo Han in the vicinities of Ulaan Baator. —— a, Forest vegetation; b, host tree (white birch); c, emergence hole on the trunk of the host tree.

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Elytra, *Tokyo*, **22** (1): 23–44, May 15, 1994

New Oculate *Trechiama* (Coleoptera, Trechinae) Mainly from Non-volcanic Mountains of Northern Honshu, Northeast Japan[1)]

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Abstract Five new oculate species of the trechine genus *Trechiama* are described from high mountains at the western side of northern Honshu, Northeast Japan. One of them, named *T. yoshikoae*, belongs to the *nivalis* lineage and is endemic to an isolated volcano, while the remaining four are restricted to non-volcanic mountains and form a homogeneous group to be called the *meridianus* lineage.

For many years, I have endeavoured to clarify the trechine fauna of the high mountains of northern Honshu, Northeast Japan. I have climbed up many of them, but the material now at my hands is not yet satisfactory because of difficulty of making repeated investigations in remote areas. On these high mountains in the northern territory, good collecting season is much limited due to bad weather in the autumn and heavy snowfall in the winter. It is therefore impossible to carry out time-consuming searches for small subalpine beetles within a short time.

In the present paper, I am going to describe five new oculate species of trechine beetles belonging to the genus *Trechiama*, which are now known fairly well. One of them is endemic to a recent volcano standing at the western side of northern Honshu. It belongs to the *nivalis* lineage of the group of *T. oreas* but is unique in the elytral chaetotaxy and configuration of the aedeagus. All the others are restricted to such non-volcanic mountains as the Mahirus, Taiheis and Shirakamis, all seldom visited by entomologists, and form a subgroup of their own within the same species-group. Though their differentiation is rather subtle, I have regarded every one of them as a full species, not as a subspecies of a single polymorphic species, in view of remarkable speciation of their relatives on very recent volcanoes distributed in the same general area.

The abbreviations employed in this paper are the same as those explained in previous papers of mine.

Before going further, I wish to express my hearty thanks to the following friends of mine, who either helped me in field investigations or submitted their collections to me for taxonomic study: Professor Yoshiaki NISHIKAWA, Messrs. Azuma ABE, Ma-

1) This study is supported by a Grant-in-aid for Scientific Research from the Ministry of Education, Science and Culture, Japan.

sayuki FUJIOKA, Naoyuki HIKIDA, Seiji MORITA, Kiyofumi SASAKI, Fukuo SATÔ and Satoshi YAMAUCHI.

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

[Japanese name: Chôkai-naga-chibigomimushi]

(Figs. 1–4)

Length: 5.20–5.70 mm (from apical margin of clypeus to apices of elytra).

Belonging to the *nivalis* lineage of the group of *T. oreas*, and recognized at first sight on its narrow elytra with two setiferous dorsal pores of the external series. Besides, this species is unique in the peculiarly shaped aedeagus, which is very slender, regularly arcuate, and with very long apical lobe.

Externally similar in many respects to *T. nivalis* S. UÉNO (1986, p. 132, figs. 1–4) of the Iidé Mountains, but the fore body is usually larger, the antennae are stouter and somewhat shorter, the elytra are more elongate and more parallel-sided, bearing two setiferous dorsal pores on the 5th stria instead of one, and the legs are stouter.

Colour as in dark individuals of *T. nivalis*, dark reddish brown to blackish brown in fully mature individuals, shiny, faintly iridescent on elytra; palpi, apical halves of antennae, and legs light reddish brown, venter of hind body also paler than dorsum.

Head more transverse than in *T. nivalis*, obviously wider than long, with frontal furrows more strongly curved behind; eyes variable in both size and convexity, though usually smaller and flatter in ♀ than in ♂; genae also variable in convexity, sometimes rather tumid, five-ninths to four-fifths as long as eyes; neck very wide, neck constriction distinct at the sides; mentum tooth large and broad, widely truncated or slightly emarginate at the apex; antennae stouter and usually somewhat shorter than in *T. nivalis*, reaching basal third to two-fifths of elytra and usually a little longer in ♂ than in ♀, segments 8–9 each 2.5 times or a little more as long as wide.

Pronotum ample, subcordate and convex, widest at about three-fifths from base, and a little more gradually narrowed towards base than towards apex, with the sides more widely and strongly arcuate than in *T. nivalis*, especially behind the widest part, briefly and less deeply sinuate at a level between 1/12 and 1/8 from base, and then slightly divergent towards hind angles, which are sharp, sometimes acute, and produced postero-laterad; front angles obtuse, hardly porrect; base bisinuate, more or less wider than apex; PW/HW 1.37–1.44 (M 1.40), PW/PL 1.16–1.24 (M 1.20), PW/PA 1.51–1.62 (M 1.56), PW/PB 1.33–1.43 (M 1.39), PB/PA 1.08–1.19 (M 1.12); sculptures as in *T. nivalis*.

Elytra elongated subovate, widest slightly before the middle, and almost equally narrowed towards bases and towards apices, though more pointed at the latter than at the former; EW/PW 1.41–1.47 (M 1.44), EL/EW 1.57–1.65 (M 1.62); shoulders more distinct than in *T. nivalis* though rounded, with prehumeral borders gently arcuate; sides feebly arcuate, rather abruptly convergent in apical parts without distinct emargination; each apex either obtuse or narrowly rounded, re-entrant angle at suture

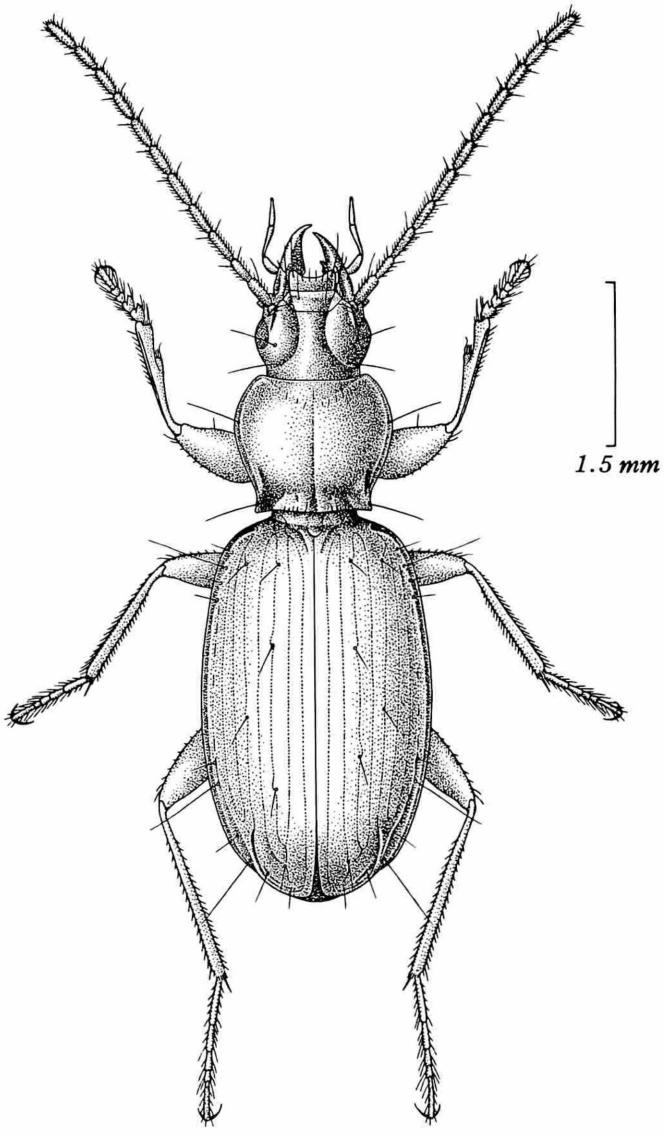
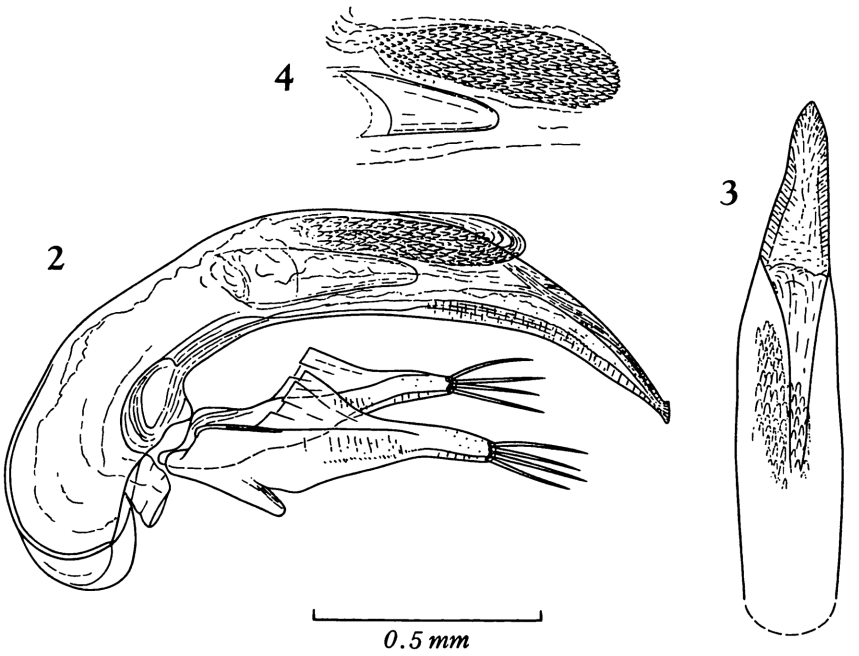


Fig. 1. *Trechiama* (s. str.) *yoshikoae* S. UÉNO, sp. nov., ♂, from Mt. Chôkai-zan (vicinities of Zenjin-numa).

very small; surface gently convex though widely depressed on the disc, marginal declivity steep; striae entire, fairly deep even at the side, finely punctate, stria 8 deeply impressed behind the middle set of marginal umbilicate pores; scutellar striole fairly long; apical striole deep and moderately curved, either joining or almost joining stria 5 (rarely joining stria 7 on one elytron); intervals gently convex and smooth, apical



Figs. 2–4. Male genitalia of *Trechiama* (s. str.) *yoshikoae* S. UÉNO, sp. nov., from Mt. Chôkai-zan (vicinities of Zenjin-numa); left lateral view (2), apical part of aedeagus, dorso-apical view (3), and separated inner armature, left lateral view (4).

carina prominent; stria 3 with three setiferous dorsal pores at 1/11–1/8, 3/10–2/5 (usually about 1/3) and about 2/3 from base, respectively; preapical pore situated at the apical anastomosis of striae 2 and 3, well behind the level of the terminus of apical striole but still more distant from apex than from suture; stria 5 always with two setiferous dorsal pores at 1/10–1/8 and 3/7–3/5 (usually about 1/2) from base, respectively; marginal umbilicate pores completely aggregated.

Ventral surface smooth; anal sternite with the apical margin more strongly and evenly arcuate in ♂ than in ♀, bisetose in the former, quadrisetose in the latter. Legs relatively stout, evidently stouter than in *T. nivalis*, with protibiae more widely dilated towards apices than in the latter.

Male genital organ large, slender and heavily sclerotized. Aedeagus about three-sevenths as long as elytra, tubular, long, regularly arcuate, gradually tapered towards apex from before the level of apical orifice, and produced into a long apical lobe, with the dorsal margin semicircularly rounded in profile; basal part elongate, curved ventrad, and slightly emarginate at the sides of basal orifice, with a fairly large sagittal aileron; viewed dorsally, apical lobe very gradually narrowed apicad and forming a subtriangular apical portion pointed at the extremity; viewed laterally, apical lobe narrow, feebly curved ventrad, gradually tapered apicad, and dorsally tuberculate at the ex-

tremity; ventral margin widely emarginate in profile. Inner sac armed with an anisotopic copulatory piece and a large patch of heavily sclerotized teeth; copulatory piece subtriangular with rounded apex, somewhat spatulate, and becoming membraneous at the basal part; teeth-patch dorsal, lying at the right dorsal side of copulatory piece just behind middle of aedeagus. Styles relatively small and narrow, left style longer than the right, each bearing four or five setae at the apex; in one of the paratypes, a short sixth seta present on the right style.

Variation in elytral chaetotaxy. Unlike *T. nivalis*, this species shows a high stability of elytral chaetotaxy. Of the total 19 specimens examined, only one male is aberrant in having a fourth dorsal pore on the third stria of the left elytron. No aberrancy is found in the number of dorsal pores on the fifth elytral stria.

Type series. Holotype: ♂, Zenjin-iké, 28–VIII–1982, S. UÉNO leg. Allotype: ♀, Zenjin-iké, 28–VIII–1982, Y. NISHIKAWA leg. Paratypes: 1 ♀, Zenjin-iké, 28–VIII–1982, S. UÉNO leg.; 5 ♂♂, vicinities of Zenjin-numa, 950–1,000 m alt., 20–VIII–1959, S. UÉNO leg.; 2 ♀♀ (teneral), Yajima-guchi 1,400–1,600 m alt., 20–VIII–1959, S. UÉNO leg.; 3 ♂♂, 4 ♀♀ (incl. 1 teneral ♀), Yajima-guchi 1,220–1,380 m alt., 28–VIII–1982, S. UÉNO & Y. NISHIKAWA leg.; 1 ♀, Ohshimizu, 29–VIII–1982, Y. NISHIKAWA leg.; 1 ♂, Masuda-guchi 1,250 m alt., 29–VIII–1982, S. UÉNO leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Mt. Chôkai-zan, on the borders of Akita and Yamagata Prefectures, at the western side of northeastern Honshu, Northeast Japan. Zenjin-iké (=Zenjin-numa; 1,050 m in altitude) and Yajima-guchi are on the northeastern slope in Akita Prefecture, Ohshimizu (850 m in altitude on Momoyaké-guchi) is on the eastern slope, also in Akita Prefecture, and Masuda-guchi is on the southern slope in Yamagata Prefecture.

Further specimen examined. 1 ♀, Mt. Chôkai-zan, Yunodai-guchi 1,400 m alt., Yuza-chô, Yamagata Pref., 29–VIII–1982, Y. NISHIKAWA leg. (NSMT).

Notes. The single female specimen collected at Hatchô-zaka of Yunodai-guchi, on the southern slope of the volcano, is excluded from the type series because of its exceptional body form. This is an unusually small individual with narrow prothorax, measuring only 5.15 mm in the length of body. The standard ratios of its body parts are: PW/HW 1.37, PW/PL *1.13*, PW/PA 1.49, PW/PB 1.38, PB/PA 1.07, EW/PW *1.54*, EL/EW 1.60. Most probably, this specimen represents an extreme variant of *T. yoshikoae*, though exact identification is not possible without examination of male genitalia.

It seems certain that the present species is a member of the *nivalis* lineage in a strict sense in view of the characteristic inner armature of its male genitalia. It is, however, considerably different from the other species of the same lineage[2)] both in the elytral chaetotaxy and in the configuration of aedeagus. Of these, the former is not definite

2) *Trechiama nivalis* S. UÉNO, 1986, *T. akinobui* S. UÉNO, 1986, *T. abcuma* S. UÉNO, 1992, and two undescribed species.

as will be shown on later pages for the *meridianus* lineage, but the latter is really astonishing. No other trechines belonging to the group of *Trechiama oreas*, both described and undescribed, have such a slender aedeagus as is found in *T. yoshikoae*, although very slender aedeagi are known in certain anophthalmic forms of the genus. Peculiar genitalic specialization shown by *T. yoshikoae* is almost incredible, especially because it has taken place on a very recent volcano of the Post-glacial origin, even though the solitary volcano is completely isolated from other high mountains in northeastern Honshu. This seems to suggest that speciation of *Trechiama* is very rapid under certain conditions and may be completed in less than ten thousand years.

Most specimens of the type series of *T. yoshikoae* were collected along the climbing route called Yajima-guchi on the northeastern slope of Mt. Chôkai-zan (2,236 m in height at the highest point), above all in the vicinities of the small lake called Zenjiniké (formerly called Zenjin-numa) at an altitude of 1,050 m. They were found from beneath stones lying or embedded in small gullies running through beech forests. At higher elevations, they occurred in birch shrubberies, but not near the summit that erupted recently. A few specimens were taken on the eastern and southern slopes, but we failed in finding any on the western slope, which also should harbour the same trechine.

This interesting species is named after my wife, Yoshiko, who accompanied me on the 1982 trip to the high mountains of northeatern Honshu.

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

[Japanese name: Mahiru-naga-chibigomimushi]

(Figs. 5–8)

Length: 5.80–6.10 mm (from apical margin of clypeus to apices of elytra).

Closely related to *T. oniceps* S. UÉNO (1989, p. 128, figs. 7–11) localized on the Onikôbé-tôgé and the Hanadaté-tôgé, but readily distinguished from that species by the broader elytra bearing two setiferous dorsal pores on the 5th stria.

Colour as in *T. oniceps*. Head perfectly identical with that of *T. oniceps*; eyes similarly variable, genae four-ninths to five-sevenths as long as eyes; antennae reaching basal three-sevenths of elytra in ♂, basal two-fifths of elytra in ♀. Pronotum usually larger than in *T. oniceps*, cordate, widest at about five-eighths from base, and more strongly contracted towards apex than towards base; PW/HW 1.43–1.53 (M 1.49), PW/PL 1.17–1.24 (M 1.20), PW/PA 1.57–1.69 (M 1.61), PW/PB 1.40–1.52 (M 1.46); sides strongly rounded from front angles to deep ante-basal sinuation, then more or less divergent towards sharp hind angles, which project postero-laterally; apex more or less narrower than base, PB/PA 1.03–1.16 (M 1.10), the latter nearly straight at middle; sculptures as in *T. oniceps*.

Elytra usually broader than in *T. oniceps*, widest at about four-ninths from bases, with the sides a little more strongly arcuate from behind shoulders to the level of the seventh umbilicate pore and rather abruptly convergent to apices through slight pre-

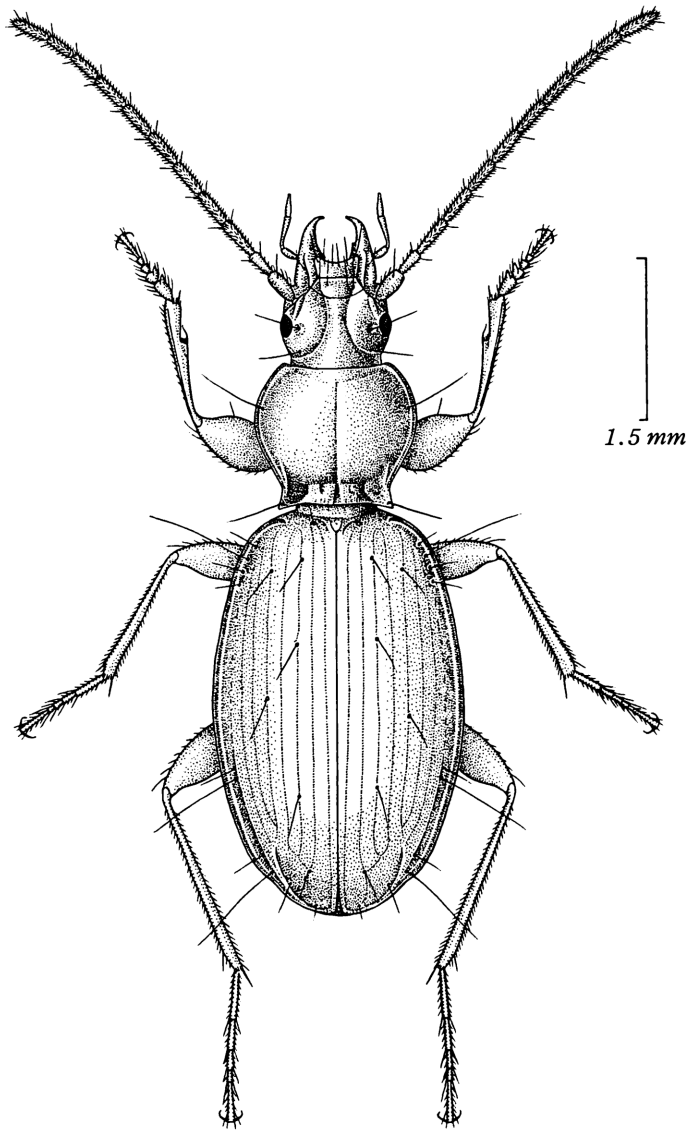


Fig. 5. *Trechiama* (s. str.) *meridianus* S. UÉNO, sp. nov., ♂, from Mt. Ondô-daké of the Mahiru Mountains.

apical emargination, which form a small re-entrant angle at suture; shoulders rounded, with prehumeral borders gently arcuate and usually less oblique than in *T. oniceps*; EW/PW 1.52–1.66 (M 1.59), EL/EW 1.49–1.55 (M 1.52); surface moderately convex especially behind middle; striae more or less deeper than in *T. oniceps*, crenulate, apical striole deeply impressed, rather feebly curved in front, and frequently joining

stria 7 though sometimes joining stria 5; intervals slightly convex on the disc; stria 3 with three setiferous dorsal pores at 1/11–1/8, 1/5–2/5 and 3/5–5/7 from base, respectively; stria 5 with two setiferous dorsal pores at 1/9–1/7 and 4/9–5/9 from base, respectively; preapical pore lying at the apical anastomosis of striae 2 and 3 well behind the level of the terminus of apical striole, and evidently more distant from apex than from suture. Ventral surface and legs as in *T. oniceps*.

Male genital organ heavily sclerotized, similar in many respects to that of *T. oniceps*, but different from the latter in the shape of aedeagal apical lobe and copulatory piece. Aedeagus about three-eighths as long as elytra, tubular, hardly arcuate, highest behind middle, and flattened at apical lobe; basal part fairly large, rather strongly curved ventrad, and deeply emarginate at the sides of basal orifice, with elongate sagittal aileron; viewed dorsally, apical lobe broad at base, narrowed towards apex, which is subtruncated and obtusely denticulate at the middle; viewed laterally, apical lobe very narrow, gradually tapered, and with a small button at the extremity; ventral margin bisinuate in profile. Inner sac armed with a large copulatory piece and three patches of heavily sclerotized teeth; copulatory piece about one-third as long as aedeagus, gutter-shaped and rather lightly twisted, dilated apically and forming a large vertical lamella rounded at the apex, with the right proximal portion heavily sclerotized and vertically produced into a triangular fin; two of the three teeth-patches left lateral, lying one outside the other at the left side of copulatory piece and seemingly united at the proximal ends, internal one dilated towards recurved apex, external one narrow, consisting of an irregular row of teeth and extending to near the apical margin of copulatory piece; right dorsal teeth-patch not large, compact and almost horizontal, lying just inside apical orifice. Styles fairly large, left style obviously larger than the right and provided with five apical setae, right style relatively small and narrow, bearing four apical setae.

Variation in elytral chaetotaxy. Chaetotaxy of elytra is fairly stable in the type population of this species, but one (♂) of the 12 specimens examined is aberrant in lacking the second dorsal pore on the fifth stria and the preapical pore of the right elytron. Rare occurrence of such an aberrancy is of some taxonomic interest, since it may represent an intermediate state between the bisetigerous condition of the external series predominant in the *oreas* and the *meridianus* subgroups and the unisetigerous condition commonly found in the *nivalis* subgroup.

Type series. Holotype: ♂, allotype: ♀, Sawauchi side, 30–VII–1985, S. UÉNO leg. Paratypes: 5 ♂♂, 2 ♀♀, Sawauchi side, 30–VII–1985, S. UÉNO & M. FUJIOKA leg.; 1 ♂, 2 ♀♀, Senhata side, 30–VII–1985, S. UÉNO & M. FUJIOKA leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Mt. Ondô-daké of the Mahiru Mountains, on the borders of Iwaté (Sawauchi-mura) and Akita (Senhata-mura) Prefectures, 820 m in altitude at the Sawauchi side and 870 m in altitude at the Senhata side, at the western side of northeastern Honshu, Northeast Japan.

Further specimens examined. 2 ♂♂, 5 ♀♀ (incl. 2 teneral ♀♀), Mt. Arisu-yama, 870 m alt. on WNW slope, Yuda-chô, Iwaté Pref., 25–VIII–1985, S. UÉNO leg. (NSMT).

Notes. The occurrence of this species on the Mahiru Mountains was preliminarily noticed in the Notes following the description of *T. oniceps* (UÉNO, 1989, p. 132). At the same time, it was pointed out that these trechines could not be placed in any of the subgroups then recognized. However, I refrained from proposing a new subgroup, seeing that *T. oniceps* is not typical of the lineage but exceptional in the chaetotaxy of its elytra. Having properly described the Mahiru species, I now propose the name *meridianus* subgroup for these two and the species to be described on later pages. It is characterized mainly by possession of narrow taeniate teeth-patches either united or seemingly united at the proximal ends and twisted copulatory piece lying at their right side. Most members of the *meridianus* subgroup resemble those of the *oreas* subgroup in their external morphology. They are, however, restricted to non-volcanic old mountains, whereas the members of the *oreas* subgroup occur mainly on recent volcanoes. Beside the species dealt with in the present paper, an isolated species belonging to this subgroup has been known from the southern part of the Kitakami Mountains at the eastern side of northeastern Honshu, or at the southeastern periphery of the distributional range of the *oreas* subgroup. It will be described in a separate paper to be published before long.

The Mahiru Mountains occupy the central part of the Ôu Mountain Range, but are utterly different from the northern and southern parts in being non-volcanic. Mt. Ondô-daké (996 m in height), the type locality of *T. meridianus*, lies near the centre of the mountains only 2.2 km northeast of Mt. Mahiru-daké, and is about 63.5 km distant to the north by east from the Onikôbé-tôgé on the Kamuro Mountains, the type locality of *T. oniceps*. *Trechiama meridianus* was found near the heads of two gullies on both sides of the ridge, from beneath stones embedded in the wet ground. Though located at the opposite sides of the watershed, the two collecting sites are only 300 m apart from each other in a bee-line.

A second locality of the present species is known on Mt. Arisu-yama (1,162 m in height), lying at the southern part of the Mahiru Mountains about 30 km south by east of Mt. Ondô-daké. The actual habitat is a shaded gully near a pass at the northwetern side of the mountain. The specimens from this population (5.25–6.05 mm in the length of body) are somewhat different from the type series in the shape of the pronotum, which is slightly narrower on an average and usually less contracted at the base. Consequently, the sides are a little less strongly arcuate, especially behind the widest part. It is for this reason that the Arisu-yama specimens are excluded from the type series. The standard ratios of their body parts are as follows: PW/HW 1.41–1.46 (M 1.43), PW/PL 1.15–1.20 (M 1.18), PW/PA 1.52–1.63 (M 1.58), PW/PB 1.30–1.43 (M 1.37), PB/PA 1.11–1.17 (M 1.15), EW/PW 1.58–1.67 (M 1.64), EL/EW 1.50–1.53 (M 1.51). They are also different from the type series in relative frequency of the occurrence of chaetotaxially aberrant individuals. Of the seven specimens examined, two females lack one of the dorsal pores on the third elytral stria; one lacks the first(!)

pore on the left elytron, and the other lacks the third pore on the right elytron. However, the external series is very stable, always consisting of two setiferous dorsal pores.

Mt. Arisu-yama is the only known place where a member of the *oreas* subgroup coexists with that of the other lineage. Three different species of trechine beetles, *T. meridianus*, a species of the *oreas* lineage and a *Kurasawatrechus*, were found together in the gully only 2 m wide and about 15 m long. All of them were met from beneath stones embedded in the gully-bed, and though I was unable to distinguish the two *Trechiama* in the field, they might dwell under the same stones. Though non-volcanic, Mt. Arisu-yama is only 5.5 km distant to the northwest from Mt. Yakéishi-daké, a recent volcano inhabited by a member of the *oreas* subgroup. It is therefore not surprising that the latter species could spread northwestwards across the ridge formed by an eruption of the volcano and came into contact with the aboriginal species.

The specific name of this new trechine is given after the name of its native place, the Mahiru Mountains, meaning the midday mountains in Japanese.

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

[Japanese name: Taihei-naga-chibigomimushi]

(Figs. 9–11)

Length: 5.85–6.60 mm (from apical margin of clypeus to apices of elytra).

Closely allied to *T. meridianus* and very similar to the latter in most external features, but the head is larger on an average, with the eyes usually a little smaller and flatter, and the elytra are usually a little longer, more widely depressed on the disc especially in ♂, steeper at the apical declivity, and more shallowly striate; PW/HW 1.39–1.49 (M 1.46), PW/PL 1.17–1.22 (M 1.19), PW/PA 1.52–1.67 (M 1.61), PW/PB 1.39–1.51 (M 1.44), PB/PA 1.04–1.17 (M 1.12), EW/PW 1.50–1.66 (M 1.58), EL/EW 1.51–1.59 (M 1.56).

Male genital organ similar to that of *T. meridianus*, but somewhat smaller, with apical lobe less flattened and bearing less conspicuous terminal button, and with copulatory piece smaller, more strongly twisted and bearing a large quadrangular fin. Aedeagus about one-third as long as elytra, similar to that of *T. meridianus* but more gradually tapered behind apical orifice in lateral view, with thicker apical lobe, whose terminal button is not conspicuous due to thickness of the lobe and sometimes represented by a mere dorsal tubercle. Copulatory piece shorter than in *T. meridianus*, about two-sevenths as long as aedeagus, broader in proximal part, more strongly twisted, and bearing a large quadrangular fin at the right proximal part. Styles as in *T. meridianus*, but the left style usually bears four apical setae.

Variation in elytral chaetotaxy. Of the 14 specimens of the type series, two, or 14.29%, are aberrant in the number of dorsal pores on the *fifth* elytral stria; one male has a third pore on the left elytron at about 2/3 from the base, and one female has a third pore on the right elytron just behind the second pore. In the members of the group of *T. oreas*, the number of dorsal pores of the external series is usually stable as

compared with that of the internal, so that the aberrancy observed in the type population of *T. pacatus* is rather exceptional within the species-group.

Type series. Holotype: ♂, allotype: ♀, Okkesa-mori, 25–VIII–1982, S. UÉNO leg. Paratypes: 3 ♂♂, 3 ♀♀, Okkesa-mori, 25–VIII–1982, S. UÉNO & Y. NISHIKAWA leg.; 1 ♂ (somewhat teneral), Fudô-daki, 25–VIII–1982, Y. NISHIKAWA leg.; 4 ♂♂, 1 ♀, Tsurugi-daké, 25–VIII–1982, S. UÉNO & Y. NISHIKAWA leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

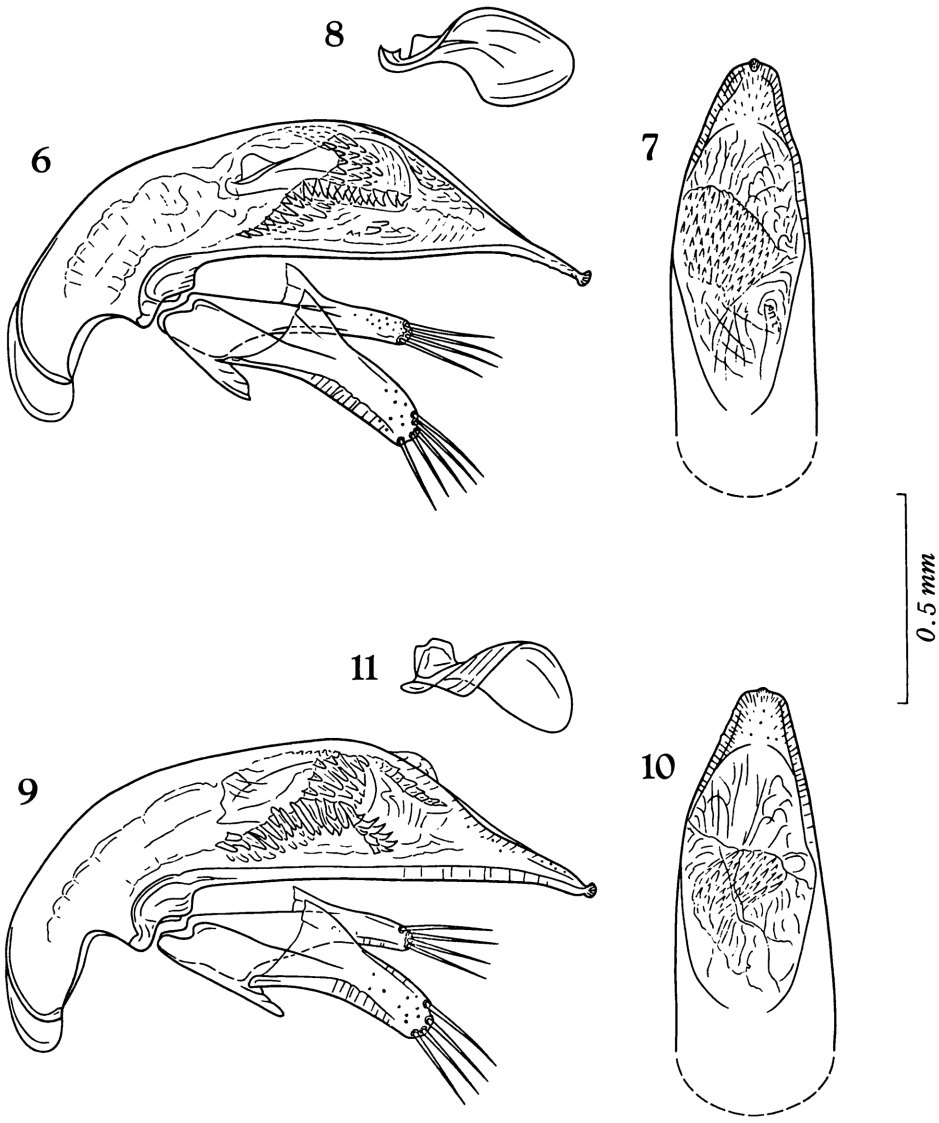
Type locality. Mt. Taihei-zan (310 m in altitude at the southwestern foot of Okkesa-mori, 350 m in altitude near Fudô-daki, and 660–680 m in altitude on the south-southeastern slope of Tsurugi-daké), in Akita-shi of Akita Prefecture, at the western side of northeastern Honshu, Northeast Japan.

Further specimens examined. 2 ♂♂, 1 ♀, Kawakita-rindô, 700 m SW of Oh-taki, 300 m alt., Kawabé-chô, Akita Pref., 26–VIII–1982, Y. NISHIKAWA leg. (NSMT); 2 ♂♂, Mt. Daibutsu-daké, Ohmizubata-zawa, 640 m alt., Nishiki-mura, Akita Pref., 28–VII–1991, N. HIKIDA leg. (NSMT); 1 ♂, Oh-mori Hill, Heiji-zawa, 500 m alt., Ani-chô, Akita Pref., 26–VIII–1982, Y. NISHIKAWA leg. (NSMT).

Notes. Though very closely similar to the Mahiru ones (*T. meridianus*), the Taihei populations are regarded herewith as belonging to a taxon different from the former at the species level. Ordinarily, such subtle differences as are observed between the two should be considered subspecific, but in this particular case, speciation seems to have been completed between the two groups of *Trechiama* populations. They are mutually exclusive beyond all reasonable doubt, being separated by the wide Yokoté Basin with two large rivers flowing through it, the Omono-gawa and its tributary, the Tama-gawa, and by the Tazawa Volcanoes inhabited by a member of the *oreas* subgroup. Of the four known localities of *T. pacatus*, Mt. Daibutsu-daké lying at the eastern part of the Taiheis is the nearest to Mt. Ondô-daké of the Mahirus, but even this is about 40 km distant to the north-northwest from the latter beyond the barriers mentioned above, and the distance itself is larger than that between the two nearest localities of *T. meridianus* and *T. oniceps*.

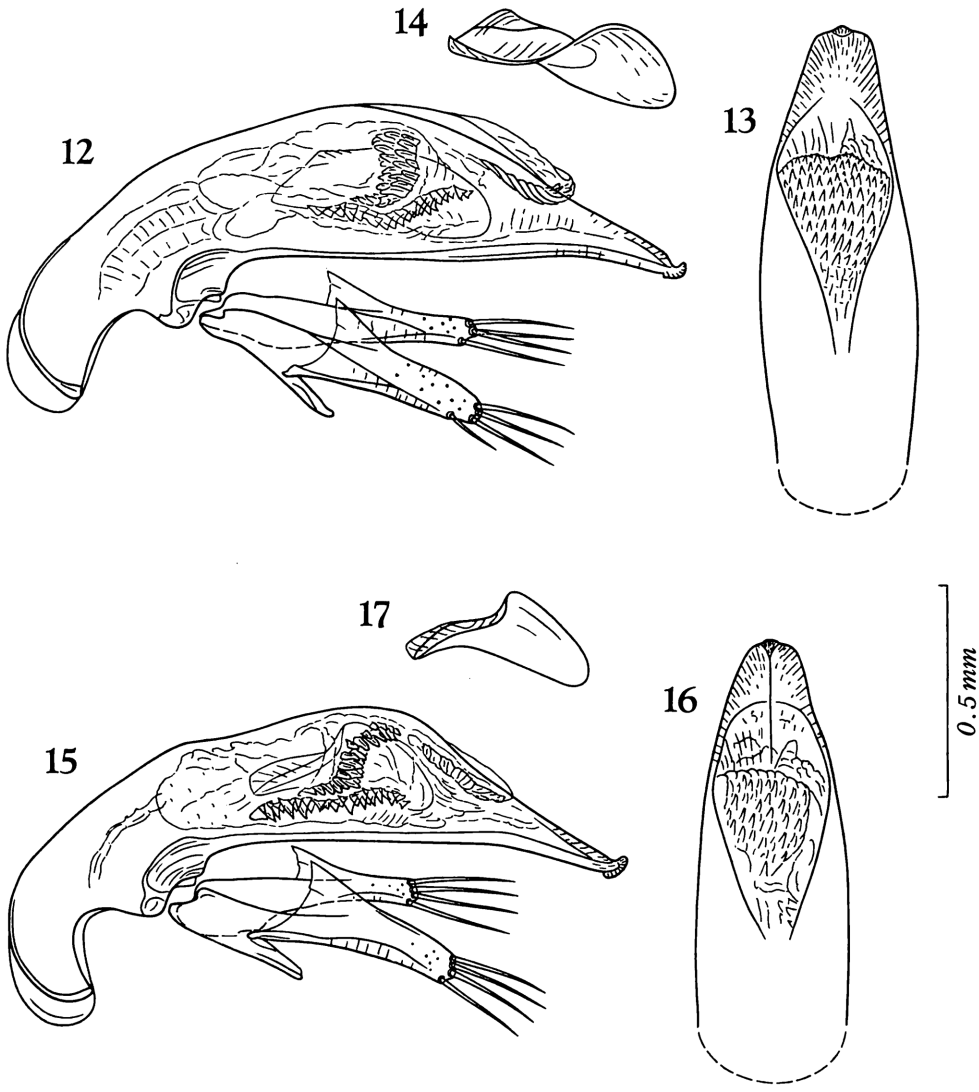
The Taihei Mountains form a range of rather low non-volcanic hills about 1,000 m in height, stretching from east to west at the western side of the Ôu Mountain Range. They are usually regarded as a portion of the so-called Dewa Mountain Range, but this is merely imaginal and meaningless from the zoogeographical viewpoint, since no continuous longitudinal range of mountains exists along the Japan Sea coast in the northern half of the Tôhoku District. *Trechiama pacatus* is restricted to and rather widely distributed over these mountains. The distance from the westernmost known locality, Mt. Taihei-zan, to the easternmost one, Oh-mori Hill, is about 22 km in a bee-line.

On Mt. Taihei-zan (1,171 m in height), the type specimens were collected along the upper course of the Taihei-gawa flowing down the southern slope. They were found from beneath large stones lying in wet shaded places. In a gully near Oh-taki,



Figs. 6–11. Male genitalia of *Trechiama* (s. str.) spp.; left lateral view (6, 9), apical part of aedeagus, dorso-apical view (7, 10), and separated copulatory piece, left lateral view (8, 11). —— 6–8. *T. meridianus* S. UÉNO, sp. nov., from Mt. Ondô-daké of the Mahiru Mountains. —— 9–11. *T. pacatus* S. UÉNO, sp. nov., from Mt. Taihei-zan (SW foot of Okkesa-mori).

which lies by the Kawakita-rindô on the opposite side of the Sannai-gawa Valley about 10.5 km east-northeast of Okkesa-mori of Mt. Taihei-zan, three specimens of *T. pacatus* were dug out from a colluvium. They are smaller (5.20–5.95 mm in the length



Figs. 12–17. Male genitalia of *Trechiama* (s. str.) spp.; left lateral view (12, 15), apical part of aedeagus, dorso-apical view (13, 16), and separated copulatory piece, left lateral view (14, 17). —— 12–14. *T. albidivalis* S. UÉNO, sp. nov., from the Tengu-tôgé of the Shirakami Mountains. —— 15–17. *T. triops* S. UÉNO, sp. nov., from the Mitsumenai-gawa Valley at the NW foot of Towada-yama in Ohwani-machi.

of body) than the type series but morphologically agree well with the latter, with the exception of one male, in which the pronotal sides are not divergent posteriad behind the ante-basal sinuation but are slightly covergent towards the hind angles. In the

female specimen from this population, the third dorsal pore is lacking on the third stria of the right elytron. The standard ratios of their body parts are: PW/HW 1.43–1.46 in ♂♂, 1.43 in ♀, PW/PL 1.17–1.21 in ♂♂, 1.17 in ♀, PW/PA 1.52–1.58 in ♂♂, 1.57 in ♀, PW/PB 1.39–1.46 in ♂♂, 1.42 in ♀, PB/PA 1.09 in ♂♂, 1.10 in ♀, EW/PW 1.59–1.64 in ♂♂, 1.49 in ♀, EL/EW 1.55–1.58 in ♂♂, 1.59 in ♀.

A third locality of this new species is known near the head of the Ohmizubata-zawa on the south-southeastern slope of Mt. Daibutsu-daké (1,167 m in height) about 9 km east of the gully near Oh-taki. The two males known from this population are perfectly identical with the type series, though one of them has a fourth pore on the third stria of the right elytron between the second and third dorsal pores. The standard ratios of their body parts are: PW/HW 1.48–1.50, PW/PL 1.23–1.24, PW/PA 1.61–1.64, PW/PB 1.45–1.47, PB/PA 1.09–1.13, EW/PW 1.52–1.54, EL/EW 1.54–1.55.

Finally, the single male specimen known from near the head of the Heiji-zawa at the southeastern foot of Oh-mori Hill (857 m in height), about 8.2 km distant to the north from Mt. Daibutsu-daké and about 12.5 km distant to the northeast from the gully near Oh-taki, perfectly accords with the type series. It measures 6.35 mm in the length of the body and has the following standard ratios of body parts: PW/HW 1.48, PW/PL 1.21, PW/PA 1.64, PW/PB 1.39, PB/PA 1.18, EW/PW 1.57, EL/EW 1.58. It seems worth noting that Oh-mori Hill is nearer to Mt. Moriyoshi-zan than to Mt. Taihei-zan, only about 10 km distant from the former though separated by the Utsutô-gawa Valley and about 22 km distant from the latter. Mt. Moriyoshi-zan is a recent volcano and harbours *Trechiama oreas*.

The specific name *pacatus* is derived from the Taihei Mountains, which mean the peaceful mountains in Japanese.

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

[Japanese name: Shirakami-naga-chibigomimushi]

(Figs. 12–14, 18)

Length: 5.90–6.75 mm (from apical margin of clypeus to apices of elytra).

Belonging to the *meridianus* lineage and recognized at first sight on the characteristic shape of its pronotum, which is not cordate but rather campanulate, with broad base, very short basal part and small hind angles. Also different from the other species in aedeagal configuration.

Colour variable; specimens from high altitude populations are usually dark, sometimes blackish, and similar to *T. pacatus* in coloration, but those from lower altitude, including the holotype and allotype, are wholly reddish brown with more or less lighter appendages. However, the difference is not definite, dark-coloured individuals also occurring at low places.

Head relatively narrow, narrower than in *T. pacatus*, usually with small flat eyes and gently contracted genae, the latter usually more than three-fourths as long as the former and sometimes equal in length to that, though rarely only two-thirds as long

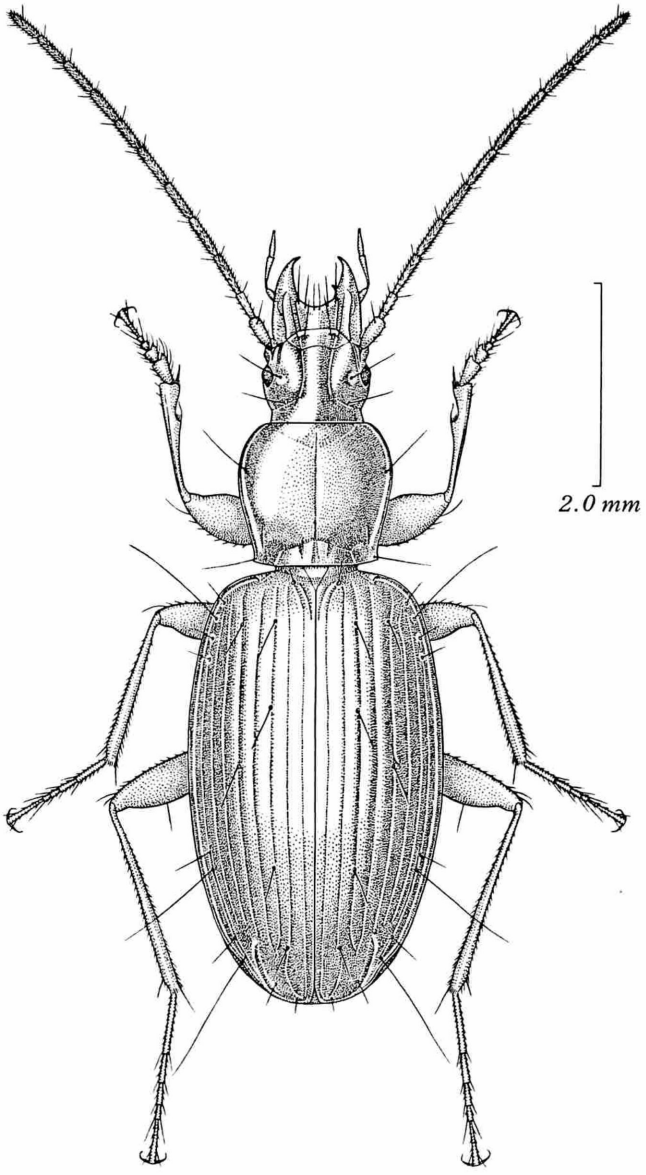


Fig. 18. *Trechiama* (s. str.) *albidivalis* S. UÉNO, sp. nov., ♂, from the Tengu-tôgé of the Shirakami Mountains.

as eyes; antennae reaching basal three-sevenths to the middle of elytra in ♂, usually a little shorter than that in ♀.

Pronotum usually subcampanulate rather than subcordate, usually widest at about three-fifths from base, and much more gradually narrowed towards base than

towards apex, with very short but broad basal part and small subrectangular hind angles; PW/HW 1.41–1.57 (M 1.47), PW/PL 1.11–1.22 (M 1.16), PW/PA 1.52–1.66 (M 1.60), PW/PB 1.22–1.36 (M 1.28); sides rather widely bordered except near front angles, moderately arcuate in front, very feebly so behind middle in the majority of individuals, very briefly and shallowly sinuate just before hind angles, or at 1/14–1/10 from base, and then slightly divergent towards hind angles in most specimens examined; apex obviously narrower than base, PB/PA 1.14–1.33 (M 1.25), with front angles obtuse and hardly porrect; base straight at middle, either straight or very slightly oblique on each side inside hind angle, which is rectangular or denticulate at the tip or somewhat sharp and is usually directed outwards; surface rather gently convex, more or less depressed on the disc; sculpture as in the other species of the subgroup.

Elytra usually more elongate than in *T. pacatus*, widest at a level between three-sevenths and four-ninths from bases, and obviously more pointed at apices than at bases; EW/PW 1.55–1.71 (M 1.63), EL/EW 1.54–1.65 (M 1.59); shoulders distinct though rounded, with prehumeral borders moderately arcuate and almost perpendicular to the mid-line at the innermost portions; sides rather widely reflexed in basal halves, very feebly arcuate from behind shoulders to the level of the seventh umbilicate pore, each with a shallow preapical emargination; apices rather narrowly and almost conjointly rounded; surface widely depressed in basal three-fifths, with steep marginal declivity; striae deeply impressed, distinctly crenulate in the majority of the specimens examined, apical striole variable though usually short, either joining or almost joining stria 7 in most individuals though sometimes directed to stria 5; intervals slightly convex on the disc; stria 3 with three setiferous dorsal pores at 1/10–1/8, 2/7–2/5 and 3/5–5/7 from base, respectively; stria 5 always with two setiferous dorsal pores at 1/10–1/8 and 2/5–1/2 from base, respectively; preapical pore lying at the apical anastomosis of striae 2 and 3, either at the level of the terminus of apical striole or a little behind that level, and much more distant from apex than from suture.

Legs relatively slender.

Male genital organ similar in basic structure to that of *T. pacatus*, but more elongate and differing from the latter in many minor details. Aedeagus about two-fifths as long as elytra, elongate, tubular, hardly arcuate, and highest at about or a little behind middle, with the dorsal margin gently arcuate in profile; basal part elongate and gently curved ventrad, with fairly large basal orifice whose sides are deeply emarginate; sagittal aileron fairly large; viewed dorsally, apical lobe gradually narrowed towards apex, which is subtruncated and obtusely denticulate at the middle; viewed laterally, apical lobe somewhat curved ventrad and gradually tapered, with the terminal button fairly large, oblique and recurved; ventral margin slightly arcuate behind middle in profile. Inner sac armed with a large copulatory piece and three patches of heavily sclerotized teeth; copulatory piece about one-third as long as aedeagus, twisted from left proximal to right apical, rather heavily sclerotized in proximal part, especially at the right side, but thin and hyaline in rounded apical part; two of the teeth-patches left lateral, lying one outside the other at the left side of copulatory piece and seemingly

united at the proximal ends, internal one rectangularly curved dorsad at middle and dilated towards the dorsal rim of copulatory piece, external one narrow, consisting of an irregular row of teeth, and extending to near the apical margin of copulatory piece; dorso-apical teeth-patch almost horizontal, lying just inside apical orifice. Styles narrow though not particularly long, obviously slenderer than in the other species of the same subgroup, left style a little longer than the right and bearing a narrow ventral projection, each usually provided with four apical setae, which are not particularly long.

Variation in elytral chaetotaxy. Chaetotaxy of the elytra is remarkably stable in this new species. Of the 47 specimens of the type series, only three, or 6.38%, are aberrant in the number of setiferous dorsal pores on the third elytral stria. Two of them, both males from Hitotsu-mori, lack the third pore, one on the right elytron and the other on the left. The third aberrant specimen, a male from Rangan-no-mori, has a fourth pore on the third stria of the left elytron. No aberrancy is observed in the number of dorsal pores of the external series.

Type series. Holotype: ♂, allotype: ♀, Tengu-tôgé (830 m alt.), 25–VI–1986, S. UÉNO leg. Paratypes: 3 ♂♂, Tengu-tôgé (830 m alt.), 25–VI–1986, Y. NISHIKAWA leg.; 1 ♀, Tengu-tôgé (870 m alt.), 2–VII–1989, A. ABE leg.; 1 ♀, Tengu-tôgé (870 m alt.), 9–VII–1989, A. ABE leg.; 4 ♂♂, 3 ♀♀, Hitotsu-mori, 25–VI–1986, S. UÉNO & Y. NISHIKAWA leg.; 1 ♂, 1 ♀, Rangan-no-mori, 16–VII–1989, A. ABE leg.; 1 ♀, Ao-iké, 20–VI–1979, S. MORITA leg.; 2 ♀♀, Ao-iké, 24–VI–1986, S. UÉNO & Y. NISHIKAWA leg.; 3 ♂♂, Shirakami-daké, 29–VII–1992, S. YAMAUCHI leg.; 4 ♂♂, 2 ♀♀, Shirakami-daké, 27–VII–1993, S. YAMAUCHI leg.; 1 ♂, Futatsu-mori, 23–VII–1989, A. ABE leg.; 4 ♂♂, 2 ♀♀, Futatsu-mori, 24–VII–1989, A. ABE leg.; 1 ♂, 1 ♀, Futatsu-mori, 25–VII–1989, A. ABE leg.; 1 ♀, Santa-kayanagaré (750 m alt.), 21–VII–1984, F. SATÔ leg.; 5 ♂♂, 4 ♀♀, Santa-kayanagaré (600 m alt.), 4–VIII–1985, F. SATÔ leg. Several paratypes from Mt. Shirakami-daké and Mt. Futatsu-mori are deposited in the collection of the Aomori Prefectural Museum. All the others including the holotype and allotype are preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Localities of the type specimens. Ao-iké of Jûniko, 240 m in altitude, in Iwasaki-mura, Aomori Pref.; Mt. Shirakami-daké, 1,220 m in altitude, in Iwasaki-mura, Aomori Pref.; Hitotsu-mori, 590 m in altitude at the east-southeastern side, in Fukaura-machi, Aomori Pref.; Tengu-tôgé (type locality!), 830 m and 870 m in altitude at the western side, in Fukaura-machi, Aomori Pref.; Rangan-no-mori, 660 m in altitude on the southern slope, in Ajigasawa-chô, Aomori Pref.; Mt. Futatsu-mori, 880 m in altitude at the heads of the Tomari-zawa, in Ajigasawa-chô, Aomori Pref.; Santa-kayanagaré, 600 m and 750 m in altitude on the west-northwestern slope, in Fujisato-machi, Akita Pref.; all in the western part of the Shirakami Mountains on the borders of Aomori and Akita Prefectures, at the western side of northeastern Honshu, Northeast Japan.

Further specimens examined. 3 ♂♂, 2 ♀♀, Anmon-gawa Valley, Yakeyama,

280 m alt., Nishimeya-mura, Aomori Pref., 25–VI–1986, S. UÉNO & Y. NISHIKAWA leg. (NSMT).

Notes. Though rather variable, this new species can be easily distinguished from the other members of the *meridianus* subgroup by the short broad basal part of the pronotum and the elongate aedeagus. It is widespread in the western part of the Shirakami Mountains, and the actual range may extend eastwards into the central part. Anyway, its distributional range is adjacent to that of *T. oreas* H. W. BATES, since Rangan-no-mori lying at its northeastern periphery is only 13.7 km distant to the southwest from the habitat of *T. oreas* in the Yu-no-sawa at the southwestern side of Mt. Iwaki-san. On the other hand, even the southernmost known locality of *T. albidivalis*, Santa-kayanagaré, is about 70 km distant to the north by west from Tsurugi-daké of Mt. Taihei-zan, and besides, the Shirakami Mountains are separated from the Taiheis by the wide alluvia of the Yoneshiro-gawa and the low hilly area south of the large river.

Of the eight localities of *T. albidivalis* hitherto known, the Tengu-tôgé is selected as the type locality, since it is situated at the centre of the middle altitude habitats of the species. Lying in the Oirasé-gawa drainage, this locality is only 2.8 km east by north of Hitotsu-mori and 4.9 km west of Rangan-no-mori, the latter of which lies in the Akaishi-gawa drainage. Specimens from these localities were dug out from colluvia deposited at the sides of shaded gullies, and therefore, they are not dark-coloured. Ao-iké of the Jûniko Lakes is located at 6.7 km west of Hitotsu-mori and marks the western limit of distribution of *T. albidivalis*. The three known specimens from this locality, all unfortunately females, are slightly different from the specimens of the middle altitude habitats in the narrower base of the pronotum (see Table 1), though otherwise agreeing well with the latter in external morphology. One of the three is dark-coloured like high altitude specimens, but the other two are wholly reddish brown.

The specimens from near the summit of Mt. Shirakami-daké (1,235 m in height), which is 7.3 km apart to the south-southwest from Hitotsu-mori and 6.8 km apart to the south-southeast from Ao-iké of the Jûniko Lakes, are darker in coloration than any of the middle altitude ones, and have relatively sharp hind angles of the pronotum and rather widely rounded apices of the elytra. Those from Mt. Futatsu-mori (1,086 m in height), a peak on the watershed ridge about 11 km southeast of Mt. Shirakami-daké, and those from Santa-kayanagaré, which lies at the southern side of the mountain range about 4.1 km farther in the same direction, resemble the Shirakami-daké specimens, but the head is relatively small on an average (see Table 1) and the elytra are narrowly rounded at the apices as in the specimens from the type population.

Most remarkable is the Anmon-gawa population, whose specimens are larger on an average than any of the others (6.35–6.80 mm in the length of body) and are characterized by the unusually broad basal part of the pronotum (see Table 1), which makes its lateral sides only lightly contracted posteriad and only very slightly sinuate before rectangular hind angles. It is for this reason that the Anmon-gawa specimens are excluded from the type series, although the collecting site is only 6.5 km distant to

Table 1. Geographical variation of standard ratios in *Trechiama* (s. str.) *albidivalis* S. UÉNO, sp. nov., from the Shirakami Mountains. Mean values are shown in parentheses.

Population	PW/HW	PW/PL	PW/PA	PW/PB	PB/PA	EW/PW	EL/EW
Ao-iké	1.41–1.45 (1.43)	1.14–1.20 (1.17)	1.55–1.62 (1.57)	1.33–1.36 (1.34)	1.14–1.22 (1.18)	1.57–1.62 (1.59)	1.60–1.62 (1.61)
Shirakami-daké	1.44–1.49 (1.46)	1.12–1.20 (1.15)	1.59–1.66 (1.62)	1.25–1.34 (1.29)	1.22–1.31 (1.26)	1.60–1.68 (1.65)	1.56–1.62 (1.59)
Hitotsu-mori	1.41–1.49 (1.44)	1.11–1.20 (1.16)	1.56–1.61 (1.59)	1.22–1.34 (1.28)	1.20–1.30 (1.25)	1.56–1.70 (1.63)	1.56–1.65 (1.60)
Tengu-tôgé	1.44–1.47 (1.46)	1.11–1.18 (1.15)	1.60–1.64 (1.62)	1.22–1.29 (1.25)	1.27–1.32 (1.30)	1.60–1.65 (1.62)	1.60–1.65 (1.62)
Rangan-no-mori	1.45–1.48	1.11–1.20	1.52–1.59	1.24–1.26	1.22–1.26	1.63–1.71	1.54–1.60
Futatsu-mori	1.47–1.55 (1.51)	1.14–1.21 (1.16)	1.62–1.64 (1.63)	1.22–1.33 (1.27)	1.22–1.33 (1.28)	1.59–1.70 (1.64)	1.54–1.63 (1.58)
Santa-kayanagaré	1.42–1.57 (1.48)	1.13–1.22 (1.17)	1.57–1.64 (1.59)	1.25–1.33 (1.29)	1.19–1.31 (1.23)	1.55–1.65 (1.61)	1.56–1.61 (1.58)
[Total]	1.41–1.57 (1.47)	1.11–1.22 (1.16)	1.52–1.66 (1.60)	1.22–1.36 (1.28)	1.14–1.33 (1.25)	1.55–1.71 (1.63)	1.54–1.65 (1.59)
Anmon-gawa Valley	1.43–1.49 (1.46)	1.10–1.16 (1.14)	1.55–1.61 (1.59)	1.17–1.23 (1.20)	1.30–1.35 (1.33)	1.60–1.67 (1.64)	1.57–1.61 (1.59)

the south-southeast from Rangan-no-mori. They are wholly reddish brown in coloration, having been dug out from a rather thick colluvium deposited at the side of a shaded gully.

On Mt. Shirakami-daké, this *Trechiama* coexists with *Oroblemus yamauchii* S. UÉNO (1993, p. 180, figs. 1–2) just as in the case of the southeastern slope in the alpine zone of Mt. Iwaki-san, where *T. oreas* dwells in coexistence with *O. caecus*. No other trechine species have been known in the territory of *T. albidivalis*, though certain *Oroblemus* may occur there, most probably in the upper hypogean zone.

The specific name *albidivalis* denotes the Shirakami Mountains, meaning the mountains of white god in Japanese.

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

[Japanese name: Mitsumé-naga-chibigomimushi]

(Figs. 15–17)

Length: 5.75–6.30 mm (from apical margin of clypeus to apices of elytra).

Closely allied to *T. albidivalis*, but somewhat smaller on an average and intermediate in facies between *T. albidivalis* and *T. pacatus*, mainly due to the intermediate shape of prothorax.

Colour dark brown, partially reddish especially on the dorsum of head, at the lateral parts of pronotum and in the basal area of elytra, shiny, very faintly iridescent on elytra; palpi, apical halves of antennae, venter of hind body, and legs reddish brown to dark reddish brown.

Head as in *T. albidivalis*, with small flat eyes; genae more than four-fifths as long as eyes and sometimes as long as the latter; antennae almost reaching the middle of elytra in ♂, basal two-fifths to four-ninths of elytra in ♀.

Pronotum subcordate though wider at base than in *T. pacatus* and *T. meridianus*, with longer and narrower basal part than in *T. albidivalis*, widest at about two-thirds from base and more strongly contracted towards apex than towards base; PW/HW 1.42–1.52 (M 1.47), PW/PL 1.14–1.22 (M 1.18), PW/PA 1.58–1.67 (M 1.61), PW/PB 1.31–1.42 (M 1.36); sides rather strongly arcuate in front, more gently so behind the widest part, distinctly sinuate at a level between basal eighth and sixth, and then more or less divergent towards hind angles in most specimens examined, rarely subparallel or even slightly convergent posteriad; apex narrower than base, PB/PA 1.14–1.24 (M 1.19), with front angles very obtuse, sometimes almost rounded off; base slightly bisinuate, hind angles usually a little sharp and directed postero-laterad, though sometimes rectangular; surface moderately convex, hardly depressed on the disc; sculpture as in the other species of the subgroup.

Elytra as in *T. albidivalis*, but the shoulders are less salient, with prehumeral borders oblique at the innermost portions and less arcuate, widest at about four-ninths from bases, and almost equally narrowed towards bases and towards apices though more pointed at the latter than at the former; EW/PW 1.56–1.66 (M 1.62), EL/EW

1.54–1.61 (M 1.56); sides more regularly arcuate than in *T. albidivalis*, each with a slight preapical emargination; apices rather narrowly rounded; surface moderately convex, less distinctly depressed on the disc than in *T. albidivalis*, with gentle apical declivity; striation as in *T. albidivalis*, but the apical striole usually joins or almost joins stria 5, only rarely joining stria 7 on one elytron; chaetotaxy as in *T. albidivalis*.

Legs stouter than in *T. albidivalis*.

Male genital organ similar in many respects to that of *T. albidivalis*, but the aedeagus is a little less elongate, highest behind the middle, and contains a smaller, differently shaped copulatory piece. Aedeagus about three-eighths as long as elytra, lightly depressed, hardly arcuate at middle, and highest at about apical two-fifths; basal part elongate, moderately curved ventrad, and deeply emarginate at the sides of basal orifice, with a hyaline sagittal aileron; viewed dorsally, apical lobe rather broad, with the apex subtruncated and very obtusely denticulate at the middle; viewed laterally, apical lobe gradually tapered, with the terminal button fairly large and oblique. Inner armature basically as in *T. albidivalis*, but the copulatory piece is smaller, about three-tenths as long as aedeagus, and less strongly twisted, with the gutter-shaped proximal part almost horizontal; external taeniate teeth-patch composed of an irregular row of triangular teeth of unequal size. Styles not so slender as in *T. albidivalis*, though the left one bears a similarly narrow ventral projection, each style provided with four apical setae.

Variation in elytral chaetotaxy. Both the internal and external series are stable in the number of setiferous dorsal pores, no aberrancy being found in the 12 specimens of the type series.

Type series. Holotype: ♂, allotype: ♀, paratypes: 5 ♂♂, 5 ♀♀, 25–IX–1992, Y. NISHIKAWA leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Towada-yama, 220 m in altitude at the northwestern foot in the Mitsumenai-gawa Valley, in Ohwani-machi of Aomori Prefecture, at the western side of northeastern Honshu, Northeast Japan.

Notes. It was unexpected that a second oculate species of *Trechiama* did exist on the Shirakami Mountains, even though its habitat lies near the eastern edge of the mountain range and is widely distant from the known range of distribution of *T. albidivalis*, which covers the western third of the mountains. Its type locality is about 27 km distant to the east by south from the Anmon-gawa Valley and about 33 km distant to the east by north from Mt. Futatsu-mori, both harbouring *T. albidivalis*. The type specimens of *T. triops* were dug out from a colluvium together with six specimens of *Kurasawatrechus nishikawai* S. UÉNO (1993, p. 182, figs. 3–5), in whose description were given some notes on the habitat of these trechine beetles.

Though differing in facies, *T. triops* seems closer to *T. albidivalis* than to the other species of the *meridianus* lineage. This is indicated by some details of its male genitalia and also by relatively wide base of its pronotum.

The specific name *triops* is derived from the name of the type locality, the Mi-

tsumenai-gawa Valley, which means the valley of the river of three-eyed place in Japanese.

要　約

上野俊一：東北地方北西部の主として非火山に生息するナガチビゴミムシ類．—— 東北地方北西部の，鳥海山，真昼山地，太平山地および白神山地から，ナガチビゴミムシ属の5有眼種を新しく記載し，これらにチョウカイナガチビゴミムシ *Trechiama yoshikoae*，マヒルナガチビゴミムシ *T. meridianus*，タイヘイナガチビゴミムシ *T. pacatus*，シラカミナガチビゴミムシ *T. albidivalis* およびミツメナガチビゴミムシ *T. triops* という新名を与えた．これらのうち，チョウカイナガチビゴミムシだけは新しい火山に固有の種で，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するきわめて特異なものである．他の4種は非火山性山地のみに分布し，たがいにごく近縁で，おもに新しい火山に分布するイワキナガチビゴミムシ亜群のものに似ている点が多いが，雄の交尾器の膚斑の特異性に基づいて，独自のマヒルナガチビゴミムシ亜群を認めた．神室山地に固有のオニコウベナガチビゴミムシ *T. oniceps* も，この新亜群に含まれる．

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Elytra, Tokyo, **22** (1): 45–48, May 15, 1994

Occurrence of *Thalassoduvalius* (Coleoptera, Trechinae) on Two Isolated Islands off Kyushu, West Japan[1)]

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Abstract The halophilous trechine beetle, *Thalassoduvalius masidai masidai* S. UÉNO, is recorded from two isolated islands off Kyushu, West Japan. It is considered that the unusually wide range of distribution of this nominotypical subspecies along the northwestern side of West Japan may have been formed under the influence of the Tsushima Current.

In my revision of halophilous beetles of the trechine genus *Thalassoduvalius* (UÉNO, 1978), I classified the specimens then known into three subspecies of a single species, *T. masidai*, and concluded that the subspecific differentiation of this species may have been effected under the influence of different tidal currents.

Since then, two more localities of *T. masidai* were discovered on two isolated islands, both uninhabited, off Kyushu, West Japan. One of them is the Island of Oshima of the Danjo Islands lying in the East China Sea about 70 km south-southwest of the Island of Fukué-jima of the Gotôs, and the other is the Island of Oki-no-shima lying in the Genkai-nada about 55 km northwest of the nearest point of northern Kyushu. The former is the largest of the five main islands forming the Danjos, which are wholly composed of welded tuff, and is 2.1 km^2 in area, 3.5 km in major axis and 225 m in height. The latter is a solitary basaltic island 0.69 km^2 in area, 1.6 km in major axis and 244 m in height. At both the localities, the trechine beetle was found from beneath stones lying on the ground under cliffs well above the high tide mark.

After a careful examination, it has become apparent that the populations of these islands can be referred to the nominotypical subspecies of *T. masidai*, though the Oshima population is somewhat different from the others. This was unexpected, since the Island of Oki-no-shima is about 190 km distant to the west-southwest from the estuary of the Sufu-gawa River in western Honshu, the type locality, and the Island of Oshima is about 295 km farther to the southwest. No other apterous species of Japanese trechines occupy an range almost 500 km long.

This unusually wide, but discontinuous, distribution of *T. masidai masidai* must have been achieved through the agency of the Tsushima Current, which flows through the three known localities of the subspecies. Its native place may have been some-

1) This study is supported by a Grant-in-aid for Scientific Research from the Ministry of Education, Science and Culture, Japan.

where in northern Kyushu, from where the beetle dispersed northeastwards along the coast of the Japan Sea. Beyond all reasonable doubt, new localities of this subspecies will be found in future on the Gotô Islands and in the coastal areas of northern Kyushu.

This short paper is dedicated to the memory of the late Mr. Masao EZIMA, who unexpectedly passed away on April 14, 1990, at the age of 39, less than a year after his discovery of *Thalassoduvalius* on the Danjo Islands. Hearty thanks are also due to Messrs. Sumao KASAHARA, Rikio MATSUMOTO and Yûichi OKUSHIMA, who kindly arranged deposit of invaluable specimens to the National Science Museum (Nat. Hist.), Tokyo.

Thalassoduvalius masidai masidai S. UÉNO, 1956

Thalassoduvalius masidai S. UÉNO, 1956, Mem. Coll. Sci. Univ. Kyoto, (B), **23**, p. 65, figs. 1–2; type locality: estuary of the Sufu-gawa River in Shimané Pref.

Thalassoduvalius masidai masidai: S. UÉNO, 1978, Mem. natn. Sci. Mus., Tokyo, (11), pp. 124–127; 1985, Coleopt. Japan Col., Osaka, **2**, p. 68. —— CASALE & LANEYRIE, 1982, Mém. Biospéol., Moulis, **9**, p. 117, fig. 88.

Additional specimens examined. 1 ♂, 1 ♀, Is. Oki-no-shima, Genkai-nada, Ohshima-mura, Fukuoka Pref., 9–X–1993, R. MATSUMOTO leg.; 7 ♂♂, 12 ♀♀ (incl. 2 teneral ♂♂ and 5 teneral ♀♀), Nishidomari, Is. Oshima, Danjo Islands, Nagasaki Pref., 25–V–1989, M. EZIMA & Y. IKEZAKI leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Notes. The Oki-no-shima specimens recorded above are perfectly identical with the type series, whereas the Oshima specimens are variable to some extent according to individuals. Many specimens from the Oshima population agree well with the type series, but there are a few others that vary towards the Pacific subspecies. This is particularly apparent in the basal part of the pronotum, whose sides are convergent posteriad as in *T. m. pacificus*, and in the shallow external striae on the elytra. It is possible that subspecific differentiation is not yet pronounced in the western part of the distributional range of the species *masidai*, but at the present moment, I prefer to regard the Oshima population as belonging to the nominotypical subspecies, seeing that the great majority of the specimens examined accords with it, and that any *Thalassoduvalius* for comparative study has not been found until now at the western side of the main island of Kyushu.

The insular populations under consideration are different from the mainland ones in their existence well above the high tide mark. On the Island of Oki-no-shima, the beetle was found from beneath fist-sized stones lying on the wet gravelly soil about 10 m removed from the water edge of the sea. This spot was situated under a cliff and was fed by a seepage. On the Island of Oshima, the trechine beetle was found at two spots about 50 m apart by narrow streams at the eastern side of the island. These streams were issued from crevices of welded tuff forming a precipitous slope and ran down on a sandy beach into the sea. The *Thalassoduvalius* dwelt under stones lying on wet fine sand more than 20 m above the high tide mark.

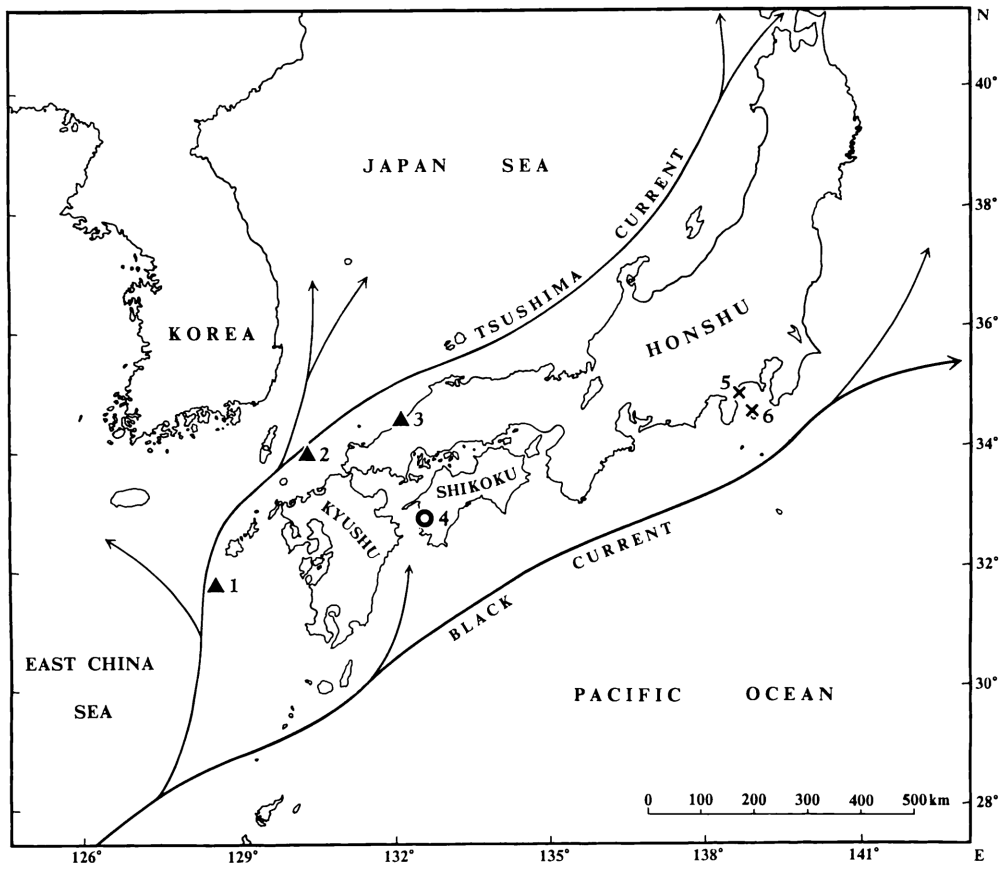

Fig. 1. Map showing the known localities of *Thalassoduvalius*. —— 1, Is. Oshima of the Danjo Islands (*T. m. masidai*); 2, Is. Oki-no-shima (*T. m. masidai*); 3, estuary of the Sufu-gawa River (*T. m. masidai*); 4, Uwajima (*T. m. kurosai*); 5, Cape Manazuru-misaki (*T. m. pacificus*); 6, Aki-no-hama on Is. Oh-shima (*T. m. pacificus*).

Thus, the habitats of *Thalassoduvalius* on both Oki-no-shima and Oshima are not intertidal, though still littoral. On these small islands in the distant sea, however, splash of salty water is blown up incessantly for a considerable distance, which makes various small marine animals dwell well above the intertidal zone. *Thalassoduvalius* can also be regarded as one of such cases, even though it may have been derived from a riparian ancestor.

要　　約

上野俊一: 男女群島男島および筑前沖ノ島のイソチビゴミムシ. —— 東シナ海に浮かぶ男女群島の男島と玄界灘の沖ノ島で採集されたイソチビゴミムシを検討した結果, これらがともに基亜種 *Tha-*

lassoduvalius masidai masidai S. UÉNO に属するものと認めて記録した．ただし，男島産のものには個体変異があり，太平洋側の亜種に似た特徴を合わせもつ少数の個体が含まれている．後翅が退化しているにもかかわらず，このチビゴミムシが 500 km 近い長距離に拡散することができたのは，その特異な生息条件によるもので，既知の産地 3 カ所を通る対馬海流に運ばれたからだろう．

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Elytra, Tokyo, **22** (1): 48, May 15, 1994

New Combinations of Diaperine Tenebrionid Beetles of the Genus *Platydema*

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In the course of my study on the genus *Ceropria* from Asia, I was able to examine the following species, which should be transferred to the genus *Platydema* from the genus *Ceropria*.

Platydema opacipenne (PIC, 1921), comb. nov.

Ceropria opacipennis PIC, 1921, Mél. exot.-ent., (34): 26.

Type depository: MNHN, Paris (1 ex.).

Platydema reitteri (PIC, 1934), comb. nov.

Ceropria Reitteri PIC, 1934, Ent. Nachr.-bl., **8**: 85.

Type depository: MNHN, Paris (2 exs.).

Elytra, Tokyo, **22** (1): 49–71, May 15, 1994

Platynine Carabid Beetles of the Subgenus *Negreum* (Coleoptera, Carabidae)

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Abstract Platynine carabid beetles belonging to the subgenus *Negreum* are enumerated. This subgenus is characterized mainly by having at least three setae on the antennal segment II, and no pubescence on the sternites. Of the seven species hitherto known, two are new to science and are described under the names of *Colpodes amagisanus* and *C. asakoae*. A key to all the species is prepared.

Introduction

The subgenus *Negreum* was erected by HABU (1958, p. 46) for a medium-sized platynine carabid, *Agonum ehikoense* HABU (1954, p. 331) known from West Japan. Twenty years later, when a monograph of the Japanese platynine carabids was published by the same author, he placed five species in the subgenus, that is, *Agonum ehikoense*, *A. yasuii* (HABU, 1974, p. 26), *A. peliotes* (HABU, 1974, p. 23), *A. bentonis* (BATES, 1883, p. 258) and *A. mutator* (BATES, 1883, p. 259). This subgenus is rather easily recognizable mainly in having metallic lustre on the elytra, at least three setae on the second antennal segment and no pubescence on the sternites. Since its publication, nothing has been added to our knowledge.

The first species of this subgenus known to the science is *Agonum bentonis* BATES originally described from Nikko, Central Japan, more than one hundred years ago. Later in 1958, it was redescribed by HABU (1958, p. 50), though he did not make critical re-examination of its type series. Studying my collection of "*A. bentonis*" recently, I noticed that it contained three different forms and that they were very similar to one another in their facies. Accordingly, it was impossible to determine their true systematic status solely on HABU's accounts. Through the courtesy of Dr. STORK and Dr. HINE, I was given an opportunity of examining the type series of this species. After a careful examination of male genital organ of the type specimens, it became evident that HABU's identification of the species in question was right and that the remaining two forms must belong to new species.

Although there still remain many problems especially concerning generic classification of platynine carabids, I prefer to follow TANAKA's view (1985, p. 125) for the time being. In this paper, I recognize seven species of this subgenus and place them in the genus *Colpodes* with some hesitation.

Materials

This study is based on the examination of approximately 350 specimens. Most of them were collected by myself. The type materials of *Colpodes bentonis* were borrowed from the Natural History Museum, London. HABU's materials were studied in the National Institute of Agro-environmental Sciences, Tsukuba, and the Aomori Prefectural Museum.

Abbreviations

In the key and descriptions, the following abbreviations are used: HW – greatest width of head; PW – greatest width of pronotum; PL – length of pronotum, measured along the median line; PA – width of pronotal apex; PB – width of pronotal base; EW – greatest width of elytra; EL – greatest length of elytra; WL – greatest length of hind wing; TV – length of claw segment of metatarsus; TI – length of segment I of metatarsus; M – arithmetic mean; NHM – Natural History Museum, London; NSMT – National Science Museum (Nat. Hist.), Tokyo; NAS – National Institute of Agro-environmental Sciences, Tsukuba; AM – Aomori Prefectural Museum.

Acknowledgements

I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critically reading the manuscript of this paper. Thanks are also due to Dr. Nigel E. STORK and Dr. Stuart J. HINE of the Natural History Museum, London, for loan of type materials under their care, and to Dr. Takeshi MATSUMURA and Dr. Shin-ichi YOSHIMATSU of the National Institute of Agro-environmental Sciences, Tsukuba, and Mr. Satoshi YAMAUCHI of the Aomori Prefectural Museum for giving me opportunities of examining materials studied by HABU.

My deep indebtedness is also due to the following colleagues and friends, whose kind aid and support enabled the completion of this paper: Dr. Kazuo TANAKA, Dr. Yûki IMURA, Dr. Sadahiro OHMOMO, Dr. Katsuyuki TERADA, Messrs. Hideo AKIYAMA, Hirofumi HAYAKAWA, Naoyuki HIKIDA, Yukihiko HIRANO, Hanmei HIRASAWA, Atsuo IZUMI, Toshiro KISHIMOTO, Minoru NUMATA, Hideo OHKAWA, Minoru TAO and Katsuro YAHIRO.

I am also indebted to my daughter, Asako, for her aid in searching for carabid beetles in the field.

Subgenus *Negreum* HABU

Negreum HABU, 1958, Bull. natn. Inst. agric. Sci., Tokyo, (C), (10): 46; type species: *Agonum ehikoense* HABU; 1978, Carab. Platynini *in* Fauna Japonica, Tokyo, 152. —— TANAKA, 1985, Coleopt. Japan Col., Osaka, **2**: 126. —— NAKANE, 1986, Nat. & Ins., Tokyo, **21** (10): 19.

Diagnostic accounts were given by HABU in 1958 and 1978. This subgenus is

characterized by the following combination of morphological features: size medium; elytra with metallic lustre; antennal segment II with a long seta and at least two medium-sized or short setae at subapical part; sternites without pubescence in ♂ and ♀. Of the seven species recognized herein, six are flightless, but they still retain reduced hind wings. Only a single species, *C. yasuii* is fully winged and undoubtedly capable of flying.

The following key is probably adequate for identifying specimens from West and South Japan, as the three species are not only discriminated by their external features but also allopatric. If a specimen is obtained from a known locality or range, it is rather easily determined. The remaining four species are very closely similar to one another in external morphology. Besides, two different species show sympatry at one station. They can be classified with confidence only on shape of male genital organ.

It is true that all the members of *Negreum* and *Hikosanoagonum* (HABU, 1954, p. 327) share the same feature of antennal segment II. Actually, *Colpodes ehikoensis* was originally regarded as a member of the latter subgenus. However, they are distinguished from each other by slight differences of tarsal structure and presence or absence of pubescence on sternites. Though DARLINGTON (1952) regarded the former as an important character, his accounts were brief, and he considered the latter to be either secondary sexual or specific. It is to be hoped that thorough revisional study of Asian platynines will be made before long.

Colpodes sylphides (HABU) (1975, p. 19) has three setae on antennal segment II, though HABU placed it in another subgenus, *Glaucagonum*. My examination showed that the three setae are almost the same in length. For this reason, I interpret the similarity between the members of *Negreum* and *C. sylphides* as a result of parallel evolution. In this paper, therefore, I prefer to follow the arrangement given by HABU.

Key to the Species

1. Pronotum transverse (PW/PL 1.37); hind wings developed (WL/EL 1.53); claw segment of each metatarsus almost smooth or with microscopic hairs on ventro-lateral sides..... *C.* (*N.*) *yasuii* (HABU).
— Pronotum cordate or subcordate; hind wings reduced (WL/EL 0.3–0.6)..... 2.
2. Pronotum subcordate, with obtuse hind angles..... 3.
— Pronotum cordate, with acute hind angles..... 4.
3. Elytra oblong-oval; sides of pronotum dark brown..... *C.* (*N.*) *periotes* (HABU).
— Elytra elongated ovate; sides of pronotum brown or reddish brown..... *C.* (*N.*) *ehikoensis* (HABU).

Colpodes* (*Glaucagonum*) *sylphides (HABU)

Specimens examined. 1 ♂, Hatsuno, Amami-oshima Is., Kagoshima Pref., 6–IV–1972, IMAMURA leg.; 1 ♂, Shinkogachi, Amami-oshima Is., Kagoshima Pref., 10–III–1993, T. KISHIMOTO leg.

4. Aedeagus gently arcuate; ventral margin slightly emarginate and not convex in lateral view; sagittal airelon absent..... *C.* (*N.*) *mutator* BATES.
— Aedeagus straight; ventral margin straight or convex a little behind middle in lateral view ..... 5.
5. Aedeagus with a short apical lobe; ventral margin more convex..... ..... *C.* (*N.*) *asakoae* sp. nov.
— Aedeagus with an elongate apical lobe; ventral margin almost straight or a little convex ..... 6.
6. Aedeagus with almost straight apical lobe; ventral margin a little convex; sagittal aileron absent..... *C.* (*N.*) *amagisanus* sp. nov.
— Aedeagus with abruptly bent apical lobe; ventral margin almost straight or slightly convex; sagittal aileron present..... *C.* (*N.*) *bentonis* BATES.

Colpodes (*Negreum*) *yasuii* (HABU)

[Japanese name: Yasui-morihirata-gomimushi]

(Figs. 1–2)

Platynus (*Negreum*) *yasuii* HABU, 1974, Ent. Rev. Japan, Osaka, **27**: 26, fig. 8, pl. 5–2; type locality: Mt. Hateruma, Iriomote Is.

Agonum (*Negreum*) *yasuii*: HABU, 1978, Carab. Platynini *in* Fauna Japonica, Tokyo, 164, figs. 261, 266, 271, 294–296, pl. 16–4.

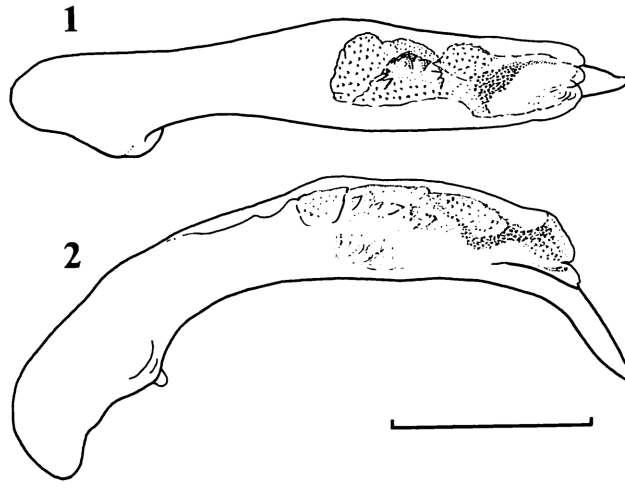
Additional description based on a newly obtained male:—

Length: 9.43 mm (from apical margin of clypeus to apices of elytra).

Body elongate, with rather wide pronotum; head almost smooth and convex; frontal furrows linear, divergent posteriad and extending a little beyond mid-eye level; eyes moderately convex; PW/HW 1.48; sides of gula with several irregular wrinkles; microsculpture almost vanished; antennal segment I thick (about 2.89 times as long as wide), with a long seta; segment II with a long seta and two medium-sized setae; relative lengths of antennal segments as follows:— I: II: III: IV: V: VI≒1: 0.54: 1.19: 1.15: 1.15: 1.17.

Pronotum transverse, widest at about 3/5 from base; PW/PL 1.37; PW/PA 1.71; PW/PB 1.31; apex widely emarginate, much narrower than base, PA/PB 0.77; apical angles strongly produced and rounded at the tips; sides rather strongly arcuate; reflexed lateral borders very wide; basal foveae deep, and with several punctures; median line shallow but clearly impressed, reaching neither apex nor base; apical transverse impression very shallow; hind angles obtuse; base almost straight, but slightly arcuate at the sides; basal part moderately convex; posterior marginal seta situated just before hind angle; microsculpture almost vanished, though partially existing as irregular meshes.

Wings developed, WL/EL 1.53. Elytra elongated ovate; EW/PW 1.63; EL/EW 1.56; sides evenly arcuate, with shallow preapical emargination; three dorsal pores on interval III, the first adjoining stria III, the second lying on interval III, the third



Figs. 1–2. Aedeagus of *Colpodes* (*Negreum*) *yasuii* (HABU) from Is. Ishigaki-jima; 1, dorsal view; 2, left lateral view. (Scale: 0.5 mm.)

adjoining stria III on the left elytron, all the three pores adjoining stria III on the right one; first pore situated at 1/4, the second at middle, the third at 3/4 from base, respectively; striae shallow, slightly crenulate at basal parts, becoming shallower towards apices, and smooth at apical parts; scutellar striole rather long; intervals smooth, a little convex, but flat at apices; microsculpture consisting of wide or transverse meshes; marginal series composed of 20 pores.

Posterior margin of metafemur with 2 setae on the left, and 3 setae on the right; claw segment of metatarsus with several microscopic hairs below; TI/TV 0.78.

Aedeagus long and slender, hardly arcuate at median part, basal part rather strongly produced ventrad; sagittal aileron absent; apical lobe long, nearly parallel-sided, narrowed from apical third, and blunt at the extremity in lateral view; viewed dorsally, apical part slightly inclined to the right; inner sac covered with very minute spinules or scales and teeth.

Specimens examined. 1 ♀ (holotype), "Mt. Hateruma Iriomote Is. 28. VII. 1965 M. Yasui"/"Holotype *Platynus yasuii* Habu" [NAS]; 1 ♂, Mt. Omoto-dake, Ishigaki Is., 31–V–1973.

Range. Japan (Is. Ishigaki-jima; Is. Iriomote-jima).

Colpodes (*Negreum*) *peliotes* (HABU)

[Japanese name: Nisehikosan-morihirata-gomimushi]

(Figs. 3–4)

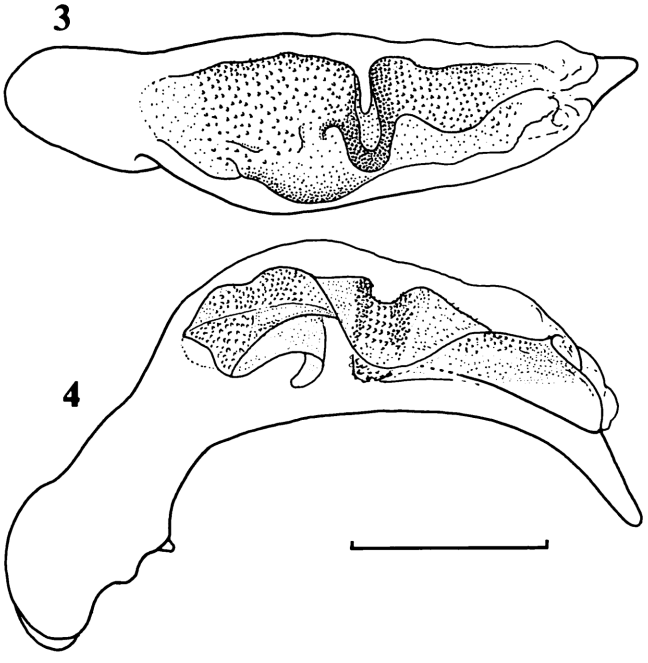
Platynus (*Negreum*) *peliotes* HABU, 1974, Ent. Rev. Japan, Osaka, **27**: 23, figs. 7, 9–10, pl. 5–1; type locality: Hananoego, Yaku Is.

Agonum (*Negreum*) *ehikoense*: HABU, 1958, Bull. natn. Inst. agric. Sci., Tokyo, (C), (10): 49, 51 [*partim*].
Agonum (*Negreum*) *peliotes*: HABU, 1978, Carab. Platynini *in* Fauna Japonica, Tokyo, p. 159, figs. 260, 264, 277, 280–282, 293, pl. 16–3.

Length: 9.49–10.09 mm (from apical margin of clypeus to apices of elytra).

Head convex and smooth; frontal furrows wide, shallow, divergent posteriad and reaching anterior supraorbital pores; PW/HW 1.35, 1.35; eyes rather flat; microsculpture not sharply impressed though consisting of polygonal or wide meshes, partially obliterated; sides of gula either with several wrinkles or smooth; antennal segment I either with a long seta and a short seta or with only a long seta; segment II with a long seta and two medium-sized setae; relative lengths of antennal segments as follows:— I: II: III: IV: V: VI: XI≒1: 0.44: 0.94: 1.03: 0.97: 0.93: 0.84.

Pronotum subcordate widest at about 5/8 from base; PW/PL 1.13, 1.14; apex weakly emarginate, a little narrower than base; PW/PA 1.54, 1.56; PW/PB 1.46, 1.52; PA/PB 0.95, 0.97; apical angles produced and rounded at the tips; sides moderately arcuate in front, and then either simply convergent towards hind angles or very slightly sinuate just before hind angles; reflexed lateral borders wide, joining the sides of basal foveae, and narrowed towards apices; base almost straight at median part, though arcuate at the sides; basal foveae deep, elongate and with several coarse punctures; median line and apical transverse impression very shallow; microsculpture not sharply



Figs. 3–4. Aedeagus of *Colpodes* (*Negreum*) *peliotes* (HABU) from Is. Yaku-shima; 3, dorsal view; 4, left lateral view. (Scale: 0.5 mm.)

impressed, but consisting of transverse and wide meshes on lateral and basal parts.

Wings reduced, WL/EL 0.66. Elytra oblong-oval, widest at about middle; EW/PW 1.62, 1.63; EL/EW 1.59, 1.64; three dorsal pores present on interval III, first pore adjoining stria III, second one adjoining stria II or III, third one adjoining stria II; additional pore rarely present between first and second pores; striae weakly crenulate and entire, though disappearing at the apex, striae V and VI free at the apices; scutellar striole rather long, hardly crenulate; intervals almost flat or a little convex at basal parts, and flat at apical parts; microsculpture consisting of transverse meshes.

Posterior margin of each metafemur with 3 setae; proximal 2 segments of meso- and metatarsi each with inner and outer sulci, though the inner one is rudimentary or disappears; claw segment of metatarsus with several microscopic setae below; TI/TV 1.02.

Aedeagus rather short; apical lobe elongate and rounded at the extremity in lateral view; sagittal aileron present; inner sac covered with scales or teeth.

Specimens examined. ♂ (holotype), "Hananoego Yaku Is. 14. VIII. 1965 H. Konishi"/"Holotype *Negreum peliotes* Habu" [NAS]; 2 ♂♂, Mt. Miyanoura-dake, Yaku Is., Kagoshima Pref., 1–VIII–1976, S. MORITA leg.

Range. Japan (Is. Yaku-shima).

Colpodes (*Negreum*) *ehikoensis* (HABU)

[Japanese name: Hikosan-morihirata-gomimushi]

(Figs. 5–7)

Agonum (*Hikosanoagonum*) *ehikoensis* HABU, 1954, Bull. natn. Inst. agric. Sci., Tokyo, (C), (4): 331, figs. 14, 15-c, pl. 3, figs. 4, 8; type locality: Mt. Hiko.

Agonum (*Hikosanoagonum*) *raizanum* HABU, 1954, Bull. natn. Inst. agric. Sci., Tokyo, (C), (4): 330, pl. 3, fig. 5.

Colpodes raizanus: HABU, 1955, Kontyû, Tokyo, **23**: 156, fig.

Agonum (*Negreum*) *ehikoense*: HABU, 1958, Bull. natn. Inst. agric. Sci., Tokyo, (C), (10): 51, figs, 11, 16; 1978, Carab. Platynini *in* Fauna Japonica, Tokyo, 161, figs. 258–259, 265, 274, 279, 283–286, 287–289, 291, pl. 3–3.

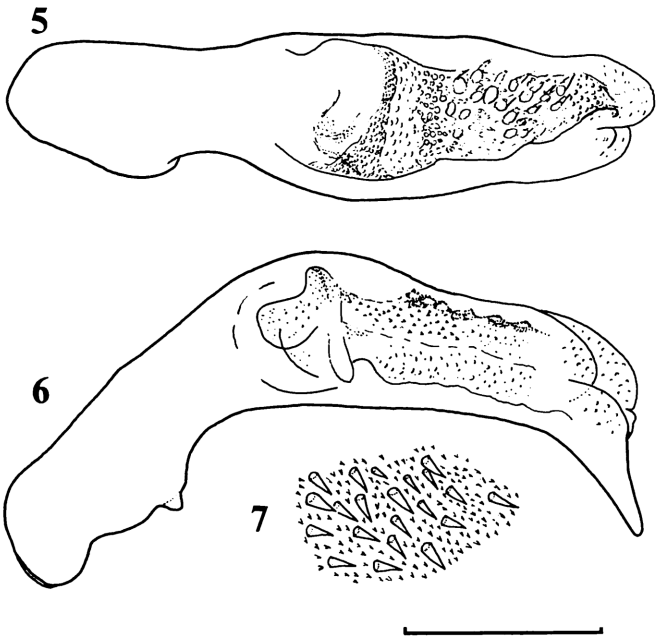
Agonum (*Negreum*) *raizanum*: HABU, 1958, Bull. natn. Inst. agric. Sci., Tokyo, (C), (10): 51, figs. 12–13.

Colpodes ehikoensis: NAKANE, 1963, Icon. Ins. Japon. Col. nat. ed., Tokyo, **2**: 40, pl. 20, fig. 15.

Agonum raizanum: TAKAKURA, 1972, Kita-Kyûshû no Konchû, Kokura, **17**: 66.

Specimens examined. 16 ♂♂, 11 ♀♀, Mt. Yamaingiri, Izumi-mura, Kumamoto Pref., 12～13–IX–1992, S. MORITA leg.; 3 ♂♂, 4 ♀♀, Mt. Tara-dake, Nagasaki Pref., 20–V–1977, S. MORITA leg.; 1 ♂, same locality, 15–IX–1981, S. MORITA leg.; 4 ♂♂, 3 ♀♀, Mt. Hiko-san, Fukuoka Pref., 7–VI–1981, S. MORITA leg.; 2 ♂♂, 3 ♀♀, Tsuchigoya, Mt. Ishizuchi-san, Ehime Pref., 4～7–IX–1980, S. MORITA leg.; 1 ♀, Mt. Jakuchi-san, Yamaguchi Pref., 21–IX–1981, S. MORITA leg.; 4 ♂♂, Mt. Gori-san, Kake-chô, Hiroshima Pref., 25–VII–1976, T. KOSAKA leg.; 1 ♂, 2 ♀♀, Mt. Iwawaki-san, Osaka Pref., 14–X–1981, S. MORITA leg.

Range. Japan: Honshu (Kinki District, Chûgoku District); Shikoku; Kyushu.



Figs. 5–7. Aedeagus of *Colpodes* (*Negreum*) *ehikoensis* (HABU) from Mt. Gori-san; 5, dorsal view; 6, left lateral view; 7, everted dorsal wall of inner sac, showing sclerotized teeth. (Scale: 0.6 mm.)

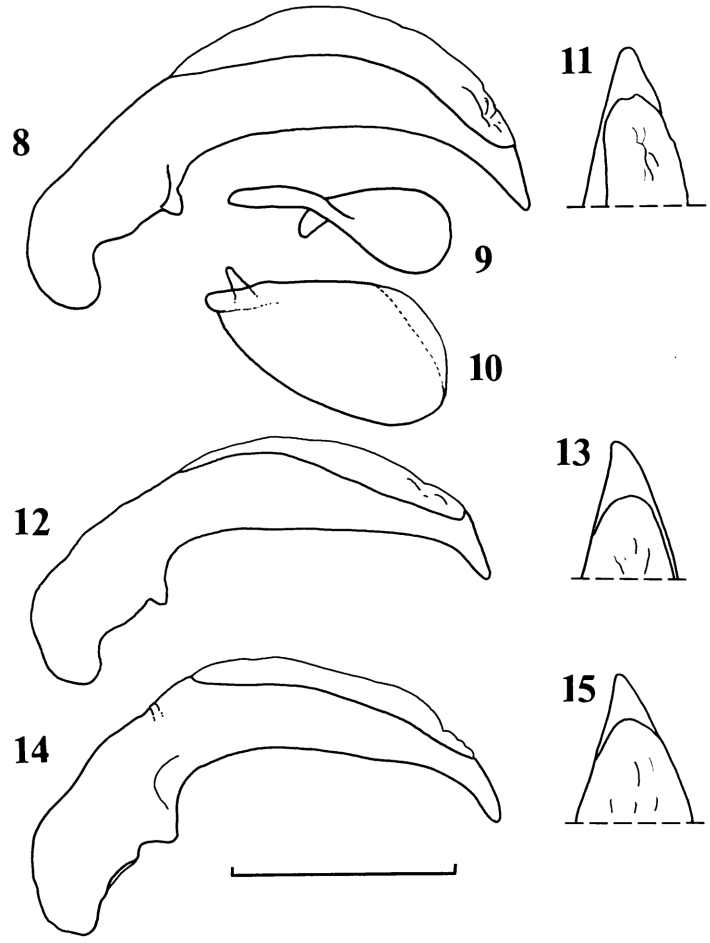
Notes. It seems unnecessary to redescribe this species, because its accounts were made several times by HABU. Of these, structure of the male genital organ is of special interest from the taxonomic point of view, since his account (1978, pp. 163–164) goes as follows: "The aedeagus has inside a mass of seven to twelve small teeth at or before the middle near the dorsal side, but they are sometimes absent." A careful study of my collection has revealed that this species is variable in the number of teeth even within the same population. I herewith give one of the examples showing this fact. My observation of 4 males from a single population (Mt. Gori-san, Hiroshima Prefecture) can be summarized as follows:— inner sac covered with sclerotized scales or teeth and 20–23 large teeth; large teeth heavily sclerotized and situated at the dorsal wall of inner sac; rarely a medium-sized tooth present.

Colpodes (*Negreum*) *mutator* BATES

[Japanese name: Fukushima-morihirata-gomimushi]

(Figs. 8–15)

Colpodes mutator BATES, 1883, Trans. ent. Soc. London, **1883**: 259; type locality: Fukushima (=Kiso-fukushima). —— NAKANE, 1963, Icon. Ins. Japon. Col. nat. ed., Tokyo, **2**: 40, pl. 20, figs. 17.



Figs. 8–15. Male genital organ of *Colpodes* (*Negreum*) *mutator* BATES, showing the variation according to populations; left lateral view (8, 12, 14), right style (9), left style (10), apical part of aedeagus, apico-dorsal view (11, 13, 15). —— 8–11, Specimen from Aoki-kôsen; 12–13, specimen from the Kitahira-tôge; 14–15, specimen from the Honzawa-dani in Horigane-mura. (Scale: 1.00 mm.)

Agonum (*Negreum*) *mutator*: HABU, 1958, Bull. natn. Inst. agric. Sci., Tokyo, (C), (10): 49, figs. 2, 5, 7, 17; 1978, Carab. Platynini *in* Fauna Japonica, Tokyo, 154, figs. 9, 257, 262, 267, 272, 276, 278, 290, pl. 16–1.

Specimens examined. 1 ♂, 1 ♀, Abe-tôge, Shizuoka Pref., 29–VII–1970, Y. IMURA leg.; 4 ♀♀, same locality, 3～4–VII–1977, S. MORITA leg.; 2 ♂♂, 2 ♀♀, same locality, 24–VI–1978, S. MORITA leg.; 6 ♂♂, 7 ♀♀, same locality, 19～20–IX–1980, S. MORITA leg.; 1 ♀, Uedo, Riv. Abe-gawa, Shizuoka Pref., 17–XI–1984, S. MORITA leg.; 10 ♂♂, 19 ♀♀, Aoki-kôsen, Yamanashi Pref., 30–VI～1–VII–1978, S. MORITA

leg.: 1 ♂, Mt. Ohdaigahara, Nara Pref., 8-VIII-1976, T. YAMASHITA leg.; 1 ♂, Kita-hira-tôge, Shiga Pref., 17-IX-1977, S. MORITA leg.; 1 ♂, Honzawa-dani, Horigane-mura, Nagano Pref., 29-IV-1992, H. HIRASAWA leg.

Range. Japan: Chûbu District (Yamanashi Pref., Nagano Pref., Shizuoka Pref., Ishikawa Pref., Gifu Pref.); Kinki District (Shiga Pref., Nara Pref.).

Notes. As was already mentioned in the introduction of this paper, remarkable similarity of the species occurring in Chûbu and Kantô districts makes their classification difficult. Configuration of aedeagus serves as one of the most important characters for identification and is shown in figures.

Colpodes (Negreum) bentonis BATES

[Japanese name: Benton-morihirata-gomimushi]

(Figs. 16–26)

Colpodes Bentonis BATES, 1883, Trans. ent. Soc. London, **1883**: 258; type locality: Nikko.

Agonum (Negreum) bentone: HABU, 1958, Bull. natn. Inst. agric. Sci., Tokyo, (C), (10): 50, figs. 3, 4, 6.

Agonum (Negreum) bentonis: HABU, 1978, Carab. Platynini *in* Fauna Japonica, Tokyo, 157, figs. 263, 268–270, 273, 275, 292, pl. 16–2.

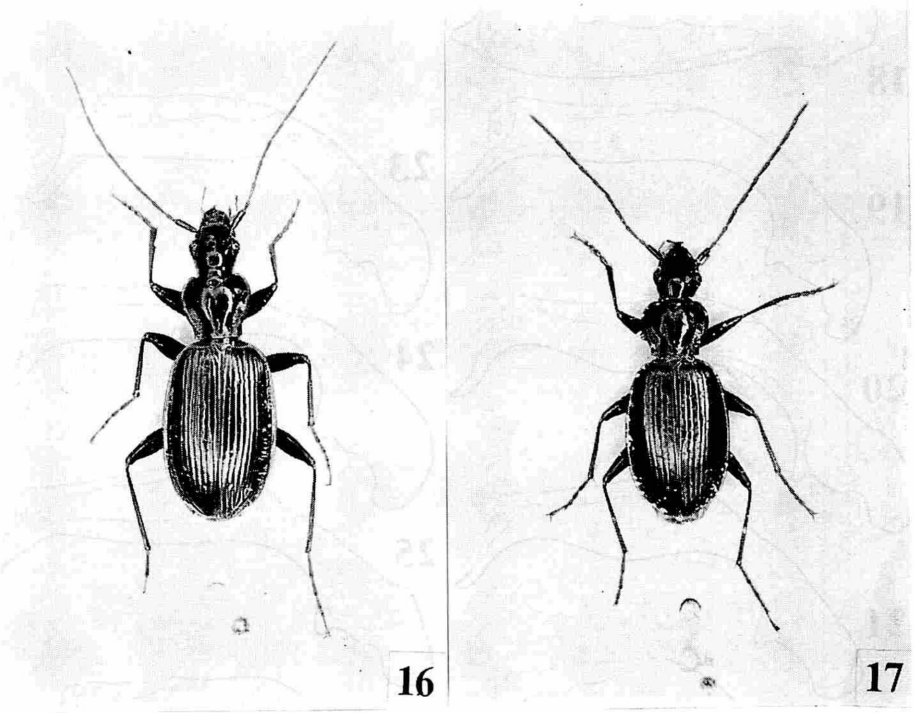
Colpodes bentonis: NAKANE, 1963, Icon. Ins. Japon. Col. nat. ed., Tokyo, **2**: 40, pl. 20, fig. 16. —— TANAKA, 1985, Coleopt. Japan Col., Osaka, **2**: 126, pl. 23, fig. 30.

Length: 9.34–11.95 mm; 10.14 mm (holotype) (from apical margin of clypeus to apices of elytra).

Head convex and smooth; eyes rather flat; frontal furrows deep, linear and a little divergent posteriad; neck narrow; neck constriction rarely distinct; microsculpture composed of wide or polygonal meshes but partially disordered; sides of gula with many oblique wrinkles; antennal segment I usually with a long seta and 1 or 2 short seta(e), rarely with a long seta and 3 or 4 or 5 short setae; segment II usually with a long seta and 2 or 3 short setae; relative lengths of antennal segments as follows:— I: II: III: IV: V: VI: XI≒1: 0.38: 0.89: 0.95: 0.93: 0.89: 0.82.

Pronotum variable in form, usually cordate; in the Aomori specimen collected by LEWIS, pronotum wider (see the data of PW/PL in Table 1); apex widely emarginate; apical angles produced and rounded at the tips: sides arcuate in front, convergent posteriorly, and weakly sinuate before hind angles; reflexed lateral borders usually wide and narrowed towards apices; basal foveae elongate, rather deep, and with several coarse punctures; hind angles acute; microsculpture composed of fine transverse meshes, and of wide ones on basal part.

Wings reduced, WL/EL 0.33–0.36. Elytra oblong-ovate; shoulders rounded; sides gently arcuate, and rather deeply emarginate before apices; striae smooth or slightly crenulate; scutellar striole rather short; interval III usually with 3 or 4 dorsal pores, anterior one adjoining stria III and the others adjoining stria II or rarely lying on interval III; in the holotype, interval III with 4 dorsal pores, anterior two pores



Figs. 16–17. *Colpodes* (*Negreum*) *bentonis* BATES; 16, ♂ (holotype); 17, ♂ (specimen collected by G. LEWIS).

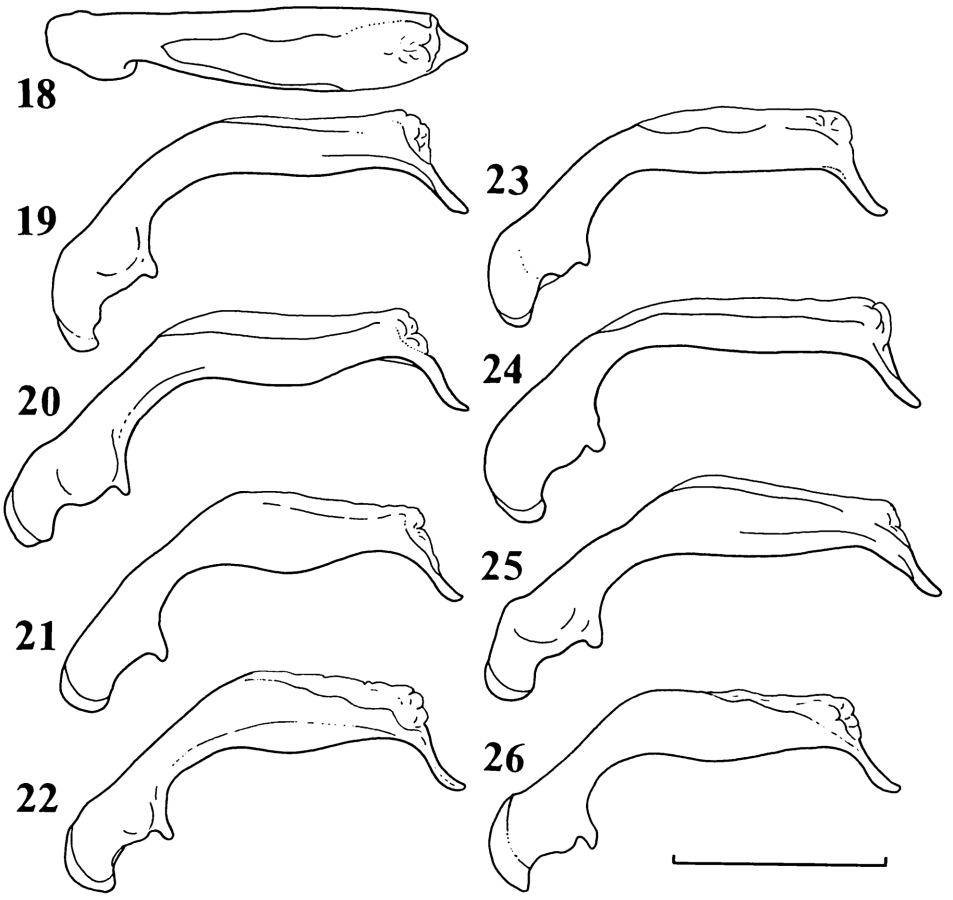
adjoining stria III, third pore adjoining stria II, and the remaining one lying on interval III close to stria II on the left elytron, anterior pore adjoining stria III, the others lying on interval III close to stria II on the right; intervals weakly convex; microsculpture composed of very fine transverse meshes; marginal series of umbilicate pores 19–20 in number.

Ventral side smooth except for mesepisternum, mesosternum and sternites I which bear several coarse punctures; apex of anal sternite widely arcuate in ♂.

Posterior margin of each metafemur usually with 4 setae, rarely with 5 setae; TI/TV 0.87–1.35.

Aedeagus elongate; viewed laterally, apical lobe bent and rounded or simply rounded at the extremity; sagittal aileron present; in profile, ventral margin almost straight or slightly convex a little behind middle.

Specimens examined. ♂ (holotype), "Type H.T."/"Japan. G. Lewis. 1910–230."/"Nikko. 3. VI.–21. VI. 80."/"*Colpodes bentonis* Bates" [NHM]; 1 ♂, "Japan G. Lewis. 1910–320"/"Awomori. 2. IX.–9. IX. 80."/"*Colpodes bentonis* Bates" [NHM]; 1 ♀, Nurukawa-onsen, Hiraka-machi, Aomori Pref., 24–IX–1950, K. SHIMOYAMA leg. [AM]; 1 ♂, Tsuruoka, Yamagata Pref., 29–VI–1971, K. SHIRAHATA leg. [NAS]; 1 ♂, Kuro-



Figs. 18–26. Aedeagus of *Colpodes* (*Negreum*) *bentonis* BATES, showing variation according to populations; dorsal view (18); left lateral view (19–26). —— 18, Specimen from Marunuma; 19, same specimen; 20, specimen from Mt. Hikage-yama; 21, specimen from Mt. Mitô-san; 22, another specimen from Mt. Mitô-san; 23, the holotype from Nikko; 24, specimen from Mt. Narabe-yama; 25, specimen from Mt. Kaikoma-ga-take; 26, specimen from Daibosatsu. (Scale: 1.00 mm.)

kawa, Niigata Pref., 25–VIII–1957, K. BABA leg. [NAS]; 1 ♂, Hôshi～Mikuni-tôge, Gunma Pref., 11–VIII–1954, A. HABU leg. [NAS]; 1 ♀, Kirizumi-onsen, Matsueda-chô, Gunma Pref., 22–VII–1990, T. KISHIMOTO leg.; 2 ♂♂, same locality, 16～17–V–1992, T. KISHIMOTO leg.; 6 ♂♂, 15 ♀♀, Mt. Hikage-yama, Ueno-mura, Gunma Pref., 19–IX–1992, S. MORITA leg.; 1 ♂, Marunuma, Gunma Pref., 21～22–VI–1982, S. MORITA leg.; 1 ♂, Ootakisawa, Kuriyama-mura, Tochigi Pref., 16–X–1988, H. OHKAWA leg.; 1 ♂, Mt. Kôshin-zan, Tochigi Pref., 24–IX–1990, H. OHKAWA leg.; 1 ♂, Meotobuchi, Kuriyama-mura, Tochigi Pref., 1–IX–1990, H. OHKAWA leg.; 1 ♂, 2 ♀♀, Mt. Narabe-yama, Tochigi Pref., 4–III–1973, S. MORITA leg.; 1 ♂, same locality,

Table 1. Standard ratios of body parts in *Colpodes* (*Negreum*) *bentonis* BATES.

	PW/HW	PW/PL	PW/PA	PW/PB	PA/PB	EW/PW	EL/EW
Holotype Nikko ♂	1.39	1.14	1.46	1.46	1.00	1.64	1.56
1 ♂ Aomori	1.37	1.22	1.50	1.41	0.94	1.56	1.55
1 ♂ Marunuma	1.31	1.12	1.52	1.43	0.98	1.66	1.51
1 ♂ Meotobuchi	1.35	1.17	1.46	1.40	0.96	1.63	1.51
1 ♂ Kirizumi	1.32	1.09	1.45	1.42	0.98	1.69	1.55
1 ♂ Mt. Hikage-yama	1.31	1.08	1.58	1.41	0.89	1.69	1.50
1 ♂ Mt. Kôshin-zan	1.32	1.16	1.42	1.48	1.04	1.68	1.47
1 ♂ Daibosatsu	1.40	1.09	1.59	1.52	0.96	1.57	1.47
10 ♂♂ Mt. Mitô-san	1.37 (1.33–1.45)	1.12 (1.06–1.20)	1.57 (1.53–1.61)	1.52 (1.45–1.57)	0.97 (0.93–1.02)	1.61 (1.54–1.78)	1.52 (1.44–1.57)
1 ♂ Mt. Gozen-yama	1.32	1.11	1.56	1.56	1.00	1.73	1.45
1 ♂ Mt. Kumotori-yama	1.39	1.16	1.57	1.57	1.00	1.61	1.49
1 ♂ Mt. Kaikoma-ga-take	1.33	1.14	1.50	1.44	0.96	1.53	1.47
10 ♀♀ Mt. Mitô-san	1.39 (1.30–1.46)	1.14 (1.07–1.20)	1.55 (1.48–1.62)	1.48 (1.41–1.54)	0.96 (0.88–1.03)	1.69 (1.63–1.76)	1.49 (1.40–1.55)

4–V–1977, H. OHKAWA leg.; 3 ♂♂, 4 ♀♀, same locality, 23–I–1993, H. OHKAWA leg.; 2 ♂♂, Mt. Bukô, Saitama Pref., 2–VI–1955, M. ONO leg. [NAS]; 2 ♀♀, Mt. Ryôgami-san, Saitama Pref., 11～12–VI–1978, S. MORITA leg.; 1 ♂, Mt. Kumotori-yama, Tokyo, 20～21–VIII–1976, S. MORITA leg.; 1 ♂, 1 ♀, Mt. Gozen-yama, Tokyo, 24–IV–1974, S. MORITA leg.; 1 ♀, Mt. Mitake-san, Tokyo, 4–VI–1976, S. MORITA leg.; 10 ♂♂, 14 ♀♀, Mt. Mitô-san, Tokyo, 9–VII–1978, S. MORITA leg.; 1 ♀, Mt. Ohtake-san, Tokyo, 22–V–1973, S. MORITA leg.; 2 ♂♂, Mt. Amari-yama, Yamanashi Pref., 16–VI–1973, S. MORITA leg.; Mt. Kaikoma-ga-take, Yamanashi Pref., alt 1,200 m, 16～17–VIII–1982, S. & E. MORITA leg.; 1 ♂, Hikawa-rindô, Yamanashi Pref., 22–VI–1985, K. YOSHIHARA leg.; 1 ♂, Daibosatsu, Yamanashi Pref., 28–VIII–1986, S. OHMOMO leg.; 1 ♂, Masutomi-kôsen, Yamanashi Pref., 1–VII–1989, A. IZUMI leg.; 1 ♂, Kanayama, Yamanashi Pref., 29–V–1993, Y. HIRANO leg.; 1 ♂, Shiga-kôgen, Nagano Pref., IX–1960, J. MINAMIKAWA leg. [NAS]; 1 ♂, 1 ♀, Tobira-dam, Matsumoto-shi, Nagano Pref., 20～29–VI–1992, H. HAYAKAWA leg.; 1 ♂, 1 ♀, Inakoyu, Mt. Yatsu-ga-take, Nagano Pref., 14–VI–1992, H. HAYAKAWA leg.; 1 ♂, Unazuki-onsen, Toyama Pref., 15–III–1958, K. BABA leg. [NAS].

Range. Japan: Tôhoku District (Aomori Pref., Yamagata Pref.), Kantô District

(Gunma Pref., Tochigi Pref., Saitama Pref., Tokyo), Chûbu District (Nagano Pref., Yamanashi Pref., Toyama Pref.).

Notes. The most distinctive feature of this species is the characteristic configuration of its aedeagus. The genitalia of 40 males have been studied. Variation in configuration of aedeagus is presented in Figs. 19–26. In the populations of the Okutama mountains, the aedeagus is relatively short and robust; its ventral margin is more convex a little behind middle in profile. In the populations of the western part of Tochigi Prefecture including the type locality, the aedeagus is relatively slender and its ventral margin is straight in profile. In the population of Mt. Hikage-yama of the southwestern corner of Gunma Prefecture, the aedeagus is elongate with a large basal part.

It is possible that they may be classified at least into three geographical races: population of the western side of Tochigi Prefecture, populations of the Okutama mountains and Daibosatsu, and populations of Chûbu District. However, it seems better to refrain from splitting them into three subspecies. As is shown on the accompanying sketch map, there are several wide blanks. It is to be hoped that more materials of the species will be found in these areas by future investigations.

Colpodes (*Negreum*) *amagisanus* MORITA, sp. nov.

[Japanese name: Amagi-morihirata-gomimushi]

(Figs. 27–35)

Agonum bentone: HIRANO, 1968, Kanagawa-chûhô, Yokohama, (29): 144.

Length: 10.71–11.70 mm in the Amagi-san specimens, 11.79 mm in the Futago-yama specimen (from apical margin of clypeus to apices of elytra).

Colour as in *C.* (*N.*) *bentonis* though the appendages are lighter.

Head convex and smooth; frontal furrows short, rather deep, and divergent posteriad and reaching anterior supraorbital pores; eyes rather flat; microsculpture not sharply impressed, though consisting of isodiametric meshes, rarely partially disordered; sides of gula usually with many oblique wrinkles; apex of labrum slightly emarginate or almost straight; each antennal segment I usually with a long seta and 2 or 3 short setae, rarely with a long seta and 1 or 4 short seta(e); segment II usually with a long seta and 2 or 3 short setae, rarely with a long seta and 4 short setae; relative lengths of antennal segments as follows:— I: II: III: IV: V: VI: XI≒1: 0.37: 0.85: 0.98: 0.94: 0.93: 0.82 in the Amagi-san specimens, 1: 0.26: 0.85: 0.98: 0.95: 0.93: 0.84 in the Futago-yama specimen.

Pronotum cordate, convex, variable in shape and widest at 2/3–3/5 from base; apex weakly emarginate, rarely almost straight at middle, a little narrower than base; apical angles rounded; sides moderately arcuate in front, convergent posteriorly, and sinuate before hind angles, which are acute; reflexed lateral borders narrow; anterior marginal setae inserted at the widest part, rarely with an additional seta, posterior ones

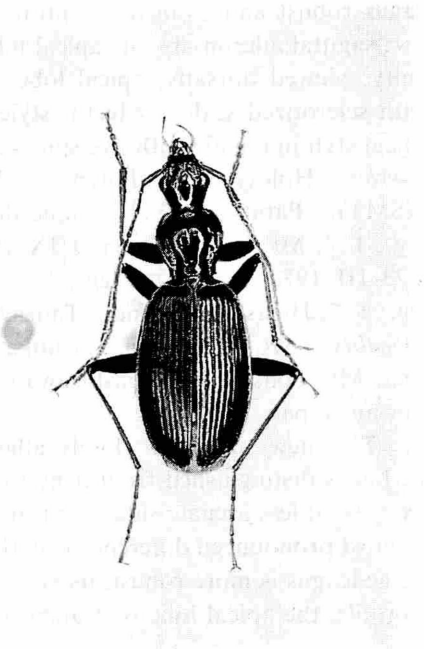


Fig. 27. *Colpodes* (*Negreum*) *amagisanus* sp. nov., from Mt. Amagisan.

inserted a little or just before hind angles; basal foveae deep and elongate, usually with several coarse punctures, rarely almost smooth; median line distinct, reaching neither apex nor base; base almost straight at middle though briefly and arcuately oblique inside each hind angle; microsculpture composed of fine transverse meshes, of wide or isodiametric meshes on basal part.

Wings reduced, WL/EL 0.34. Elytra oblong-oval, widest at about 3/5 from base; surface weakly convex; shoulders effaced; sides gently arcuate, and slightly emarginate before apices; apices almost conjointly rounded though forming a small re-entrant angle at suture; striae smooth; scutellar striole rather short and smooth; additional pore absent near basal pore; interval III usually with 3 dorsal pores, anterior one adjoining stria III and the others adjoining stria II, rarely with 4 dorsal pores, of which the anterior 2 adjoin stria III and the others adjoin stria II; intervals weakly convex; microsculpture composed of fine transverse meshes; marginal series of umbilicate pores 19–20 in number.

Ventral side smooth except for mesepisternum and sides of mesosternum which bear several coarse punctures; in ♂, apex of anal sternite slightly emarginate.

Legs slender; posterior margin of each metafemur with 4 or 5 setae; claw segment of metatarsus usually with many short hairs, rarely with about 10 short hairs on ventrolateral sides; proximal 3 segments of meso- and metatarsi each with inner and outer sulci, though the inner sulcus is rudimentary or disappears, especially in segments II and III; TI/TV 1.23 in the Amagi-san specimens, 1.21 in the Futago-yama specimen.

Aedeagus robust and elongate; ventral side slightly convex at about middle in lateral view; sagittal aileron absent; apical lobe long, straight, and simply rounded at the extremity; viewed dorsally, apical lobe slightly inclined to the right; inner sac covered with sclerotized scales or teeth; styles broad, left style being larger than the right. Apical styli in female with five spines on outer margin.

Type series. Holotype: ♂, allotype: ♀, Mt. Amagi-san, 18–VII–1975, S. MORITA leg. (NSMT). Paratypes: 3 ♂♂, same data; 2 ♀♀, 8–V–1993, same locality, S. MORITA leg.; 1 ♂, Mt. Futago-yama, 9–IX–1956, Y. HIRANO leg.; 1 ♀, Mt. Ô-yama, Tanzawa, 23–III–1973, S. MORITA leg.; 1 ♀, Mt. Tôno-take, Tanzawa, 9–X–1973, S. MORITA leg.; 1 ♂, Higashizawa-rindô, Tanzawa, 20–X–1993, Y. HIRANO leg.

Type locality. Mt. Amagi-san, Shizuoka Prefecture; Mt. Futago-yama (Hakone), Mt. Ô-yama, Mt. Tôno-take, Higashizawa-rindô (Tanzawa), Kanagawa Prefecture, central Honshu, Japan.

Notes. This new species is closely allied to *C.* (*N.*) *bentonis* of the Okutama mountains, but is distinguished from it by the following points: 1) elongate body, 2) less convex eyes, 3) less arcuate sides of pronotum, and 4) more oblique elytral shoulders. The most pronounced difference is in the configuration of aedeagus: in this new species, the aedeagus is more robust, its ventral margin is more convex a little behind middle in profile, the apical lobe is straight in lateral view, and the sagittal aileron is absent.

Colpodes* (*Negreum*) *asakoae MORITA, sp. nov.

[Japanese name: Akagi-morihirata-gomimushi]

(Figs. 36–46)

Colpodes bentonis: OHKAWA, 1990, Mem. Tochigi pref. Mus., (8): 13.

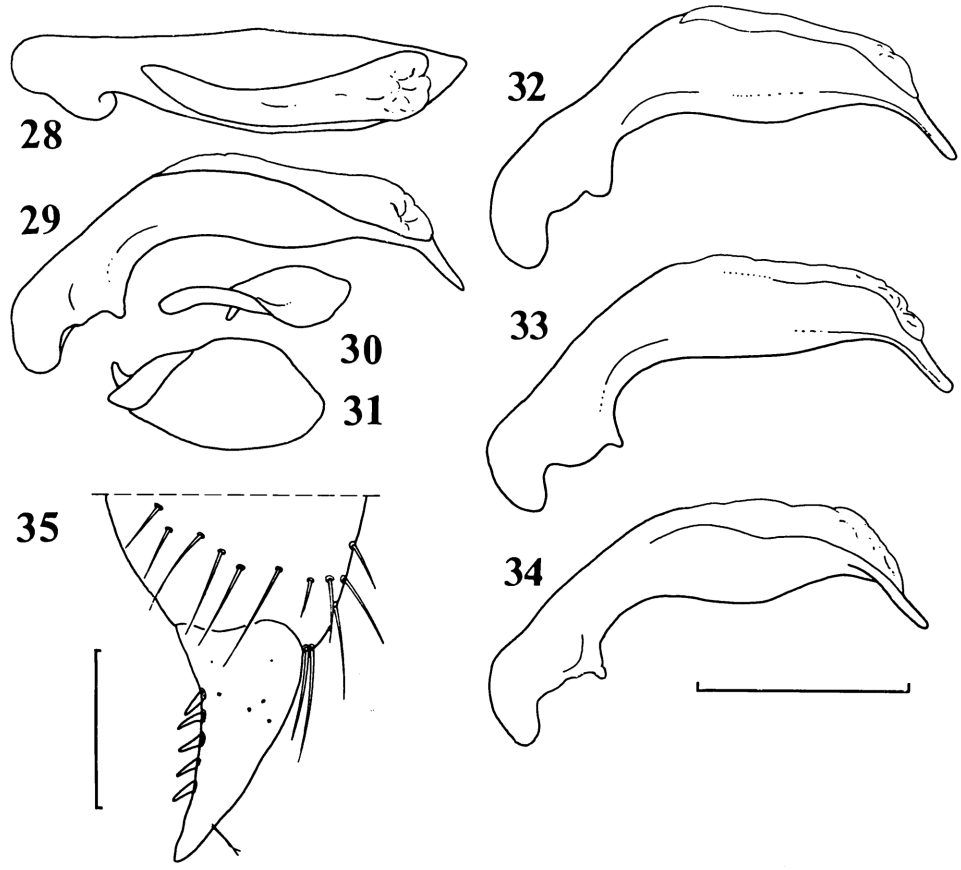
Length: 9.94–11.03 mm (from apical margin of clypeus to apices of elytra).

Very closely allied to *C.* (*N.*) *bentonis*, from which it cannot be distinguished with confidence by external morphology: in many individuals, the pronotum has more strongly arcuate sides, sides of gula are almost smooth or provided with several shallow wrinkles, and the elytral intervals are more convex especially at the apical part. Evidently different from *C.* (*N.*) *bentonis* in certain details of aedeagus: aedeagus robust with short apical lobe; basal part with small sagittal aileron; apical part voluminous.

Colour as in *C.* (*N.*) *bentonis*. Head convex and smooth; frontal furrows rather deep, wide and divergent posteriad, and then reaching anterior supraorbital pores; eyes rather convex; genae very slightly convex; sides of gula usually with several shallow wrinkles, rarely almost smooth; neck wide; apex of labrum usually straight, rarely slightly emarginate; antennal segment I usually with a long seta and 2 or 3 short or medium-sized setae, rarely with a long seta and 1 or 4 short or medium-sized seta(e); segment II with a long seta and 2 or 3 or 4 short or medium-sized setae; relative lengths of antennal segments as follows:— I: II: III: IV: V: VI: XI≒1: 0.38: 0.84: 0.91: 0.87: 0.85: 0.80.

Table 2. Standard ratios of body parts in *Colpodes* (*Negreum*) *amagisanus* sp. nov.

	PW/HW	PW/PL	PW/PA	PW/PB	PA/PB	EW/PW	EL/EW
3 ♂♂ Mt. Amagi-san	1.35 (1.31–1.37)	1.07 (1.02–1.11)	1.52 (1.46–1.60)	1.45 (1.44–1.46)	0.95 (0.91–1.00)	1.66 (1.58–1.71)	1.56 (1.48–1.64)
3 ♀♀ Mt. Amagi-san	1.35 (1.31–1.38)	1.12 (1.09–1.15)	1.55 (1.49–1.58)	1.46 (1.43–1.50)	0.95 (0.91–1.00)	1.72 (1.69–1.75)	1.48 (1.47–1.49)
1 ♂ Mt. Futago-yama	1.35	1.13	1.56	1.46	0.94	1.66	1.57
1 ♂ Higashizawa	1.33	1.10	1.48	1.44	0.97	1.58	1.60



Figs. 28–35. Genitalia of *Colpodes* (*Negreum*) *amagisanus* sp. nov. —— 28–34. Male genitalia; aedeagus, dorsal view (28), aedeagus, left lateral view (29, 32–34), right style (30), left style (31). —— 28–31, Specimen from Mt. Amagi-san; 32, another specimen from Mt. Amagi-san; 33, specimen from Mt. Futago-yama; 34, specimen from Higashizawa-rindô. (Scale: 1.00 mm.) —— 35, Right stylus; specimen from Mt. Amagi-san. (Scale 0.2 mm.)

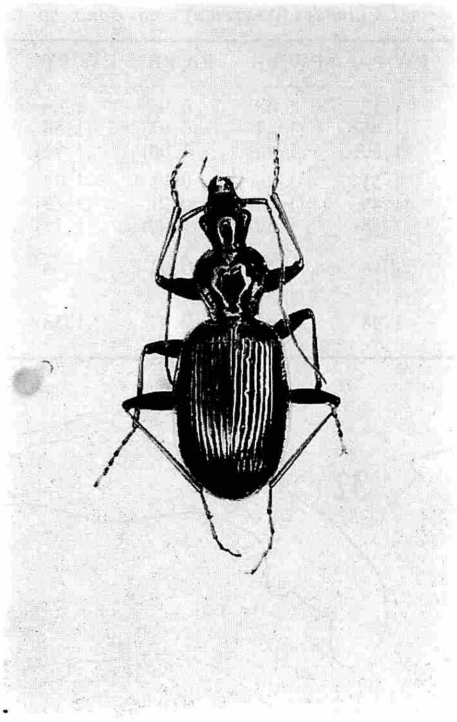


Fig. 36. *Colpodes (Negreum) asakoae* sp. nov., from Mt. Akagi-san.

Pronotum cordate, convex, and widest at about 3/5 from base; apex deeply emarginate, rarely straight at middle, a little narrower than base; apical angles produced and widely rounded; sides usually strongly arcuate in front, convergent posteriad and then sinuate before hind angles, which are acute; reflexed lateral borders narrow; anterior marginal setae inserted at the widest part, posterior ones inserted just before hind angles; basal foveae deep and elongate, usually with several fine or rather coarse punctures; median line very shallow, reaching neither apex nor base; base almost straight; microsculpture composed of fine transverse meshes.

Wings reduced, WL/EL 0.30. Elytra oblong-ovate, widest at about middle; shoulders rounded; sides gently arcuate, and shallowly emarginate before apices; striae smooth or very slightly crenulate; scutellar striole rather short; interval III usually with 4 dorsal pores, anterior 2 pores adjoining stria III and the others adjoining stria II; rarely 3 or 5 dorsal pores present, first pore adjoining stria III, second pore usually adjoining stria III, rarely adjoining stria II or lying on interval III, the others usually adjoining stria II, rarely adjoining stria III or lying on interval III; intervals convex; microsculpture composed of fine transverse meshes though partially disordered; marginal series of umbilicate pores 19–20 in number.

Ventral side smooth except for mesepisternum, mesosternum and sternite I which bear several coarse or fine punctures; apex of anal sternite widely arcuate in ♂, and with a pair of setae, extremely rarely with an additional seta on each side in the spec-

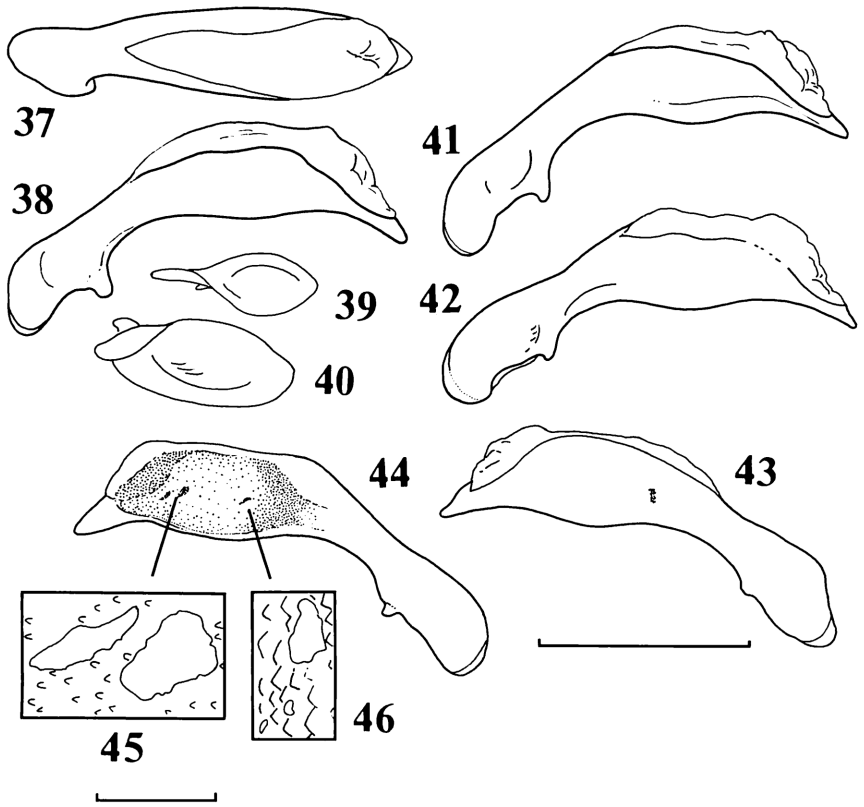
Table 3. Standard ratios of body parts in *Colpodes* (*Negreum*) *asakoae* sp. nov.

	PW/HW	PW/PL	PW/PA	PW/PB	PA/PB	EW/PW	EL/EW
10♂♂ Mt. Akagi-san	1.39 (1.36–1.44)	1.18 (1.13–1.24)	1.56 (1.49–1.66)	1.46 (1.39–1.50)	0.93 (0.90–0.98)	1.56 (1.51–1.62)	1.53 (1.48–1.58)
14♀♀ Mt. Akagi-san	1.41 (1.35–1.52)	1.18 (1.13–1.23)	1.55 (1.49–1.62)	1.47 (1.38–1.63)	0.95 (0.88–1.02)	1.63 (1.57–1.67)	1.46 (1.42–1.50)
10♂♂ Mt. Yamizo-san	1.38 (1.32–1.43)	1.17 (1.12–1.21)	1.55 (1.43–1.63)	1.43 (1.35–1.46)	0.93 (0.90–0.96)	1.57 (1.50–1.64)	1.51 (1.48–1.53)
10♀♀ Mt. Yamizo-san	1.39 (1.33–1.42)	1.18 (1.13–1.24)	1.55 (1.48–1.63)	1.43 (1.37–1.50)	0.92 (0.86–0.97)	1.64 (1.59–1.70)	1.48 (1.42–1.59)
1♂ Sandogoya-onsen	1.42	1.20	1.60	1.42	0.88	1.59	1.50
2♀♀ Sandogoya-onsen	1.34 (1.33–1.35)	1.21 (1.17–1.24)	1.47 (1.42–1.51)	1.48 (1.47–1.48)	1.01 (0.98–1.04)	1.70 (1.68–1.71)	1.44 (1.42–1.46)
4♂♂ Mt. Narabe-yama	1.39 (1.36–1.41)	1.13 (1.07–1.16)	1.57 (1.52–1.60)	1.48 (1.45–1.53)	0.95 (0.91–0.97)	1.62 (1.56–1.66)	1.49 (1.45–1.53)
3♀♀ Mt. Narabe-yama	1.38 (1.35–1.42)	1.14 (1.13–1.14)	1.54 (1.48–1.59)	1.45 (1.42–1.48)	0.96 (0.92–1.00)	1.68 (1.64–1.71)	1.47 (1.46–1.48)
1♂ Mt. Kosabi-yama	1.30	1.07	1.50	1.47	0.98	1.64	1.46
1♂ Fujimishita	1.39	1.20	1.58	1.44	0.91	1.53	1.54
1♂ Nanairi	1.44	1.18	1.61	1.55	0.96	1.51	1.53
1♀ Nanairi	1.46	1.21	1.57	1.52	0.97	1.57	1.46

imens from Mt. Yamizo-san.

Posterior margin of each metafemur usually with 3 or 4 setae, rarely with 2 or 6 setae; claw segment of each metatarsus with many short hairs and several microscopic ones on ventro-lateral sides; proximal 3 segments of meso- and metatarsi each with inner and outer sulci, though the inner sulcus is sometimes rudimentary, especially in segments II and III; in the specimens from Mt. Yamizo-san, all the sulci are usually deeper than in the specimens from Mt. Akagi-san; TI/TV 1.12.

Aedeagus robust and weakly bent at basal third; sagittal aileron small; ventral margin convex a little behind middle in profile; viewed laterally, apical lobe short and gradually narrowed towards apex, which is simply rounded. Inner sac covered with scales or teeth; in two specimens from Mt. Yamizo-san, inner sac with one or five sclerotized part(s) (not copulatory pieces) on the right wall. Styles broad, left style larger than the right. Apical styli in female with 4 spines on outer margin; spines variable in form, usually proximal one rather long and pointed at apex, the others very short and rounded at apices.



Figs. 37–46. Male genitalia of *Colpodes* (*Negreum*) *asakoae* sp. nov.; aedeagus, dorsal view (37), aedeagus, left lateral view (38, 41–42), aedagus, right lateral view (43–44), right style (39), left style (40). —— 37–40, Specimen from Mt. Akagi-san; 41, specimen from Mt. Narabe-yama; 42, specimen of Sandogoya-onsen; 43, specimen from Mt. Yamizo-san, showing the position of sclerotized part; 44, another specimen from Mt. Yamizo-san, showing the position of screlotized parts (scale: 1.0 mm); 45, two sclerotized parts; 46, three screlotized parts (scale 0.1 mm).

Type series. Holotype: ♂, allotype: ♀, Mt. Akagi-san, 16–V–1990, S. & A. MORITA leg. (NSMT). Paratypes: 1 ♀, Mt. Akagi-san, 17–VI–1981, S. MORITA leg.; 13 ♂♂, 8 ♀♀, same locality, 26–V–1990, S. & A. MORITA leg.; 6 ♂♂, 8 ♀♀, same locality, 15–V–1993, S. MORITA leg.; 1 ♂, 2 ♀♀, Sandogoya-onsen, Tochigi Pref., 7～9–IX–1979, S. MORITA leg.; 1 ♂, Mt. Kosabi-yama, Kuroiso-shi, Tochigi Pref., 13–XI–1988, H. OHKAWA leg.; 1 ♂, Fujimishita, Tokura, Gunma Pref., 7–VIII–1988, H. AKIYAMA leg.; 1 ♂, 1 ♀, Midorisawa-rindô, Shioya, Tochigi Pref., 21–V–1989, A. IZUMI leg.; 1 ♂, 1 ♀, Nanairi, Hinoemata-mura, Fukushima Pref., 22～24–VI–1990, T. KISHIMOTO leg.; 1 ♂, Mt. Yamizo-san, Tanakura-machi, Fukushima Pref., 20–V–1988, H. OHKAWA leg.; 1 ♂, 2 ♀♀, same locality, 5–V–1992, M. NUMATA leg.; 9 ♂♂, 6 ♀♀, same locality, 24–V–1992, M. NUMATA leg.; 44 ♂♂, 11 ♀♀, same locality, 18–

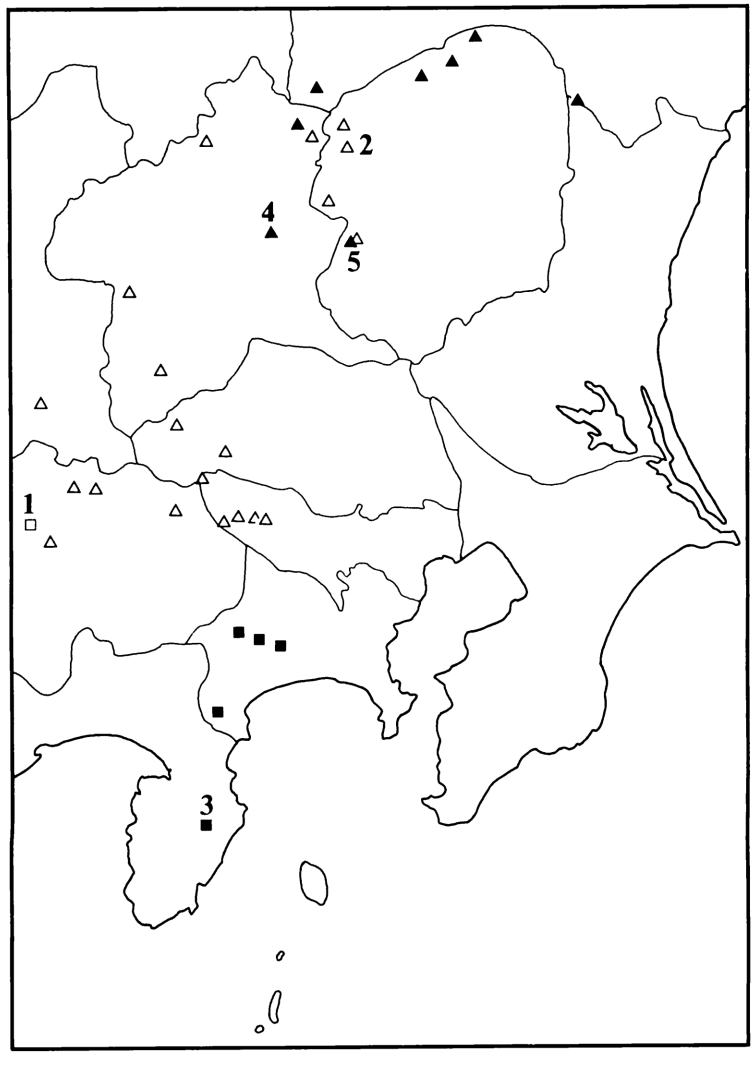


Fig. 47. Map showing the distribution of *Colpodes* (*Negreum*) *bentonis*, *C.* (*N.*) *mutator*, *C.* (*N.*) *amagisanus* sp. nov., and *C.* (*N.*) *asakoae* sp. nov., in the Kantô District, the southernmost part of the Tôhoku District and the easternmost part of the Chûbu District in central Honshu, Japan. △ – *C.* (*N.*) *bentonis*; □ – *C.* (*N.*) *mutator*; ■ – *C.* (*N.*) *amagisanus* sp. nov.; ▲ – *C.* (*N.*) *asakoae* sp. nov. —— 1, Aoki-kôsen (showing the eastern limit of distribution of *C.* (*N.*) *mutator*); 2, Mt. Amagi-san (type locality of *C.* (*N.*) *amagisanus* sp. nov.); 3, Nikko (type locality of *C.* (*N.*) *bentonis*); 4, Mt. Akagi-san (type locality of *C.* (*N.*) *asakoae* sp. nov.); 5, Mt. Narabe-yama (sympatric site of *C.* (*N.*) *bentonis* and *C.* (*N.*) *asakoae* sp. nov.).

IV–1993, M. NUMATA leg.; 3 ♂♂, 2 ♀♀, Mt. Yamizo-san, Daigo-machi, Ibaraki Pref., 3–V–1992, M. NUMATA leg.; 1 ♂, Mt. Narabe-yama, Tanuma-chô, Tochigi Pref., 23–XII–1984, H. OHKAWA leg.; 4 ♂♂, 3 ♀♀, same locality, 23–I–1993, H. OHKAWA leg.

Locality. Gunma Prefecture (Mt. Akagi-san, Fujimishita); Tochigi Prefecture (Sandogoya-onsen, Mt. Kosabi-yama, Midorisawa-rindô, Mt. Narabe-yama); Ibaraki Prefecture (Mt. Yamizo-san); Fukushima Prefecture (Nanairi, Mt. Yamizo-san).

Notes. What was most unexpected was the sympatric occurrence of this new species and *C.* (*N.*) *bentonis* on Mt. Narabe-yama, Tochigi Prefecture. This was discovered by recent investigations made by Mr. OHKAWA. According to him, this new species coexists with *C. bentonis* under the same large stone. Incidentally, I myself visited the mountain more than twenty years ago with Dr. UÉNO and Mr. OHKAWA. At that time, our main purpose was to obtain trechine carabid beetles, so that only three specimens of *C. bentonis* were found as a by-product.

In general appearance and body size as well as in coloration, this new species resembles *C. bentonis*, and in fact, the two can be distinguished with certainty only by the shape of male genitalia.

This new species is dedicated to my daughter, Asako, one of the collectors of this beetle.

要　約

森田誠司: *Negreum* 亜属に所属するヒラタゴミムシ類. ―― わが国に分布する *Negreum* 亜属に属するヒラタゴミムシ類について簡単に述べ，2新種を追加した．なかでもベントンモリヒラタゴミムシは，基準標本がまったく調査されずに再記載されてきたため，ロンドンの自然史博物館所蔵の基準標本を調査し，じゅうらいの見解が正しかったことを明らかにした．

残念ながら，ヒラタゴミムシ類の属・亜属の段階での分類体系は，じゅうぶんに確立されていない．たとえば，HABU (1978) の行ったわが国の種に対する研究結果と，DARLINGTON (1952) の New Guinea の種に対する研究を比べても，取り上げた特徴が一致せず整合性が見られない．ここでは，触角の第2節の末端近くに1本の長毛と2本以上の短毛をもつこと，腹節に細毛を欠くこと，上翅に金属光沢をもつこと，付節の基部 2–3 節両側に溝をもつことで，*Negreum* 亜属が，わが国に産するほかの亜属とは明確に区別されるため，HABU の処置にしたがって亜属として認めた．また，属の方の処置は，*Agonum* があまりにも異質的な群をまとめたものであるように思われるので，田中 (1985) に従い *Colpodes* を用いた．多くのオサムシ科の甲虫では，陰茎内部のキチン化した部分が種を識別するためにもっとも重要な特徴のひとつとなることがよく知られている．しかし，この亜属の種のうち，この特徴を観察することのできたヒコサンモリヒラタゴミムシとアカギモリヒラタゴミムシの2種では，同一産地のもののなかでさえ内部構造に変異が見られるので，それらが種を識別する特徴にはならないことを図示した．

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Elytra, Tokyo, **22** (1): 72, May 15, 1994

Notes on the Bembidiinae (Carabidae) of Japan

VII. Records of Two Species of *Asaphidion*

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Three species of the bembidiine carabids of the genus *Asaphidion* have hitherto been recorded from Japan. One of them is *A. semilucidum* (MOTSCHULSKY) widely distributed in the Far East. In the mainland of Japan, this species is very common both in plains and in mountainous areas. Contrary to this, the remaining two forms are extremely rare. I am therefore going to record them in this paper.

Asaphidion angulicolle (MORAWITZ)

Tachypus angulicollis MORAWITZ, 1862, Bull. Acad. imp. Sci. St.-Pétersb., **4**: 226; type locality: Bureja-Gebirge.

Asaphidion angulicolle: HABU & INOUYE, 1962, Ent. Rev. Japan, Osaka, **14**: 21-22, fig. 1. —— JEDLIČKA, 1965, Ent. Abh. Mus. Tierk. Dresden, **32**: 82. —— NAKANE, 1978, Nat. & Ins., Tokyo, **13** (8): 10. —— LAFER, 1989, Opred. Nasek. Dal'nego Vostoka SSSR, **3** (1): 135.

Specimens examined. 2♂♂, Takkobu-numa, near Kushiro, Hokkaido, 17-VI-1991, S. MORITA leg.

Asaphidion tenryuense konoi S. UÉNO

Asaphidion (s. str.) *tenryuense kônoi* S. UÉNO, 1955, Publ. Seto. mar. biol. Lab., **4**: 411, fig. 7; type locality: Takao on the Island of Nakanoshima.

Asaphidion tenryuense konoi: NAKANE, 1978, Nat. & Ins., Tokyo, **13** (8): 9-10. —— MORITA, 1985, Coleopt. Japan Col., Osaka, **2**: 100, pl. 19, fig. 17.

Specimen examined. 1♂, Kametoku, Is. Tokuno-shima, Kagoshima Pref., 3-XI-1989, T. UENO leg.

I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kindness in reading the manuscript. My thanks are also due to Mr. Teruhisa UENO of Kyushu University for kindly supplying me with important material.

Elytra, Tokyo, **22** (1): 73–79, May 15, 1994

Two New *Trichotichnus* (Coleoptera, Carabidae) from Shizuoka Prefecture, Central Japan

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Abstract Two new montane harpaline carabid beetles, *Trichotichnus* (*Trichotichnus*) *monticola* sp. nov. and *T.* (*T.*) *spinifer* sp. nov., are described from Shizuoka Prefecture, Central Japan. The former belongs to the *congruus* group, while the latter is a member of the *leptopus* group.

There are two unnamed forms of the harpaline carabid genus *Trichotichnus* found on the mountains lying at the southernmost part of the Akaishi Mountain Range in Shizuoka Prefecture, central Honshu, Japan. One of them was collected while searching for trechine carabid beetles on Mt. Ohfuda-yama, which is a small head on the range on the right side of the River Ôi-gawa. It doubtless belongs to the *congruus* group (*sensu* HABU, 1961, pp. 139–143), but is unique in the species-group for its apterism. The other large-sized one, whose occurrence was previously noticed by myself (KASAHARA, 1992, p. 30), has been found on Mt. Ryûtô-zan lying on the left side of the lower part of the River Tenryû-gawa. It is a member of the *leptopus* group (*sensu* HABU, 1961, pp. 149–154). These two species are clearly distinguished from their relatives and must be new to science. In this article, I will describe the former under the name of *Trichotichnus* (*Trichotichnus*) *monticola* sp. nov., and the latter under that of *T.* (*T.*) *spinifer* sp. nov. The abbreviations used herein are the same as those explained in other papers of mine. All the holotypes to be designated are preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are deposited in my collection.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for affording me facilities for examining the specimen under his care. Thanks are also due to Messrs. Hitoshi ISHIKAWA, Shinzaburo SONE and Yoshiaki TAHIRA for their kind help in materials and field works.

Trichotichnus* (*Trichotichnus*) *monticola sp. nov.

[Japanese name: Yama-tsuyagomokumushi]

(Figs. 1, 3)

Description. Length (measured from apex of labrum to apices of elytra) 8.0–8.6 mm; width 3.2–3.4 mm. Dark reddish brown, shiny though not iridescent; lateral

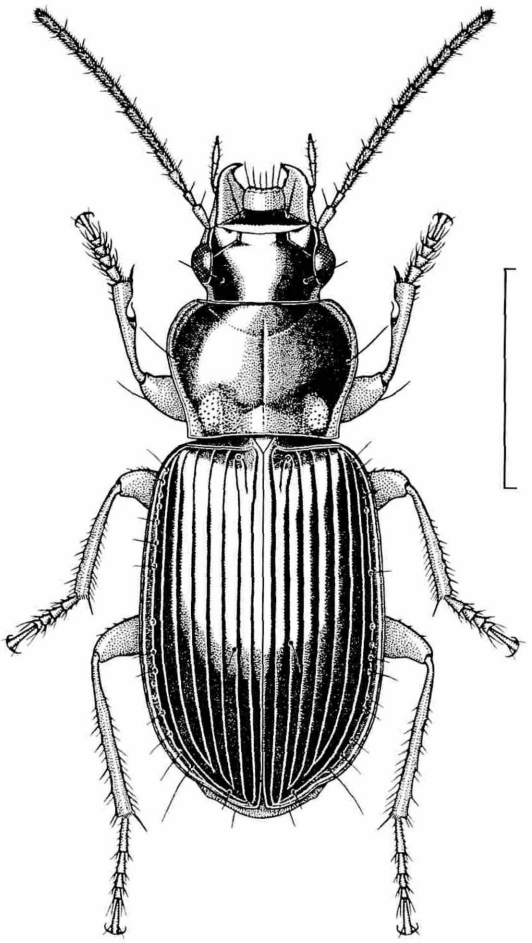


Fig. 1. *Trichotichnus* (*Trichotichnus*) *monticola* sp. nov., ♂, from Mt. Ohfuda-yama in Shizuoka Pref. Scale 3 mm.

margins of pronotum, venter and legs reddish brown; palpi and antennae light reddish brown.

Head moderately convex; eyes convex; post-genae short and oblique; mandibles stout; labrum emarginate at apex; clypeal suture distinct; frontal oblique grooves distinct, surface around the grooves somewhat depressed; supraorbital setae inserted at the post-eye level; surface very minutely and sparsely punctate; microsculpture invisible, but clearly impressed on labrum, formed by fine isodiametric meshes; antennae moderately long, extending beyond shoulders.

Pronotum transverse, convex, widest at apical third, ca. 1.4 times as wide as head (PW/HW 1.37–1.38, mean 1.38), ca. 1.3 times as wide as base (PW/PBW 1.24–1.34, mean 1.29), ca. 1.5 times as wide as long (PW/PL 1.44–1.53, mean 1.48); lateral margins evenly arcuate in apical two-thirds, then distinctly convergent posteriad, and

gently sinuate before base; marginal setae inserted at apical two-fifths; apical margin gently emarginate, finely bordered, though generally obsolete at middle; apical angles hardly produced, rounded at the tips; basal margin almost as wide as or a little wider than the apical, slightly emarginate, distinctly bordered throughout, basal angles rectangular, slightly produced laterad; median line fine, though distinct; basal foveae shallow, rather roundly depressed, and strongly punctate; lateral furrows narrow, punctate throughout; both apical and basal transverse impressions weak or obsolete; surface often with irregularly transverse wrinkles; microsculpture almost invisible.

Wings reduced. Elytra elliptical, moderately convex, widest at the middle, ca. 1.26 times as wide as pronotum (EW/PW 1.24–1.31, mean 1.26), ca. 2.8 times as long as pronotum (EL/PL 2.77–2.89, mean 2.82), ca. 1.5 times as long as wide (EL/EW 1.47–1.52, mean 1.52); basal border almost straightly extending to shoulder, and meeting with lateral border at an obtuse but mal-defined angle; shoulders rounded; lateral margins weakly curved from behind shoulders to apical fourth, then distinctly and roundly convergent towards apices, preapical emarginations shallow; apex of each elytron rounded; scutellar striole and stria 2 arising from basal pores; striae fine and smooth; intervals rather flat, though convex at apical parts; interval 3 with a dorsal pore adjoining stria 2 from behind middle to apical two-fifths; marginal series of pores 17–18 in number, 2–3 additional small pores visible on interval 9.

Venter almost smooth; prosternum and abdominal sternite 4 very minutely punctate and pubescent in middle; prosternal process with a pair of setae at apex; terminal sternite with two pair of setae in both sexes. Protibiae not sulcate on each inner side.

Aedeagus stout, arcuate, gently curved ventrad at apical part in lateral view; apical lobe as long as wide, tapering towards apex, which is narrowly rounded, and finely or indistinctly bordered; ventral side bordered on each side, almost flat between the borders; inner sac provided with a curved peg-like copulatory piece near apical orifice.

Type series. Holotype: ♂, Mt. Ohfuda-yama (1,100 m alt.), Nakakawane-chô, Shizuoka Pref., 10-V-1992, S. UÉNO leg. Paratypes: 2 ♂♂, 1 ♀, same locality and date as for the holotype, S. KASAHARA leg.

Notes. The present new species somewhat resembles *T.* (*T.*) *congruus* (MOTSCHULSKY) in general apperance, but is easily discriminated from the latter by wider and less convex body with atrophied wings and different configuration of aedeagus. Judging from the conformation of male genitalia, it may have some relationship with *T.* (*T.*) *nishioi* HABU (1961, pp. 141–142, 159, 162) but the latter species has fully developed wings and slenderer aedeagus.

Trichotichnus* (*Trichotichnus*) *spinifer sp. nov.

[Japanese name: Tenryû-tsuyagomokumushi]

(Figs. 2, 4)

Description. Length (measured as in the preceding species) 12.8–13.6 mm; width

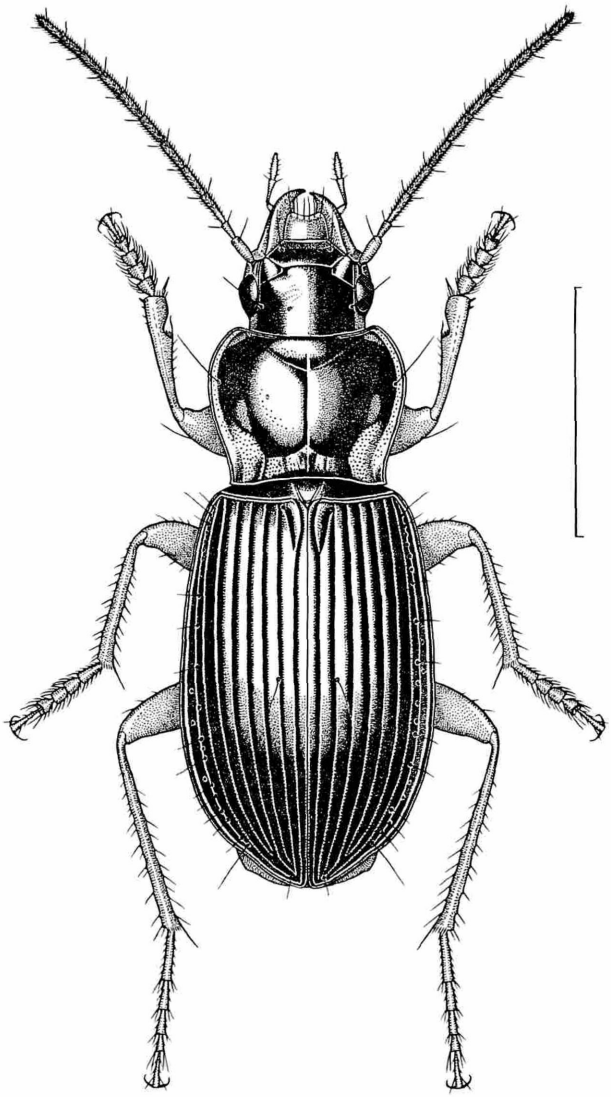
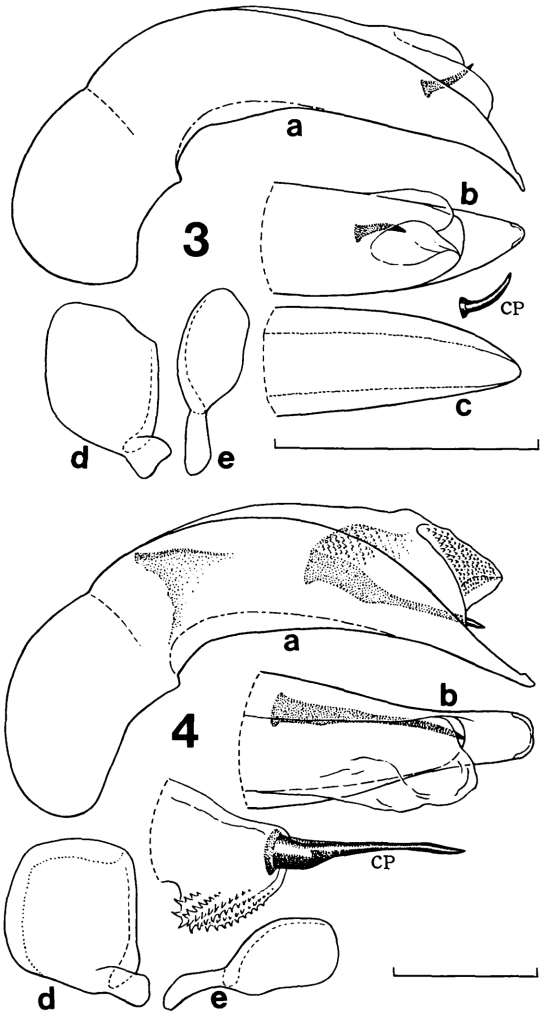


Fig. 2. *Trichotichnus* (*Trichotichnus*) *spinifer* sp. nov., ♂, from Mt. Ryûtô-zan in Shizuoka Pref. Scale 5 mm.

5.0–5.4 mm. Black, shiny and iridescent; labrum, mandibles and venter dark reddish brown; appendages yellowish brown.

Head convex; eyes moderately convex, though less convex in the female; postgenae short, gently convergent posteriad; labrum subtrapezoidal, distinctly emarginate at apex; clypeus gently emarginate at apex; clypeal suture fine, though distinct; frontal oblique grooves distinct; supraorbital setae inserted at the post-eye level; surface



Figs. 3–4. Male genitalia of *Trichotichnus* (*Trichotichnus*) spp. —— 3, *T.* (*T.*) *monticola* sp. nov., from Mt. Ohfuda-yama in Shizuoka Pref.; 4, *T.* (*T.*) *spinifer* sp. nov., from Mt. Ryûtô-zan in Shizuoka Pref.; a–c, aedeagus; a, left lateral view; b, apical half in dorsal view; c, apical half in ventral view; d, left paramere; e, right paramere; cp, copulatory piece. Scale 1 mm.

smooth, though often minutely punctate on frons; microsculpture hardly visible, though well visible on labrum, formed by isodiametric meshes; antennae moderately long, reaching basal fifth of elytra.

Pronotum transverse, convex, widest at apical third, less than 1.5 times as wide as head (PW/HW 1.40–1.50, mean 1.45), as wide as long in almost the same proportion (PW/PL 1.41–1.51, mean 1.45), ca. 1.3 times as wide as base (PW/PBW 1.27–1.32,

mean 1.28); lateral margins evenly arcuate, and convergent posteriad, slightly sinuate before base; apical margin gently emarginate, finely bordered on each side, apical angles hardly produced, rounded at the tips; basal margin wider than the apical, slightly sinuate on each side, finely but distinctly bordered throughout, basal angles rectangular, slightly produced laterad; median line fine, though distinct; basal foveae wide and shallow, sometimes rather deeply impressed, divergent anteriad, strongly and densely punctate; outer side of foveae depressed and punctate, the depressions extending to apical angles along lateral margins, and punctate throughout; both apical and basal transverse impressions generally weak or obsolete, but sometimes rather distinct; surface strongly punctate in apical, basal and lateral areas; microsculpture partially and scarcely visible, formed by very fine transverse meshes.

Wings reduced. Elytra oblong subovate, convex, widest at about middle, ca. 1.3 times as wide as pronotum (EW/PW 1.28–1.35, mean 1.31), about three times as long as pronotum (EL/PL 2.82–3.02, mean 2.93), ca. 1.55 times as long as wide (EL/EW 1.51–1.58, mean 1.55); basal border slightly curved, minutely dentate at shoulder; shoulders narrowly rounded or obtusely angulate especially in the female; lateral margins gently divergent towards middle, then roundly convergent towards apices, preapical emarginations shallow; apex of each elytron rather pointed, though blunt at the tip; scutellar striole moderately long, arising from basal pore; striae finely but deeply impressed, smooth; intervals gently convex, though well convex at apical parts; interval 3 with a dorsal pore adjoining stria 2 at the middle; marginal series of pores 25–28 in number, some small pores of them lying on interval 9.

Venter shiny; pro- and metasterna and abdominal sternite 4 minutely punctate and pubescent at median part; lateral part of metasternum, and pro-, meso- and metepisterna punctate; sternite 3 and lateral sides of sternite 4 irregularly rugose and punctate: prosternal process pubescent and plurisetose at apex. Protibiae sulcate on each inner side.

Aedeagus thick in basal part, arcuate, and tapered towards apex in lateral view; in dorsal view, almost straight, though apical part is slightly curved rightwards; apical lobe longer than wide, rounded and bordered at apex, which is often slightly emarginate at middle; inner sac provided with a very long and heavily sclerotized nail-like piece, which is almost a third as long as aedeagus; left paramere wide, square; right one relatively wide, gently arcuate at apex.

Type series. Holotype: ♂, Mt. Ryûtô-zan (1,260 m alt.), Sakuma-chô, Shizuoka Pref., 7–X–1992, S. KASAHARA leg. Paratypes: 3 ♂♂, 2 ♀♀, same data as for the holotype; 1 ♂, 1 ♀, same locality and date as for the holotype, H. ISHIKAWA leg.; 1 ♀, same locality, 9–VIII–1988, T. KATÔ leg.; 1 ♀, same locality, 26～27–VII–1991, S. KASAHARA leg.

Notes. The present new species somewhat resembles *T.* (*T.*) *kasaharai* HABU (1983, pp. 1–4) described from Mt. Minobu-san in Yamanashi Prefecture in general appearance. It is, however, clearly distinguished from that species by shorter body with robuster elytra and different configuration of aedeagus, with exceedingly long

copulatory piece. As was already mentioned by myself (KASAHARA, 1992, p. 30), it is often found together with *T.* (*T.*) *ishikawai* KASAHARA (1992, pp. 28–30) in the same habitat.

要　約

笠原須磨生：静岡県産ツヤゴモクムシ属の2新種．—— 静岡県の赤石山脈南端部の山地にみられるツヤゴモクムシ属 *Trichotichnus* の2新種を記載した．

1) ヤマツヤゴモクムシ *T.* (*T.*) *monticola* は，ヒメツヤゴモクムシ種群 *congruus* group に属する種で，ヒメツヤゴモクムシ *T.* (*T.*) *congruus* (MOTSCHULSKY) に似ているが，体がより幅広く扁平で，雄交尾器の形態も明らかに異なる．さらに，後翅が退化していることは，同種群のなかでも異例である．

2) テンリュウツヤゴモクムシ *T.* (*T.*) *spinifer* は，ツヤゴモクムシ種群 *leptopus* group の大型種で，外形は山梨県の身延山から記載されたカサハラツヤゴモクムシ *T.* (*T.*) *kasaharai* HABU に似ているが，より小型で上翅が短かく，雄交尾器の形態も相違する．とくに，陰茎の1/3に及ぶ長大な骨片は特異である．本種は，すでに予告されていたように (KASAHARA, 1992, p. 30)，基産地の竜頭山では，同種群に属するリュウトウツヤゴモクムシ *T.* (*T.*) *ishikawai* KASAHARA と同所的に生息する．

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KASAHARA, S., 1992. Three new carabid beetles from Shizuoka Prefecture, central Honshu, Japan. *Elytra, Tokyo*, **20**: 21–31.

Elytra, Tokyo, **22** (1): 80, May 15, 1994

Occurrence of *Paratachys uenoianus* (Coleoptera, Carabidae) in Japan

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The bembidiine carabid beetle, *Paratachys uenoianus* (HABU, 1974), was described on the basis of a single male specimen from Taiwan, and has never been re-obtained thereafter. However, an undetermined species of *Paratachys* found in Honshu, Shikoku and the Ryukyus, Japan, seemed to agree with this species according to HABU's original description and figure. Through the courtesy of Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, I was able to compare it with the holotype of *P. uenoianus* under his care. After a close examination, I have come to the conclusion that the Japanese species in question is doubtless identical with the Taiwanese. In the following lines, I will record it as being new to the fauna of Japan.

Paratachys uenoianus (HABU)

[Japanese name: Uéno-komizugiwa-gomimushi]

Tachys (*Eotachys*) *uenoianus* HABU, 1974, Trans. Shikoku ent. Soc., **12**: 47-48; type locality: Sekitaku (=Shih-cho) in Chia-i Hsien, Taiwan.

Specimens examined. 1♂, Ohtsuka, Hachiôji-shi, Tokyo, 17-VIII-1982, T. NIISATO leg.; 1♀, Rokugô, Ohta-ku, Tokyo, 22-VI-1983, T. NIISATO leg.; 1♀, Nunoshida, Kôchi-shi, Kôchi Pref., 6-IX-1983, Y. ITÔ leg.; 1♀, same locality, 22-VIII-1985, Y. ITÔ leg.; 1♂, Sonai, Is. Yonaguni-jima, Okinawa Pref., 29-VI-1993, T. TAKASAKI leg.

I am grateful to Dr. Shun-Ichi UÉNO, Messrs. Yoshiyuki ITÔ, Tatsuya NIISATO and Tetsuya TAKASAKI for their kind help in various way.

Reference

HABU, A., 1974. Notes and description of Formosan Carabidae taken by Dr. S.-I. UÉNO in 1961 (Coleoptera: Carabidae). IV. A new species of *Tachys*. *Trans. Shikoku ent. Soc.*, **12**: 47-48.

Elytra, Tokyo, **22** (1): 81–88, May 15, 1994

Studies on Asian Carabidae

VIII. Species of the Genus *Ophoniscus*

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Abstract A new species of the carabid genus *Ophoniscus* BATES is described from Sri Lanka, and redescriptions are given for two species, *O. iridulus* BATES and *O. cribrifrons* BATES, both from Myanmar.

The harpaline genus *Ophoniscus* BATES is characterized by the mentum truncate at the bottom of the apical emargination, the labrum and the clypeus respectively subtruncate at the apex, the ligula bearing four setae, the dorsal surface wholly punctate and pubescent, the elytra with uniseriate setiferous pores respectively on the 3rd, 5th and 7th intervals, and the apical segment of female genitalia without small spine at the outer ventral margin. It consists of three known species.

In this paper I am going to redescribe two of them and to describe a new species from Sri Lanka.

I wish to express my deep gratitude to Dr. Frits HIEKE of the Museum für Naturkunde der Humboldt-Universität and Dr. Lothar ZERCHE of the Deutsches Entomologisches Institut for their kind loan of many important materials including a syntype of *O. iridulus* BATES. Also I heartily thank Mr. Taichi SHIBATA and Dr. Gerald R. NOONAN for their valuable suggestions.

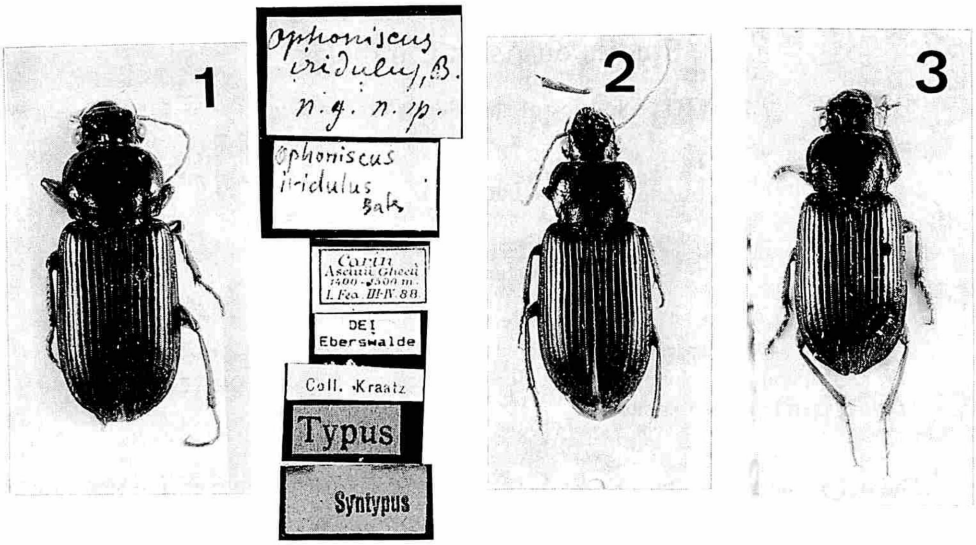
Ophoniscus iridulus BATES

(Figs. 1, 4–5)

Ophoniscus iridulus H. W. BATES, 1892, Annli. Mus. civ. Stor. nat. Genova, (2), **12**: 337. —— NOONAN, 1985, Milwaukee Public Mus. Contr. Biol. & Geol., (64): 12, 31–32; 1985, ibid., (65): 18, 22–23.
Trichotichnus (*Ophoniscus*) *iridulus*: CSIKI, 1932, Coleopt. Cat., (121): 1216.
Parophonus (*Ophoniscus*) *iridulus*: NOONAN, 1976, Quaest. ent., **12**: 46.

Body rather widely oblong, pitchy brownish black, very shiny, with weakly iridescent lustre on elytra; palpi, antennae and legs yellowish brown, labrum and mandibles reddish brown.

Head weakly convex and flattened on vertex, relatively wide and about three-fourths as wide as pronotum, coarsely and sparsely punctate all over in a syntype (smooth from vertex to clypeal suture in a Himalayan example), sparsely pubescent laterally on clypeus and frons; labrum gently curved inwards at sides, with apex trun-



Figs. 1–3. Habitus of *Ophoniscus* spp. —— 1, *Ophoniscus iridulus* BATES (syntype); 2, *O. cribrifrons* BATES; 3, *O. insulicola* sp. nov.

cate or slightly emarginate; clypeus obscurely depressed between a pair of setae, very gently and flatly declivous in front of the depression, with one or two clear rugosities near sides; clypeal suture clearly marked but not deepened at each end, from which frontal impression runs obliquely behind, clear and shallow near the suture, and rudimentary just before supraorbit; interocular space relatively wide, a little more than two-thirds times the width of head inclusive of eyes; eyes large but not very convex; temples short, one-eighth the longitudinal diameter of eye, almost straightly contracted behind and meeting with neck constriction at an obtuse angle, sparsely pubescent, the pubescence being spread out towards gula and genae; mandibles short and thick, dull at tips; antennae slender and relatively long, reaching basal seventh of elytra, 3rd segment pubescent in apical three-fourths, weakly thickened distally, equal in length to 4th and twice as long as 2nd; labial palpi rather well pubescent, 2nd somewhat robust, as long as 3rd; ligula relatively wide, parallel-sided in basal three-fourths, thence weakly expanded forwards, its apex truncate and forming two sharp angles with sides; paraglossae wide, gently arcuately expanded apicad, prolonged forwards a little beyond ligular apex, and widely rounded at apices; mentum transverse, truncate at bottom of apical emargination, epilobes narrow and weakly widened in front; microsculpture fine and obscure, invisible on vertex and on middle of frons, composed of isodiametric meshes on apical portion of clypeus and of transverse lines and meshes near frontal impressions and supraorbital setae.

Pronotum subquadrate, widest at apical third, not well contracted behind at sides, two-fifths wider than long, coarsely punctate near median line and on lateral and basal areas, the punctures compact on basal foveae, sparsely pubescent laterally and basally;

sides weakly arcuate in front and gently obliquely straight behind from the widest point; apex almost truncate and unbordered medially; base slightly wider than apex, weakly bisinuate and very weakly oblique at sides, its border either obscurely observable at the sides or quite invisible; basal angles a little larger than rectangle and narrowly rounded; lateral furrows narrow and V-shapedly cut, not widened behind and linked with basal foveae; basal foveae small and shallow, flat at bottoms; both front and hind transverse impressions vague; median line short and fine, lying between the two impressions; a pair of marginal setae present, one of them being at the borders of apical angles and the other at apical third in lateral furrows; microsculpture fine and obscure, largely invisible though observable as transverse lines and meshes near apex and in basal foveae.

Hind wings fully developed. Elytra oblong, two-thirds longer than wide, gently and uniformly convex, densely and moderately coarsely punctate, densely pubescent; sides subparallel, arcuately convergent behind from apical third and shallowly sinuate at apices; apices not produced behind, widely rounded and not separated, each acute and rectangular at sutural angles; base gently oblique at sides and forming rounded angles with lateral borders; striae not wide, moderate and little stronger in depth even apically and basally, scutellar striole fully long; intervals more or less raised on disc and more raised near apex and base, 3rd, 5th and 7th each bearing a row of large setiferous pores along the inner stria, 3rd with 9–12 pores, 5th with 8–13 pores, and 7th with 8–13 pores; marginal series interrupted in middle, composed of (8–9)+(7–9) umbilicate pores; microsculpture vaguely observable as transverse lines.

Ventral surface rather densely pubescent on abdomen and moderately on coxae and trochanters; metepisterna a half longer than wide; 6th abdominal segment quadrisetose in both male and female along outer margin, in ♂ widely and weakly arcuate and in ♀ rather well produced behind and narrowly arcuate at apex.

Fore tibia weakly dilated distally and truncate at apex, sparsely pubescent dorsally, with three short spines along apico-external margin, terminal spur gradually expanded towards middle, toothed at the widest point of each side; tarsi bearing long pubescence on dorsal side, those on hind tarsi relatively short, 1st segment of mid tarsus fully squamous biseriately like 2nd, 3rd and 4th, hind tarsus in both sexes as long as the width of head, 1st three-fifths longer than 2nd and about twice as long as 3rd, 4th one-third shorter than 3rd, claw segment trisetose along each ventral margin.

Aedeagus (Fig. 4) robust and clearly arcate, twisted to the left in 90°, so that the apical orifice is directed laterally; apical lamella thin and triangular, two-thirds longer than wide; apical orifice small, occupying posterior third of apical part; inner sac bearing two groups of spines, one composed of three long spines and the other of five spines. Stylus (Fig. 5) gently curved outwards and acute at tip, with a long seta situated at apical fourth; basal segment bearing a short seta at apex.

Length: 9.9–10.0 mm. Width: 3.2–3.5 mm.

Specimens examined. 1 ♂ (syntype), Carin (Karin), Asciuii, Ghecù, alt. 1,400–1,500 m, III～IV–1888, L. Fea leg.; 1 ♂, Pokhara, Nepal, 22～IX–1976, Mönch leg.,

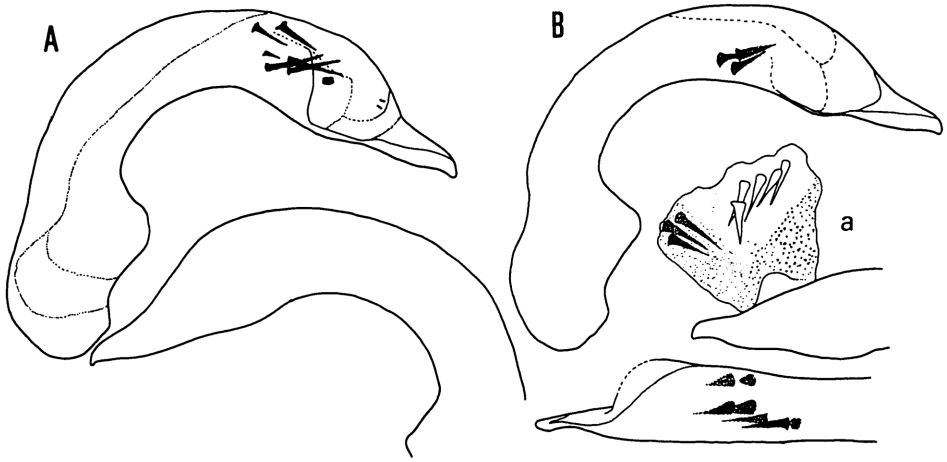


Fig. 4. Male genitalia of *Ophoniscus iridulus* BATES. —— A, Syntype, from Carin (Karin), Asciuii Ghecù; B, specimen from Pokhara, Nepal. a: Inner sac.

1 ♂, same locality, 30-X-1992, SCHMIDT leg.; 1 ♀, Nagpore, India, 1 ♀, India (further data not decipherable).

Ophoniscus cribrifrons BATES

(Figs. 2, 6)

Ophoniscus cribrifrons BATES, 1892, Annli. Mus. civ. Stor. nat. Genova, (2), **12**: 338. —— NOONAN, 1985, Milwaukee Public Mus. Contr. Biol. & Geol., (64): 12, 31–32; 1985, ibid., (65): 18, 22–23.
Trichotichnus (*Ophoniscus*) *cribrifrons*: CSIKI, 1932, Coleopt. Cat., (121): 1216.
Parophonus (*Ophoniscus*) *cribrifrons*: NOONAN, 1976, Quaest. ent., **12**: 46.

Body similar to that of *Lampetes*-species, oblong, pitchy black and slightly brownish, very shiny, iridescent lustre distinctly weaker than in *O. iridulus*; palpi, antennae, lateral borders of pronotum, and legs reddish brown, labrum and mandibles dark reddish brown.

Head wide and only one-fourth narrower than pronotum, coarsely and moderately densely punctate all over except for labrum which is finely punctate, sparsely pubescent on labrum and partly on lateral areas, more or less convex and weakly raised on frons; labrum transversely quadrate, gently raised longitudinally along middle, with apex shallowly blunt-notched; clypeus rather thick and slightly swollen, shallowly emarginate and narrowly flattened throughout at apex, clearly sutured from frons by a fine and shallow line; frontal impressions divergent behind, moderately deep and not reduced up to eyes, so that convexity of space in front of the impression is emphasized; eyes hemispherically prominent; temples short and rather abruptly contracted behind, with sparse pubescence, which covers ganae and gula; genuine ventral margins of eyes removed for a short distnce from buccal fissure; antennae not slender, short and not

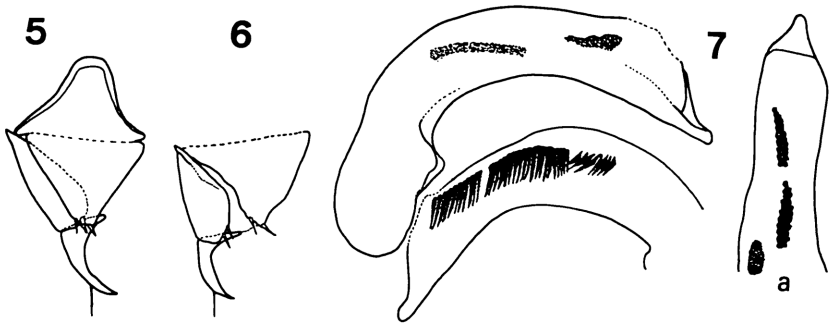
extending beyond basal fifth of elytra, densely pubescent in apical two-thirds of 3rd segment as well as all the following segments and sparsely covered with short pubescence on 1st and 2nd, 3rd as long as 4th and two-fifths longer than 2nd; mandibles short and robust, strongly curved inwards before apex, truncate and blunt at tip in left mandible and acute at tip in the right one; labial palpi not slender and bearing long, rather dense pubescence, 2nd rather well thickened distad and one-fifth shorter than 3rd; ligula wide, constricted just behind apex, thence gently arcuate behind and steeply oblique in front, its apex shallowly emarginate, sharply angulate at sides; paraglossae wide and expanded in a fan-shape, fused with ligula up to the ligular constriction; mentum less transverse than in *O. iridulus*, apical border truncate or hardly produced in front; microsculpture mostly invisible, slightly observable as transverse meshes only near apex of labrum and near supraorbital setae.

Pronotum transversely cordiform, two-fifths wider than long, relatively convex and flattened on disc, coarsely punctate all over, the punctures sparse on disc and dense in basal foveae, with very sparse pubescence laterally and basally; sides clearly arcuate in front and almost straight obliquely behind from the widest part at apical two-fifths, shallowly and widely sinuate before base; apex very shallowly emarginate, with a fine border interrupted medially; base one-tenth wider than apex, almost straight and finely and entirely bordered; basal angles a little wider than rectangle, apparently angulate though blunt at tips, without any prominences; each lateral furrow forming a line, not widened behind, and furnished with several fine and short uniseriate setae in apical fourth; basal fovea small, vaguely grooved longitudinally, weakly and roundly swollen beside the groove; two marginal setae present on each side, one situated at the border of apical angle and the other at apical fourth in lateral furrow; microsculpture mostly absent, partly visible (mainly near punctures) as vague transverse lines.

Fully winged. Elytra oblong, subparallel-sided, three-fifths longer than wide, gently and evenly convex, weakly declivous apicad and rather steeply so baso-laterally, covered with dense punctures and pubescence (the pubescence is lacking on disc in the specimen examined probably due to wearing out); base hardly oblique laterad and rounded at humeri; apices not produced behind, gently oblique before tips and separately rounded, obtuse and angulate at sutural angles; striae deep and wide, a little deepened apically and basally, scutellar striole long; intervals weakly convex, becoming higher towards base and sides, 3rd, 5th and 7th intervals bearing a row of setiferous pores along each inner stria, the row composed of 11–12 pores on 3rd, of 8–9 pores on 5th and of 7–9 pores on 7th; marginal series widely interrupted medially, consisting of 8+(7–8) umbilicate pores; microsculpture invisible under 80× magnification.

Ventral surface moderately densely pubescent on abdomen and metasternum and sparsely so on prosternum and pre- and mesepisterna; metepisterna rugose along inner margins, abruptly narrowed behind and three-fourths longer than wide; apical margin of 6th abdominal segment gently arcuately produced even in ♀ and quadrisetose.

Fore tibia sparsely pubescent dorsally, weakly widened distally and triangularly bi-protuberant at apex, armed with three spines along apico-external margin, terminal



Figs. 5–7. Genitalia of *Ophoniscus* spp. —— 5, Stylus of *Ophoniscus iridulus* Bates; 6, stylus of *O. cribrifrons* Bates; 7, male genitalia of *O. insulicola* sp. nov. a: Dorsal side.

spur dentate at both margins; pubescence of tarsi long in mid tarsi and short in hind ones (fore tarsi missing), hind tarsi in ♀ one-tenth shorter than the width of head, 1st segment four-fifths longer than 2nd and as long as 2nd and 3rd together, 4th two-fifths shorter than 3rd, each ventral margin of claw segment trisetose.

Stylus (Fig. 6) short and moderately curved, a long seta situated distantly from apex, basal segment bearing two short setae at outer apical corner, which is tapered, hemisternite with two setae, one inserted at apex and the other a little before apex on inner margin.

Length: 8.5 mm. Width: 3.2 mm.

Specimen examined. 1 ♀, Bhamò, Birmania (Myanmar), IV–1886, Fea leg.

Ophoniscus insulicola sp. nov.

(Figs. 3, 7)

Body oblong, a litte wider than in *O. cribrifrons*, pitchy and slightly brownish black, shiny, with slightly bluish iridescent lustre on elytra, labrum reddish brown, mandibles dark reddish brown; palpi, antennae, and legs light brown; dorsal surface almost lacking in microsculpture, which can be vaguely seen as transverse lines only on elytra.

Head well convex on vertex, rather wide and nearly three-fourths as wide as pronotum, sparsely furnished laterad with coarse punctures bearing short hairs and wholly with very fine punctures; labrum weakly convex, subsquare, and widely and shallowly notched at apex; clypeus quite flat, not rugose even near sides, more deeply emarginate than in the two previous species; clypeal suture shallow but clearly marked, slant at front side; frontal impressions also clear, gradually decreasing in clearness towards eyes, space in front of the impression hardly convex; eyes large and almost hemispherically prominent; temples rather well convergent in prolongation of the curvature of eyes towards neck constriction, bearing sparse pubescence; distance between buccal fissures and genuine ventral margins of eyes short; mandibles short and

robust, blunt and truncate at tip in left mandible, sharper in the right one; antennal segments 4th to apical segments missing, 1st and 2nd bearing very sparse pubescence besides the ordinary setae, 3rd relatively thickened apicad and a half longer than 2nd; labial palpi moderately pubescent, 2nd more or less robust and as long as 3rd; ligula gently expanded medially and constricted behind straight apex, fused with paraglossae up to the constriction; paraglossae not wide and rounded at apices; mentum less transverse than in *O. iridulus*, finely bordered at bottom of apical emargination, slightly protuberant in front of the border, epilobes narrow, weakly widened forwards.

Pronotum transversely quadrate, a half wider than long, widest at apical two-thirds, evenly and rather well convex, finely and moderately punctate throughout and coarsely and sparsely on lateral and basal areas, the coarse punctures partly confluent in basal foveae; sides arcuately convergent in front and straightly so behind from the widest point, slightly sinuate before base; apex shallowly and uniformly emarginate and unbordered medially; base a little wider than apex (1.1 in ratio), indistinctly bisinuate, very gently arcuate laterad, and obscurely bordered only on the arcuate portions; basal angles very obtuse and angularly rounded; lateral furrows narrow, not widened even behind, each with hind one of two marginal setae at the bottom and front one on lateral border; basal foveae ill-defined, shallow and only flattened, sparsely pubescent, the pubescence being spread out into lateral furrows and rarely visible on disc; median line fine and obscure, lying between the two transverse impressions, which are shallow and very vague.

Hind wings entirely developed. Elytra widely oblong, about one and a half times as long as wide and one-third wider than pronotum, uniformly and relatively convex and rather steeply declivous in apical parts, densely and moderately coarsely punctate, covered with dense pubescence; sides subparallel, gradually becoming arcuate behind from apical three-fifths and shallowly sinuate before apex, thence rather abruptly and straightly oblique; apices narrowly, separately rounded, blunt at sutural angles; base shallowly bisinuate, more or less oblique at sides; striae wide, moderately deep on disc and a little deeper near apex, scutellar striole very long; intervals slightly convex on disc, increasing in convexity backwards and weakly ridged near apex, 3rd, 5th and 7th each with uniseriate setiferous pores, 11 pores on 3rd, 8 pores on 5th, and 9 pores on 7th; marginal series divided into two groups, the proximal group composed of 8 umbilicate pores and the apical group of 8–9 pores.

Ventral surface a little more sparsely pubescent than in *O. iridulus*; metepisterna strongly contracted behind and moderately elongate, a half longer than wide; 6th abdominal segment bisetose on each side, slightly emarginate at apex.

Fore tibia sparsely pubescent and not sulcate dorsally, rather well dilated apicad, truncate and micro-protuberant medially at apex, armed with two short spines along apico-external margin, terminal spur distinctly unidentate at each margin; tarsi furnished with long pubescence on dorsal sides (the pubescence being a little shorter on hind tarsi), 1st segment of mid tarsi bearing ventral adhesive hairs only near apex, hind tarsi almost equal in length to the width of head, 1st about a half longer than 2nd and

one-fifth shorter than 2nd and 3rd together, 4th four-fifths as long as 3rd, claw segment quadrisetose along each ventral margin.

Aedeagus (Fig. 7) robust and relatively arcuate, thinned only at apex; apical lamella small, abruptly narrowed and produced in a tongue-shape; inner sac bearing two groups of spines, one composed of many peg-shaped ones and the other of short spinous ones.

Length: 8.2 mm. Width: 3.0 mm.

♀ Unknown.

Holotype: ♂, Ceylon (without further data), (in Museum of Humboldt University).

This new species resembles *O. cribrifrons* BATES but differs from the latter in lacking microsculpture on the head and pronotum, in the pronotum not cordate and more obtuse and blunt at basal angles, and in the elytra more narrowly rounded at apices and with iridescent lustre.

要　約

伊藤　昇: アジア地域のオサムシ科の研究. VIII. *Ophoniscus* 属の種について. ——*Ophoniscus iridulus* BATES および *O. cribrifrons* BATES の再記載をするとともに, Sri Lanka より *O. insulicola* N. ITO. を記載した. この新種は, 2番目の種に似ているが, 前胸背板の形状や微細印刻の差によって区別できる.

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Elytra, *Tokyo*, **22** (1): 89–93, May 15, 1994

A New Genus and Species of Harpaline Carabid Beetle from Central Honshu, Japan

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Abstract A new genus and species of harpaline carabid beetle, *Uenanthracus perigonoides* gen. et sp. nov., is described from central Honshu, Japan. It belongs to the tribe Stenolophini, and is easily recognized from other genera and species on its characteristic facies.

It has been known for some time that a strange brachypterous stenolophine carabid beetle occurs on the low mountains in central Honshu, Japan. At a glance, it looks like a perigonine carabid, but doubtless belongs to the tribe Stenolophini of the Harpalinae. According to HABU's key to genera of the Stenolophina (1973, pp. 301–302), it falls in *Acupalpus* or *Anthracus*, and in his key to the subgenera of *Acupalpus* (*op. cit.*, p. 326), it agrees either with *Pseudanthracus** or with *Acupalpus*. However, it is to some extent intermediate between the two subgenera, and its flat eyes with tumid pubescent post-genae and other features are so distinctive that full generic state of the harpaline seems guaranteed. In this paper, therefore, I am going to propose a new genus for the reception of this remarkable new species and to describe it with illustrations. The abbreviations used herein are the same as those explained in other papers of mine.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for affording me facility for examining the specimens under his care and for reading the manuscript of this paper. Thanks are also due to Messrs. Hitoshi ISHIKAWA and Minoru TAO for their kind supplying with the materials. The holotype is preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are deposited in my collection.

Genus ***Uenanthracus*** nov.

Type species. *Uenanthracus perigonoides* sp. nov.

Description. Elongate, brachypterous. Head large; eyes flat, convex ommatidia well visible; frontal furrows oblique and gently incurvate, linearly and deeply im-

* Erected by HABU (1973, p. 326, foot-note) for the Southeast Asian species *Acupalpus sinuellus* BATES, 1892. It somewhat resembles the present genus and species in configuration of prothorax and elytra, but its head with large hemispherical eyes and undefined post-genae are quite different from the Japanese one.

pressed, extending to the mid-eye level; clypeal suture fine; antennae thick, submoniliform, densely pubescent from segment 3; mentum deeply emarginate and devoid of tooth; ligula narrow, truncate at apex, paraglossae extending beyond the apex of ligula. Pronotum quadrate-subcordate, with rectangular basal angles. Elytra oblong; basal margin level; basal border complete; basal pore present; scutellar striole present; interval 3 with a dorsal pore adjoining stria 2 at apical two-fifths. Abdominal sternites 6–8 minutely pubescent on median parts; anal sternite ciliated on lateral margins, apical margin with a pair of setae in the male, with two pair of setae in the female. Pro- and mesotarsi with adhesive hairs in the male; claw segment with a seta on each lateral margin on the ventral surface.

Range. Honshu, Japan.

The generic name is derived from a combination of *Uéno* and *Anthracus*. It is dedicated to Dr. Shun-Ichi UÉNO.

Uenanthracus perigonoides sp. nov.

[Japanese name: Ohzu-chibi-gomokumushi]

(Figs. 1–5)

Description. Length (measured from apex of labrum to apices of elytra) 3.33–4.10 mm; width 1.33–1.55 mm.

Head dark reddish brown to blackish, though the mandibles, labrum, clypeus and basal third of antennae are reddish brown; pronotum reddish brown, though the lateral parts are lighter; elytra reddish brown to dark reddish brown, area in basal fourth, interval 1 and margins brown to brownish yellow; venter almost wholly reddish brown; palpi, apical halves of antennae, and legs brownish yellow.

Head convex; mandibles moderately long and stout; areas outside frontal furrows with obliquely impressed short furrows; supraorbital seta distant from the post-eye level; frons with a small and rounded fovea at the middle; fronto-vertexal area with irregularly transverse wrinkles; antennae relatively short, reaching behind shoulders; microsculpture well visible, formed by isodiametric meshes. Pronotum moderately convex, widest at apical two-fifths, about 1.3 times as wide as head (PW/HW 1.25–1.29, mean 1.27), as wide as base in almost the same proportion (PW/PBW 1.25–1.34, mean 1.30), about 1.35 times as wide as long (PW/PL 1.33–1.37, mean 1.35); lateral margins evenly and gently arcuate in apical three-fifths, and gently convergent posteriad and sinuate before base; lateral reflexed borders narrow; marginal setae inserted at apical fifth; apical margin gently emarginate, finely bordered on each side, apical angles rather pointed, though dull at the tips; basal margin narrower than the apical, almost straight though slightly oblique on each side, not bordered; basal foveae wide and shallow, often with indistinctly linear impressions at the bottoms; areas outside foveae depressed; median line fine, widening at the basal part and reaching the basal margin; apical and basal transverse impressions weak or obsolete; surface with irregularly transverse wrinkles; microsculpture almost invisible.

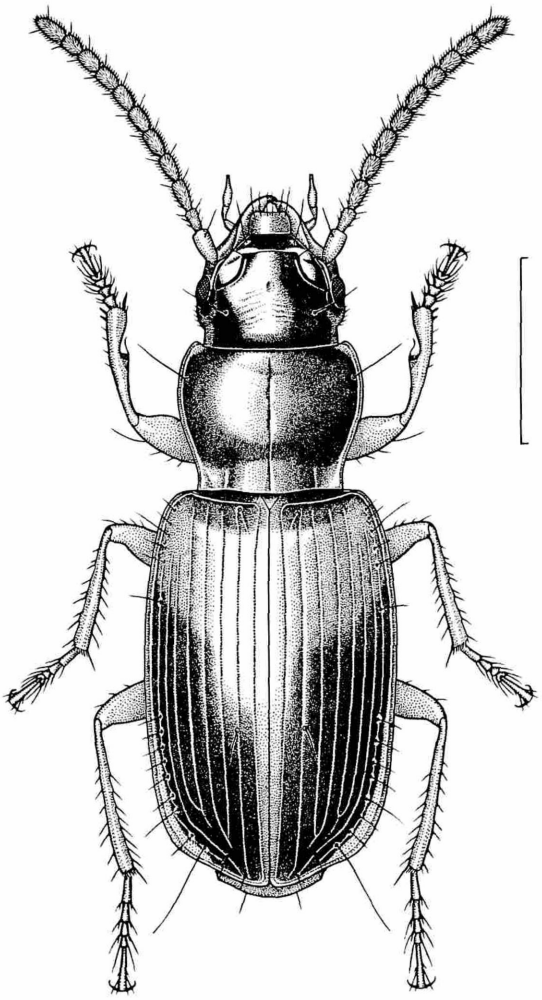
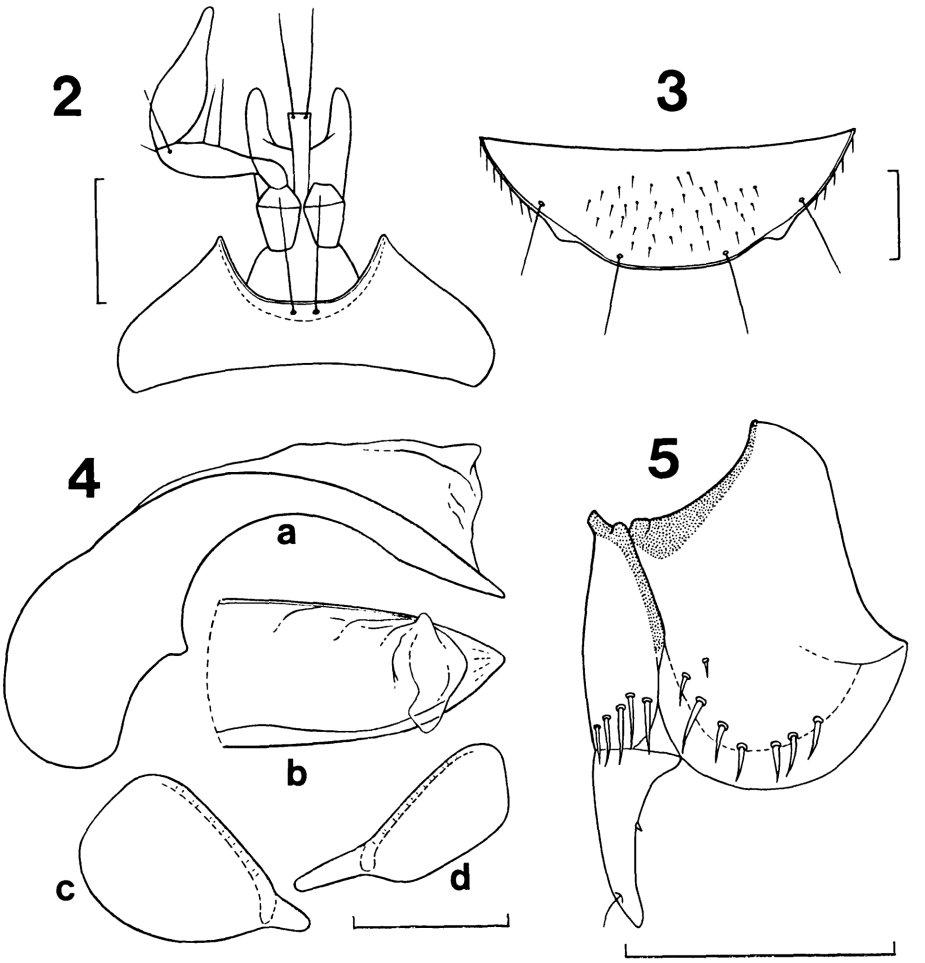


Fig. 1. *Uenanthracus perigonoides* gen. et sp. nov., ♂, from Kiyozasa-tôge, Shizuoka Pref. Scale 1 mm.

Wings short, a half as long as elytra, not folded. Elytra oblong, moderately convex though rather flat on the disc, widest at the middle, about 1.36 times as wide as pronotum (EW/PW 1.33–1.40, mean 1.36), about three times as long as pronotum (EL/PL 2.73–2.88, mean 2.82), about 1.55 times as long as wide (EL/EW 1.50–1.59, mean 1.55); basal margin level; basal border complete, alomst straightly extending to shoulder, and meeting with lateral border at a very obtuse angle; shoulders rounded; lateral margins weakly curved, almost parallel to each other, apices obliquely subtruncate; striae fine, indistinctly crenulate in basal halves, striae 7–8 generally obsolete near shoulder; intervals nearly flat; marginal series of pores 14–15 in number, widely



Figs. 2–5. Mouth-parts, terminal sternite and genitalia of *Uenanthracus perigonoides* gen. et sp. nov., from Kiyozasa-tôge, Shizuoka Pref. —— 2, Mentum, right labial palpus (left one omitted) and ligula with paraglossae in the male; 3, terminal sternite in the female; 4, male genitalia; a–b, aedeagus; a, left lateral view; b, apical half in dorsal view; c, left paramere; d, right paramere; 5, left basal and apical styli with hemisternite. Scales 0.2 mm.

spaced at middle.

Aedeagus stout, very thick in basal third, depressed in apical third, well arcuate at middle, then straightly extending to apex; viewed dorsally, apical lobe triangular, apex pointed though blunt at the tip; inner sac without chitinized sclerite; left paramere wide, truncate at apex; right paramere relatively wide, obliquely truncate at apex; basal stylus and hemisternite each with a row of thick spines; apical stylus narrow, twice as long as base, tapering towards apex, outer ventral margin with a minute spine at the middle.

Type series. Holotype: ♂, Yoko-sawa (320 m alt.), Sawama, Honkawane-chô, Shizuoka Pref., 9–V–1992, S. UÉNO leg. Paratypes: 1 ♂, Haibara-gawa Valley (430 m alt.), Nakakawane-chô, Shizuoka Pref., 10–V–1992, S. UÉNO leg.; 1 ♂, 1 ♀, Kiyozasatôge, Shizuoka-shi, Shizuoka Pref., 1–V–1988, H. ISHIKAWA leg.; 2 ♂♂, Yujima, Shizuoka-shi, Shizuoka Pref., 3–V–1988, H. ISHIKAWA leg.; 1 ♂, Tochiyori, Okutama-chô, Tokyo, 10–VI–1978, M. TAO leg.

Notes. The present new species seems somewhat different ecologically from members of the genera *Acupalpus* and *Anthracus*. It dwells under litter at the edges of secondary forests on low mountains, while those of the latter two genera are hygrophilous and usually found on wet ground in lowlands. It may not live at water edges because of its flightless condition.

要　　約

笠原須磨生：本州産ゴモクムシ（オサムシ科）の1新属新種．—— 本州中部の低山地の落葉下に生息するゴモクムシの新属新種オオズチビゴモクムシ *Uenanthracus perigonoides* を記載した．本種は，一見ホナシゴミムシ類によく似ているが，ゴモクムシ亜科 Harpalinae のマメゴモクムシ族 Stenolophini に属するもので，近縁属のムネミゾチビゴモクムシ属 *Anthracus* やチビゴモクムシ属 *Acupalpus* とは，個眼が明らかで扁平な眼と，細毛の疎生するふくらんだ側頭部や，太い棘が列生する雌交尾器などで区別される．また，前記2属の種が好湿性で平地の湿地などに多いのに対し，低山地の林縁にみられる．後翅の縮小した飛べない小型種であることから，水辺の環境には適さないものと思われる．

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Elytra, Tokyo, **22** (1): 94, May 15, 1994

Oodes echigonus (Coleoptera, Carabidae) Found in Kwantô District, Central Honshu, Japan

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In 1987, I had an opportunity to examine numerous fragments of beetles unearthed at a hamlet remain, which lay on the right side of the River Ara-kawa in Itabashi-ku, Tokyo and was built more than one thousand years ago. Total 352 pieces of fragments comprising 42 species were determined and reported.* Most of them belonged to the Carabidae, and an almost complete pronotum and a small portion of elytron were identified with confidence with *Oodes echigonus* HABU et BABA (1960). It was unknown then from Kwantô District of central Honshu, Japan. The discovery of its fragments suggested that the species may have been distributed to Kwantô at least in former times.

Through the courtesy of Mr. Hideo YAMAZAKI, I was recently able to examine his carabid collection and found a female specimen of *O. echigonus* obtained by himself in Sakura-shi of Chiba Prefecture. I record herewith the first recent example of a remarkable carabid from the Kwantô Plain.

Specimen examined. 1 ♀, Sakura-jôshi, Sakura-shi, Chiba Pref., 12-VIII-1983, H. YAMAZAKI leg. Attracted to a light.

I thank Mr. Hideo YAMAZAKI of Ichikawa Gakuen High School for his kind supplying with invaluable specimen.

* KASAHARA, S., 1988. Insect remains found at Hayasemae in Itabashi-ku, Tokyo. *Hayasemae-iseki Hakkutsu-chôsa Hôkokusho*, pp. 374-385. Shingashi 3-chôme Hayasemae-Iseki Chôsakai, Tokyo. (In Japanese.)

Elytra, Tokyo, **22** (1): 95–96, May 15, 1994

九州におけるミズギワアトキリゴミムシの記録

八　尋　克　郎

YAHIRO, K.: Records of *Demetrias marginicollis* BATES in Kyushu, Japan

ミズギワアトキリゴミムシ属 *Demetrias* は北方系の属で，付節がひろがっていることにより容易に区別でき，本邦からはヒメミズギワアトキリゴミムシ *Demetrias amurensis* MOTSCHULSKY とミズギワアトキリゴミムシ *D. marginicollis* BATES が知られている．これまでの本邦におけるミズギワアトキリゴミムシの分布記録は，HABU (1978)，原色日本甲虫図鑑 (II) や日本産昆虫総目録 (I) によると北海道と本州のみである．

筆者は，上野輝久氏により大分県九重で採集された標本を見る機会をえた．氏によると，アシ原でのビーティングで採れたという．また，九州大学彦山生物学実験所所蔵の標本の中にも本種を見つけることができた．本州産の標本と比較したが相違がないので，本種の西限の分布記録として報告する．九州におけるミズギワアトキリゴミムシの記録を改めて調べたところ，環境庁が編集している日本の重要な昆虫類（南九州・沖縄版）に大分県での採集記録があるくらいで，ほかにはほとんどみあたらない．記録によると標高 800 m 前後の湿原で採れたもので，個体数は少ないらしい．

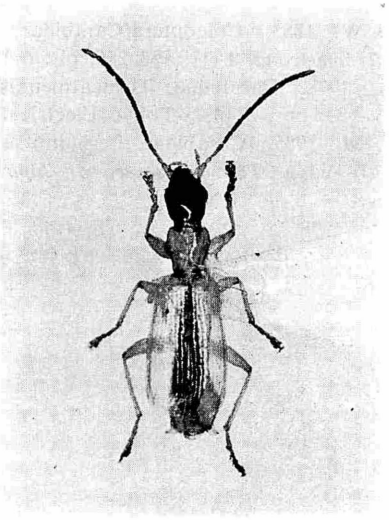

Fig. 1. *Demetrias marginicollis* BATES from Mt. Kujû, Ôita Prefecture.

最後に，貴重な標本を恵与された上野輝久氏と本州産の比較標本を貸していただいた上野俊一博士に厚くお礼を申し上げる．

2♂♂, 2♀♀, 大分県九重町九重山, 25-VI-1992, 上野輝久採集.

2♀♀, 大分県九重町長者原, 26-VI-1969, 10-X-1969, 上宮健吉採集, 九州大学農学部彦山生物学実験所所蔵.

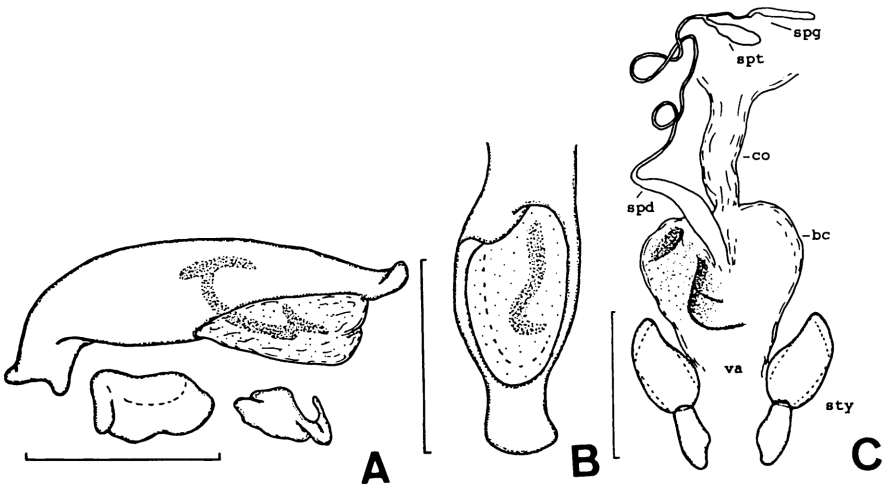

Fig. 2. *Demetrias marginicollis* BATES; A, lateral view of aedeagus, right and left parameres; B, ventral view of aedeagus; C, female reproductive organ. bc, bursa copulatrix; co, common oviduct; spt, spermatheca; spd, spermathecal duct; spg, spermathecal gland; sty, stylus; va, vagina. Scales. A-B, 0.5 mm; C, 0.3 mm.

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Elytra, Tokyo, **22** (1): 97–99, May 15, 1994

Records of Some Beetles of the Suborder Adephaga (Coleoptera) from Honshu, Japan[1)]

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Abstract Records are given for 4 species of cicindelids, 9 species of carabids and 1 species of dytiscid collected in 1993 in Honshu.

In the summer 1993, Dr. N. V. KURZENKO and A. S. LELEJ took part in a joint field survey in Honshu with Dr. Sk. YAMANE and other Japanese entomologists. The main task was to collect any kind of wasps in different biotopes but a small number of beetles were also collected. In this paper the results of our study on the beetles of the suborder Adephaga is given. The list contains 4 species of cicindelids, 9 species of carabids and 1 species of dytiscid. All materials mentioned here were collected by A. S. LELEJ and deposited in the collection of the Institute of Biology and Pedology, Vladivostok. The taxonomic part of this paper was prepared by G. Sh. LAFER. Most species contained in the list are well known in Japan but we hope that new records of some of them may be interesting for coleopterists.

Before going further, we should mention herewith that we are much indebted to Prof. A. SHIBATANI of Kyoto Seika University, Prof. Sk. YAMANE of Kagoshima University, Mr. S. SUGI, Tokyo, Dr. S. MORIUTI of the University of Osaka Prefecture, Dr. Y. MAETA of Shimane University, Dr. S. YAMANE of Ibaraki University, Dr. A. SHIMIZU, Mr. T. TANO, Mrs. C. NOZAKA, Mr. H. KUROKAWA, Mr. T. MUROTA, Mr. Y. HANEDA, Mr. E. NOZAKI, Mr. H. ITAMI and Mr. T. NAMBU for their kind help during the collecting trip in Honshu. We also wish to express our hearty thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critically reading the original manuscript of this paper and for its publication.

Fam. Cicindelidae

1. *Cicindela* (*Apterodela*) *ovipennis* LEWIS

1 ♂, Plateau Akakura-kôgen, 1,000 m in altitude, Niigata Pref., on a hard ground road in a broadleaved forest, 27–VII–1993.

2. *Cicindela* (*Eugrapha*) *elisae* MOTSCHULSKY

2 ♂♂, 1 ♀, Sanri-hama, Fukui Pref., on sand at the mouth of a small stream, 28–VII–1993.

1) Report No. 31 from Russia/Japan Cooperative East Asian Entomological Program.

3. *Cicindela* (*Cicindela*) *japana* MOTSCHULSKY

1 ♂, Plateau Kurohime-kôgen, 900 m in altitude, Nagano Pref., forest glades and roads, 26–VII–1993. The basic colour of body is black. 1 ♀, Plateau Akakura-kôgen, 1,000 m in altitude, Niigata Pref., on hard ground roads and bald spots among grass on glades in a broadleaved forest, 27–VII–1993. 1 ♀, Toniyama, 500–600 m in altitude, Ôno-shi, Fukui Pref., on glades in a broadleaved forest, 29–VII–1993. The basic colour of both the females are greenish-coppery with dark blue points.

4. *Cicindela* (*Sophiodela*) *chinensis japonica* THUNBERG

1 ♀, Ogura Park in Mino-shi, Gifu Pref., 4–VIII–1993, a forest glade at the top of a hill.

Fam. Carabidae

1. *Carabus* (*Ohomopterus*) *insulicola insulicola* CHAUDOIR

1 ♀, Plateau Akakura-kôgen, 1,000 m in altitude, Niigata Pref., in a broadleaved forest with Sasa, 27–VII–1993.

2. *Poecilus* (*Macropoecilus*) *fortipes* CHAUDOIR

1 ♀, Plateau Akakura-kôgen, 1,000 m in altitude, Niigata Pref., a glade in a broadleaved forest, 27–VII–1993.

3. *Amara* (*Amara*) *silvestrii* BALIANI

2 ♂♂, Akuta, Hachiman-chô, Gifu Pref., 4–VIII–1993.

This rare species described from Yunnan Province, China, is characterized by rather vast range of distribution. HIEKE (1981, p. 196) reported it from the south of Ussuri Region, Korea, eastern and southeastern China, northern Burma and from southern Japan, but he did not indicate detailed localities. This species was included in "A Check List of Japanese Insects, Vol. 1" (1989) from "southern Japan" but was not mentioned by K. TANAKA (1985) in "The Coleoptera of Japan in Color, Vol. 2." This is why we hope that new occurrence of *A. silvestrii* in Honshu will be interesting for Japanese specialists. In the Primorye Territory, this species is found only on the two small islands (Bolshoi Pelis Il. and Furugelm Il.) in Peter the Great Bay.

From two related species of the subgenus *Amara* (s. str.), *A. similata chalcites* DEJEAN and *A. congrua* A. MORAWITZ, with which it shares the basal setiferous pores on the elytra and two-coloured legs, *A. silvestrii* is distinguished by notably larger size and peculiar armature of endophallus, which bears a large dark, more or less cylindrical structure with rounded apical end at the left lateral wall (HIEKE, 1975, p. 309, fig. 34; LAFER, 1989, pp. 160, 165, figs. 104–3 and 109–3). From *A. similata chalcites*, it is easily distinguished by deep and close punctures on the metepisterna. The aedeagus was investigated in one of these specimens. In spite of being slightly immature, they are good for study. The size and standard ratios of the body parts are as follows: L 10.0, 9.50; Ls 9.70, 9.75; EL 6.00, 6.00; EW 4.50, 4.45; HL 0.90, 1.05; HW 1.95, 1.95; PA 2.15; 2.20; PW 4.05, 4.03; PB 4.00, 3.85; PL 2.80, 2.70; PLm 2.45, 2.50; PW/HW 2.08, 2.07; PW/PL 1.45, 1.49; PB/PA 1.86, 1.75; EL/EW 1.33, 1.35; EL/PL 2.14, 2.22;

EW/PW 1.11, 1.10. The sculpture of the basal area of pronotum is variable in these specimens. In one of the two, both the basal foveae, inner and outer, are obviously more distinctive, and each covered with a few punctures. In the other, close punctures cover almost whole the basal area except for the middle part, so that the basal foveae are not quite distinctive.

4. *Amara* (*Amara*) *similata chalcites* DEJEAN

1 ♂, Taniyama, 500–600 m in altitude, Ôno-shi, Fukui Pref., 29–VII–1993.

5. *Harpalus* (*Harpalus*) *tinctulus* BATES

12 ♂♂, Niigata-shi, Niigata Pref., 19–VIII–1993. Slightly immature specimens.

6. *Chlaenius* (*Lissauchenius*) *posticalis* A. MORAWITZ

1 ♂, Plateau Kurohime-kôgen, 900 m in altitude, Nagano Pref., 26–VII–1993.

7. *Chlaenius* (*Chlaenius*) *virgulifer* CHAUDOIR

1 ♀, Shinshitsuko Oh-ike, Tsuchiura-shi, Ibaraki Pref., near a bog, 17–VIII–1993.

8. *Parena laesipennis* (BATES)

1 ♀, Matsue-shi, Shimane Pref., in a bamboo grove, 9–VIII–1993.

9. *Planetes puncticeps* ANDREWES

1 ♂, Mt. Haku-san, 300 m in altitude, Oguchi, Ishikawa Pref., 1–VIII–1993.

Fam. Dytiscidae

1. *Eretes sticticus* (LINNÉ)

1 ♂, 1 ♀, Esaki, Gifu-shi, Gifu Pref., in a pool on a road near a river, 5–VIII–1993.

要　約

G. Sh. LAFER • A. S. LELEJ: 本州産オサムシ亜目甲虫類の記録. —— 1993 年の日ロ合同調査で, 本州各地からえられたハンミョウ科 4 種, オサムシ科 9 種およびゲンゴロウ科 1 種の甲虫類を記録した. これらの多くはよく知られている種であるが, 岐阜県八幡町で採集されたウンナンマルガタゴミムシ *Amara silvestrii* BALIANI は, 確実な産地の記録として重要である.

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Elytra, Tokyo, **22** (1): 100, May 15, 1994

Additional Records of *Stenhomalus ater* (Coleoptera, Cerambycidae, Cerambycinae)

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Stenhomalus ater NIISATO et KINUGASA (1982, pp. 12–13, fig. 1 c) was described based on four specimens from northern Thailand. This *Stenhomalus* seems rather rare, since it has not yet been rediscovered in more than the past 10 years. Recently, I was able to examine two specimens of the same species collected near the original locality. Their collecting data are recorded below.

1 ♂, Ban Huai Po (1,600–2,000 m in alt.), Mae Hong Son, 9～16–V–1991, J. HORÁK leg.; 1 ♀, Doi San, Chiang Mai, 4–VI–1993, T. WAKEJIMA leg.

The female specimen examined has a large-sized body (6.95 mm), with pale yellow hind tarsi as in the hind tibiae, and the antennal segments 6–11 are pale yellow on each basal part. In the original description, the type locality was described as "Puping"– Doi Pui, though it should be correctly read "Phu Phing Palace"– Doi Pui.

Thanks are expressed to Messrs. Carolus HOLZHCHUH (Vienna) and Tetsuto WAKEJIMA (Tokyo) for providing with material for my examination.

Reference

NIISATO, T., & K. KINUGASA, 1982. Cerambycid beetles of the genus *Stenhomalus* in northern Thailand (Cerambycidae). *Elytra, Tokyo*, **10**: 11–15.

Elytra, Tokyo, **22** (1): 101–107, May 15, 1994

Notes on the Species of *Nazeris* (Coleoptera, Staphylinidae) from Japan, VII

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Abstract In addition to the description of a new taxon, *Nazeris okinawanus amamianus*, additional data and distribution maps of the Japanese species belonging to the *optatus* group of *Nazeris* are given.

In recent years, the Japanese species of the genus *Nazeris* have been studied progressively, but the result is still insufficient for elucidating the distribution of all the species.

In the present paper, I am going to add a new subspecies of *N. okinawanus* to the Japanese fauna and to give additional data on the known species belonging to the *optatus* group, which can be recognized from the other species on such characters as the pronotum with a few characteristic long setae, the prosternum clearly carinate to near the apex, the male 7th sternite of abdomen more or less depressed along the middle and bearing a sinuation and/or a pair of tufts at the apical margin, and the body generally of pale coloration. Their distribution maps will be given in Figs. 2–4 to illustrate the results of my study hitherto made on the members of the *optatus* group from the Japanese Islands including the Ryukyus.

Nazeris gotoi ITO

Nazeris gotoi ITO, 1986, Ent. Rev. Japan, **41**: 89.

Specimens examined. Amami-Oshima Is., Kagoshima Pref., 1 ♀, Hatsuno, 27–III–1978, S. NAOMI leg.; 2 ♂♂, 1 ♀, same locality, 14–V–1983 and 10–VIII–1984, S. NOMURA leg.; 1 ♀, Chûô Rindô, 18–VI–1980, S. IMASAKA leg.; 1 ♂, Mt. Aburadake, 4–V–1987, S. NOMURA leg.; 1 ♂, 2 ♀♀, Mt. Yuwandake, 11–V–1983 and 5–V–1987, S. NOMURA leg.; 6 ♂♂, 3 ♀♀, Mt. Yuidake, 14～15–V–1983 and 10–VIII–1984, S. NOMURA leg.; 1 ♀, Setouchi, 18–III–1980, S. TANAKA leg.; 1 ♂, 1 ♀, Kominato, 25–XII–1989, Y. SAKAURADANI leg.

Nazeris okinawanus ITO

Nazeris okinawanus ITO, 1986, Ent. Rev. Japan, **41**: 91.
Nazeris okinawanus: ROUGEMONT, 1988, Rev. suisse Zool., **95**: 775.

This species may be discriminated into two subspecies as follows:

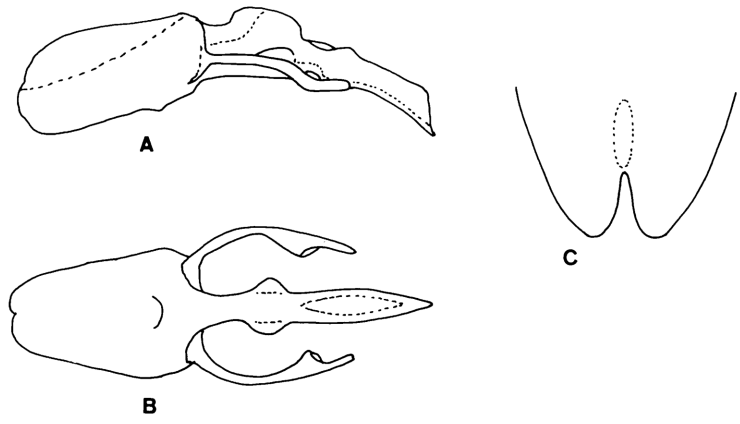

Fig. 1. *Nazeris okinawanus amamianus* subsp. nov.; A, aedeagus in lateral view; B, same in ventral view; C, outline of the 8th sternite in ♂.

Nazeris okinawanus okinawanus Ito

Specimens examined. Okinawa-Hontô Is., Okinawa Pref., 1 ♀, Motobu, 13–III–1978, S. Naomi leg.; 4 ♂♂, 4 ♀♀, Yona, 12 & 15–III–1985, 20–IV–1986 and 12–X–1988, S. Nomura leg.; 1 ♂, 2 ♀♀, Mt. Yonahadake, 31–XII–1976, H. Ohishi leg. and 20–X–1987, Y. Nishikawa leg.; 2 ♀♀, Mt. Nagodake, 30–XII–1976, H. Ohishi leg.; 1 ♂, Mt. Terukubi, 15–III–1985, S. Nomura leg.; 6 ♂♂, 2 ♀♀, Ie-Rindô, 14–III–1985, 22–IV–1986 and 11–X–1988, S. Nomura leg.

Nazeris okinawanus amamianus subsp. nov.

(Fig. 1)

The present subspecies is different from the nominotypical subspecies in the following points: the apophyses of aedeagus slightly stouter and more arcuately expanded externally, the head and pronotum proportionally wider, the postgenae less convergent behind, the body slightly robuster, wholly darker in color and a little larger in size, the length from the base of labrum to the apex of eighth abdominal segment 5.1–5.4 mm (4.7–5.2 mm in the nominotypical subspecies).

Holotype: ♂, Tete, Tokunoshima Is., Kagoshima Pref., 4–V–1988, S. Nomura leg. (Type No. CBM-ZI 33065, Natural History Museum and Institute, Chiba). Paratypes: 1 ♂, Inokawadake, Tokunoshima Is., Kagoshima Pref., 2–V–1988, S. Nomura leg.; 2 ♀♀, Inutabudake, Tokunoshima Is., Kagoshima Pref., 3–V–1988, S. Nomura leg.

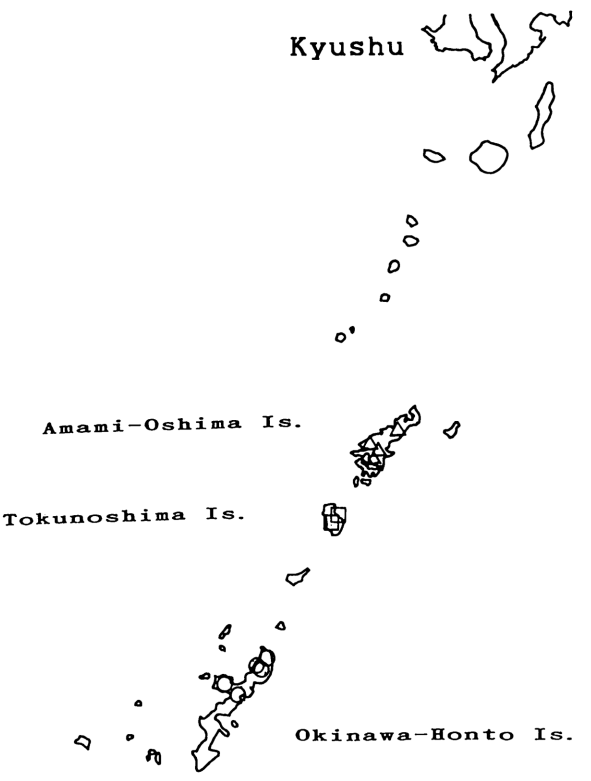

Fig. 2. Map showing the distribution of the group of *Nazeris optatus* in the Ryukyu Islands; △ – *Nazeris gotoi*, □ – *N. okinawanus amamianus*; ○ – *N. okinawanus okinawanus*.

Nazeris hikosanus Ito

Nazeris hikosanus Ito, 1991, Ent. Rev. Japan, **46**: 7.

Specimens examined. 4 ♂♂, 3 ♀♀, Mt. Hiko, Fukuoka Pref., 4–IX–1977, H. Ohishi leg.; 4 ♀♀, same locality, 21–V–1986, S. Nomura leg.; 4 ♀♀, Shin'yabakei, Ôita Pref., 30–III–1985, S. Nomura leg.; 5 ♂♂, 4 ♀♀, Mt. Sobo, Ôita Pref., 23–VII–1983, 4–V–1984 and 17–V–1986, S. Nomura leg.; 1 ♂, 2 ♀♀, Mt. Kurodake, Kujû, Ôita Pref., 3–IX–1982 and 28–V–1986, S. Nomura leg.; 1 ♀, Hazama, Ôita Pref., 5–XI–1985, A. Miyata leg.; 1 ♀, Karishuku, Ôita Pref., 19–II–1985, A. Miyata leg.; 5 ♂♂, 7 ♀♀, Mt. Ohkue, Miyazaki Pref., 8–X–1984, S. Nomura leg.; 2 ♂♂, 5 ♀♀, Mt. Ichifusa, Kumamoto Pref., 12～13–V–1985 and 1～2–VIII–1988, S. Nomura leg.; 1 ♂, 2 ♀♀, Hiyoshi, Kumamoto Pref., 15–X–1977, H. Ohishi leg.; 2 ♂♂, 3 ♀♀, Nagahama, Shimokoshiki Is., Kagoshima Pref., 16–X–1976, H. Ohishi leg.; 5 ♂♂, 3 ♀♀, Omogokei, Ehime Pref., 29–IV & 1–V–1989, T. Ito leg.; 11 ♂♂, 3 ♀♀, Saragamine, Ehime Pref., 1–V–1989, T. Ito leg.; 10 ♂♂, 8 ♀♀, Okudôgo, Ehime Pref., 2–V–1989, T. Ito leg.; 2 ♂♂, 6 ♀♀, Mt. Odami, Ehime Pref., 13～14–VIII–1991 and 12～13–

VI–1992, I. OKAMOTO leg.; 4 ♂♂, 3 ♀♀, Mt. Takanawa, Ehime Pref., 14–IV, 6–V, 1–VI, 24 & 31–VIII–1991, I. OKAMOTO leg.; 4 ♂♂, Houjô, Ehime Pref., 27–VII & 9–XI–1991, I. OKAMOTO leg.; 4 ♂♂, Nibukawa Spa, Ehime Pref., 18–V, 16–VIII and 22–IX–1991, I. OKAMOTO leg.; 1 ♂, Kikumachô, Ehime Pref., 20–IX–1991, I. OKAMOTO leg.; 12 ♂♂, 23 ♀♀, Ashizuri, Kôchi Pref., 5～7–V–1988, T. ITO leg.

Nazeris hisamatsui ITO

Nazeris hisamatsui ITO, 1991, Ent. Rev. Japan, **46**: 8.

Specimens examined. 1 ♂, Tara, Fujitsugun, Saga Pref., 14–V–1985, S. NOMURA leg.; 1 ♀, Buzenbô, Fukuoka Pref., 30–IV–1983, S. NOMURA leg.; 2 ♂♂, 2 ♀♀, Mt. Hiko, Fukuoka Pref., 8–VIII–1977, S. NAOMI leg.; 3 ♂♂, 2 ♀♀, Mt. Kurodake, Kujû, Ôita Pref., 28～29–IV & 15–IX–1985 and 28–V–1986, S. NOMURA leg.; 1 ♂, Mt. Hakuchô, Kumamoto Pref., 27–V–1978, T. OGATA leg.; 2 ♂♂, same locality, 17–XI–1980, H. TAKEMOTO leg.; 4 ♂♂, 2 ♀♀, same locality, 30–V–1985 and 5–IV–1987, S. NOMURA leg.; 2 ♀♀, Mt. Daikinbou, Kumamoto Pref., 18–X–1988, S. NAOMI leg.; 2 ♂♂, Mt. Ishizuchi, Ehime Pref., 3–VIII–1977, N. TSURUSAKI leg.; 1 ♂, same locality, 16–VI–1981, S. NAOMI leg.; 3 ♂♂, 1 ♀, same locality, 14 & 21–VII–1991 and 27–IV–1992, I. OKAMOTO leg.; 1 ♀, Omogokei, Ehime Pref., 15–VI–1981, S. NAOMI leg.; 1 ♂, 1 ♀, Mt. Odami, Ehime Pref., 13 & 19–VI–1992, I. OKAMOTO leg.; 18 ♂♂, 6 ♀♀, Mt. Tsurugi, Tokushima Pref., 15～17–X–1980 and 19～20–VI–1981, S. NAOMI leg.

Nazeris omogonis ITO

Nazeris omogonis ITO, 1991, Ent. Rev. Japan, **46**: 10.

Specimens examined. 5 ♂♂, 3 ♀♀, Mt. Odami, Ehime Pref., 13 & 14–VI–1992, I. OKAMOTO leg.; 4 ♂♂, 2 ♀♀, Mt. Takanawa, Ehime Pref., 1–VI & 6–VII–1991 and 31–V–1992, I. OKAMOTO leg.; 1 ♂, Okudôgo, Ehime Pref., 15–VI–1991, I. OKAMOTO leg.

Nazeris pacificus ITO

Nazeris pacificus ITO, 1990, Ent. Rev. Japan, **45**: 99.

No additional records.

Nazeris shibatai ITO

Nazeris shibatai ITO, 1990, Ent. Rev. Japan, **45**: 97.

Specimens examined. 7 ♂♂, 3 ♀♀, Mt. Iwawaki, Osaka Pref., 30–IV–1986, T. ITO leg.; 2 ♀♀, Kawachinagano, Osaka Pref., 27 & 28–X–1984, M. YASUI leg.; 8 ♂♂, 7 ♀♀, Mt. Kasuga, Nara Pref., 15–XI–1987, 30–X–1988 and 22–I–1989, S. TAKAHASHI leg.; 1 ♀, Hasedera, Nara Pref., 14–IV–1959, T. SHIBATA leg.; 3 ♂♂, 1 ♀, same locality,

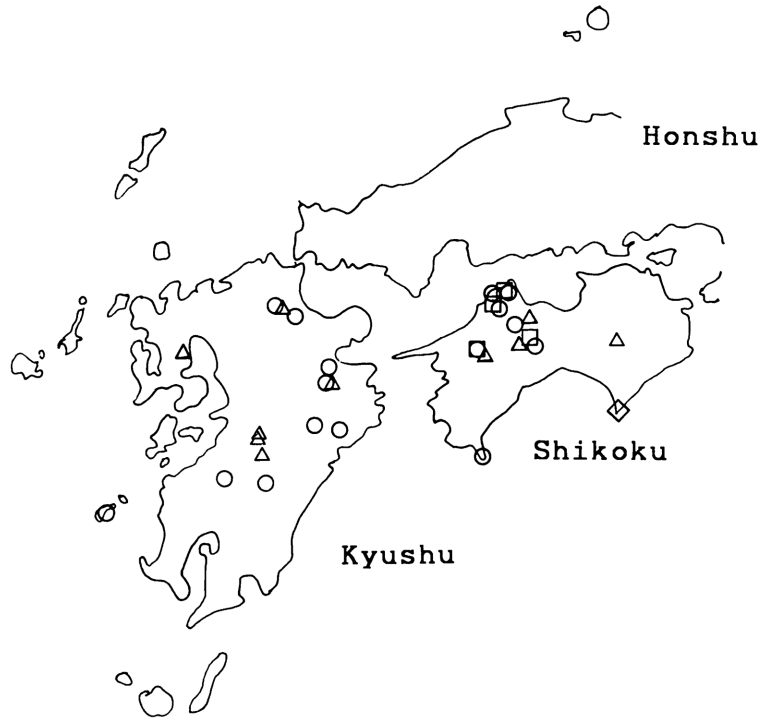

Fig. 3. Map showing the distribution of the group of *Nazeris optatus* in Kyushu and Shikoku; ○ – *Nazeris hikosanus*, △ – *Nazeris hisamatsui*, □ – *Nazeris omogonis*, ◇ – *Nazeris pacificus*.

22–VIII & 20–XI–1966, T. Ito leg.; 16 ♂♂, 16 ♀♀, Tônomine, Nara Pref., 13–VII–1985 and 5–V & 12–X–1986, T. Ito leg.; 5 ♂♂, 6 ♀♀, Murooji, Nara Pref., 10–X–1984, T. Ito leg.; 3 ♂♂, Onoji, Nara Pref., 10–X–1984, T. Ito leg.; 6 ♂♂, 11 ♀♀, Imoyama, Nara Pref., 2–VI & 15–IX–1984, T. Ito leg.; 1 ♂, Mt. Yoshino, Nara Pref., 20–X–1984, M. Yasui leg.; 5 ♂♂, 3 ♀♀, same locality, 27–V–1985, S. Nomura leg.; 13 ♂♂, 7 ♀♀, Dorogawa, Nara Pref., 1–V–1985, T. Ito leg.; 3 ♂♂, 2 ♀♀, Mt. Inamura, Nara Pref., 11–VI–1993, T. Ito leg.; 8 ♂♂, 10 ♀♀, Mt. Kohjin, 30–VI–1968, 17 & 18–VII and 19–VIII–1976, T. Ito leg.; 1 ♂, Ohdaigahara, Nara Pref., 2–VIII–1967, H. Nomura leg.; 1 ♀, same locality, 25～26–VI–1981, S. Naomi leg.; 1 ♀, Akame, Mie Pref., 24–IX–1984, T. Ito leg.; 4 ♂♂, 4 ♀♀, Mt. Kuroso, Mie Pref., 2–X–1993, T. Ito leg.; 1 ♂, Hirakura, Mie Pref., 8–IX–1957, K. Ishida leg.; 7 ♂♂, 10 ♀♀, same locality, 2–X–1993, T. Ito & K. Mizuno leg.; 2 ♂♂, 4 ♀♀, Mt. Asama, Ise, Mie Pref., 20–X–1990 and 4–XII–1993, T. Ito leg.; 18 ♂♂, 17 ♀♀, Mt. Aomine, Toba, Mie Pref., 27–VIII–1984, T. Ito leg.; 11 ♂♂, 8 ♀♀, Tamagawakyô, Wakayama Pref., 24 & 25–VIII–1985, T. Ito leg.; 2 ♂♂, 4 ♀♀, Mt. Gomanodan, Wakayama Pref., 22～23–VI–1981, S. Naomi leg.; 26 ♂♂, 9 ♀♀, Mt. Ohtô, Wakayama Pref., 28～29–VI–1981, S. Naomi leg.; 1 ♂, Mt. Nachi, Wakayama Pref., 16–V–1964, M.

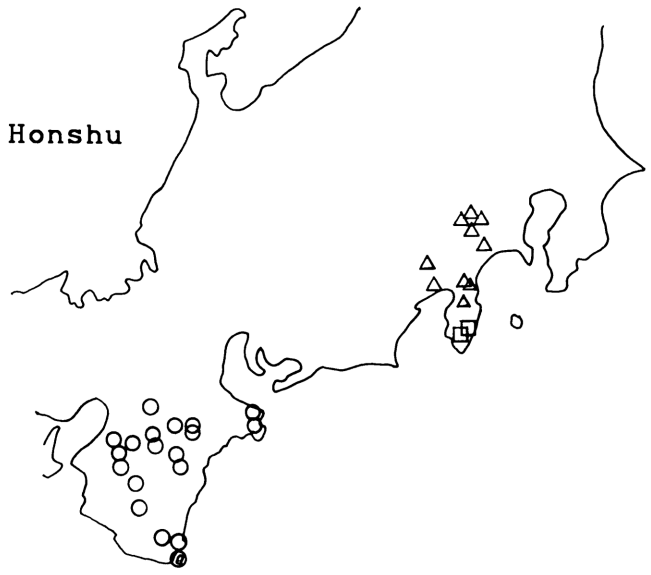

Fig. 4. Map showing the distribution of the group of *Nazeris optatus* in Honshu; ○ – *Nazeris shibatai*, △ – *Nazeris optatus*, □ – *Nazeris watanabei*.

YASUI leg.; 4 ♂♂, 5 ♀♀, same locality, 21–VII–1984 and 20–VII–1985, T. ITO leg.; 1 ♂, Kii-Ôshima Is., 4–V–1962, H. NOMURA leg.

Nazeris optatus (SHARP)

Mesunius optatus SHARP, 1889, Ann. Mag. nat. Hist., (6), **3**: 322.

Nazeris optatus: BERNHAUER & SCHUBERT, 1912, Coleopt. Cat., Staphylinidae III, 212; KOCH, 1939, Ent. Bl., **35**: 160; SCHEERPELTZ, 1957, Kol. Rdsch., **35**: 20; ADACHI, 1955, J. Toyo Univ., (7): 17; 1957, ibid., (11): 189; SHIBATA, 1977, Annual Bull. Nichidai Sanko, (20): 31; ITO, 1990, Ent. Rev. Japan, **45**: 67.

Specimens examined. 1 ♂, 4 ♀♀, Ôhito Spa, Shizuoka Pref., 4–XI–1991, T. ITO leg.; 2 ♀♀, Mt. Kamiyama, Hakone, Kanagawa Pref., 30–VI–1983, Y. WATANABE leg.; 3 ♂♂, Sengokubara, Hakone, Kanagawa Pref., 25–X–1985, S. NOMURA leg.; 1 ♂, Mt. Sôunzan, Hakone, Kanagawa Pref., 28–III–1990, T. ITO leg.; 14 ♂♂, 6 ♀♀, Mt. Mitake, Tokyo Metr., 12–VIII–1990 and 1–V–1991, T. ITO leg.; 1 ♂, 1 ♀, Fureoka, Ôtsuki, Yamanashi Pref., 23–V–1982, Y. WATANABE leg.; 7 ♂♂, 16 ♀♀, Mt. Daibosatsu, Yamanashi Pref., 15～18–VII–1982, S. NAOMI leg.; 15 ♂♂, 5 ♀♀, Aokigahara, Mt. Fuji, Yamanashi Pref., 23–VII–1984 and 29–VIII–1987, S. NOMURA leg.

Nazeris watanabei ITO

Nazeris watanabei ITO, 1990, Ent. Rev. Japan, **45**: 70.

Specimen examined. 1 ♂, Amagi Pass, Izu, Shizuoka Pref., 23–VII–1982, S.

NAOMI leg.

In closing this brief paper, I would like to express my indebtedness to all the gentlemen whose names are printed in the sections of type and specimens examined in a series of papers entitled "Notes on the species of *Nazeris* from Japan" inclusive of the present one.

要　約

伊藤建夫: 日本産 *Nazeris* 属ハネカクシについて. VII. —— 日本産 *Nazeris* 属の研究は近年になって進展したが, まだ全貌を明らかにするにはいたっていない. 本論文は, この属のハネカクシのうち, 前胸背板に数本の長剛毛があり, 雄第7腹板に切り込みや毛束があるなどの特徴をもつ *optatus* 群について, 今までのデータを追加報告した. そのうち徳之島産のものは, 沖縄産のものに類似するが, 雄交尾器に差異を認めたので *Nazeris okinawanus amamianus* subsp. nov. として記載し, また *optatus* 群の全種についての分布図を示した.

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SHARP, D., 1889. The Staphylinidae of Japan. *Ann. Mag. nat. Hist.*, (6), **3**: 319–334.

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Elytra, Tokyo, **22** (1): 108, May 15, 1994

新 刊 紹 介

彩色圖鑑海南・廣東的天牛. 華 立中・奈良 一・余 清金共著. (Longicorn Beetles of Hainan & Guangdong. By HUA, L.-Z., H. NARA & C.-K. YU.) 320 pp., 24 pls. 1993. 木生昆蟲博物館叢書.

1992年夏の北京の国際昆虫学会議に前後して，国外に向けた中国の開放政策もとかく出足の鈍かった昆虫界に浸透しはじめ，閉鎖的だと思われていた研究者たちの動向がようやく私たちの情報ネットの範疇に入ってくるようになった．それにともない，個人レベルの交流もいままでのような論文の交換だけにとどまらず，共同研究や調査が積極的に進められている．また，このような国外との交流は，昆虫関係図書の出版の動きにもあらわれだした．中国では，論文を発表する研究者の増加に対して，それらに対応，受理できる国内の雑誌の数がひじょうに少なく，たとえばいま「昆虫学報」や「動物分類学報」に論文を投稿したとしても，その出版はおそらく4～5年も先のことになるという．中国国内の出版事情は，それほどまでに悪いらしい．そこで考えられるのは，台湾や日本などの雑誌や研究機関を媒体とした出版で，この動きは今後ますます活発になるものと思われる．最近，台湾の木生昆蟲博物館より出版された表題の本も，おそらくその一環ととらえられるものであろう．

昨年の2月に，第一著者である華教授を広東省広州市の中山大学に訪ねたとき，本書のゲラを見せていただき，この出版のことをはじめて知ることになった．本書は，台湾の余清金氏らと華教授との間で私的に計画されたもので，もちろん事前の情報などは皆無であったが，ゲラ刷りのコピーを通読させていただき，中国のカミキリムシの，最近のしかも具体的な情報にひどく興奮したことを憶えている．ちょうど華教授の研究室には，本書の図版に使用した標本が撮影時そのままの状態で保管されていて，ゲラの解説と実際の標本を同時にみることができた．華教授とはいくつかの共同研究の約束もあったので，本書のゲラに散見された疑問点や誤同定について指摘したのだが，その後に華教授の校閲を経ないまま本書が世に出てしまい，その意味では悔いの残る出版物となってしまった（学名のミスなどについてはその後，正誤表で訂正された）．

華教授のおられる中山大学の前身は，米国のミッション系嶺南大学で，故 J. L. GRESSITT 博士が1938～1949年の11年間滞在し，中国のカミキリムシやハムシの研究をされていたことでよく知られている．華教授の研究室には，当時の GRESSITT 博士の基準標本を含む収集標本がそっくり引き継がれていて，研究環境としてはすこぶるよい状態にある．今回の出版物の図版写真にも，GRESSITT 博士の基準標本が多く掲載されていて，本書の文献的な価値をたかめている．

さて，本書の内容であるが，1988年にやはり木生昆蟲博物館から出版された「彩色圖鑑台湾的天牛」のスタイルを発展的に踏襲し，冒頭の24ページに及ぶ原色図版と本文解説とによって構成されている．本文は検索表（亜科，族，属，種）と種の解説（形態，寄主植物，分布）とであるが，この部分は中文と英文の2部で構成されていて，中国語圏以外の読者を対象とする配慮が評価される．原色図版の仕上りは比較的よいが，図版を一括撮りしているために，小型種では識別がむずかしい．また，図版の横には美しい生態写真が添えられている．本文解説は簡潔でわかりやすいが，対象地域を海南省と広東省に限定しているので，この両地域から未記録の種については検索表が対応できない難がある．とはいえ，総掲載種数は406種に及び，それらが原色写真で一覧できる利便さは計り知れない．また，中国でも南西よりの地域を扱っている関係から，ベトナムなど近隣地域の資料の同定にも活用できるものと思われる．

（新里達也）

Elytra, Tokyo, **22** (1): 109–113, May 15, 1994

A New Apterous *Ochthephilum* (Coleoptera, Staphylinidae) from Yunnan Province, Southwest China

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Abstract A new species of the genus *Ochthephilum* is described under the name of *O. yunnanense*, with illustrations of habitus, secondary sexual character of the abdominal sternites and the genital organ in the male. It was found from under dead leaves and in the litter zone of tropical rain forests in Xishuangbanna of Yunnan Province, Southwest China.

So far as has been known to the authors, five species of the genus *Ochthephilum* have hitherto been known from China. Three of them were reported from North China by BERNHAUER (1928, p. 38) and LI and CHEN (1990, p. 17), and the other two from South China by BERNHAUER (1941, p. 227) and SCHEERPELTZ (1933, p. 1297).

By the Sino-Japanese cooperative study on the soil fauna of tropical forests in Yunnan Province of Southwest China, made twice in the end of October, 1992, and the middle of September, 1993, an interesting species of the genus *Ochthephilum* was found from under dead leaves and in the litter zone of tropical rain forests in Xishuangbanna of Yunnan Province, Southwest China. After a careful examination, it has become clear that it is new to science for reason of disagreement with the known congeners in the shape of the head, antennal articulation and configuration of the secondary sexual character of the abdominal sternites. It will be described in the present paper. The holo- and allotypes of the new species to be described are deposited in the collection of the Shanghai Institute of Entomology, Academia Sinica, China, and the paratypes are distributed to the collection of the Kunming Institute of Zoology, Academia Sinica, China, National Science Museum (Nat. Hist.), Tokyo, and the Laboratory of Entomology, Tokyo University of Agriculture.

Before going further, the authors wish to express their hearty thanks to Professor YIN Wen-ying of the Shanghai Institute of Entomology, Academia Sinica, and Profes-

1) This study is supported by the Grant-in-aid No. 04041042 for Field Research of the Monbusho International Science Research Program, Japan.

sor Gentaro IMADATÉ of Tokyo Medical and Dental University for their kind help through the Sino-Japanese cooperative study. Deep gratitude is also due to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, Assoc. Professor LUO Zhi-yi of the Shanghai Institute of Entomology, Academia Sinica, and Mr. Yasutoshi SHIBATA, Tokyo, for their advice on the present study, and to Professor Hiroshi TAMURA of Ibaraki University, Mito, and the members of the Sino-Japanese cooperative study for their kind collaboration in searching for this new species in the field.

Ochthephilum yunnanense sp. nov.

(Figs. 1–5)

Body elongate, parallel-sided and somewhat depressed above. Colour black and shining, with elytra narrowly and obscurely reddish along posterior margin, mouth parts, antennae and legs reddish brown, though the femora are yellowish.

Male. Head subtrapezoidal and somewhat depressed above, apparently longer than broad (length/width=1.17), widest at posterior fourth and more strongly narrowed anteriad than posteriad, with lateral sides gently arcuate in posterior third and nearly straight in anterior two-thirds; postocular part long, nearly three times as long as the longitudinal diameter of each eye; surface densely covered with rugose umbilicate punctures, which become finer and closer in latero-posterior parts, though smooth in frontal area between antennal tubercles which are well elevated and glabrous. Antennae geniculate, rather slender and not thickened apicad, three proximal segments polished, the remainings opaque, 1st segment the longest and dilated towards the apex, 7 times as long as broad, 2nd short, less than one-fifth as long as 1st and twice as long as broad, 3rd elongate, a little longer than 2nd (3rd/2nd=1.25) and twice as long as broad, 4th somewhat shorter than 3rd (4th/3rd=0.80) though more than 1.5 times as long as broad, 5th to 9th equal in both length and width to one another, each a little longer than broad (length/width=1.40), 10th slightly shorter than 9th (10th/9th=0.91) though somewhat longer than broad (length/width=1.28), apicalmost longer than 10th (apicalmost/10th=1.19) and more than 1.5 times as long as broad.

Pronotum subcylindrical and distinctly longer than broad (length/width=1.23), slightly shorter (pronotum/head=0.92) and a little narrower (pronotum/head=0.88) than head, widest between anterior angles and apparently narrowed posteriad; lateral sides almost straight, but slightly emarginate behind the middle; anterior margin gently rounded, posterior one almost straight though slightly emarginate at the middle, anterior angles bluntly angulate, posterior ones narrowly rounded; surface much more coarsely and less closely punctured than on head, bearing a longitudinal smooth area along the median line, the posterior half of which is a little elevated. Scutellum subtriangular, surface somewhat convex and provided with a few setiferous punctures. Elytra square and somewhat depressed above, evidently longer than broad (length/width=1.19), slightly broader than (elytra/pronotum=1.03) but equal in length to pronotum; lateral

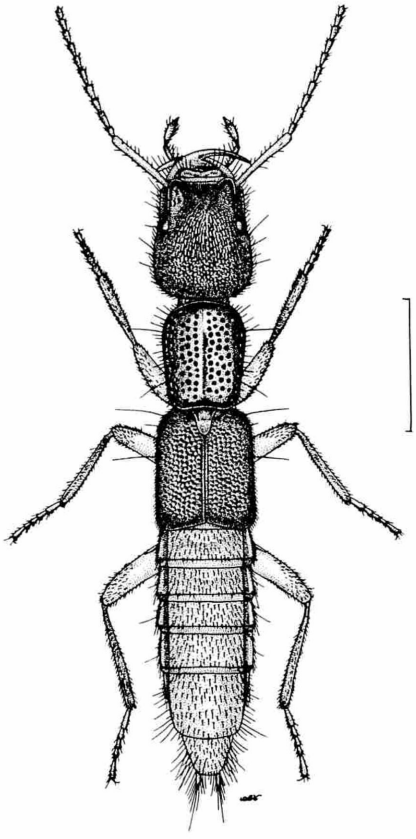


Fig. 1. *Ochthephilum yunnanense* sp. nov., ♂. Scale: 2.0 mm.

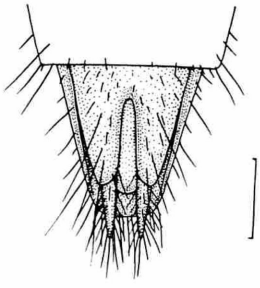
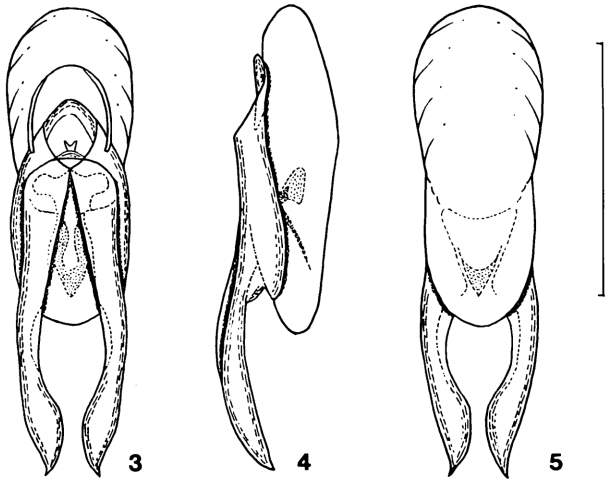


Fig. 2. Last abdominal sternite in male of *Ochthephilum yunnanense* sp. nov. Scale: 0.5 mm.

sides almost straight, posterior margin forming an obtuse re-entrant angle, posterior angles rounded; surface densely covered with coarse umbilicate punctures; each epipleuron provided with a fine longitudinal keel which is obscure behind humeral angle. Hind wings degenerated to minute lobes. Legs relatively elongate, anterior tarsi thin.

Abdomen elongate and almost parallel-sided; basal three visible tergites each transversely and shallowly depressed along basal margin and moderately closely cov-



Figs. 3–5. Male genital organ of *Ochthephilum yunnanense* sp. nov.; ventral view (3), lateral view (4), and dorsal view (5). Scale: 1.0 mm.

ered with coarse setiferous punctures, apical three visible tergites more sparingly and more finely punctured than on the preceding three tergites; preapical sternite provided with a deep V-shaped notch at the middle of posterior margin.

Genital organ sclerotized except for membraneous median lobe, elliptical, almost symmetrical. Median lobe relatively broad, gradually narrowed apicad and gently rounded at the apex. Parameres elongate, remarkably longer than median lobe, curved dorsad in posterior two-thirds in profile; each somewhat constricted behind the middle and widened before the apex, curved inwards in apical half and ending in a small acute denticle directed outwards as seen from ventral side.

Female. Similar to male in facies and size, though the preapical sternite is rounded at the middle of posterior margin.

Type series. Holotype: ♂, allotype: ♀, tropical rain forest (Tropical Botanical Garden), Menglun, Mengla County, Xishuangbanna, Yunnan Province, Southwest China, 29–X–1992, Y. WATANABE leg. Paratypes: 1 ♀, same locality as for the holotype, 10–V–1992, XIAO N. leg.; 4 ♂♂, 1 ♀, same data as for the holotype; 1 ♂, 2 ♀♀, same locality and collector as for the holotype, 28–X–1992; 3 ♂♂, 2 ♀♀ same locality as for the holotype, 29–X–1992, S. UÉNO leg; 4 ♂♂, 9 ♀♀, same locality as for the holotype, 10–IX–1993, Y. WATANABE & XIAO N. leg.; 1 ♀, same locality and collector as for the above, 11–IX–1993; 1 ♂, same locality and collector as for the above, 12–IX–1993; 1 ♀, tropical rain forest in a limestone area near Tropical Botanical Garden, Menglun, Mengla County, Xishuangbanna, Yunnan Province, Southwest China, 30–X–1992, Y. WATANABE leg.; 1 ♂, same locality as for the above, 10–IX–1993, Y. WATANABE & XIAO N. leg.; 1 ♂, same locality and date as for the above, K. FUKUYAMA leg.; 6 ♂♂, 1 ♀, Mengla Nature Protective Area, Mengla County, Xishuangbanna,

Yunnan Prov., Southwest China, 13–IX–1993, Y. WATANABE & XIAO N. leg.

Distribution. Southwest China (Yunnan Prov.).

Notes. The present new species is similar in general appearance to *O. semiopacum* (EPPELSHEIM) (1895, p. 402) from Pegu, but differs from it in the following points: head subtrapezoidal, 5th to 9th antennal segments almost equal in length to one another, legs reddish brown except for yellowish femora, 5th abdominal sternite in male nearly truncate or only feebly emarginate at the middle of posterior margin and lacking clearly impressed smooth space before the middle of posterior margin.

All the specimens of this new species were found from under dead leaves and in the litter zone of the tropical rain forest of Tropical Botanical Garden, Academia Sinica, and its vicinities.

要　　約

渡辺泰明・蕭　宇年：中国云南省から採集された後翅の退化した *Ochthephilum* 属の1新種．——1992および1993年の両年にわたって実施された中日共同学術調査によって，中国云南省西双版納の熱帯植物園およびその近隣地域の，熱帯雨林の林床に堆積した腐葉層や落ち葉の下から，*Ochthephilum* 属の1種が採集された．この種は後翅が退化したきわめて興味深いもので，詳細に検討した結果，新種と判定されたので，下記のとおり命名記載した．

Ochthephilum yunnanense Y. WATANABE et XIAO, sp. nov.

本種は，体長および外部形態は EPPELSHEIM によって Pegu から記載された *O. semiopacum* に類似しているが，頭部は梯形を呈し，触角の第5から9節までの各節はほぼ同長で，肢は黄色い腿節を除いては赤褐色を呈し，雄の第5腹板には明瞭な第二次性徴が表われないなどの特徴によって区別される．

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Elytra, Tokyo, **22** (1): 114, May 15, 1994

New Record of Staphylinid Species from Rebun-tô Island, Northeast Japan

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In one of the previous papers of ours (WATANABE & SHIBATA, 1965, pp. 317–323), nine species of staphylinid beetles were recorded from Rebun-tô Island off northern Hokkaido, Japan.

The following four staphylinid species are newly added to the fauna of that island in the present short report. All the specimens were collected at Kafuka (60 m alt.) of Rebun-tô Island on August 11, 1990, by Dr. Shun-Ichi UÉNO. I thank him for his kindness in giving me the opportunity of examining the specimens.

1. *Stilicoderus japonicus* Y. SHIBATA 1♂.
2. *Stilicoderus signatus* SHARP 1♂.
3. *Othius rosti* BERNHAUER 2♂♂.
4. *Nitidotachinus impunctatus* (SHARP) 1♀.

Reference

WATANABE, Y., & Y. SHIBATA, 1965. The staphylinid-beetles from Rishiri and Rebun Isls., Hokkaido, Japan, with descriptions of three new species. *Kontyû, Tokyo*, **33**: 317–323.

Elytra, Tokyo, **22** (1): 115–131, May 15, 1994

Studies on the Asian Staphylininae (Coleoptera, Staphylinidae)

II. On the Characteristics of the Genus *Philonthus* CURTIS, *sensu stricto*, with a Redescription of *Philonthus splendens* (FABRICIUS)

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Abstract Characteristics of the staphylinid genus *Philonthus* CURTIS (s. str.) are reviewed, and its type species, *Ph. splendens* (FABRICIUS), is redescribed

The genus *Philonthus* (s. lat.) includes a large number of species, and even now many new species are being reported from all over the world. It is currently classified into several subgenera, and the subgenus *Philonthus* (s. str.) is again split up into many species-groups.

Philonthus is the type genus of the tribe Philonthini COIFFAIT and occupies an important position in the subfamily Staphylininae. For revising the phylogeny of the Staphylininae, therefore, it is indispensable to seize the diagnostic characters of the genus *Philonthus* CURTIS.

Philonthus splendens (FABRICIUS), the type species of the genus, is rather a peculiar species and seems isolated in the genus. If *Philonthus* is interpreted in a strict sense, systematic status of many species currently regarded as members of *Philonthus* become problematical. It is therefore reasonable first to make a close investigation into the morphological features of *Ph. splendens* (FABRICIUS).

In the second part of this series, I am going to redescribe this species and to make comment on the genus *Philonthus* (s. str.) after comparing some *Philonthus* species with it. The main terminology and the abbreviations used herein are the same as those explained in the first part of this series with some additional ones as follows: sutural space (ss) of elytra=space between suture and parasutural line.

Before going further, I wish to express my hearty thanks to Dr. Ales SMETANA of the Research Branch of Agriculture Canada for giving me an opportunity to examine *Philonthus splendens* (FABRICIUS), and to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his invaluable advice in preparing the manuscript of this paper.

Philonthus (s. str.) ***splendens*** (FABRICIUS)

(Figs. 1–18)

Staphylinus splendens FABRICIUS, 1792, Ent. Syst., 1 (1): 523.

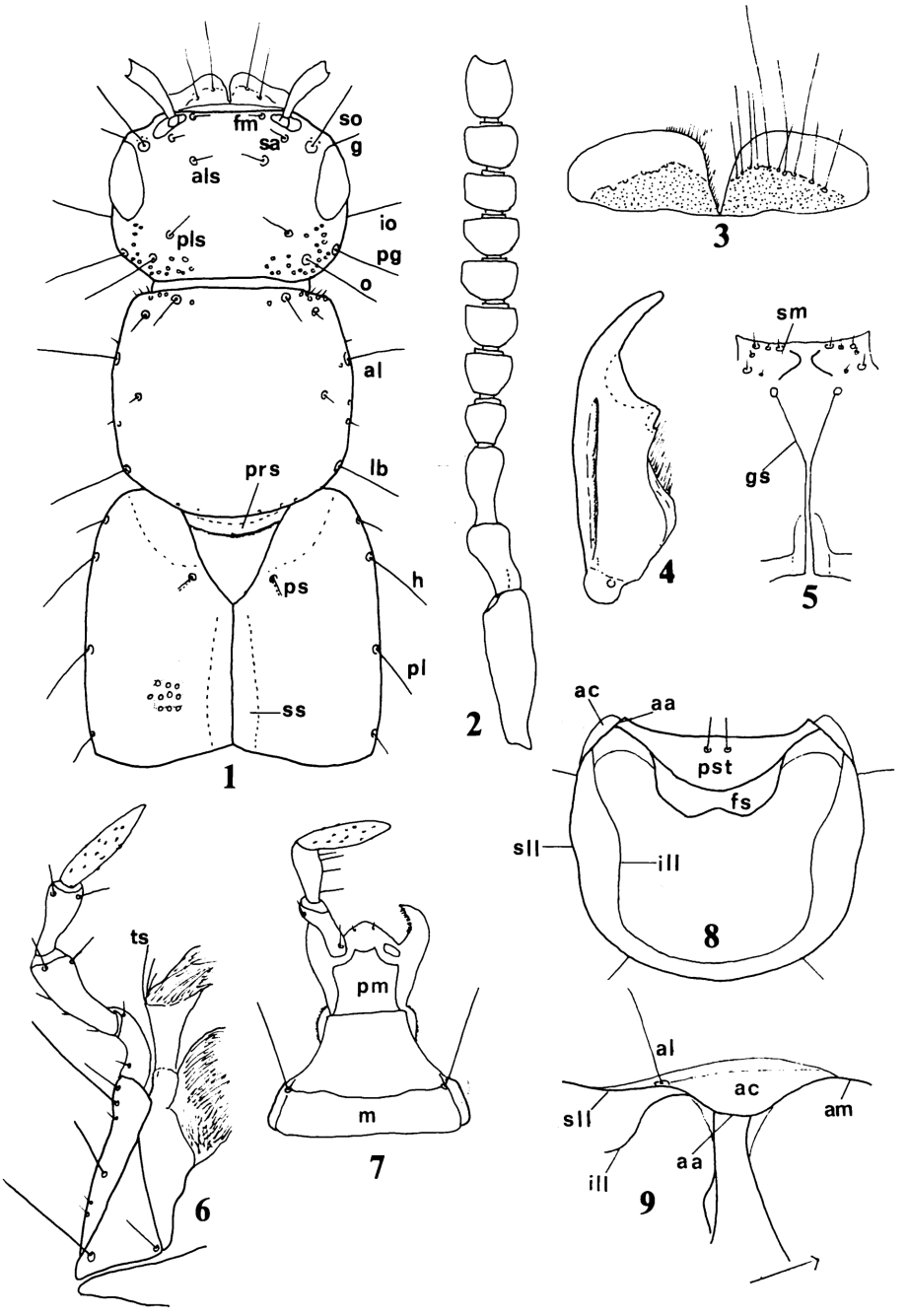
Philonthus (s. str.) *splendens*: COIFFAIT, 1974, Nouv. Rev. Ent., Suppl., **4** (4): 122–127, 128–130, 266–267.
Other references are omitted.

Body robust, thick, subparallel-sided and fairly shiny; colour black, mouth organs dark brown to pitchy, antennae and legs blackish brown, elytra pitchy black with weak aeneous lustre, suture somewhat brownish, abdomen weakly iridescent. Length: 11–14 mm (12.6 mm in the material examined).

Male. Head (Fig. 1) transversely oblong, considerably convex above, about four-fifths as long as wide, subparallel-sided, front margin and sides nearly straight, hind margin feebly emarginate in the middle, and hind angles angulately rounded; upper surface scattered very sparsely with weak unhaired micropunctures throughout, microsculpture barely perceptible as fine striation except for vertex, coarse setiferous punctures except primary ones (which bear macrosetae and large setae) not dense, markedly localized on supraorbital space and latero-occipital corners (postgenae bearing primary punctures only); front marginal, supra-antennal and genal marcosetae mal-developed, thin and short, supraorbital macroseta rather distant from eye and placed before the level of anterior large seta, which lies just inside each imaginary longitudinal line traced on antennal insertion and rather nearer to each other than to each lateral margin of head, posterior large seta located at the level of infraorbital macroseta and much nearer to lateral margin of head than to each other. Eyes moderate in size, not prominent and slightly shorter than postgena (6.5: 7.0). Antennae (Fig. 2) rather thick, subclavate, thickest at 7th and 8th segments, hardly reaching the middle of pronotum; basal 3 segments polished, these and 11th segment more or less longer than wide, 4th slightly and the following 6 segments much wider than long, 6th to 10th segments slightly asymmetrical, 11th subovate, each segment with the following relative length: 25.0–12.0–13.0–7.5–7.5–7.5–7.0–7.0–7.0–11.0.

Labrum (Fig. 3) rather long, bilobed with a very deep notch, which reaches base, each lobe about 1.7 times as wide as long, weakly convex and bearing about 10 long setae and fringed with fine and short pubescence of various length in the inner half of front margin, and two of the long setae much longer than the others. Mandibles (Figs. 4) not elongate, nearly as long as head, thick and stout, rather acute at the tips, gently arcuate, left mandible with a molar tooth at the middle, the tooth bidenticulate at the tip; prostheca unilobed and thickly pubescent. Maxillary palpi (Fig. 6) robust and not elongate; 1st segment very short, feebly geniculate, with 1 or 2 short fine setae; 2nd fairly thickened distad, long, gently incurved, with some fine setae at base and lateral sides, and also with a few and a little longer setae at apex; 3rd straight, fairly thickened apicad, half as long as and slightly thinner than 2nd, with a few short

Figs. 1–9. *Philonthus splendens* (FABRICIUS), ♂. —— 1, Fore body with original setae (als=anterior large seta; pls=posterior large seta); 2, antenna; 3, labrum (large setae are removed in the left half and fine setae are removed in the right half); 4, left mandible; 5, gular plate (sm=submentum); 6, right maxilla; 7, labium; 8, prothorax in ventral view; 9, same, latero-ventral view.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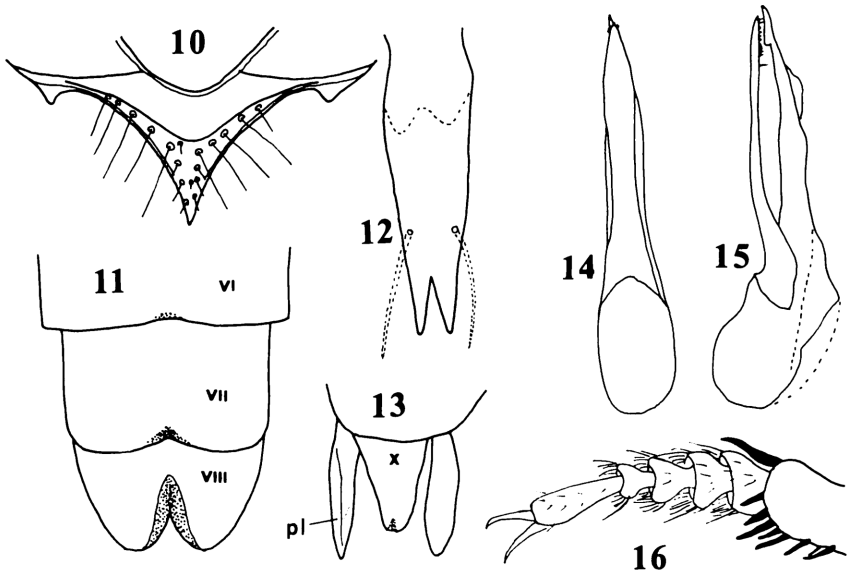
setae at apex; 4th subfusiform, blunt at tip, a little more than 4 times as long as wide, nearly as long as 2nd, a little thinner than 3rd, unhaired but minutely and very sparsely tuberculate. Galea (Fig. 6) thickened distad, densely pubescent on distal lobe, with proximal sclerite subtrapezoidal, bearing 2 strong terminal setae; lacinia (Fig. 6) wide, densely pubescent, with fine suberect setae at base. Labial palpi (Fig. 7) stout and fairly long; 1st segment considerably thickened apicad, distinctly longer than wide, with a fine, not long seta at both base and apex; 2nd slightly longer than and nearly as thick as 1st, but more strongly thickened in apical half, bearing 2 fine setae at base and a few ones at apical portion; 3rd subfusiform, nearly 4 times as long as wide, slightly slenderer and longer than 2nd, blunt at tip, somewhat oppressed, unhaired but with very sparse and minute tubercles as in 4th segment of maxillary palpus. Ligula (Fig. 7) wide, fairly long, rounded at apex, with a pair of very fine short hairs. Paraglossae (Fig. 7) moderate in length and width, porrect forwards and densely pubescent inside. Prementum (Fig. 7) subpentagonal, impressed medially in the front portion. Mentum (Fig. 7) short, very transverse, narrowly reflexed at sides, well sclerotized, feebly emarginate at well-defined front margin, with a single thick and long seta at each front corner. Gular sutures (Fig. 5) distinct, fine and shallow, straightly convergent behind in anterior halves, then much narrowed and parallel to each other towards neck constriction.

Pronotum (Figs. 1, 8–9) subquadrate, slightly wider than long (23.0: 21.5), widest at anterior third, a little narrower and longer than elytra (23: 27 and 21.5: 20.0), front margin nearly straight in middle, oblique and feebly emarginate laterally, apical corner rounded at the marginal line and divided by a very loose fold into the upper (generally called disc) and the under sides (apical corner *sensu* HAYASHI, 1993), sides subparallel to each other in the middle, slightly convergent in front and behind, base gently rounded, with hind angles obtuse but rounded at the tips; disc not convex, rather coarsely and irregularly punctured on front and hind angles, median series of large seta formed by only a single seta near front margin, but lateral series includes 2 setae, surface without microsculpture but very minutely, shallowly and sparsely punctured; chaetotaxy consisting of 2 pairs of well developed macrosetae, antero-lateral seta lying far behind apical angle, with its socket just contiguous to superior lateral line, latero-basal one at hind angle; superior lateral line gently incurved antero-inferiorly from anterior fourth and then hidden (in dorsal view) by apical corner and united with inferior lateral line far behind apical angle, the united line extending forwards and continuous to front margin; pronotal epipleuron almost evenly facing downwards, somewhat undulate and almost invisible in lateral view. Prepimera absent.

Scutellum (Fig. 1) subtriangular, finely and sparsely asperate-punctate, with recumbent fine and short pubescence, covered with transverse, fine and linear microsculpture; prescutum well developed.

Elytra (Fig. 1) subquadrate, slightly widened behind, a little wider than long (27.0: 20.0, but nearly equal in width to the maximum length), each disc flattened but feebly convex in sutural space, which is coarsely, sparsely and obliquely strigous; sides feebly



Figs. 10–16. *Philonthus splendens* (FABRICIUS), ♂. —— 10, Mesosternum; 11, 6th to 8th abdominal sternites of male; 12, 9th abdominal sternite with paired pores; 13, 9th (pleurite) and 10th tergites; 14, male genitalia in ventral view; 15, same, right lateral view; 16, fore tarsus.

arcuate, apices shallowly emarginate, latero-apical angles obtusely rounded; surface somewhat undulate, without distinct microsculpture but faintly and vaguely scratched here and there, not finely, rather sparsely and shallowly punctured, with suberect, rather long and stout brownish pubescence; chaetotaxy probably composed of 3 pairs of macrosetae, parascutellar macroseta just beside the middle of scutellum (the setae are unfortunately lost in the specimen examined, so that grade of their development cannot be ascertained), humeral and postero-lateral ones well-developed, single large seta present at each shoulder and latero-apical angle.

Prosternum (Fig. 8) smoothly and highly convex in middle, without fossae and median ridge, paired setae rather thick and short; lateral border short and completely united with pronotal discal margin at the apical angle. Furcasternum (Fig. 8) short and even, without median ridge.

Mesosternum (Fig. 10) rather flattened, transversely and remarkably bounded at about the middle; surface smooth before the bound but coarsely and roughly punctate, with several long setae behind it; mesosternal process narrow, acute at tip, feebly convex and not margined by a ridge in the apical portion; intersternal piece deeply sunk. Mesocoxae contiguous to each other.

Abdomen feebly dilated in middle, finely and rather sparsely punctate, with recumbent, long and dark setae, the punctures on each segment a little denser at base; 3rd

tergite impunctate and slightly depressed at base; 6th sternite (Fig. 11) faintly emarginate at the middle of apical margin; 7th sternite (Fig. 11) widely and shallowly emarginate at apex and shallowly depressed in the middle of apex; 8th sternite (Fig. 11) triangularly, deeply and clearly excavated from the middle to apex, sharply and deeply incised medially; 10th tergite (Fig. 13) subtruncte at apex but with a small notch at the middle; 9th sternite (Fig. 12) narrow, gently narrowed behind, deeply and triangularly excised at apex (in the specimen examined, paired large erect setae are unfortunately lost but paired pores are recognizable); pleurites (Fig. 13) thick, wide and foliaceous in lateral view.

Legs thick, stout and rather short; procoxae not spinous; protibiae fairly clavate and bearing numerous remarkable spines; basal 4 tarsal segment (Fig. 16) short, subtrapezoidal, rather narrow, much narrower than apex of protibia and with dense stiff pubescence on the planters; empodial setae imperceptible.

Male genitalia (Figs. 14–15) elongate and symmetrical; penis feebly dilated at base, rather straightly narrowed towards subacute tip, feebly sinuate in lateral view and with a small hook before the tip on the ventral side; parameres unilobed, thin, elongate, reaching near apex of penis, somewhat emarginate at sides, abruptly narrowed in apical portion towards acute tip, inner side bearing 6 pairs of black sensory tubercles and 2 pairs of fine short pubescence both before and behind the tubercles.

Material examined. ♂, Tubney, Berks, England, 17–IV–1948.

Previous Arrangement of the Genus *Philonthus* and its Allies

BERNHAUER and SCHUBERT (1914) collected past literature and arranged the genera of the *Philonthus* group from the Palearctic and Oriental Regions in a phylogenetic order as follows:— *Neobisnius* GANGLBAUER (syn. *Bisnius* C. G. THOMSON, *Erichsonius* FAUVEL [*ex parte*], *Actobius* FAUVEL [*ex parte*]); *Actobius* FAUVEL (syn. *Remus* C. G. THOMSON, *Erichsonius* FAUVEL [*ex parte*]); *Philonthus* CURTIS (subgenn. *Gabrius* STEPHENS, *Gefyrobius* C. G. THOMSON, *Rabigus* MULSANT et REY, *Philonthus* s. str. [syn. *Bisnius* STEPHENS]); *Cafius* STEPHENS (subgenn. *Bryonomus* CASEY, *Cafius* s. str., *Remus* HOLME [syn. *Pseudidus* MULSANT et REY]); *Hesperus* FAUVEL; *Belonuchus* NORDMANN (syn. *Trapeziderus* MOTSCHULSKY).

SCHEERPELTZ (1933) gave the following additional arrangement to the *Philonthus* group:— *Jurecekia* RAMBOUSEK (separated from *Philonthus*); *Hesperus* FAUVEL (subgen. *Hesperotropis* GRIDELLI); *Stevensia* CAMERON; *Tolmerinus* BERNHAUER.

BLACKWELDER (1952) added the following treatment to the *Philonthus* group:— *Erichsonius* FAUVEL (syn. *Actobius* FAUVEL); *Philonthus* CURTIS (subgenn. *Bisnius* CURTIS [syn. *Gefyrobius* C. G. THOMSON], *Jurecekia* RAMBOUSEK, *Onychophilonthus* NERESHEIMER et WAGNER); *Cafius* CURTIS (subgenn. *Remus* HOLME [syn. *Menapius* HOLME], *Euremus* BIERIG, *Pseudoremus* KOCH, *Ifacus* BLACKWELDER [syn. *Philonthopsis* KOCH]).

From 1953 to 1973, several important papers were published on the *Philonthus* group by TOTTENHAM, COIFFAIT and SMETANA. Then, COIFFAIT (1974) made a comprehensive survey of previous studies on the group and published the result in a monograph of the Staphylinidae of the West Palearctic Region. His arrangement is as follows:— *Palaeophilonthus* COIFFAIT; *Erichsonius* FAUVEL (subgenn. *Erichsonius* s. str., *Parerichsonius* COIFFAIT); *Gabrius* CURTIS; *Paragabrius* COIFFAIT (subgenn. *Paragabrius* s. str., *Metagabrius* COIFFAIT); *Rabigus* MULSANT et REY; *Gabronthus* TOTTENHAM; *Philonthus* CURTIS (subgenn. *Gefyrobius* C. G. THOMSON, *Onychophilonthus* NERESHEIMER et WAGNER, *Kenonthus* COIFFAIT, *Trionthus* COIFFAIT, *Philonthus* s. str.); *Spatulonthus* TOTTENHAM; *Jurecekia* RAMBOUSEK; *Hesperus* FAUVEL; *Neobisnius* GANGLBAUER; *Remus* HOLME; *Cafius* STEPHENS (subgenn. *Euremus* BIERIG, *Pseudoremus* KOCH, *Suborthidus* COIFFAIT).

COIFFAIT's arrangement given above is supported by most researchers of the Staphylinidae.

Notes on Some *Philonthus* Species

For correct recognition of the genus *Philonthus* CURTIS (s. str), it is very useful to know different characteristics in some corresponding organs between *Philonthus splendens* and some other *Philonthus*-species. The following reference species except *Ph. tarsalis* are currently placed in the subgenus *Philonthus* s. str. (after COIFFAIT, 1974, SHIBATA, 1983, and SMETANA, 1983).

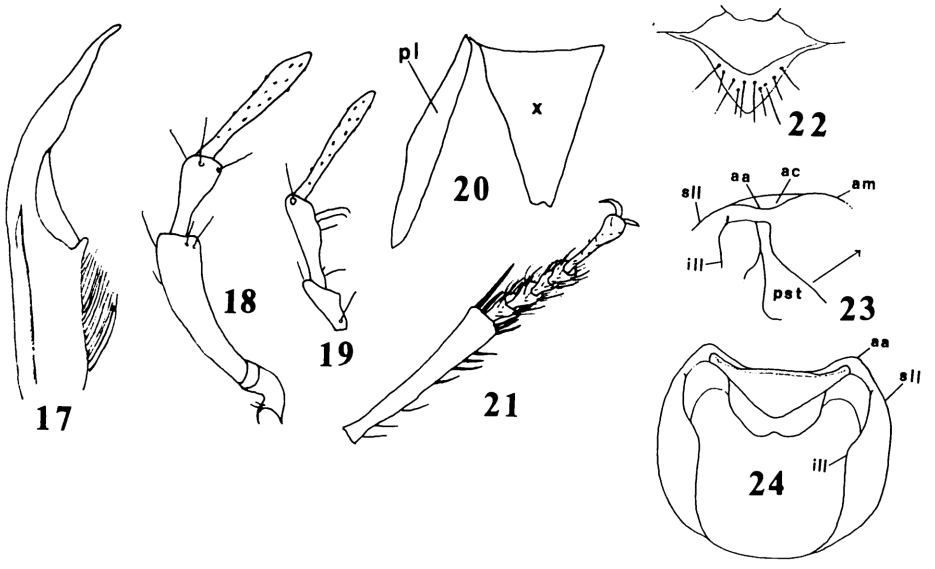
Philonthus cyanipennis (FABRICIUS)

(Figs. 17–23)

Mandibles elongate, much longer than head (11 : 7), left mandible (Fig. 17) with a simple slender tooth, the right one bidentate; palpi (Fig. 18–19) very long and slender, 4th segment of maxillary palpus more than 7 times as long as wide. Of pronotum (Figs. 23–24), inferior lateral line terminated before reaching superior lateral line and prosternal lateral borders, and never united with the latter line, so that the superior lateral line only extends forwards and shifts to anterior margin. Prosternum (Fig. 24) bearing a pair of well-developed long setae, lateral borders far separated from pronotal discal margins and never united with the latter; mesosternum (Fig. 22) flattened before and behind the bound, with its process wide. Pleurites (Fig. 20) elongate, subfusiform. Male protarsomeres (Fig. 21) not dilated, narrow; protibiae (Fig. 21) elongate, with many long spines.

Specimen examined. ♂, Mt. Kohjin, Nara, Japan, 11–V–1981, M. YAMAMOTO leg.

Notes. The present species is one of the most widespread species in the Palearctic Region, always regarded as a member of *Philonthus* (s. str.), and placed in the *intermedius* group (COIFFAIT, 1974, the largest species-group of *Philonthus* s. str.), though markedly different from *Ph. splendens* in the limbic conformation of the pronotum.



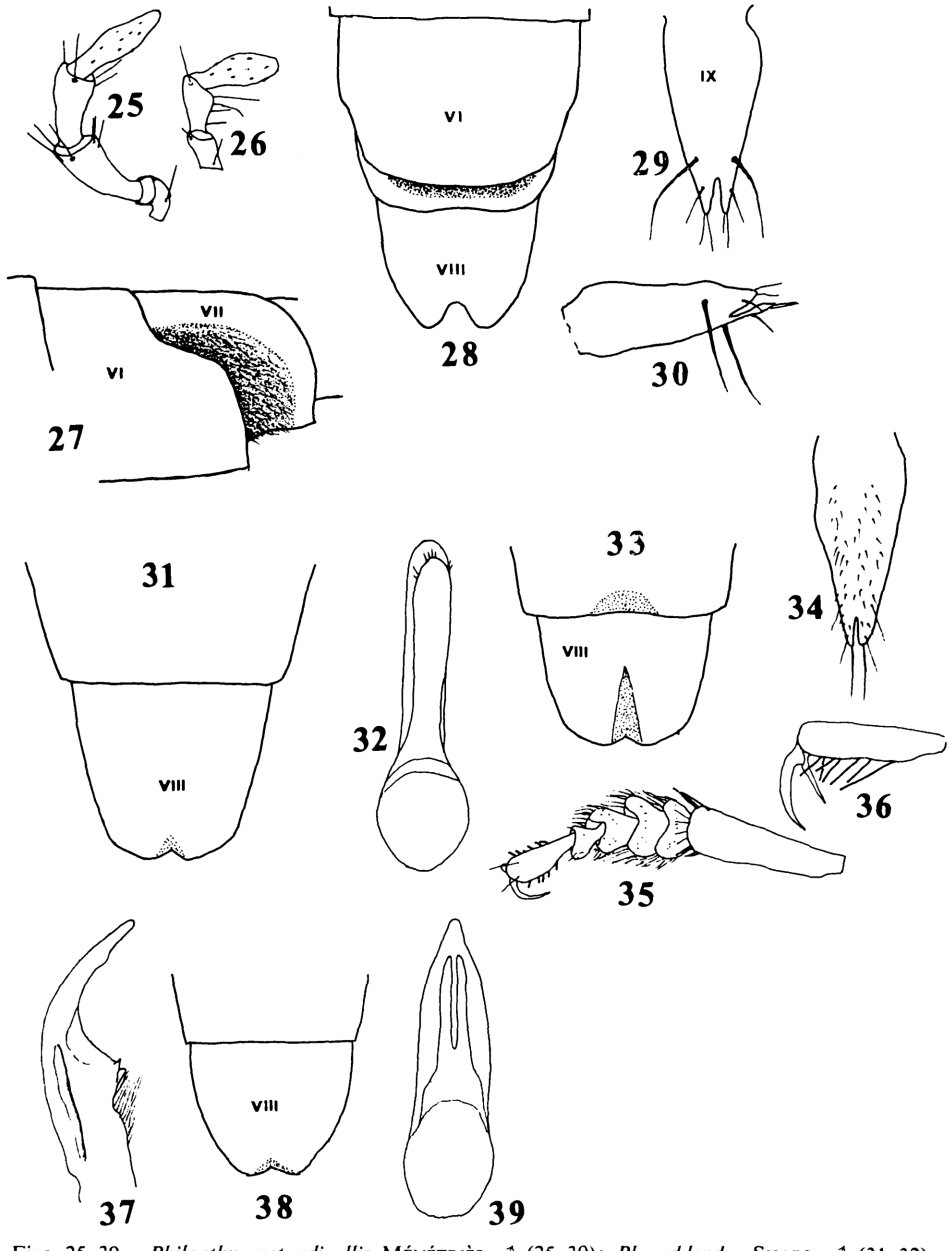
Figs. 17–24 (22–24: after HAYASHI, 1993). *Philonthus cyanipennis* (FABRICIUS), ♂. —— 17, Left mandible; 18, right maxillary pulpus; 19, right labial palpus; 20, 9th (pleurite) and 10th tergites; 21, right protibia and protarsus; 22, mesosternum; 23, prothorax in latero-ventral view; 24, same, ventral view.

Philonthus rotundicollis MÉNÉTRIÈS

(Figs. 25–30)

Palpi (Figs. 25–26) thick and relatively short; 4th segment of maxillary palpus rather thick and short, only slightly longer than 3 times the width; 3rd segment of labial palpus thick, rather strongly tumid at apical third, somewhat thicker than 4th segment of maxillary palpus, fully as thick as 2nd and 3 times as long as wide. Genal macrosetae much reduced, very fine and short. Limbic conformation of pronotum similar to that in *Ph. cyanipennis*. Male secondary sexual features remarkable: 6th abdominal sternite (Figs. 27–28) widely protrudent behind and concealing most parts of 7th sternite (Fig. 27–28), the concealed area shallowly depressed, strongly shagreened and densely granulo-punctate, with dense long suberect pubescence; apices of 6th and 7th sternites each nearly straight; 8th sternite (Fig. 28) rather deeply, widely and roundly emarginate at apex but not depressed nor flattened before the emargination; 9th sternite (Figs. 29–30) bearing a pair of large erect setae as in *Ph. splendens* (FABRICIUS).

Specimens examined. ♂ and 20 exs., Masagosawa (alt. 1,800 m) and Tsurugisawa (2,500 m), Mt. Tsurugi, Toyama, 14, 15, 17, 18 and 20–VII–1962, Y. HAYASHI leg.; 3 exs., Mt. Dainichi (alt. 2,500 m), Toyama, 6–VII–1964, Y. HAYASHI leg. and 27–VII–1964, J. KAMEI leg.; 2 exs., Sennin Taira (alt. 2,100 m), Toyama, 15–VIII–1961, J.



Figs. 25–39. *Philonthus rotundicollis* MÉNÉTRIÈS, ♂ (25–30); *Ph. addendus* SHARP, ♂ (31–32); *Ph.* (*Onychophilonthus*) *tarsalis* SMETANA, ♂ (33–36); *Ph. rectangulus* SHARP, ♂ (37–39). — 25, Right maxillary palpus; 26, right labial palpus; 27, 6th and 7th abdominal sternites in lateral view; 28, 7th to 8th sternites, ventral view; 29, 9th abdominal sternite in ventral view; 30, same, oblique view; 31, 7th and 8th abdominal sternites; 32, male genitalia in ventral view; 33, 7th and 8th abdominal sternites; 34, 9th abdominal sternite in ventral view; 35, left protibia and protarsus; 36, 5th segment of protarsus in lateral view; 37, left mandible; 38, 7th and 8th abdominal sternites; 39, male genitalia in ventral view.

KAMEI leg.; 2 exs., Goshikigahara (alt. 2,500 m), Toyama, 2–VIII–1964, J. KAMEI leg.; 2 exs., Taneike (alt. 2,500 m), Mt. Jiigatake, Toyama, 27–VII–1962, Y. HAYASHI leg.; 2 exs., Mizuyajiri and Ohanamatsubara (alt. 2,300 m), Mt. Hakusan, 22–VII–1962, S. TAKABA leg.; 1 ex., Mt. Kisokomagatake (alt. 2,100 m, near Isetaki), Nagano, 24–VIII–1962, Y. HAYASHI leg.; 2 exs., Mt. Houou (alt. 2,800 m), Yamanashi, 21–V–1990, K. HOSODA leg.; 1 ex., Yamada Spa, Hokkaido, 14–VII–1966, J. KAMEI leg. (All the localities are in Japan, so that this species is newly recorded from Japan).

Notes. This is one of the most widely distributed species in the Palearctic Region and has been regarded as a member of the *intermedius* group of *Philonthus* (s. str.). It has peculiar secondary sexual features in the male.

Philonthus addendus SHARP

(Figs. 31–32)

Limbic conformation of pronotum and structure of mesosternum rather similar to those of *Ph. cyanipennis*. Procoxae bearing numerous thin and short spines. Male 7th abdominal sternite (Fig. 31) not modified, and 8th (Fig. 31) narrowly and shallowly emarginate at apex and subtriangularly flattened before the emargination. Male genitalia (Fig. 32) nearly spatulate in both penis and parameres as in the genus *Spatulonthus* though symmetrical.

Specimens examined. ♂, Aizankei, Hokkaido, Japan, 24–VIII–1964, C. YAMANO leg.; ♀, Tokugô, Kamikôchi, Nagano, Japan, 1–VIII–1966, T. ITO leg.

Notes. This species is also widely distributed in the Palearctic Region, and always regarded as a member of the *intermedius* group of *Philonthus* (s. str.), though somewhat different in the male secondary sexual and the male genitalic features.

Philonthus* (*Onychophilonthus*) *tarsalis SMETANA

(Figs. 33–36)

Similar to *Ph. cyanipennis* in limbic conformation of pronotum. Male 8th sternite (Fig. 33) narrowly, shallowly and subtriangularly emarginate at apex and with median glabrous space long, smooth and triangular; male 9th sternite (Fig. 34) less deeply notched at apex, without paired large setae and pores. Male protarsus (Figs. 35–36) strongly dilated in the basal 3 segments, which are a little wider than the apex of protibia. The 5th male protarsomere (Fig. 36) conspicuously and numerously spinous beneath.

Specimen examined. ♂, Gozaishi Spa, Yamanashi, Japan, 5–VI–1991, K. HOSODA leg. (new record from Japan).

Notes. This is one of the *Onychophilonthus* species distributed in Japan and Continental Asia, and bears peculiar structure on the underside of the 5th protarsal segment in both sexes.

Philonthus rectangulus SHARP

(Figs. 37–39)

Mandibles (Fig. 37) vertically bidentate. Underside of head triangularly and shallowly depressed just before neck constriction. On elytra, only humeral and parascutellar macrosetae well developed. A pair of large setae on prosternum well developed. Mesosternum without developed setae, its process not narrow, and feebly convex. Male 7th abdominal sternite not modified; 8th (Fig. 38) widely and shallowly emarginate at apex, and narrowly smooth before the emargination; male 9th sternite without paired large setae and pores as in *Ph. tarsalis*. Pleurites rather slender as in *Ph. cyanipennis*. Male genitalia (Fig. 39) with parameres bilobed in apical half.

Specimen examined. ♂, Kumabashiri, Ishikawa, Japan, 24–IV–1961, Y. HAYASHI leg.

Notes. The present species is a representative of the *rectangulus* group (*sensu* COIFFAIT, 1974) widely distributed in the Holarctic Region, and has bilobed parameres in the male. This species has been regarded as a member of *Philonthus* (s. str.).

Philonthus lewisius SHARP

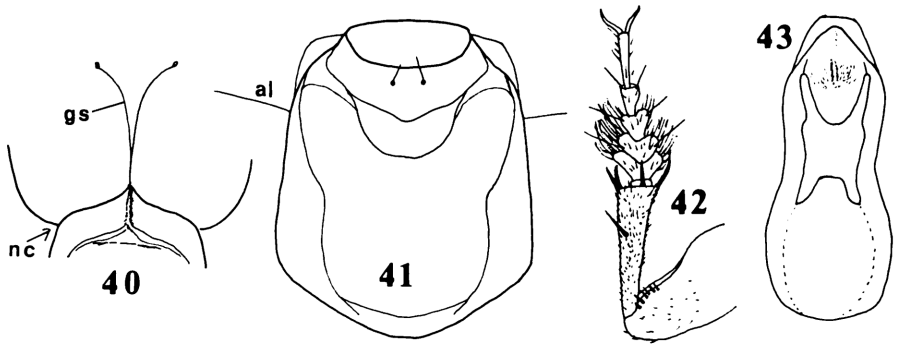
(Figs. 40–43)

Gular plate (Fig. 40) extremely narrow in posterior half. Pronotal latero-basal macroseta rather mal-developed and its socket barely perceptible. Lateral border of prosternum (Fig. 41) long and in the front half only united with discal margin of pronotum at the front angle. Postero-lateral macrosetae of elytra reduced, almost imperceptible as in *Ph. rectangulus*. Male 7th, 8th and 9th sternites formed as in *Ph. rectangulus*. Pleurites rather slender as in *Ph. rectangulus*. Penis (Fig. 43) very thick, cupuliform and blunt at the tip; parameres markedly bilobed apicad. Protibiae (Fig. 42) very sparsely spinous, only with a few spines except for the apices; male protarsi (Fig. 42) strongly dilated in basal 3 segments, which are a little wider than the apex of tibia, and in the female, they are weakly dilated.

Specimen examined. ♂, Riv. Yodo, Osaka, Japan, 15–III–1958, T. ITO leg.

Notes. The present species was placed by SCHEERPELTZ (1933) in the subgenus *Gefyrobius* C. G. THOMSON, then regarded as a synonym of *Ph. aeneipennis* BOHEMAN (BERNHAUER & SCHUBERT, 1914). BLACKWELDER (1952) regarded *Gefyrobius* as a synonym of *Bisnius* CURTIS. ADACHI (1957) followed BLACKWELDER and arranged *Ph. aeneipennis* in the subgenus *Bisnius*. SMETANA (1958) pointed out that *Gefyrobius* was not a synonym of *Bisnius*, and regarded *Ph. cephalotes* (GRAVENHORST), the type species of *Bisnius* CURTIS, as a member of *Philonthus* in a strict sense. Accordingly, *Ph. aeneipennis* automatically became a member of the subgenus *Philonthus* (s. str.).

Philonthus lewisius was considered to be a synonym of *Ph. aeneipennis*. CAMERON (1932) put the former in a synonym of the latter, but in 1949 he treated it as a good species without comment. SAWADA (1960) suggested existence of some problems be-



Figs. 40–43. *Philonthus lewisius* SHARP, ♂. —— 40, Head in ventral view (nc=neck constriction); 41, prothorax in ventral view; 42, right fore leg; 43, male genitalia in ventral view.

tween the two species. I myself agree with CAMERON's 1949 view. This species seems to be a member of the *aeneipennis* geroup due to the similarity in general appearance and male genitalia. *Philonthus aeneipennis* is widely distributed in the southern areas of Asia including Japan.

Philonthus prolatus SHARP

Head multi-punctate except for frons and vertexal area. The 4th segment of maxillary palpus twice as long as the 3rd. Basal 3 visible tergites deeply impressed at each base. Male 9th abdominal sternite without paired large setae. Penis spatulate in ventral view.

Specimens examined. ♂, Mt. Taradake, Nagasaki, Japan, 3–V–1987, T. ITO leg.

Notes. This species was placed by SCHEERPELTZ (1933) in *Gabrius* STEPHENS. ADACHI (1957) and SHIBATA (1983) followed his view. SMETANA (1983) considered that *Ph. prolatus* was not a *Gabrius* species. HAYASHI (1993) followed SMETANA's opinion.

This species is either closely allied to or belongs to the *nigrita* group (COIFFAIT, 1974) because of resemblance of male genitalia, and has peculiar features in the mouth organs, the basal 3 visible tergites of abdomen and the prothorax.

Diagnostic Characters Found in Some Organs of *Philonthus*

In *Philonthus* and its allied groups, phylogenetically important characters seems to appear on the mentum, the prothorax and the male 9th abdominal sternite. It is therefore imperative to examine these organs closely for analysing the phylogeny of *Philonthus* itself and the allied groups, though detailed information is extremely few in previous papers.

In the following lines, some comment will be made on the phylogenetic relationship based on these organs in *Philonthus* itself and its relatives.

1. The mentum bears only a single seta at each anterior corner; the following genera also bear a single seta at each anterior corner of the mentum: *Belonuchus*, *Hesperus*, *Paragabrius*, *Rabigus*, *Neobisnius*, *Spatulonthus* and *Craspedomerus*. On the other hand, the following genera bear at least paired setae at each corner of the mentum (after COIFFAIT, 1974): *Erichsonius*, *Gabronthus*, *Cafius* and *Remus*.

2. In the pronotum, inferior lateral line is distinctly united with superior lateral line far behind the pronotal apical angle; the united line extends forwards, tightly unites with the prosternal lateral border at about the apical angle, and then shifts to the apical margin. At least in the following species, the limbic conformation of pronotum is apparently different from that observed in *Ph. splendens*: *Ph. cyanipennis*, *rotundicollis*, *addendus* and *tarsalis*, in which the inferior lateral line of pronotum ends far behind the apical angle and never unites with the superior lateral line nor with the lateral border of the prosternum.

3. In *Ph. splendens*, the 9th abdominal sternite in the male bears a pair of remarkably developed erect setae arising from large punctures. Similar setae are present in the following species: *Ph. cyanipennis*, *rotundicollis*, *addendus* and *Spatulonthus minutus* (BOHEMAN); but the setae are absent in the following species: *Ph. rectangulus*, *lewisius*, *tarsalis*, *nudus*, *prolatus*, *Belonuchus rufoniger* FAUVEL, *Gabrius ophion* SMETANA, *Rabigus brunnicollis* (HOCHHUTH) and *Craspedomerus bernhaueri* CAMERON.

Reference species examined:—

Philonthus nudus SHARP

♂, Maizuru, Kyoto, Japan, 3-V-1986, Y. HAYASHI leg.

Spatulonthus minutus (BOHEMAN)

♂, Osaka City, Japan, 12-VII-1958, T. SHIBATA leg.

Gabrius ophion SMETANA

♂, Dashiqiau, Yinkou, Lianning, China, 10-VIII-1987, LI Jingke leg.

Rabigus brunnicollis (HOCHHUTH)

♂, Numata, Gumma, Japan, 2-IV-1966, T. TAKEI leg.

Hesperus ornatus SHARP

♂, Akazai, Hyôgo, Japan, 17-VI-1979, T. ITO leg.

Belonuchus rufoniger FAUVEL

♂, Nanshanchi, Taiwan, 17-IX-1970, Y. KIYOYAMA leg.

Craspedomerus bernhaueri CAMERON

♂, Ghorapani Pass (alt. 2,835 m), Nepal, 13-V-1983, Y. HAMA leg.

Delimitation of the Subgenus *Philonthus* s. str.

(Figs. 1-16)

As a summary of the results given above, the subgenus *Philonthus* should be strictly interpreted as follows:

Type species: *Staphylinus splendens* FABRICIUS.

Description. Body elongate, nearly parallel-sided, rather flattened above and

shiny; head and pronotum generally sparsely punctured, elytra and abdomen densely so.

Head suboval to subquadrate, more or less convex above; neck thick and a little wider than a half the width of head. Antennae filiform, moderately long, basal 3 segments polished. Eyes moderately large, generally about as long as postgenae and not so prominent. Chaetotaxy (of macrosetae and large setae) in dorsal view as shown in Fig. 1, front marginal seta, supra-antennal one and genal one mal-developed, large setae usually well developed, consisting of 2 pairs (frontal and occipital) of long setae.

Mandibles thick and stout, subacute at the tips, gently arcuate, about as long as head, left mandible with a molar tooth at the middle, the tooth bidenticulate at the tip; prostheca unilobed and thickly pubescent.

Labrum rather long, bilobed with very deep cleft, which reaches the base; each lobe about 1.7 times as wide as long, weakly convex, bearing about 10 long setae (two of them much longer than the others) a little behind front margin, which is fringed with short pubescence of various length at its inner half.

Galea thickened apicad, densely pubescent on distal lobe and bearing 2 thick and long terminal setae at the apex of subquadrate proximal sclerite; lacinia wide, densely pubescent, with fine suberect setae at base. Maxillary palpi not elongate and rather robust; 1st segment very short, feebly geniculate, with 1 or 2 short fine setae; 2nd moderately thickened apically, long and gently incurved, with some fine setae at base and lateral side, also with a little longer ones at apex; 3rd nearly straight, moderately thickened apically, much shorter and slightly thinner than 2nd, with a few short setae at apex; 4th subfusiform, blunt at tip, about 4 times as long as wide, nearly as long as 2nd, a little thinner than 3rd, glabrous but with several very minute tubercles.

Labial palpi moderately elongate and rather robust; 1st segment long, considerably thickened apicad, distinctly longer than wide, with a fine and not long seta at both base and apex; 2nd slightly longer than and nearly as thick as 1st (though more strongly thickened in apical half), bearing 2 fine setae at base and a few similar ones in apical portion; 3rd subfusiform, about 4 times as long as wide, slightly slenderer and longer than 2nd, blunt at tip, somewhat oppressed, unhaired but bearing very sparse and minute tubercles as on 4th segment of maxillary pulpus. Ligula wide, moderately long, rounded at apex, with a pair of very fine short hairs. Paraglossae moderate in length and width, porrect forwards and densely pubescent inside. Prementum subpentagonal, impressed medially in the front portion. Mentum short, very transverse, narrowly reflexed at sides, well sclerotized, feebly emarginate at front margin which is well defined with a single long thick seta at each front corner.

Gular sutures distinct, fine and shallow, straightly convergent posteriad in anterior halves, then very narrowly separated and parallel to each other in posterior halves.

Pronotum subquadrate, front margin and sides usually straight, base more or less arcuate, rather rounded at each angle; chaetotaxy consisting of 2 pairs of macrosetae, which are well developed, antero-lateral seta placed far behind apical angle with

its socket just contiguous to discal margin, latero-basal seta at hind angle; disc bearing 2 series (median and lateral) of large punctures on both sides; superior lateral line gently incurved antero-inferiorly from far behind apical angle, then hidden (in dorsal view) by apical corner and united with inferior lateral line far behind apical angle, the united line extending forwards and continuous to front margin; pronotal epipleuron evenly faced downwards, somewhat undulate and almost invisible in lateral view. Pronotal epimera absent.

Scutellum subtriangular, with well developed prescutum.

Elytra subquadrate, rather flattened, with feebly convex sutural space; lateral margins not edged, hind margin feebly emarginate; chaetotaxy consisting of 3 pairs of macrosetae, parascutellar macroseta placed just beside the middle of scutellum, humeral and postero-lateral ones well developed.

Prosternum strongly convex in middle, without fossae and median ridge, bearing paired, rather thick and short setae; lateral border short, and entirely united with pronotal discal margin at the apical angle. Furcasternum short, even, and not ridged medially.

Mesosternum rather flattened, remarkably and transversely bounded at about the middle, smooth before the bound but roughly punctured behind; its process narrow, acute at the tip and not margined by ridge in apical portion; intersternal piece deeply sunk. Mesocoxae contiguous to each other.

Male 7th and 8th sternites more or less emarginate or notched at the least; 9th sternite bearing a pair of well developed large setae, deeply and triangularly notched at apex; pleurites (male) thick and wide.

Procoxae not spinous; protibiae remarkably spinous; protarsomeres rather short, not dilated, much narrower than apex of protibia, with dense stiff fine hairs; empodial setae imperceptible.

Male genitalia elongate and symmetrical; parameres consolidated in a single lobe and bearing fine dark tubercles on the inner (dorsal) face of apical portion.

Discussion. The subgenus *Philonthus* in current sense (viz. *sensu* COIFFAIT) is divided into two groups by difference in the structure of male 9th abdominal sternite; in one group, a pair of large erect setae are present as in *Ph. splendens*, but in the other they are absent. At least the latter group (*e.g.*, *rectangulus*, *lewisius* and *prolatus* groups) should be excluded from *Philonthus* (s. str.). It is, however, difficult to decide at present to which subgenera the species of the latter group actually belong, because of the lack of knowledge about African and Neotropical species.

The species currently placed in *Philonthus* are considerably variable in limbic conformation of pronotum (also in relation to the prosternum), and it is difficult to apply the pronotal character to reclassification of *Philonthus*. In some species-groups of the second group mentioned above, however, this character seems to be stable according to specified groups.

要　約

林　靖彦: アジア産ハネカクシ亜科の研究, II. *Philonthus* 属 (コガシラハネカクシ属) とその属基準種 *Ph. splendens* (FABRICIUS) について. —— コガシラハネカクシ類は, 現在の定義においても膨大な数の種を含み, 若干の亜属に分かれている. そのうちでも *Philonthus* 亜属は非常に多くの種群に分けられている (COIFFAIT, 1974). 筆者は, 日本産種を中心に属基準種 *Ph. splendens* との比較検討を行なった結果, *Philonthus* 亜属は雄の第9腹板上に1対の顕著な長剛毛があるかないかで大きく2群に分けられると考えるにいたった. 本属はハネカクシ亜科のうちでももっとも重要な属の一つで, その本態を正しく理解することは, コガシラハネカクシ群の解明のみならず, ハネカクシ亜科全体の系統を考える上でも, きわめて有意義なことと思われる. また, 本属の前胸背板周辺構造は, 全体として見ると変化が多く, 属の特徴として確定しがたいが, 種群によっては安定しているように見受けられるものもあり, 今後の検討課題である.

本報ではコガシラハネカクシ属の基準種の再記載を行い, 基亜属の再記載と若干の考察を試みた.

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新 刊 紹 介

土壌动物区系生态地理研究 (Studies on Fauna and Ecogeography of Soil Animal). 李景科 (LI Jingke)・陈鹏 (CHEN Peng) 等著. vii+4+i+265 ページ. 东北师范大学出版社, 長春. 1993 年.

この書物は, 主として北東中国の土壌動物に関する従来の知見および近年の調査結果を取りまとめたものである. 内容は, まず土壌動物の区系地理と生態地理の 2 部門に大別されているが, それぞれの部門の記述項目および著者名 (括弧内) を示せば次のとおりである.

土壌動物の区系地理

北東中国のハネカクシ類 (李景科); 北東中国のハンミョウ類 (李景科); 中国産ハンミョウ科目録 (李景科); 中国のエンマムシ類 (李景科); 北東中国に分布する鞘翅目の科の分布型 (李景科・陈鹏・张雪萍); 中国におけるセスジハネカクシ科の区系分布 (李景科・张雪萍); 北東中国のオトシブミ類 (李景科・唐永紅); 中国産 *Coptolabrus lafossei* (F.) の分布と 3 新亜種 (李景科・唐永紅); 北東中国産アラメナガゴミムシ亜属の 2 種 (李景科・陈鹏); 北東中国のコキノコムシ科と 1 新記録種 (唐永紅・李景科); 黒龙江省尚志市老爷岭産土壌甲虫類の分類 (李景科・陈鹏・卜照义・张雪萍); 安徽省の土壌甲虫類 (李景科・王宗英).

土壌動物の生態地理

帽儿山地域における土壌動物群の構造的特徴 (陈鹏・仲伟彦・张雪萍・梁淑英); 帽儿山の落葉松林におけるダニ類 (卜照义・董冬平・文在根); 小兴安岭の泥炭地林における土壌動物群集の構造的特徴 (梁淑英・陈鹏・郎恵卿); 小兴安岭の沼沢地林における土壌動物と微量元素含量 (张桂荣・梁淑英); 马家沟汚灌区土壌と土壌動物の重金属含量 (华德尊・张雪萍・刘来祥); 吉林省における丘陵と山地の蒙古櫟林落葉層の土壌動物 (殷秀琴・张桂荣・李景科・许静); 长春市南湖公園の土壌昆虫 (苏志剛); 辽宁营口地区におけるハンミョウの生態的分布 (李景科・陈鹏); 千山自然保護区のオサムシ類 (李景科・梁淑英); 森林群落での異なる遷移の土壌動物 (侯威岭・张桂荣); 土壌性線虫群集の特徴 (杨发柱・殷秀琴); 土壌性線虫の研究方法 (杨发柱); 主要参考文献.

記述項目は上記のとおりであるが，記述項目を通覧すればわかるように，書物の標題に対して内容が充足されていないし，とくに全体の 65% を占める区系地理の部門には，この分野に関心をもつ者に大きい不満が残る．いっぽう，この部門には，新属，新種の記載や新記録種の報告などが数多く含まれていて，分類や分布の研究にたずさわる者には見逃がしえない．

冒頭の「北東中国のハネカクシ類」は，直海 (1985) による分類体系に従って，アリヅカムシ類を Oxyporidae の 1 亜科として取り扱い，これを含めて 309 種（最後の種の番号が 311 になっているが，途中 232, 233 の番号が欠落している）のハネカクシが記録されている．そのなかには 5 新種，1 新亜種が含まれ，これに続く新種記載部分には 16 種が取り扱われている．しかしなぜか，そのうちの 2 種は既知種で，1 種は種名未確定種である．このほか，他の記述項目のなかで，エンマムシ科 1 種，*Coptolabrus lafossei* の 3 新亜種の記載がなされ，黒龙江省からはヒラタナガクチキムシ科の 1 新亜種，また安徽省からはハネカクシ科 7 新種，アリヅカムシ科の 1 新属，4 新種，それにコケムシ科，コメツキムシ科，ジョウカイボン科，ゴミムシダマシ科およびハムシ科から 1 新種がそれぞれ記載されている．これらを合計すると，この書物において，1 新属，35 新種，5 新亜種の甲虫類が記載されたことになる．これら新タクソンの記載文はすべてが中国語で，しかもきわめて簡単なものである．はなはだしい場合には，基準標本の採集データを除くとわずかに 4 行の記載文しかない新種もあり，新種の形態的特徴を示すにはまったく不十分である．種を同定するうえでもっとも重要な特徴とされる雄交尾器も，図示されているのはわずかに 8 種だけで，その図もきわめて簡単なものである．ハネカクシ科に含まれる種の多くは，形態や色彩がよく似ているので，このような記載文が近縁種の識別に役立つとは思われず，属の判定にさえ大きい危惧を感じる．この意味で，本書の分類学的内容に関するかぎり，学問の進歩よりは混乱をもたらす危険性が大きいといわざるをえない．

文末ではあるが，本書を入手するについてご尽力をいただいた上海昆虫研究所の罗志义副教授および国立科学博物館の上野俊一博士に心からお礼を申し上げる．

（渡辺泰明）

Elytra, Tokyo, **22** (1): 133–137, May 15, 1994

A New Species and a New Subspecies of the Genus *Aceraius* (Coleoptera, Passalidae) from Sumatra

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Abstract A new species and a new subspecies of passalid beetles belonging to the genus *Aceraius* KAUP, *A. fujiokae* and *A. pilifer tobae*, are described from Sumatra. *Aceraius fujiokae* resembles *A. pilifer* KUWERT and *A. ashidai* KON, ARAYA et JOHKI. A key to the related species is provided.

A new species and a new subspecies of passalid beetles to be described below run down to the clause 6 in GRAVELY (1918)'s key to the species of the genus *Aceraius*, because of the combination of "the lack of acute upper tooth in front of posterior convexity of left mandible" and "the anterior angle of head never prominent". After GRAVELY's key, some species were described under his clause 6 by HINCKS (1938), KON and JOHKI (1989), KON, ARAYA and JOHKI (1992, 1993 a, b) and KON, UEDA and JOHKI (1993). A provisional key to the Sumatran species is therefore provided below for facilitating future studies.

Key to the Species of the Genus *Aceraius* KAUP under 'the Clause 6' of GRAVELY (1918)'s Key

1. Tenth rib of elytra hairless; all from Borneo.....*A. kinabalensis* KON et JOHKI, *A. kuwerti* ZANG, *A. laevimargo* ZANG, *A. tricornis* ZANG.
— Tenth rib hairy, at least at the anterior part..... 2.
2. Antennal lamellae long; Borneo.....*A. hidakai* KON, ARAYA et JOHKI.
— Antennal lamellae short..... 3.
3. Apices of middle and posterior fifth tarsal segments concave, respectively; 2 spp. from Borneo.....*A. laniger* ZANG, *A. boucheri* KON, ARAYA et JOHKI.
— Apices of middle and posterior fifth tarsal segments normal..... 4.
4. Tenth rib hairy at anterior 1/5 to 1/4; Sumatra.....*A. fujiokae* sp. n.
— Tenth rib hairy at anterior 1/3 to 1/2..... 5.
5. Smaller, less than 35 mm.....Malay Peninsula: *A. parvulus* HINCKS; Borneo: *A. hikidai* KON, UEDA et JOHKI; Sumatra: *A. pilifer tobae* subsp. n.; Java: *A. pilifer pilifer* (PERCHERON).
— Larger, more than 35 mm.....Malay Peninsula, Sumatra (new record): *A. ashidai* KON, ARAYA et JOHKI; Borneo: ? undescribed species.

Aceraius fujiokae sp. nov.

(Figs. 1–3)

Antenna with six short lamellate segments. Labrum hairy, angles rounded, anterior border weakly emarginate, left angle more prominent than the right one. Left mandible normal; upper tooth of left mandible strongly convex with the tip weakly depressed internally; anterior lower tooth of left mandible simple; lowest terminal tooth of right mandible minute or absent; upper denticle of right anterior lower tooth obtuse or rectangular, lower one very small. Anterior border of mentum weakly notched madially.

Head with both anterior angles not prominent. Left outer tubercle produced antero-internally, distinctly bifid at the distal end, external apex prominent anteriorly, internal apex prominent internally, basal swelling of external border indistinct. Right outer tubercle quadrangular or triangular, external apex distinctly prominent anteriad, internal one obtuse, not prominent, external border weakly emarginate, internal border very weakly arcuate or obtusely angulate. Inner tubercle prominent upward; ridge between the two inner tubercles emarginate or nearly straight in dorsal view; parietal ridges in a straight line as a whole. Depressed area of head and area between outer

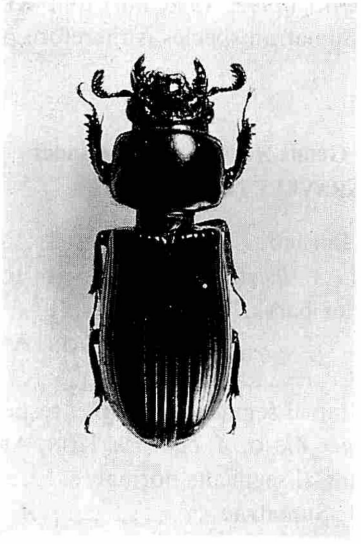

Fig. 1. *Aceraius fujiokae* sp. nov.; dorsal aspect.

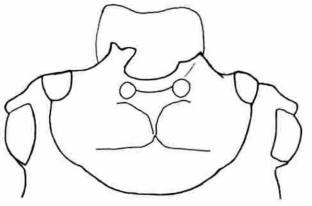

Fig. 2. *Aceraius fujiokae* sp. nov.; dorsal view of head.

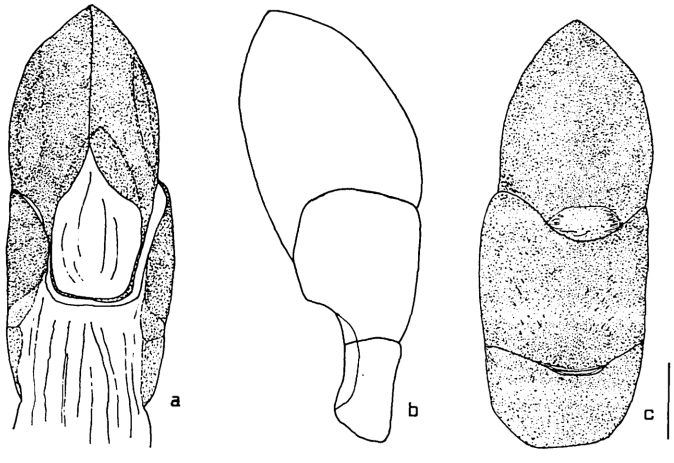

Fig. 3. *Ceraius fujiokae* sp. nov.; male genitalia (scale: 0.5 mm). —— a, Dorsal view; b, lateral view; c, ventral view.

tubercle and inner branch of supraorbital ridge rather sparsely covered with hair-bearing punctures.

Pronotum with hair-bearing punctures in marginal grooves and lateral scar; median groove almost absent.

Elytra hairy in anterior vertical portions between suture and fifth groove and in front of shoulder; first rib hairy near apex; seventh rib and seventh groove with a few hair-bearing punctures posteriorly; eighth rib hairless; eighth groove and ninth rib sparsely hairy anteriad, very sparsely so posteriad; tenth rib hairy at anterior 1/5 to 1/4; tenth groove hairy throughout.

Posterior plate of prosternum hairless; mesosternum smooth with lateral scar very shallow or indistinct; mesepisternum smooth posteriorly, densely covered with large punctures dorsally and posteriorly, clothed with minute setae along dorsal border. Central area of metasternum smooth; anterior intermediate and lateral areas densely covered with hair-bearing punctures; posterior intermediate area almost smooth, though rather densely covered with hair-bearing punctures along posterior border. Each abdominal sternite with lateral scars very small.

Male genitalia as shown in Fig. 3.

Length: 35–38 mm.

Holotype: ♂, Takengon, Aceh, VIII–1993; paratypes: 2 ♂♂, 4 ♀♀, same data as for the holotype. The holotype will be preserved in the National Science Museum (Nat. Hist.), Tokyo.

This new species is very similar to *A. altaceosternus* KUWERT from the Malay Peninsula, though differing in the shape of the upper tooth of left mandible.

Ceraius pilifer tobae subsp. nov.

Ceraius pilifer (PERCHERON), originally described from Java, was recorded by GRAVELY (1918) from Borneo, Sumatra and Java. HINCKS (1938) described *A. parvulus* from the Malay Peninsula, and considered that it is the replacement of *A. pilifer* in the Malay Peninsula. KON, UEDA and JOHKI (1993) described *A. hikidai* from Borneo, but it seems to be GRAVELY's Bornean *A. pilifer* (not PERCHERON's), and the new subspecies to be described below is identical with GRAVELY's Sumatran *A. pilifer*.

This new subspecies differs from the nominotypical subspecies in the following points: left outer tubercle more weakly bifid; right outer tubercle more or less quadrangular; anterior lower tooth of left mandible simple; lowest terminal tooth of right mandible more distinct. It differs from Bornean *A. hikidai* in the following points: lowest terminal tooth of right mandible larger; upper tooth of left mandible (or posterior convexity of left mandible) distinctly bifid at the tip; metasternum almost hairless between mesocoxae. In some of the northern Sumatran specimens, the mesosternum is clothed with a few to some hair-bearing punctures along the median line. Length: 27–31 mm.

Holotype: ♂, Aek Popo, Sumatera Utara, 30–IV–1993, K. IWASE leg. Paratypes: 3 exs., same data as for the holotype; 4 exs., Takengon, Aceh, IV–1993; 6 exs., Berastagi, Sumatera Utara, IX–1993; 1 ex., Solok, Sumatera Barat, VII–1993; 1 ex., Mt. Tandikat, Sumatera Barat, VIII–1993; 6 exs., Padang, Sumatera Barat, VII–1993; 3 exs., Mt. Singgalang, Sumatera Barat, VII–1993. The holotype will be preserved in the National Science Museum (Nat. Hist.), Tokyo.

Ceraius ashidai KON, ARAYA et JOHKI

Ceraius ashidai KON, ARAYA et JOHKI, 1992, p. 204.
Ceraius perakensis: GRAVELY, 1914, pp. 229, 287, 321; 1918, pp. 91, 93 [part].

KON and JOHKI (1992) redescribed *A. perakensis* KUWERT, and placed it in the genus *Ophrygonius* (*sensu* GRAVELY). KON, ARAYA and JOHKI (1992) described *A. ashidai* from the Malay Peninsula, but it seems to be identical with GRAVELY (1914, 1918)'s *A. perakensis* (not KUWERT's). KON and JOHKI (1993) regarded *A. perakensis* KUWERT as a synonym of *O. wallacei* (KUWERT). Previously GRAVELY (1914, 1918) recorded his *A. perakensis* (not KUWERT's) from the Malay Peninsula, Borneo and Sumatra, but the Sumatran specimens recorded by GRAVELY also belong to *A. ashidai* KON, ARAYA et JOHKI.

Many Sumatran specimens differ from the Malayan ones in the following points: anterior lower tooth of left mandible simple; lowest terminal tooth of right mandible distinct, larger than the lower denticle of right anterior lower tooth; right outer tubercle more or less quadrangular. However, these differences do not always appear in the Sumatran specimens.

Specimens examined. 9 exs., Aek Popo, Sumatera Utara, 30–IV–1993, K. IWASE

leg.; 3 exs., same locality, VII–1990, K. IZAWA leg.; 4 exs., Dolok Sanggul, Sumatera Utara, 6–IX–1993; 13 exs., Padang, Sumatera Barat, VII–1993.

Acknowledgement

The author wishes to thank Dr. S.-I. UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reviewing the manuscript of this paper, and to M. FUJIOKA, Y. MIYAKE and R. MURAMOTO for various help extended to him in the course of this study.

要　約

岩瀬一男: スマトラ産クロツヤムシ, *Aceraius* 属の 1 新種と 1 新亜種. ―― スマトラ産クロツヤムシのうち, *Aceraius* 属に属する 1 新種 *A. fujiokae* と, 1 新亜種 *A. pilifer tobae* を記載した. また, マレー半島から記載された *A. ashidai* KON, ARAYA et JOHKI をスマトラから記録した. いずれもよく似た形態をしているので, GRAVELY (1918) の検索表をもとに近縁な種の検索表を作成した.

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Elytra, Tokyo, **22** (1): 138, May 15, 1994

A Collecting Record of *Trigonarthris atrata* (Coleoptera, Cerambycidae, Lepturinae) from Illinois, USA

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I was able to examine specimens of the Lepturinae which are preserved in the insect collection of the Zoology Department of Eastern Illinois University, Charleston, Illinois, USA, through the courtesy of Dr. Michael GOODRICH, Professor of Zoology of the same University. Among those specimens, I found an uncommon species, *Trigonarthris atrata*, collected near Charleston, Illinois. This may be the first record of the species from the State of Illinois. The collection data are as follows:

Trigonarthris atrata (LECONTE, 1850): 1 ♀, Illinois, Coles Co., S28, T12N, R9E, 3-VI-1978, R. C. FUNK.

According to LINSLEY and CHEMSAK (1976), *Trigonarthris atrata* is distributed in the southeastern USA, and is known from Georgia (type area), Alabama, Mississippi, Kansas, Oklahoma and Texas. Though this Illinois specimen is very similar to *T. proxima*, I have examined a female specimen of *T. proxima* from Coles County, Illinois, at the same time. According to Dr. Jeffrey P. HUETHER, he collected this species in central Iowa on the flowers of *Cornus drummondi*. Judging from these data, this species possibly occurs in natural forests from the southeastern to the central USA.

I express my deep gratitude to Professor M. A. GOODRICH (Zoology Department of Eastern Illinois University) for the loan of specimens for identification and for giving me further information about the collection data, and to Dr. J. P. HUETHER (Geneva, New York) for giving me useful comment for this report.

Reference

LINSLEY, E. G., & J. A. CHEMSAK, 1976. Cerambycidae of North America, Part VI, No. 2. Taxonomy and classification of the subfamily Lepturinae. *Univ. Calif. Publ. Ent.*, (80): 1-186.

Elytra, Tokyo, **22** (1): 139–143, May 15, 1994

Descriptions of Two New Species of *Platycerus* (Coleoptera, Lucanidae) from Central Sichuan, Central China

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Abstract Two new lucanid beetles of the genus *Platycerus* are described from central Sichuan, Central China, under the names of *Platycerus benesi* sp. nov. and *P. dundai* sp. nov. Judging from obtusely rounded hind angles of pronotum, they belong presumably to the group of *P. delicatulus* hitherto known only from Japan.

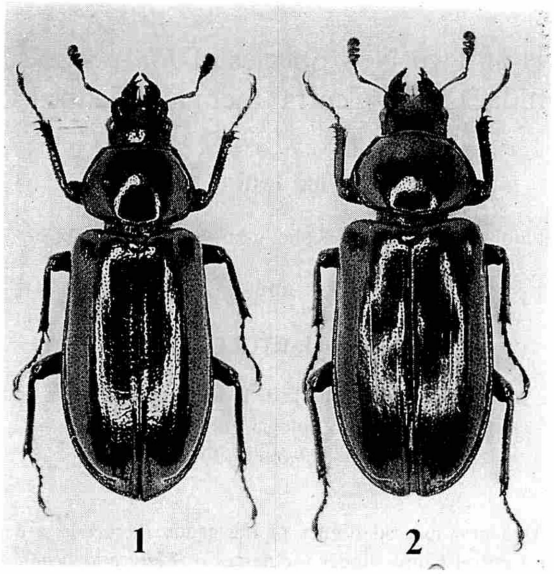
Our knowledge on *Platycerus* lucanid beetles of China is still very poor, as only two species have so far been recorded from that country: *P. caraboides caerulosus* DIDIER et SÉGUY (*sensu* IMURA, 1994) from Hunan, and *P. hongwonpyoi qinlingensis* IMURA from Shaanxi.

Recently, we had an opportunity to examine two female specimens of *Platycerus* collected from central Sichuan. They were found at different collecting sites in the same valley situated on the eastern slope of Mt. Gongga Shan. They are very similar in external appearance, but careful examination of their external morphology and genitalic structure has led us to the conclusion that they belong to two different species new to science.

Both the females are quite large for the genus (over 12 mm in length, including mandibles), have peculiarly shaped pronotum and elytra, and are readily distinguishable not only from the above two Chinese species but also from all other East Asian *Platycerus* including those from the Korean Peninsula and the Japanese Archipelago.

The most peculiar character of the new taxa is that the hind angles of the pronotum are not rectangularly pointed but rather obtusely rounded. A similar shape is found only in two Japanese endemic species, *P. delicatulus* LEWIS and *P. kawadai* FUJITA et ICHIKAWA. Although only two female specimens are now available for study, we are going to describe them in the present paper in order to increase the knowledge of the Chinese lucanid fauna and for their importance in further taxonomical and zoogeographical studies.

The abbreviations employed herein are as follows: HW – maximum width of



Figs. 1–2. *Platycerus* spp. from central Sichuan, China. —— 1, *Platycerus benesi* IMURA et BARTOLOZZI, sp. nov., ♀ (holotype), from Moxi in Luding Xian; 2, *P. dundai* IMURA et BARTOLOZZI, sp. nov., ♀ (holotype), from Hailuo-gou on the eastern slope of Mt. Gongga Shan in Luding Xian.

head including eyes; PAW – approximate width of pronotal apex, measured between the most advanced points on both sides; PW – maximum width of pronotum; PL – length of pronotum, measured along the mid-line; EW – maximum width of elytra; EL – maximum length of elytra.

We wish to express our deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, and to Ms. Sarah WHITMAN, Florence, for reviewing the manuscript of this paper. We are also greatly indebted to Mr. Hiroyuki SAKAINO, Kamakura, who kindly supported this study in various ways.

1. ***Platycerus benesi*** IMURA et BARTOLOZZI, sp. nov.

(Figs. 1, 3)

Female. Length: 12.5 mm (including mandibles). Width: 4.6 mm.

Body above brassy with dark greenish lustre especially on head, pronotum and elytral margins; median portion of mandibles, palpi and basal two-thirds of antennae reddish brown as well as tarsi and claws; marginal portion of mandibles, apical third of antennae and tibiae dark brown or brownish black; femora yellowish brown except for the apical tips which are dark brownish; venter black or dark brown except for metasterna, metepisterna and abdominal sternites which are reddish brown.

Head basically similar to that of the other members of the genus; its dorsal surface

rather sparsely scattered with punctures which are not confluent with one another.

Pronotum subtrapezoidal, widest a little behind the middle, more acutely narrowed towards apex than towards base; PW/HW 1.71, PW/PL 1.37, PW/PAW 1.66; apical margin slightly bisinuate; front angles obtuse and feebly protrudent anteriad; sides almost straight in front, subangulate at a little behind the middle, then gently narrowing posteriad; hind angles obtuse and gently rounded; basal margin arcuate; disc moderately convex above, with the surface sparsely and irregularly scattered with rounded punctures which are not confluent with one another.

Elytra oblong-subovate, widest at about three-fifths from bases, narrower towards apices than towards bases; EW/PW 1.32, EL/EW 1.59; shoulders distinct and strongly rounded, and devoid of humeral tooth; sides narrowly bordered throughout, slightly emarginate behind shoulders, feebly but widely arcuate at middle, then moderately rounded to apices which are rather narrowly and almost conjointly rounded, though forming a small re-entrant angle at suture; sutural parts slightly elevated in posterior two-thirds; disc with scattered small punctures often arranged in longitudinal lows, and sporadically contiguous with each other by transversely or somewhat obliquely set short wrinkles; each disc with two fine longitudinal striae almost at the centre and a little outside there.

Abdominal sternites rather sporadically punctate. Gonocoxite subquadrate, with the apical inner angle rather acute but gently rounded, and not strongly projected postero-internally; stylus oblong-ovate, with the sides almost parallel.

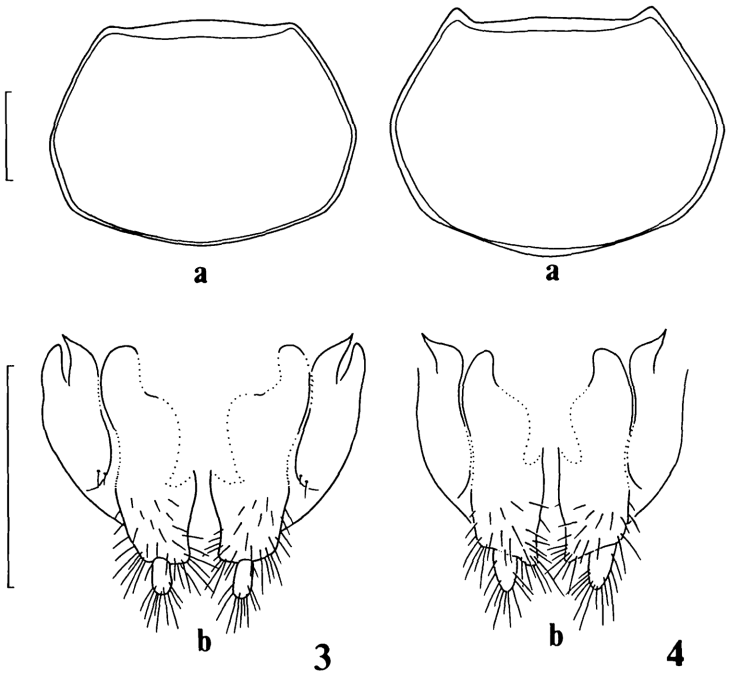
Male. Unknown.

Holotype: ♀, near Moxi, ca. 1,500 m, in Luding Xian, central Sichuan, Central China, 22–V～10–VI–1993, V. BENEŠ leg.

Type depository. Museo di Storia Naturale della Università di Firenze, Sezione di Zoologia "La Specola" (collection number 9731).

Derivatio nominis. The present new species is named in honour of Dr. Vladimír BENEŠ (Ustí nad Labem, Czech Republic), a neurosurgeon and also an entomologist, who collected the holotype specimen.

Notes. This new species is more closely related to the group of *P. delicatulus* (containing two Japanese species, *viz.*, *P. delicatulus* LEWIS and *P. kawadai* FUJITA et ICHIKAWA) than to the group of *P. caraboides* (four species in East Asia: *P. caraboides* LINNÉ, *P. acuticollis* Y. KUROSAWA, *P. sugitai* OKUDA et FUJITA, and *P. hongwonpyoi* IMURA et CHOE). It is easily distinguished from all the species belonging to the latter group by the differently shaped hind angles of pronotum. On the other hand, it is discriminated from the former group by the following points: size slightly larger; femora dark yellowish brown, though they are usually black in *P. delicatulus*; meso- and metatibiae black, though they are yellowish brown in *P. kawadai*; dorsal surface of head a little more sparsely punctate than in *P. delicatulus*; pronotum more transverse, with the front angles not so distinctly protrudent anteriad as in the two Japanese species; elytra slenderer, with the shoulders more effaced and the apices a little more narrowly rounded; elytral surface more sparsely punctate, more weakly



Figs. 3–4. Pronotum (a, dorsal view) and female genitalia showing gonocoxite and stylus (b, ventral view) of *Platycerus* spp. —— 3, *Platycerus benesi* IMURA et BARTOLOZZI, sp. nov. (holotype); 2, *P. dundai* IMURA et BARTOLOZZI, sp. nov. (holotype). Scale bar=1 mm.

rugoso-striate, and not clearly depressed in the median portion near suture on the disc; abdominal sternites more sparsely punctate; apical inner angle of gonocoxite a little more distinctly protrudent postero-internally.

2. ***Platycerus dundai*** IMURA et BARTOLOZZI, sp. nov.

(Figs. 2, 4)

Female. Length: 12.6 mm (including mandibles). Width: 4.9 mm.

Closely allied to *P. benesi* sp. nov., but differs from it in the following points: tibiae reddish brown except for blackish apical part; pronotum a little more transverse, with the front angles triangularly protrudent anteriad; elytra a little robuster, with the shoulders a little more distinct, apices more widely and almost conjointly rounded; elytral disc gently but obviously depressed at about the middle near suture, with the surface slightly duller and not at all rugoso-striate; genital organ with the apical-inner angle of gonocoxite more strongly projected postero-internally, stylus gradually narrowing to the apex.

Male. Unknown.

Holotype: ♀, Hailuo-gou Glacier Park on the eastern slope of Mt. Gongga Shan in Luding Xian, central Sichuan, Central China, 21～24-VII-1993, R. DUNDA leg.

Type depository. Museo di Storia Naturale della Università di Firenze, Sezione di Zoologia "La Specola" (collection number 9730).

Derivatio nominis. This species is named after its collector, Mr. Radek DUNDA, an entomologist who lives in Prague, Czech Republic.

要　約

井村有希・Luca BARTOLOZZI: 中国四川省中部から発見されたルリクワガタの2新種. ——中国のルリクワガタに関する知見はいまだにきわめて乏しく，これまでに湖南省と陝西省から，コルリクワガタ群に属する2種が記録されているにすぎない．筆者らはさいきん，四川省中部の貢嘎山東麓から発見された2頭の雌のルリクワガタを検することができた．両者はいっけんよく似ているが，それぞれ異なる種に属するものと思われ，なおかつ既知のいかなる種からも識別しうる形態的特徴を有している．もっとも注目すべき点は，その前胸背板後角が尖らず，丸まっていることで，これは東アジアに産する同属各種のなかでは，わが国に産するルリクワガタ *P. delicatulus* とホソツヤルリクワガタ *P. kawadai* のみに共有される形質である．雄が未知であるために確かな類縁関係はわからないが，四川省の種はおそらくこれら2種と同じ種群に属するものと考えられ，邦産種の起源を考えるうえで重要な発見であることは疑いない．そこで，本論文ではこれらの2種に *Platycerus benesi* sp. nov. および *P. dundai* sp. nov. という名を与えて記載した．

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Elytra, *Tokyo*, **22** (1): 144, May 15, 1994

Records of Two Carabid Beetles (Coleoptera, Carabidae) from Akutan Island, the Aleutians

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Through the courtesy of Mr. Yasuyuki WATANABE, I was recently given an opportunity to examine a short series of carabid beetles from Akutan Island, the Aleutians, collected by himself in the summer of 1993. They consist of two species belonging to the genus *Carabus* (s. lat.) recorded below.

Carabus (*Oreocarabus*) *taedatus* FABRICIUS
6 ♂♂, 5 ♀♀, 20～24-VII-1993, Y. WATANABE leg., in coll. Y. IMURA.
Carabus (*Morphocarabus*) *chamissonis* FISCHER
1 ♀, 20～24-VII-1993, Y. WATANABE leg., in coll. Y. IMURA

Both the species are widely distributed in North America including the Alaska Peninsula, and according to BREUNING (1932, '33), they are hitherto known from Unalaska Island, the Aleutians. All the specimens were collected by using bait traps set in the meadow lying at the foot of Mt. Akutan (ca. 10 m in altitude).

I am indebted to Mr. Yasuyuki WATANABE for kindly supplying me of the specimens, and to Dr. Eric VAN DEN BERGHE, University of Maryland, U. S. A., in providing with necessary literature.

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Elytra, Tokyo, **22** (1): 145–151, May 15, 1994

Some New Valgid and Cetoniid Beetles (Coleoptera, Scarabaeidae) from Taiwan

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3–16, Kamishakujii-minamichô, Nerima-ku, Tokyo, 177 Japan

Abstract Three new species and one new subspecies of scarabaeid beetles are described from Taiwan. They are: *Valgus okajimai*, *Dasyvalgus shimomurai*, *Protaetia orientalis sakaii*, and *P. kurosawai*.

In this paper, the author will describe two new valgid and two new cetoniid beetles from Taiwan. They belong to the genera *Valgus*, *Dasyvalgus* and *Protaetia*.

Before going further, the author wishes to thank Dr. Shun-Ichi UÉNO for permission to examine the National Science Museum collection, and also to Dr. Shûji OKAJIMA of the Insect Laboratry of Tokyo University of Agriculture, and Messrs. Masahide KUBOTA and Kaoru SAKAI for their kindness in entrusting valuable specimens to the author for investigation. The holotypes designated in this study are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Other specimens are preserved in the author's collection.

Valgus okajimai H. KOBAYASHI, sp. nov.

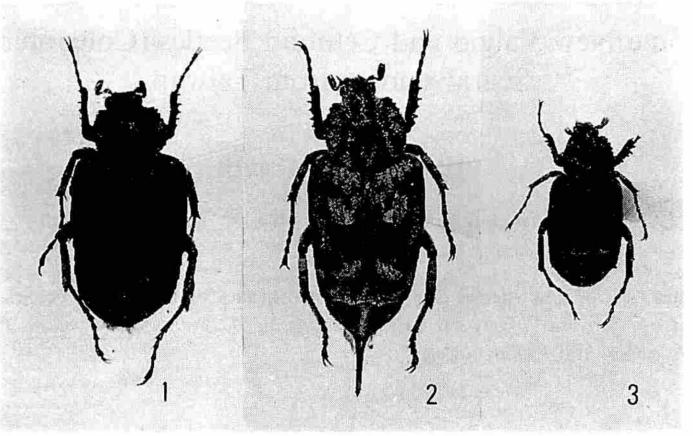
[Japanese name: Okajima-hirata-hanamuguri]

(Figs. 1–2, 4)

Female. Elongate in shape, not convex and almost flattened on elytra. Body black with dull lustre; ventral surface somewhat densely covered with grayish brown scales, dorsal surface rather densely covered with grayish brown to yellowish brown scales on basal and apical areas of elytra, with a longitudinal blackish maculation behind the middle of each elytron, propygidium rather sparsely with grayish brown scales, pygidium with a longitudinal maculation of the same color as propygidium, with a long caudal appendage which is dentate near the apex.

Clypeus rather broad, 1.5 times as broad as its length, densely punctate; anterior margin gently sinuate at the middle, bearing suberect hairs. Frons and vertex rather densely punctate, rather densely covered with grayish brown scales near eyes, with several dark reddish brown erect scales in the middle.

Pronotum scarcely broader than its length, densely punctate, the punctures being large and shallow, with two longitudinal ridges at the middle, which are rather convex before the middle but indistinct posteriorly; lateral margins gently curved at middle, strongly crenate in apical halves but indistinctly so behind, anterior angles indistinct,



Figs. 1–3. Habitus. —— 1–2, *Valgus okajimai* sp. nov.; 1, male, 2, female. —— 3. *Dasyvalgus* (*Nipponovalgus*) *shimomurai* sp. nov.

posterior ones rounded, posterior margin gently arcuate, with eight tufts of short hairs which are situated at the middle and near posterior margin. Scutellum elongate triangular, apical angle rounded, rather densely punctate. Elytra finely striate and rather densely punctate inside lateral costa, somewhat rugosely and densely punctate on lateral declivity, lateral costa without tuft of hairs at its posterior end.

Propygidium densely punctate, terminal spiracles hardly elevated, with two small tubercles at the middle. Pygidium not much broader than its length, rather flat, with a small boss-like elevation before caudal appendage. Anterior tibiae sharply 6-dentate, interspace between second and third teeth more widely separated than other ones. First tarsal segment of posterior leg very long, about twice as long as total length of 2nd and 3rd tarsal segments combined.

Male. Ventral surface sparsely bearing scales, dorsal surface almost glabrous except for longitudinal blackish maculations on elytra. Propygidium bearing short suberect setae near basal margin, tubercles more prominent, posterior margin gently sinuate. Pygidium sparsely bearing short suberect setae, without boss-like elevation. Interspace between second and third teeth of anterior tibae far apart from the others.

Length: 7.5–10.0 mm (excluding caudal appendage); breadth: 3.5–4.0 mm.

Holotype: ♀, Nanshanchi, Nantou Hsien, 5–III–1970, T. KOBAYASHI leg. Paratypes: 1 ♂, 2 ♀♀, Wulai, Taipei Hsien, 16–III–1985, S. OKAJIMA leg.; 1 ♂, Sungkang, Nantou Hsien, 4–V–1978, T. KOBAYASHI leg.

This species is nearly allied to *V. tonkinensis* ARROW, 1944, but may be separated from the latter by the following points: large-sized body; scale pattern of dorsal surface; basal tarsal segment somewhat short.

Dasyvalgus (Nipponovalgus) shimomurai H. KOBAYASHI, sp. nov.

[Japanese name: Shimomura-hirata-hanamuguri]

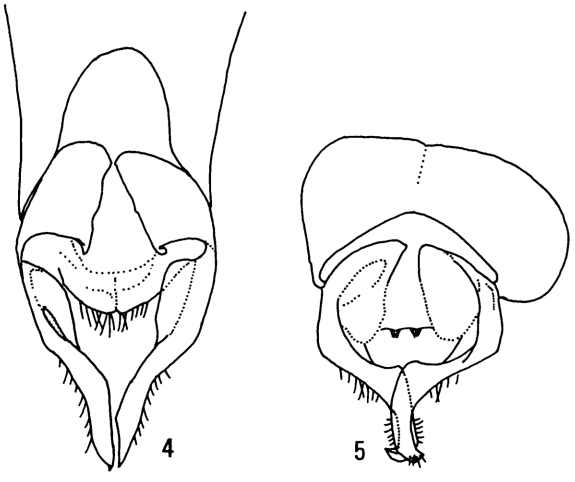
(Figs. 3, 5)

Female. Elongate, depressed above. Body reddish brown, rather shining; metasternum bearing sparse grayish brown scales, abdomen bearing very sparse grayish brown scales and scattered with suberect hairs, dorsal surface very sparsely covered with grayish white to yellowish brown scales on elytra, with a pair of round blackish maculation behind scutellum, and with a small tuft of hairs at the end of lateral costa, propygidium and pygidium rather sparsely with grayish white scales, and with a grayish white tubercle at the tip of pygidium, no caudal appendage.

Clypeus rather sparsely punctate; anterior margin gently sinuate at middle, bearing sparse suberect hairs. Frons and vertex rather densely punctate, though almost bare.

Pronotum almost as long as its breadth, rather densely punctate, the punctures being large and shallow, with two longitudinal ridges at the middle, which are rather convex before the middle but indistinct posteriorly; lateral margins gently curved at middle, strongly crenate in apical halves though only vaguely so behind, anterior angles almost rectangular, posterior ones rounded, posterior margin gently arcuate, with eight inconspicuous tufts of hairs which are situated at the middle and near posterior margin. Scutellum broadly triangular, apical angle rounded, rather densely punctate. Elytra finely striate and rather densely punctate inside lateral costa, somewhat largely and densely punctate on lateral declivity, and somewhat strigous in basal area.

Propygidium rather densely punctate, terminal spiracles short and pointed, with two small tubercles at the middle. Pygidium much broader than its length, very



Figs. 4–5. Male genitalia. —— 4, *Valgus okajimai* sp. nov.; 5, *Dasyvalgus (Nipponovalgus) shimomurai* sp. nov.

convex, with a small but conspicuous hollow on the underside of apex. Anterior tibiae sharply 7-dentate, apical to 3rd teeth large, 4th and 6th rather large, 5th and 7th very small. First tarsal segment of posterior leg rather short, about as long as the total length of 2nd and 3rd tarsal segments combined.

Male. Ventral surface bearing very sparse scales; elytra almost glabrous in basal halves, scattered with minute scales behind. Pygidium gently convex, almost bare, covered with dark grayish-white velvety bloom except for basal edges.

Length: 5.0–5.5 mm; breadth: 2.5–3.0 mm.

Holotype: ♂, Ro-shan, Nantou Hsien, 5–V–1973, H. YOKOYAMA leg. Paratypes: 1 ♂, Sulo, near Palin, Taoyuan Hsien, 28–IV–1978, T. SHIMOMURA leg.; 1 ♀, Lushan Spa, Nantou Hsien, 8–V–1975, M. KUBOTA leg.; 1 ♂, Formosa (without detailed data), T. KANO leg.

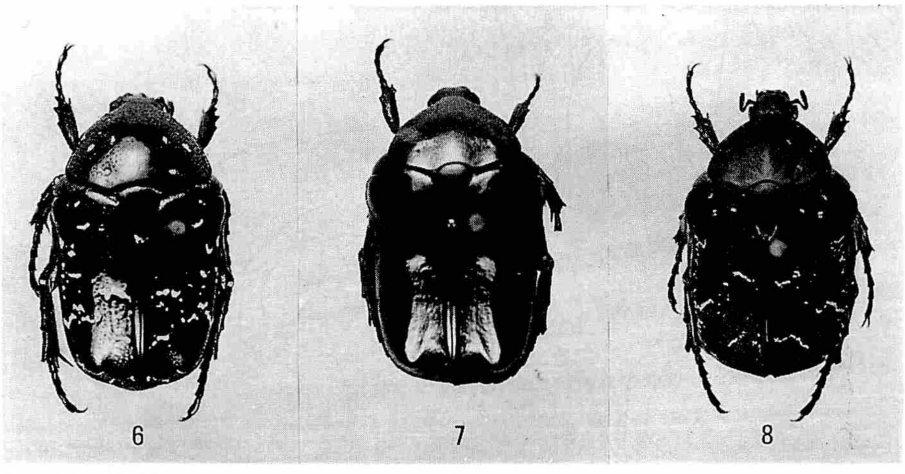
This species is somewhat allied to *D.* (*Nipponovalgus*) *angusticollis* WATERHOUSE, 1875, but it may be separated from the latter by the following points: lateral margins of pronotum strongly crenate in apical half; pygidium covered with dark grayish-white velvety bloom except for basal edges in male.

Protaetia orientalis sakaii H. KOBAYASHI, subsp. nov.

[Japanese name: Sakai-shiroten-hanamuguri]

(Fig. 6)

This subspecies may be separated from other geographical races distributed in the adjacent areas by the following points: Body cupreous black and without variation in colour (a type with greenish lustre occurs in the areas surrounding Taiwan, for example, Hongkong, Xiamen and Fuzhou in the Chinese Continent and parts of the Ryukyu



Figs. 6–8. Habitus. —— 6, *Protaetia orientalis sakaii* subsp. nov. —— 7–8. *P. kurosawai* sp. nov.; 7, male, 8, female.

Islands of Japan). Pronotum very faintly punctate in the middle and with a conspicuously longitudinal smooth line at the middle, maculations more evident than in the form distributed in Fujian District, China. Clypeus densely punctate at the base, the punctures gradually becoming sparser to front (almost uniformly punctate in other areas). Elytra more densely, somewhat rugosely punctate on lateral declivity.

Length: 21.0–25.0 mm; breadth: 11.0–12.5 mm.

Holotype: ♂, Puli ("Hori" on the label), Nantou Hsien, 25–VI–1965, T. SHIRÔZU leg. Paratypes: 4 ♂♂, 4 ♀♀, same data as for the holotype; 1 ♂, Kenting Park, Pingtung Hsien, 1–IV–1969, K. TAKAHASHI leg.; 1 ♂, Kenting Park, Pingtung Hsien, 12–VIII–1973, Y. SHIBATA leg.; 1 ♂, 2 ♀♀, Lin-kuo, Taipei Hsien, 16–VIII–1987, K. BABA leg.; 1 ♂, Mt. Senpei, near Liukuei, Kaohsiung Hsien, 31–V–1989, K. BABA leg.; 1 ♀, Liukuei, Kaohsiung Hsien, 1～8–XII–1988, K. BABA leg.

Protaetia kurosawai H. KOBAYASHI, sp. nov.

[Japanese name: Kurosawa-shiroten-hanamuguri]

(Figs. 7–9)

Body cupreous green or dark cupreous black to cupreus black, rather strongly shining on ventral surface; dorsal surface cupreous green and rather shining in male, dark cupreous black and opaque in female, bearing short suberect setae and rather long hairs on pronotum and elytra; prosternum, metasternal wings and hind coxae bearing long tawny grayish hairs. Pronotum with several small grayish white patches on the disc. Elytra with the same coloured small maculations as those of pronotum, which are situated on lateral margins, prediscal area and, middle and posterior juxtasutural margins (pronotal and elytral maculations sometimes inconspicuous). Pygidium with small whitish dots on the disc, though sometimes vanished.

Clypeus rather densely punctate, feebly raised in median part, anterior margin feebly sinuate at the middle, faintly reflexed. Frons rather sparsely punctate, bearing several rather long hairs beside eyes.

Pronotum rather finely and sparsely punctate in female, rather largely and sparsely so in male, with a longitudinal smooth line at the middle, broadest at the base; lateral margins gently curved at middle, convergent to front, completely bordered, anterior angles blunt, posterior ones gently rounded. Scutellum clearly longer than its breadth, impunctate, lateral margins somewhat gouged. Elytra very sparsely punctate in juxtascutellar area, rather densely and finely punctate inside discolateral costa and postdiscal area, sparsely punctate in prediscal area; setae inside discolateral costa rather long and evident, those in other areas rather short; apical sutural angles very blunt.

Pygidium somewhat strigose, especially near apex, margins feebly bordered. Metasternal prosess broader than its length, abruptly expanded to front, anterior margin gently rounded. Metasternum somewhat strigose at the sides, almost impunctate on the disc, with a longitudinal, rather deep sulcus at the middle. Each abdominal sternite almost impunctate or sparsely and roughly punctate at the sides. Anterior tibiae tri-

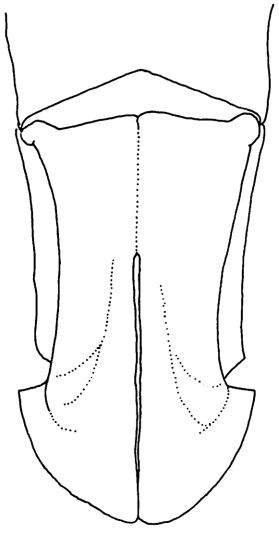


Fig. 9. Male genitalia of *Protaetia kurosawai* sp. nov.

dentate, though the 3rd tooth is blunt and inconspicuous in male. Middle femora bearing long tawny hairs in general. Middle and posterior tibiae densely bearing long yellowish tawny hairs on the inner sides.

Length: 19.0–21.0 mm; breadth: 12.5–13.5 mm.

Holotype: ♂, Puli ("Hori" on the label), Nantou Hsien, VII–1959. Paratypes: 3 ♀♀, same data as for the holotype; 1 ♀, Sungkang ("Tattaka" on the label), Nantou Hsien, 29–VI–1965, Y. KUROSAWA leg.; 2 ♀♀, Liukuei, Kaohsiung Hsien, 26–VII–1986; 1 ♀, Mt. Kuantao, Nantou Hsien, 12–VI–1983, A. YAMASHITA leg.

This new species is closely allied to *P. exasperata* FAIRMAIRE, 1893, but can be separated from the latter by the following points: dorsal surface rather shining in male, opaque in female, and bearing short, but much more evident, suberect setae and rather long hairs on pronotum and elytra; different coloration of the body.

要　約

小林裕和: 台湾産ヒラタハナムグリとハナムグリの4新種. —— 台湾から *Valgus* 属および *Dasyvalgus* 属の各1種, ならびに *Protaetia* 属の1種, 1亜種を新たに記載した. このうちで, *Valgus* 属は, 台湾から初めての記録となる.

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Elytra, Tokyo, **22** (1): 151–152, May 15, 1994

The Genus *Penichrolucanus* (Coleoptera, Lucanidae) New to the Fauna of Borneo[1)]

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The genus *Penichrolucanus* is a small-sized lucanid beetle having peculiar characters, and is considered to be termitophilous (RATCLIFFE, 1984; BARTOLOZZI, 1989). Six species are currently recognized for this genus; *P. copricephalus* DEYROLLE, 1863, from the Malay Peninsula, *P. elongatus* ARROW, 1935, also from the Malay Peninsula, *P. nicobaricus* ARROW, 1935, from the Nicobar and Andaman Islands, *P. sumatrensis* ARROW, 1935, from Sumatra Island, *P. leveri* ARROW, 1938, from Guadalcanal Island of the Solomon Group and *P. cryptonychus* (ZHANG, 1988) from Tibet (ARAYA *et al.*, 1993). On the recent survey, we collected three specimens of the beetles of this genus from Sabah and Sarawak, Malaysia, which are identified with *P. copricephalus*. In addition to these, we had an opportunity to examine one female specimen of *P. copricephalus* collected from southwestern Karimantan, Borneo. Here we will report them as the new records of the genus *Penichrolucanus* from Borneo. The collecting data of the specimens are as follows.

1) This study is partly supported by the Grant-in-aid No. 04041068 for Field Research of the Monbusho International Scientific Research Program, Japan.

1 ex., Poring, Kinabalu National Park, Sabah, Malaysia, 20-IX-1993, Y. JOHKI leg.; 1 ♀, Mt. Serapi, Sarawak, Borneo, 15-VIII-1993 (collected as a pupa), K. ARAYA leg.; 1 ex., Samunsam, Sarawak, Borneo, 6-IX-1993, K. ARAYA leg.; 1 ♀, Mt. Bawang, southwestern Karimantan, Borneo, X-1990, N. NISHIKAWA leg.

Of these, one specimen from Poring will be deposited in the collection of the Museum of Kinabalu National Park, Sabah, and the other specimens in the entomological collection of the Department of Zoology, Faculty of Science, Kyoto University.

RATCLIFFE (1984) noted the problem on the curious distribution of the genus (see above), and predicted the discovery of its members between the Malay Peninsula and the Solomons. The discovery of *P. copricephalus* from Borneo meets well with this prediction, and bridges the two isolated ranges of this genus. Further field works may possibly yield additional records of this genus from other Sunda islands.

In closing this brief report, we wish to thank Dr. M. MATSUI, Dr. T. HIKIDA, Dr. M. KON, Dr. Y. JOHKI, Mr. H. OTA, Mr. T. OBUCHI and Mr. H. ASHIDA for their help, and to Messrs. D. LABANG, A. A. HAMID, and the staff of National Park and Wildlife, and Forest Research Sections, Forest Department of Sarawak, for continuous support during the field work in Sarawak. The survey within Kinabalu National Park was conducted under the permission from Sabah Parks, and we also express our gratitude to the staff of Kinabalu National Park for their kind support.

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Elytra, Tokyo, **22** (1): 153–157, May 15, 1994

エゾクロツヤミズギワコメツキの形態について

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Notes on the Morphological Structure of *Fleutiauxellus yezoensis* (Coleoptera, Elateridae) from Japan

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Abstract *Fleutiauxellus yezoensis* ÔHIRA is a negastriine elaterid beetle originally described from Is. Rishiri-tô in the Japan Sea off the Cape Nosappu of northern Hokkaido. It was also known from the mountain areas of Hokkaido.

General structure of this unique species examined by SEM-images (Fig. 1) is described for facilitating recognition of its systematic position in the genus *Fleutiauxellus* of the Negastriinae from Japan. Besides, it was found from Aomori Prefecture, northern Honshu, by a form to be described below as the subspecies *tsugaru* nov. The holotype of this new subspecies is preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Fleutiauxellus yezoensis tsugaru subsp. nov.

[Japanese name: Tsugaru-kuro-mizugiwa-kometsuki]

(Fig. 2 A–J)

Male. Length 4–5 mm. Body moderately elongate and more or less depressed above. Surface black and shining except for blackish brown antennae (3 basal segments more or less dusky brown); vestiture fulvous and decumbent, becoming longer on head and pronotum.

This new subspecies can be distinguished from the nominotypical subspecies from Hokkaido by the weaker longitudinal impression on frons, more rounded sides of pronotum with posterior angles more sharply pointed posteriorly, shorter 3rd segments of antennae, and more clearly yellowish brown tibiae.

Holotype: ♂, Sukayu in Aomori Prefecture, 7–VIII–1993, H. OZAKI leg. Paratypes: 1♂, Sukayu in Aomori Prefecture, 18–VIII–1991, H. OZAKI leg.; 2♀♀, same locality, 17–VIII–1992, H. OZAKI leg.; 3♂♂, 1♀, same locality, 7–VIII–1993, H. OZAKI leg.; 3♀♀, same locality, 15–VIII–1993, H. OZAKI leg.

Distribution. Aomori Prefecture, Honshu, Japan.

本種は，1963年7月に，柴田泰利氏が利尻島で採集された9個体の標本にもとづいて，ÔHIRA (1973) が新種として記載した黒色の小型種である．その後，北海道内陸の各地に分布することが判明しているが，最近になって青森県でも見出されたので，両地域に分布するものの詳しい形態や，分類上の位置について，ここに報告する．

本文を草するにあたり，この報文を発表するについて種々ご指導をいただいた国立科学博物館の上野俊一博士，標本について支援をいただいた層雲峡博物館の保田信紀氏，弘前市の尾崎俊寛氏，名古屋市の蟹江　昇氏に心からお礼を申し上げる．

種の概要

本種は前述のように，*Fleutiauxellus* 属に所属する新種として ÔHIRA (1973) が利尻島から記載したが，KISHII (1976) は自身が設立した *Menoko* 属の種として本種の所属を変更し，同様に KISHII (1987) にも *Menoko* 属の種として扱い，分布に北海道を加えている．

原記載で筆者が “tarsi and claws simple” と明記しているにもかかわらず，どうして本種が爪の内側基部が拡大する *Menoko* 属の種と誤って扱われたのか不明であるが，ここに示したように本種の爪は簡単であり，雄交尾器の形態から判断しても *Fleutiauxellus* 属に所属する種であると考えられる．

本種は寒冷地系の種で，北海道でも山岳地帯に広く分布しているようであるが，詳しい生態などは不明である．また，最近になって青森県酸ケ湯において本種が見出されたが，これは北海道産のものと若干異なるところがあるので，ここに亜種として記載することにし，その形態の概要も示した．

北海道産亜種の形態

雄．体長は 4～5 mm，本属の種としては比較的大型である．体は黒色で光沢を有し，やや扁平状，上翅はときに黒褐色を呈する．触角は黒褐色（基部3節はやや暗褐色），肢は黄褐色であるが腿節は暗褐色を呈し，体表面には黄褐色～褐色毛を生ずる．

頭部の前頭部は扁平であるが，正中部には浅い縦凹溝を生ずる (Fig. 1 B の↖印)．前頭横隆線は幅せまく縁取られ，前縁は湾曲する (Fig. 1 B)．触角は細長く，前胸背板の後角より末端2節ほど後方に伸長する．第2節は短小で円筒状，第3節は細長い倒円錐形で，第2節の約 1.6 倍の長さ，第4節は第3節とほぼ等長である (Fig. 1 F)．小顎肢の末節は弱く端方へ拡大する．

前胸背板は矩形状で幅よりやや長い．両側は中央やや後方部でもっとも幅広く，後角前で顕著に内方へ湾曲する (Fig. 1 G の↗印)．背面は膨隆し，正中部には通常弱い平滑縦隆線を生ずる (Fig. 1 D の↖印)．点刻間の表面は不規則な弱いしわ状を呈する (Fig. 1 D)．後角は後外方へ突出し，末端は鋭くとがる (Fig. 1 H)．背面の隆起線は短く，前胸背板の長さの 1/3 近くまで伸長する．前胸腹板突起は前肢基節腔を越えて後方へ直線状に伸長，末端は細まってとがる (Fig. 1 I)．小盾板は舌状で，両側は湾曲して末端に向かって漸次細まる (Fig. 1 C)．

上翅の条線は明瞭に印刻され，間室部はやや扁平，小点刻を生じ弱いしわ状になっている．腰板は幅せまく，中央部でやや拡大，それから外方に漸次細まる．肢の付節は簡単で，爪の内側基部は顕著に拡大しない．

交尾器の外形（背面）は図示したようで，中央突起は細長く，末端部は細まって鈍くとがる (Fig. 1 J)（図では末端部が破損）．側突起は細長く，末端は鋭くとがる (Fig. 1 K)．

雌．体長は 5～5.5 mm．一般に雄に比べて体が大型で幅広い．触角は短く，末端は前胸背板の後角

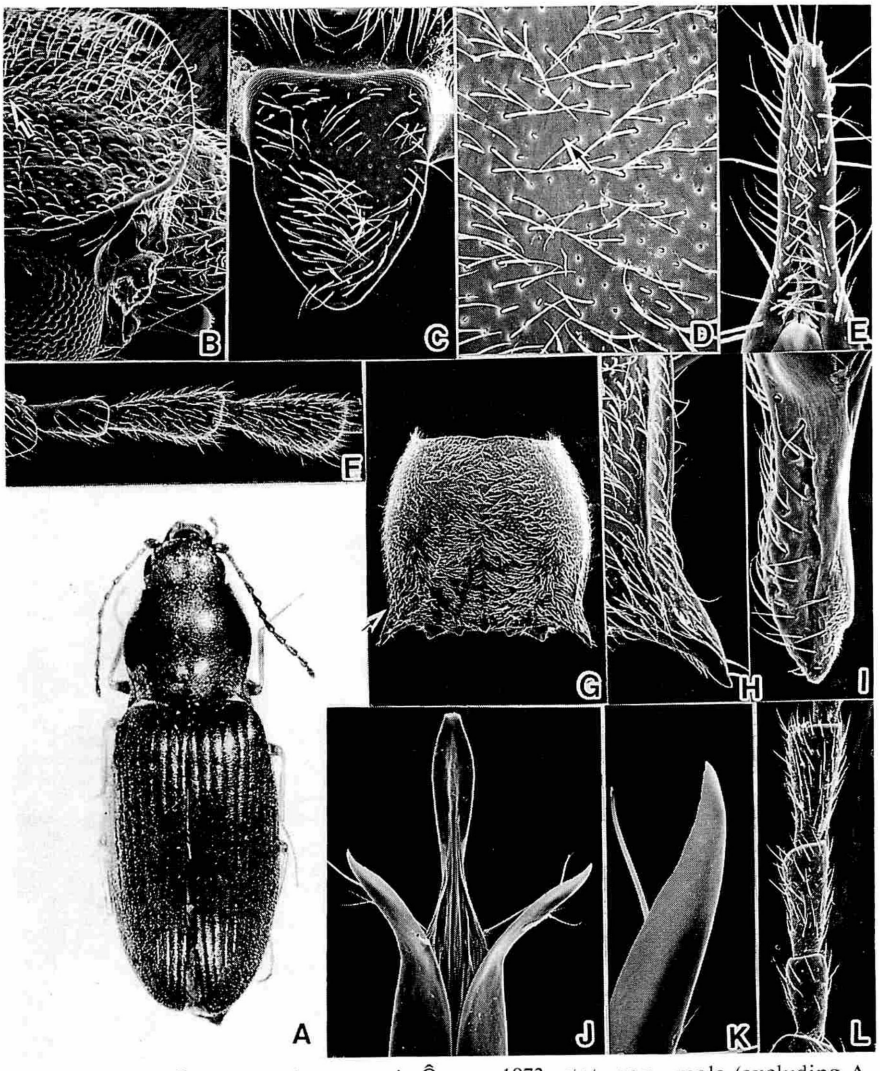

Fig. 1. *Fleutiauxellus yezoensis yezoensis* ÔHIRA, 1973, stat. nov., male (excluding A, E, L which are of a female) (Sôunkyô in Hokkaido). —— A, Adult, body length 5.5 mm; B, frons of head, latero-dorsal aspect; C, scutellum; D, medio-dorsal surface of pronotum; E, ovipositor; F, L, 2nd to 4th segments of antenna; G, pronotum, dorsal aspect; H, right hind angle of pronotum; I, prosternal process, lateral aspect; J, K, apical portion of aedeagus, ventral aspect.

より末端1節ほど後方に伸長，第3節は円筒状で，第4節は第3節とほぼ等長である (Fig. 1 L)．産卵管は細長く，多数の不規則な剛毛を生ずる (Fig. 1 E)．また，内部生殖器の袋内の2枚の板状物はよく発達する．分布は利尻島，北海道．

調査標本：2♂♂，2♀♀，利尻島 (姫沼)，25-VII-1963，柴田採集 (基準標本)．1♀，層雲峡，18-VII-1980，保田採集．1♂，4♀♀，大雪山 (黒岳)，1-VIII-1981，保田採集．1♀，上川町，5-VII-

1983, 保田採集. 1♂, ルベシベ川 (上川町), 3-VIII-1984, 保田採集. 1♂, 1♀, 羅臼岳, 23-VII-1986, 蟹江採集.

青森県産亜種の形態

弘前市に在住の尾崎俊寛氏が, 青森県酸ケ湯の山道の砂礫中より見出された個体を詳しく調べた結

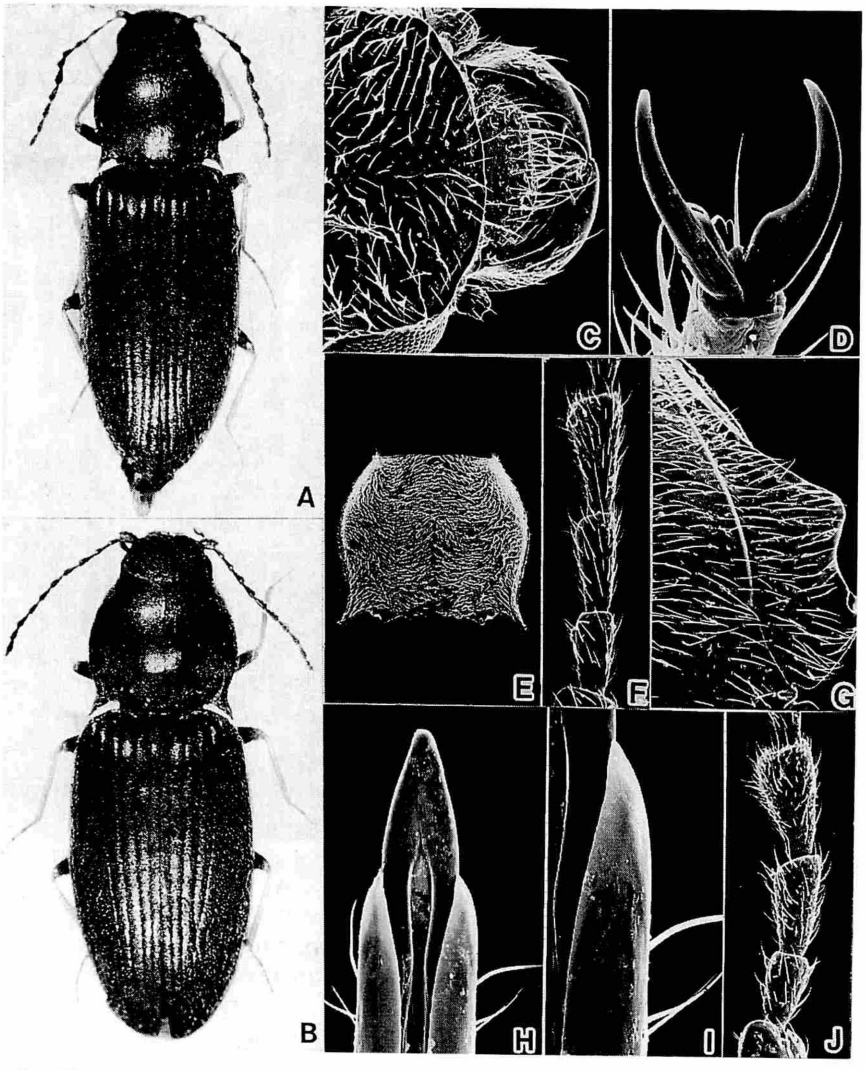

Fig. 2. *Fleutiauxellus yezoensis tsugaru* subsp. nov., male (excluding B, F which are of a female) (Sukayu in Aomori Prefecture, Honshu). —— A, Paratype, body length 5 mm; B, paratype, body length 5.5 mm; C, frons of head, dorsal aspect; D, ungula of hind leg; E, pronotum, dorsal aspect; F, J. 2nd to 4th segments of antenna; G, basal plate; H, I, aedeagus, ventral aspect.

果，前記の利尻島や北海道内陸山岳地帯に分布する *F. yezoensis* であることが判明した．しかし，地理的な隔離によって生じたと思われる，色彩や形態上の若干の相違が見出されたので，ここに *F. yezoensis* の亜種として記載することにした．記載文は Abstract につづいて掲載した．

雄．体長は 4.5 mm．一般形態は図示 (Fig. 2) したようで，頭部の前頭部は弱く膨隆し，目のあいだの縦凹溝はより浅く印刻され，やや不明瞭である (Fig. 2 C)．触角の第 3 節はより短小で，第 4 節よりやや短い (Fig. 2 J)．前胸背板の両側はより顕著に外方に湾曲，背面の点刻はより小型で，点刻間の表皮面はより平滑である．また，後角はより後方に突出する (Fig. 2 E)．雄交尾器の外形は図示したようである (Fig. 2 H–I)．

雌．体長は 5～5.5 mm．体は雄より大型で幅広い (Fig. 2 B)．触角は短く，末端は前胸背板の後角よりやや長い程度，第 3 節は第 4 節より明らかに短い (Fig. 2 F)．また，雌雄とも，肢の脛節はより明かるい黄褐色を呈する．

調査標本：5♂♂，6♀♀，青森県酸ケ湯，18–VIII–1991～15–VIII–1993，尾崎採集．

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Elytra, Tokyo, **22** (1): 158, May 15, 1994

Collecting Records of Cerambycid Beetles (Coleoptera, Cerambycidae) from Shikine-jima of the Izu Islands

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In the summer of 1984, I made a short collecting trip with Mr. Michiaki HASEGAWA to Shikine-jima Island of the Izu Islands, and collected a small series of cerambycid beetles. Although 13 species were collected by myself at that time, most of them had already been recorded from the island, except for *Apriona japonica*. No information on the cerambycid fauna of Shikine-jima Island has been reported since the publication of the checklist of the Cerambycidae of the Izu Islands (FUJITA, 1979), and only 15 species are presently known from the island. The faunal knowledge of Shikine-jima Island seems poor, especially in view that the neighbouring island with similar condition of topography and vegetation, Nii-jima Island, is known to harbour nearly 50 cerambycid species. In the following lines, I am going to show my record for reference. The data of collection are common in all the species: Shikine-jima Island, Izu Islands, off central Honshu, 14~15-VII-1984, T. NIISATO leg.

1. *Megopis* (*Aegosoma*) *sinica sinica* (WHITE, 1853) 1 ex.
2. *Ceresium holophaeum* BATES, 1873 3 exs.
3. *Stenhomalus taiwanus* MATSUSHITA, 1933 1 ex.
4. *Chlorophorus muscosus* (BATES, 1873) 22 exs.
5. *Mesosa hirsuta hirsuta* BATES, 1884 2 exs.
6. *Mesosa* (*Aphelocnemia*) *longipennis* BATES, 1873 10 exs.
7. *Pterolophia* (*Hylobrotus*) *annulata* (CHEVROLAT, 1845) 4 exs.
8. *Anoplophora malasica* (THOMSON, 1865) 4 exs.
9. *Acalolepta sejuncta izuinsulana* HAYASHI, 1968 7 exs.
10. *Uraecha bimaculata bimaculata* THOMSON, 1864 3 exs.
11. *Apriona japonica* THOMSON, 1878 1 ex. (new record)
12. *Sophronica obrioides* (BATES, 1873) 8 exs.
13. *Sciades* (*Miaenia*) *tonsus* (BATES, 1873) 2 exs.

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Elytra, Tokyo, **22** (1): 159–162, May 15, 1994

Discovery of a New Firefly of the Genus *Luciola* (Coleoptera, Lampyridae) from Kume-jima of the Ryukyu Islands

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Abstract A remarkable new firefly of the genus *Luciola*, discovered on Is. Kume-jima west of Okinawa, the central Ryukyus, is described under the name of *Luciola owadai*. It is related to *L. kagiana* MATSUMURA from Taiwan and *L. clara* OLIVIER from Vietnam.

At the end of April, 1993, Dr. M. OWADA and the junior author made a short collecting trip to Kume-jima Island for a research of the zygaenid moth *Eterusia aedea*, under the sponsorship of the Fujiwara Natural History Foundation, Tokyo. Kume-jima is a small island lying in the East China Sea about 92 km west of Okinawa Island, the central Ryukyus. Making a light trap collecting on the 27th of April, the junior author found a large strange firefly, which resembled in general appearance the Japanese firefly, *Luciola cruciata* MOTSCHULSKY, though coloration of the pronotum was markedly different. The night collecting was not so successful that the light trap was set at about 10: 00 pm, and when the mercury lamp was put out, they found a large swarming of fireflies above a small stream.

This discovery was immediately noticed to the senior author by Dr. OWADA, but he was unable to believe it until he actually saw the specimens. The junior author continued to make observation of the firefly, and confirmed that the larvae were aquatic like *Luciola cruciata*. After a careful examination of the specimens, the authors have concluded that the firefly is a member of typical *Luciola*, and is related to a Taiwanese species. It will be described as new to science in the following lines.

The authors are much indebted to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critical reading of the manuscript of this paper, to Dr. Mamoru OWADA of the same museum for his kind support in studying on the remarkable species, and to Dr. Katsuyoshi ISHIDA, Meijo University, Nagoya, for drawing fine line sketches.

Luciola owadai M. SATÔ et KIMURA, sp. nov.

(Figs. 1–2)

Male. Body elongate, moderately convex and closely covered with dark brown hairs all over, except for the hairs of pronotum which are yellowish orange. Head, elytra, antennae and legs black; metasternum and abdominal segments blackish brown except for 5th and 6th visible segments which are whitish yellow; pronotum, scutellum, base of elytral suture, protrochanters and mesosternum orange yellow.

Head rather small; vertex more or less concave, closely and distinctly punctate; eyes large, prominent, the distance between them about 1.2 times as broad as the breadth of each eye; antennae filiform, ralative lengths of respective segments 2: 1: 2: 2.5: 2: 2.2: 2: 2: 2: 1.8: 2. Pronotum about 1.6 times as broad as long, broadest at the base; front angles rounded, hind angles produced backwards with obtuse apices; surface closely and strongly punctate and furnished with medio-longitudinal impression. Scutellum large and subtriangular, with obtuse apex, and covered with close strong punctures. Elytra about 1.3 times as broad as pronotum, about 2.5 times as long as breadth, the sides subparallel; surface closely and roughly punctate and provided with 4 costae

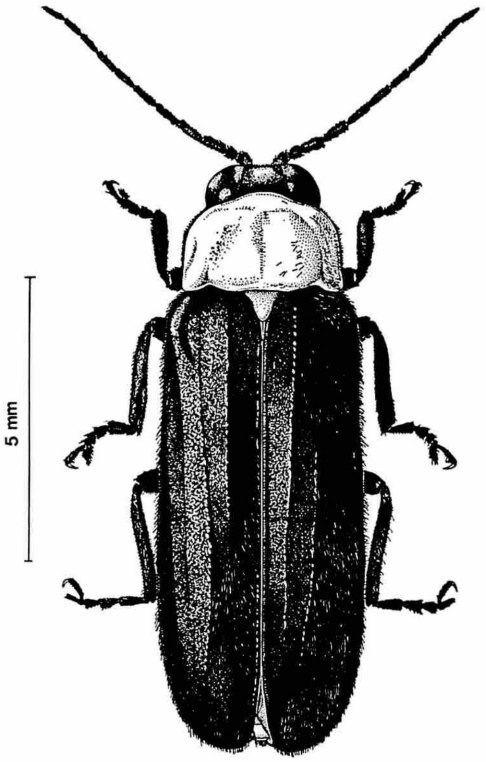

Fig. 1. *Luciola owadai* M. SATÔ et KIMURA, sp. nov.

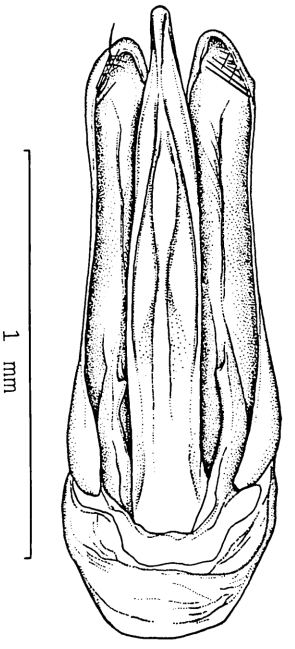

Fig. 2. Male genitalia of *Luciola owadai* M. SATÔ et KIMURA, sp. nov.

Apex of sixth abdominal segment slightly emarginate on each lateral side.

Male genitalia: basal lobe short; median lobe slender, inwardly reflexed in ventral aspect, with rounded apex; lateral lobe more or less stout, twofold in basal area and provided with some bristles at the outer preapex, the apex being gently rounded and not reaching the level of that of median lobe.

Length (from anterior margin of pronotum to apices of elytra): 12.7–14.5 mm; breadth: 4.8–5.5 mm.

Female. Almost identical with the male, but 5th abdominal segment is whitish yellow.

Length (from anterior margin of pronotum to apices of elytra): 15.2–16.0 mm; breadth 5.8–6.4 mm.

Holotype: ♂, Shirasegawa, Mt. Uegusuku, Is. Kume-jima, Ryukyu Islands, 27–IV–1993, M. OWADA leg. Allotype: ♀, same data as for the holotype. Paratypes: 18 ♂♂, same data as for the holotype; 32 ♂♂, 1 ♀, same locality as for the holotype, 27–IV–1993, M. KIMURA leg.; 5 ♂♂, 15 ♀♀, same locality, 8–V–1993, M. KIMURA leg.

The holo-, allo- and some paratypes are preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The remaining paratypes are distributed to the collections of the Entomological Laboratory, Ehime University, the Entomological Laboratory, the University of the Ryukyus, Nagoya Women's University, Natural History Museum and Institute, Chiba, Yokosuka Natural

History Museum, and M. KIMURA.

Notes. The present new species is related to *L. kagiana* MATSUMURA from Taiwan and *L. clara* OLIVIER from Vietnam, but it can be distinguished from them by the following points: different form of pronotum, darkened colour of ventral surface, yellowish orange portion of elytral suture restricted to the base, and characteristic feature of male genitalia.

The specific name is given in honour of Dr. Mamoru OWADA who is one of the discoverers of the new species.

要　約

佐藤正孝・木村正明: 琉球列島久米島産 *Luciola* 属の 1 新種. —— 1993 年 4 月に, 大和田守博士と木村によって久米島で得られた *Luciola* 属のホタルは, 台湾の *L. kagiana* MATSUMURA およびヴェトナムの *L. clara* OLIVIER に類似の新種とわかったので, クメジマボタル *L. owadai* M. SATÔ et KIMURA と命名して, ここに記載した.

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Elytra, Tokyo, **22** (1): 162–164, May 15, 1994

A List of Lepturine Beetles (Coleoptera, Cerambycidae) Collected by Using Malaise Traps in Illinois, USA

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Through the courtesy of Professor Michael GOODRICH of Eastern Illinois University, Charleston, Illinois, USA, I have had the opportunity to examine lepturine specimens collected by using Malaise traps. These traps were set in forests in Jackson Co., Clark Co., Coles Co. and Wabash Co., Illinois, by Prof. M. GOODRICH and his graduate students. I

am going to give herewith a list of the species obtained of the Lepturinae, with collection data. Most of the specimens are preserved in the insect collection of the Zoology Department of Eastern Illinois University.

1) *Stenocorus cinnamopterus* (RANDALL, 1838) Rocky Branch, Clark Co., IL: 1 ♀, 14～21-V-1990, 1 ♀, 28-V/4-VI-1990, M. A. GOODRICH; same locality: 1 ♀, 18～24-V-1992, J. W. GRIFFITHS. Burgner Acres, Coles Co., IL: 1 ♀, 1～8-V-1992, 1 ♂, 8～15-V-1992, R. S. HANLEY.

2) *Gaurotes cyanipennis* (SAY, 1824) 7 miles West of Carbondale, Jackson Co., IL: 2 ♂♂, 1 ♀, 22～29-V-1993, 1 ♀, 29-V/5-VI-1993, 1 ♀, 5～12-VI-1993, M. A. GOODRICH & D. L. WOOD. Fox Ridge State Park, Coles Co., IL: 1 ♀, 19～25-V-1992, M. A. GOODRICH.

3) *Metacmaeops vittata* (SWEDERUS, 1787) 7 miles West of Carbondale, Jackson Co., IL: 2 ♀♀, 22～29-V-1993, 2 ♀♀, 29-V/5-VI-1993, 5 ♀♀, 5～12-VI-1993, 1 ♀, 12～19-VI-1993, M. A. GOODRICH & D. L. WOOD. Rocky Branch, Clark Co., IL: 1 ♀, 28-V/4-VI-1990, 1 ♂, 25-VI/2-VII-1990, 1 ♀, 12～19-V-1991, M. A. GOODRICH; same locality: 2 ♀♀, 7～14-VI-1992, 1 ♀, 14～21-VI-1992, 1 ♂, 21～28-VI-1992, 1 ♂, 28-VI/5-VII-1992, 2 ♀♀, 13～20-VI-1993, J. W. GRIFFITHS. Fox Ridge State Park, Coles Co., IL: 1 ♀, 1～8-VI-1992, 2 ♀♀, 8～15-VI-1992, 2 ♀♀, 15～22-VI-1992, 2 ♀♀, 12～19-VI-1993, M. A. GOODRICH.

4) *Strangalia luteicornis* (FABRICIUS, 1775) 7 miles West of Carbondale, Jackson Co., IL: 1 ♂, 1 ♀, 19～26-VI-1993, 1 ♀, 26-VI/3-VII-1993, M. A. GOODRICH & D. L. WOOD. Rocky Branch, Clark Co., IL: 4 ♂♂, 4 ♀♀, 8～16-VII-1989, 2 ♂♂, 11～18-VI-1990, 1 ♂, 2～9-VII-1990, 5 ♂♂, 1 ♀, 2～13-VI-1991, 20 ♂♂, 4 ♀♀, 13～24-VI-1991, 37 ♂♂, 8 ♀♀, 24～30-VI-1991, 14 ♂♂, 2 ♀♀, 30-VI/7-VII-1991, 3 ♀♀, 7～14-VII-1991, 1 ♀, 30-VII/8-VIII-1991, M. A. GOODRICH; same locality: 2 ♂♂, 13～20-VI-1993, 2 ♂♂, 20～29-VI-1993, J. W. GRIFFITHS. Fox Ridge State Park, Coles Co., IL: 1 ♂, 8～15-VI-1992, 1 ♂, 15～22-VI-1992, 1 ♂, 22～29-VI-1992, 2 ♀♀, 6～13-VII-1992, 3 ♂♂, 12～19-VI-1993, 2 ♀♀, 10～17-VII-1993, 1 ♂, 17～24-VII-1993, M. A. GOODRICH. 3 miles SE of Allendale, Wabash Co., IL: 1 ♀, 27-VI/8-VII-1993, 1 ♂, 8～18-VII-1993, M. A. GOODRICH.

5) *Strangalia famelica solitaria* HALDEMAN, 1847 Rocky Branch, Clark Co., IL: 2 ♂♂, 8-VII-1989, 1 ♂, 13～24-VI-1991, 1 ♂, 24～30-VI-1991, M. A. GOODRICH.

6) *Strangalia bicolor* (SWEDERUS, 1787) 7 miles West of Carbondale, Jackson Co., IL: 2 ♂♂, 29-V/5-VI-1993, 1 ♂, 5～12-VI-1993, 3 ♂♂, 1 ♀, 12～19-VI-1993, 2 ♀♀, 19～26-VI-1993, M. A. GOODRICH & D. L. WOOD. Rocky Branch, Clark Co., IL: 1 ♂, 25-VI/2-VII-1990, M. A. GOODRICH; same locality: 1 ♂, 7～14-VI-1992, 1 ♂, 1 ♀, 14～21-VI-1992, J. W. GRIFFITHS. Fox Ridge State Park, Coles Co., IL: 2 ♂♂, 12～19-VI-1993, 1 ♀, 19～26-VI-1993, M. A. GOODRICH.

7) *Analeptura lineola* (SAY, 1824) 7 miles West of Carbondale, Jackson Co., IL: 1 ♀, 22～29-V-1993, 1 ♀, 29-V/5-VI-1993, M. A. GOODRICH & D. L. WOOD. Rocky Branch, Clark Co., IL: 1 ♀, 19～27-V-1991, M. A. GOODRICH; same locality: 1 ♀, 18～24-V-1992, 1 ♂, 28-VI/5-VII-1992, 1 ♂, 6～13-VI-1993, J. W. GRIFFITHS. Fox Ridge State Park, Coles Co., IL: 1 ♀, 8～15-VI-1992, 1 ♀, 5～12-VI-1993, 1 ♀, 12～19-VI-1993, M. A. GOODRICH.

8) *Typocerus v. velutinus* (OLIVIER, 1795) 7 miles West of Carbondale, Jackson Co., IL: 1 ♀, 12～19-VI-1993, 1 ♀, 19～26-VI-1993, 2 ♀♀, 3～11-VII-1993, 1 ♂, 11～18-VII-1993, M. A. GOODRICH & D. L. WOOD. Rocky Branch, Clark Co., IL: 1 ♀, 18～25-

VI-1990, 1 ♀, 25-VI/2-VII-1990, 2 ♀♀, 2～13-VI-1991, 4 ♂♂, 1 ♀, 13～24-VI-1991, 8 ♂♂, 24～30-VI-1991, 5 ♂♂, 30-VI/7-VII-1991, M. A. GOODRICH; same locality: 1 ♀, 19～26-VII-1992, 1 ♀, 9～16-VIII-1992, J. W. GRIFFITHS. 3 miles SE of Allendale, Wabash Co., IL: 1 ♀, 27-VI/8-VII-1993, M. A. GOODRICH.

9) *Typocerus deceptus* KNULL, 1929 7 miles West of Carbondale, Jackson Co., IL: 1 ♀, 11～18-VII-1993, M. A. GOODRICH & D. L. WOOD. Fox Ridge State Park, Coles Co., IL: 1 ♀, 29-VI/6-VII-1992, M. A. GOODRICH.

10) *Typocerus lugubris* (SAY, 1824) 7 miles West of Carbondale, Jackson Co., IL: 3 ♀♀, 12～19-VI-1993, M. A. GOODRICH & D. L. WOOD. Rocky Branch, Clark Co., IL: 1 ♀, 11～18-VI-1990, 1 ♀, 27-V/2-VI-1991, 1 ♀, 2～13-VI-1991, M. A. GOODRICH; same locality: 3 ♀♀, 21～28-VI-1992, J. W. GRIFFITHS. Fox Ridge State Park, Coles Co., IL: 1 ♀, 3～10-VII-1993, 1 ♀, 10～17-VII-1993, M. A. GOODRICH.

11) *Strophiona nitens* (FORSTER, 1771) 7 miles West of Carbondale, Jackson Co., IL: 1 ♂, 22～29-V-1993, 1 ♀, 12～19-VI-1993, M. A. GOODRICH & D. L. WOOD. Rocky Branch, Clark Co., IL: 2 ♂♂, 4 ♀♀, 4～11-VI-1990, 1 ♀, 11～18-VI-1990, 1 ♂, 19～27-V-1991, 3 ♀♀, 27-V/2-VI-1991, M. A. GOODRICH; same locality: 1 ♀, 7～14-VI-1992, 1 ♂, 1 ♀, 14～21-VI-1992, J. W. GRIFFITHS. Fox Ridge State Park, Coles Co., IL: 1 ♂, 1～8-VI-1992, 1 ♂, 8～15-VI-1992, 1 ♂, 22～29-VI-1992, 1 ♀, 5～12-VI-1993, 1 ♂, 1 ♀, 19～26-VI-1993, M. A. GOODRICH. 3 miles SE of Allendale, Wabash Co., IL: 1 ♀, 6～13-VI-1993, M. A. GOODRICH.

12) *Brachyleptura rubrica* (SAY, 1824) 7 miles West of Carbondale, Jackson Co., IL: 1 ♀, 12～19-VI-1993, M. A. GOODRICH & D. L. WOOD. Rocky Branch, Clark Co., IL: 4 ♀♀, 27-V/2-VI-1991, M. A. GOODRICH. Fox Ridge State Park, Coles Co., IL: 2 ♀♀, 8～15-VI-1992, 1 ♀, 15～22-VI-1992, 1 ♀, 22～29-VI-1992, 1 ♀, 29-VI/6-VII-1992, 3 ♀♀, 12～19-VI-1993, 2 ♀♀, 19～26-VI-1993, M. A. GOODRICH.

The twelve species listed above are widely distributed in the eastern United States of America. However, *Typocerus deceptus* is sporadic in distribution and is not commonly found. In addition, I have examined three females of *Necydalis mellita* (SAY, 1835) collected by a Wabash County trap. This species is rather rare in collections. According to Prof. M. GOODRICH, he was able to collect twenty-one females of *N. mellita* in 1993, by Malaise traps, though he had never collected it in Illinois by any other means in previous years. The collecting data are as follows: 7 miles West of Carbondale, Jackson Co., IL: 1 ♀, 12～19-VI-1993, M. A. GOODRICH & D. L. WOOD. 3 miles SE of Allendale, Wabash Co., IL: 3 ♀♀, 6～13-VI-1993, 16 ♀♀, 13～20-VI-1993, 1 ♀, 20～27-VI-1993, M. A. GOODRICH.

I did not realize that Malaise traps catch so many lepturines and other Coleoptera, including some rare species. Malaise traps should be a good device for studying the coleopteran fauna of woodland habitats in Japan.

I express my deep gratitude to Professor Michael GOODRICH (Zoology Department, Eastern Illinois University) for the loan of specimens for identification and for his kindness of reading through the original manuscript of this short report.

Elytra, Tokyo, **22** (1): 165–170, May 15, 1994

Four New *Laena* Species (Coleoptera, Tenebrionidae) from Yunnan, Southwest China[1)]

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Abstract Four new species of the tenebrionid genus *Laena* are described from the mountains in the vicinities of Dali City, Yunnan Province, Southwest China, under the names *L.* (s. str.) *yuzhuensis*, *L.* (s. str.) *yunnanensis*, *L.* (s. str.) *daliensis* and *L.* (s. str.) *xiaoi* (Adeliini, Tenebrionidae).

The genus *Laena* is a group of small apterous tenebrionid beetles usually found under humus in temperate broadleaved forests. In the course of the zoological survey of a Sino-Japanese joint party of entomologists on soil animals in Yunnan, Dr. Shun-Ichi UÉNO and Dr. Yasuaki WATANABE made a small collection of *Laena* specimens from the mountains in the vicinities of Dali City. They were submitted to the authors for taxonomic study, and were found to contain four new species. They will be described in the present paper under the names *Laena* (s. str.) *yuzhuensis*, *L.* (s. str.) *yunnanensis*, *L.* (s. str.) *daliensis* and *L.* (s. str.) *xiaoi*.

The holotypes of the new species to be described are deposited in the collection of the Shanghai Institute of Entomology, Academia Sinica.

The authors wish to express their deepest appreciation to Dr. Shun-Ichi UÉNO, National Science Museum (Nat. Hist.), Tokyo, Prof. Dr. Yasuaki WATANABE, Tokyo University of Agriculture, and Mr. XIAO Ning-nian, Kunming Institute of Zoology, Academia Sinica, for their kind help extended to the authors in the course of the present study. Thanks are also due to Dr. Yasuhiko HAYASHI and Mr. Kiyoshi ANDO, Osaka Coleopterological Society, for taking photographs inserted in this paper.

Laena (s. str.) *yuzhuensis* sp. nov.

(Fig. 1)

Male. Dark reddish brown, with basal portions of antennae, maxillary palpi,

1) This study is supported by the Grant-in-aid No. 04041042 for Field Research of the Monbusho International Scientific Research Program, Japan.

tarsi, etc., lighter in colour, margins of genae, apex of pronotum, femora and middle portion of abdomen much darker, eyes black; fore body slightly micro-shagreened above and sericeously shining, elytra more strongly shining than fore body above; each surface gently clothed with fine short hairs. Body rather elongate, moderately thickened and distinctly constricted between prothorax and elytra.

Head subquadrate, irregularly and coarsely punctate; clypeus transversely hexagonal and gently convex above, truncate in front, distinctly clothed with long hairs on each side; genae rather strongly raised anteriad, roundly produced obliquely forwards, with postero-ocular portions weakly produced laterad; frons with an oblong impunctate portion in middle, fronto-clypeal suture fine and sublinear; eyes medium-sized, weakly convex laterad, diatone about 6 times the width of transverse diameter of an eye. Antennae reaching basal portion of pronotum, ratio of the length of each segment from basal to apical: 0.42, 0.2, 0.35, 0.21, 0.23, 0.23, 0.23, 0.23, 0.24, 0.25, 0.47.

Pronotum subcordate, 1.2 times as wide as long, widest at apical 1/3; apex nearly straight in middle widely, neither margined nor rimmed; base moderately rounded and finely rimmed; lateral margins arcuate laterad and finely rimmed; front angles rather distinctly angulate; disc gently convex, rather closely, irregularly and coarsely punctate, each puncture with a short decumbent hair.

Elytra oblong ovate, about 1.6 times as long as wide, 2.4 times the length and a little more than 1.2 times the width of pronotum, widest at basal 3/7; dorsum rather strongly convex though slightly flattened in middle, thickest at the middle; disc rather strongly punctato-striate; intervals gently convex, each with a row of minute and haired punctures; apices produced posteriad; 9th interval with three setiferous umbilicate pores, one at basal 1/5, which is gently projected laterad and visible from above, another at apical 2/7, and the other at apical 1/7.

Propleura somewhat vitreous, strongly, rather sparsely punctate and finely haired; each femur without spine, ratios of the lengths of pro-, meso- and metatarsomeres: 0.51, 0.32, 0.31, 0.28, 1.2; 0.62, 0.39, 0.31, 0.29, 1.24; 1.31, 0.67, 0.37, 1.53.

Male genitalia fusiform and about 1.25 mm in length; fused lateral lobes 1/5 times the length of basal piece, with apex narrowly rounded.

Body length: 5.5–5.7 mm.

Holotype: ♂, Diancang Shan Mts., Yuzhu Feng (3,500 m alt.), Dali Shi, Yunnan, China, 5–IX–1993, Y. WATANABE leg. Paratype: 1 ex., same locality and date as for the holotype but 3,550 m in altitude, S.-I. UÉNO leg.

Notes. This new species somewhat resembles *Laena* (s. str.) *rhododendri* KASZAB, 1977, originally described from East Nepal, but can be distinguished from the latter by the medium-sized eyes, closely punctate genae, and subcordate pronotum with an impression on each side. The number and position of setiferous umbilicate pores on the 9th elytral interval seem to serve as an important feature for identifying the species.

Laena (s. str.) ***yunnanensis*** sp. nov.

(Fig. 2)

Male. Dark yellowish brown, with margins of pronotum, sutural intervals and femora darker in colour, mouth parts, tibiae and tarsi paler; dorsal surface strongly, vitreously shining, ventral surface moderately shining, each clothed with rather long hairs, which are distinct in postero-lateral portions of elytra. Body rather elongate, thickened posteriorly, distinctly constricted between prothorax and elytra.

Head widely pentagonal, gently raised in middle, with an impression in anterior portion on each side, irregularly and strongly punctate; clypeus somewhat transversely elliptical, distinctly clothed with rather long hairs, truncate in front; genae raised and almost impunctate in apical portions, sublinearly divergent forwards in dorsal view; eyes medium-sized, convex laterad, diatone about 5 times the width of transverse diameter of an eye. Antennae reaching basal portion of elytra, ratio of the length of each segment from basal to apical: 0.41, 0.2, 0.38, 0.23, 0.26, 0.28, 0.29, 0.31, 0.31, 0.33, 0.46.

Pronotum short subcordate, 1.2 times as wide as long, widest at apical 1/3; apex nearly straight, slightly margined in lateral portions; base hardly produced, finely margined; lateral margins moderately arcuate laterad, finely margined; front angles rounded; disc gently convex, rather closely punctate.

Elytra about 1.6 times as long as wide, 2.6 times the length and 1.3 times the width of pronotum, widest at basal 3/7, thickest at the middle, and rather strongly convex on dorsum; disc with rows of strong punctures, which are often weakly striated and are largest in the 3rd row; intervals slightly convex, each with a row of sparse punctures; 3rd interval with a setiferous umbilicate pores at apical 1/7, 7th with one at basal 1/11, and 9th with three: one at basal 1/7, which is distinctly projected laterad and visible from above, another at apical 2/7, and the other at apical 1/7, the latter two pores being more or less projected postero-laterad.

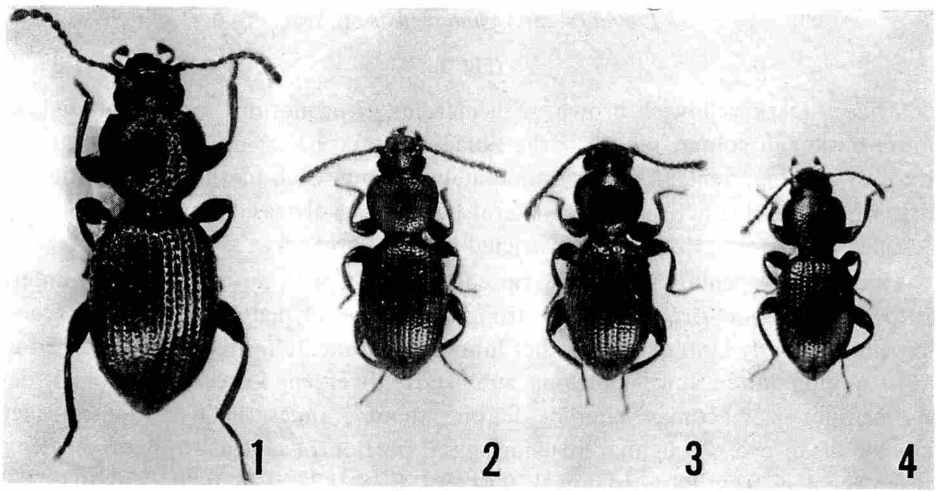
Propleura somewhat vitreous, rather closely punctate; each femur without spine, ratios of the lengths of pro-, meso- and metatarsomeres: 0.47, 0.32, 0.30, 0.23, 0.89; 0.63, 0.31, 0.26, 0.23, 1.18; 1.1, 0.68, 0.32, 1.27.

Male genitalia rather long (ca. 1.3 mm), with a basal piece toothed at the apex on each side and rather distinctly curved in basal portion.

Body length: 4.2–4.6 mm.

Holotype: ♂, Diancang Shan Mts., Zhonghe Feng (2,500 m alt.), Dali Shi, 4–IX–1993, S.-I. UÉNO leg. Paratypes: 10 exs., same data as for the holotype; 5 exs., Zhonghe Feng (2,500 m alt.), 4–IX–1993, Y. WATANABE leg.; 4 exs., Zhonghe Feng (2,620 m alt.), 3–IX–1993. S.-I. UÉNO leg.; 2 exs., Zhonghe Feng (2,620 m alt.), 4–IX–1993, Y. WATANABE leg.

Notes. This new species somewhat resembles *L.* (s. str.) *prehimalayica* KASZAB, 1977, originally described from Central Nepal, but can be distinguished from the latter by the body larger and distinctly haired, the pronotum gently convex and rather



Figs. 1–4. Habitus of *Laena* spp. —— 1, *L.* (s. str.) *yuzhuensis* sp. nov., ♂, holotype; 2, *L.* (s. str.) *yunnanensis* sp. nov., ♂, holotype; 3, *L.* (s. str.) *daliensis* sp. nov., ♂, holotype; 4, *L.* (s. str.) *xiaoi* sp. nov., ♂, holotype.

closely punctate, elytral punctures in rows not coarser than pronotal ones, and intervals with 5 setiferous umbilicate pores.

Laena (s. str.) ***daliensis*** sp. nov.

(Fig. 3)

This new species closely resembles the preceding one, *Laena* (s. str.) *yunnanensis* sp. nov., in having 5 pores on the elytra, but can be discriminated from the latter by the following points:

Male. Piceous, with antennae and legs lighter in colour, each surface more closely punctate and clothed with finer and a little decumbent hairs. Body more strongly constricted between prothorax and elytra; fore body above more thickened, while the elytra are less so.

Eyes a little larger and more strongly convex laterad, diatone about 5.2 times the width of transverse diameter of an eye; fronto-clypeal and fronto-genal borders impressed. Antennae with ratio of the length of each segment from basal to apical: 0.39, 0.2, 0.35, 0.24, 0.23, 0.23, 0.23, 0.24, 0.28, 0.26, 0.48. Pronotum a little less than 1.3 times as wide as long; base not margined.

Elytra slightly more than 1.5 times as long as wide, 2.2 times the length and 1.2 times the width of pronotum; rows of punctures more distinctly striated; intervals more convex, each with a row of denser punctures; 3rd interval with one setiferous umbilicate pore at apical 1/9, 7th with one at basal 1/9, and 9th with three: one at basal 1/6, which is distinctly projected laterad and visible from above, another at apical 1/5, and the

other at apical 1/10, the latter two gently projected postero-laterad; apices more strongly produced posteriad.

Propleura more finely punctate; legs more thickened: each femur without spine; tibiae gently incurved; ratios of the lengths of pro-, meso- and metatarsomeres: 0.37, 0.28, 0.26, 0.24, 1.18; 0.57, 0.32, 0.28, 0.26, 1.2; 1.27, 0.52, 0.24, 1.36.

Male genitalia shorter (ca. 1.1 mm in length) and thinner, with a basal piece not toothed at the apex on each side and less strongly curved in basal portion.

Body length: 4.4–4.6 mm.

Holotype: ♂, Laohu Shan (2,200 m alt.), Dali Shi, 3–IX–1993, Y. WATANABE leg. Paratypes: 2 exs., same data as for the holotype.

Laena (s. str.) ***xiaoi*** sp. nov.

(Fig. 4)

This new species also closely resembles *L.* (s. str.) *yunnanensis* sp. nov. in having 5 pores on each elytron, but can be distinguished from the latter by the following points:

Male. Reddish brown, with mouth parts and tarsi lighter in colour; each surface clothed with shorter, decumbent pale hairs. Body shorter and more strongly constricted between prothorax and elytra, slightly more convex above.

Head narrower, more sparsely and finely punctate, with an impunctate portion in middle; genae less distinctly divergent forwards; eyes smaller and less strongly convex laterad, diatone about 6 times the width of transverse diameter of an eye. Antennae a little shorter, reaching base of pronotum, ratio of the length of each segment from basal to apical: 0.41, 0.2, 0.36, 0.22, 0.24, 0.26, 0.27, 0.25, 0.27, 0.29, 0.39.

Pronotum 1.3 times as wide as long, widest at apical 1/3; disc weakly micro-shagreened; lateral margins and base finely margined; hind angles slightly, obliquely truncate and feebly sinuate before the truncation.

Elytra a little less than 1.6 times as long as wide, slightly less than 2.4 times the length and about 1.3 times the width of pronotum, widest at basal 2/5; rows of punctures sparser and not striated; intervals less convex, each with a row of finer punctures; 3rd interval with one setiferous umbilicate pore at apical 1/8, 7th with one at basal 1/18, and 9th with three: one at basal 1/7, which is distinctly projected laterad, another at apical 1/4, and the other at apical 1/8, the latter two pores being more or less projected postero-laterad; apices more strongly produced posteriad.

Propleura mico-shagreened, more finely punctate and haired; ratios of the lengths of pro-, meso- and metatarsomeres: 0.33, 0.26, 0.25, 0.24, 0.83; 0.43, 0.28, 0.25, 0.23, 0.81; 0.77, 0.28, 0.26, 1.24.

Male genitalia smaller (ca. 1.1 mm in length), with a less strongly curved basal piece.

Body length: 4.0–4.5 mm.

Holotype: ♂, Diancang Shan Mts., Yuzhu Feng (3,290 m alt.), Dali Shi, 5–IX–

1993, S.-I. UÉNO leg. Paratypes: 1 ex., same data as for the holotype; 3 exs., Yuzhu Feng (3,500 m alt.), 5-IX-1993, Y. WATANABE leg.

要　約

益本仁雄・尹　文英：中国云南省産チビヒサゴゴミムシダマシ属 (*Laena*) の4新種（ゴミムシダマシ科，チビヒサゴゴミムシダマシ族）．—— 1993年8～9月，中国云南省大理付近で，国立科学博物館上野俊一博士および東京農業大学渡辺泰明教授によって採集されたチビゴミムシダマシを検討した結果，4種を新種とみとめ，それぞれ *Laena* (s. str.) *yuzhuensis*, *L.* (s. str.) *yunnanensis*, *L.* (s. str.) *daliensis*, *L.* (s. str.) *xiaoi* と命名した．

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Elytra, Tokyo, **22** (1): 171–179, May 15, 1994

Notes on the Japanese Species of the Genus *Rhagium* (s. str.) (Coleoptera, Cerambycidae), with Description of a New Species

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Abstract After an investigation of a type specimen, it becomes clear that true *R. pseudojaponicum* PODANÝ occurs in the Tsushima Islands, Japan, and Korea including Jeju Island. The species distributed in Japan proper and hitherto regarded as *R. pseudojaponicum* is a new species and is described under the name *Rhagium femorale* sp. nov.

In former times, the Japanese species of the cerambycid genus *Rhagium* were considered monospecific, and the name *Rhagium inquisitor japonicum* BATES or *R. inquisitor rugipenne* REITTER was confusedly used for it. In 1960, HAYASHI divided them into two species, *R. japonicum* and *R. inquisitor rugipenne* based on the structure of male genitalia. In 1964, PODANÝ recognized four species in the Japanese fauna and newly described *R. pseudojaponicum* from the Tsushima Islands and *R. heylovskyi* from Jôzankei, Sapporo. AOKI (1972) revised Japanese species based on rich material from various areas and concluded that the Japanese fauna consists of three species, *R. japonicum* BATES, *R. heylovskyi* PODANÝ and *R. pseudojaponicum* PODANÝ. After this revision, TAKAKUWA (1984) added a new subspecies, *R. heyrovskyi hayakawai*, to the Japanese fauna.

Recently, I had an opportunity to examine a paratype of *Rhagium pseudojaponicum* PODANÝ used for taking the photograph accompanying the original description through the courtesy of Dr. Ilja OKÁLI of the Slovenské Národné Múseum. This species was originally described from the Tsushima Islands of Nagasaki Prefecture, Japan, and I was also able to examine some specimens collected in these islands together with many specimens from other parts of Japan and some others from Korea. After a close examinations of these materials, it was concluded that the species distributed in Japan proper and hitherto regarded as *R. pseudojaponicum* was a new species. On the other hand, true *R. pseudojaponicum* is actually a Korean species, and its habitat in Japan is restricted to the Tsushima Islands, lying between Korea and Kyushu. Thus, we have to face a problem on the taxonomy of Japanese *Rhagium*, because PODANÝ (1964) cited other localities of *R. pseudojaponicum* in his original description, "Honshu, Hokkaido; Mt. Yatsugatake, Kamikochi, Sapporo," based on his misunderstanding of HAYASHI's paper (1960), and because AOKI (1972) did not examine any *Rhagium* specimen from the Tsushima Islands which are the type locality of *R. pseudojaponicum*. Description

of the new species and a redescription of *R. pseudojaponicum* are given in the following lines.

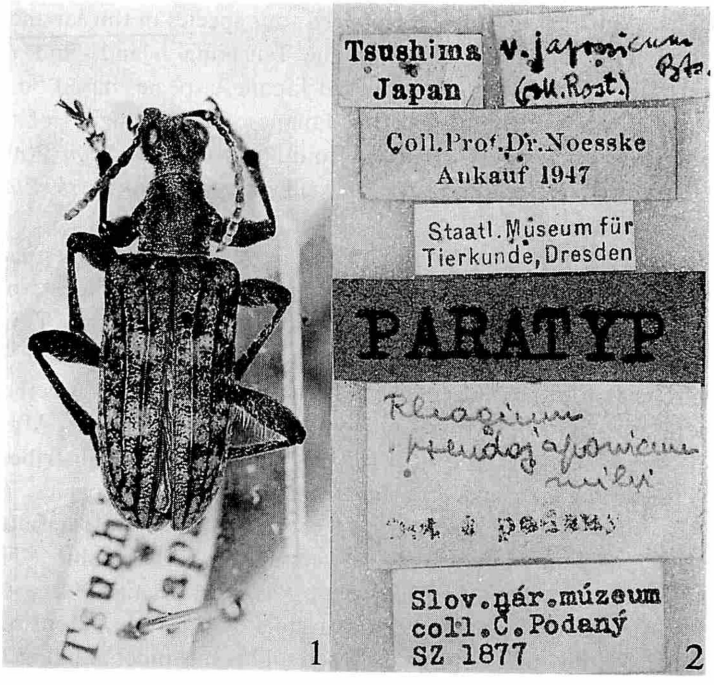
As the result, the *Rhagium* fauna of Japan consists of four species and one subspecies whose distributional ranges are as follows: *R. pseudojaponicum* PODANÝ in the Tsushima Islands, *R. heyrovskyi heyrovskyi* PODANÝ in Hokkaido, *R. heyrovskyi hayakawai* TAKAKUWA in central Honshu, *R. japonicum* BATES in Hokkaido to Honshu, and *R. femorale* sp. nov. in Honshu, Shikoku and Kyushu.

Before going further, I wish to express my sincere gratitude to Dr. Ilja OKÁLI of the Slovenské Národné Múseum and Dr. Petr ŠVÁCH of the Czech Academy of Sciences for their kindness in loaning the type specimen. My thanks are due to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his critical reading of the manuscript, and also to many entomologists, especially Dr. M. L. DANILEVSKY, Dr. M. SAKAI, Mrs. A. SAKAI, Messrs. K. TAKAHASHI, H. MAKIHARA, M. TAKAKUWA, Y. NOTSU and K. NAGATA for their kind offer of valuable specimens.

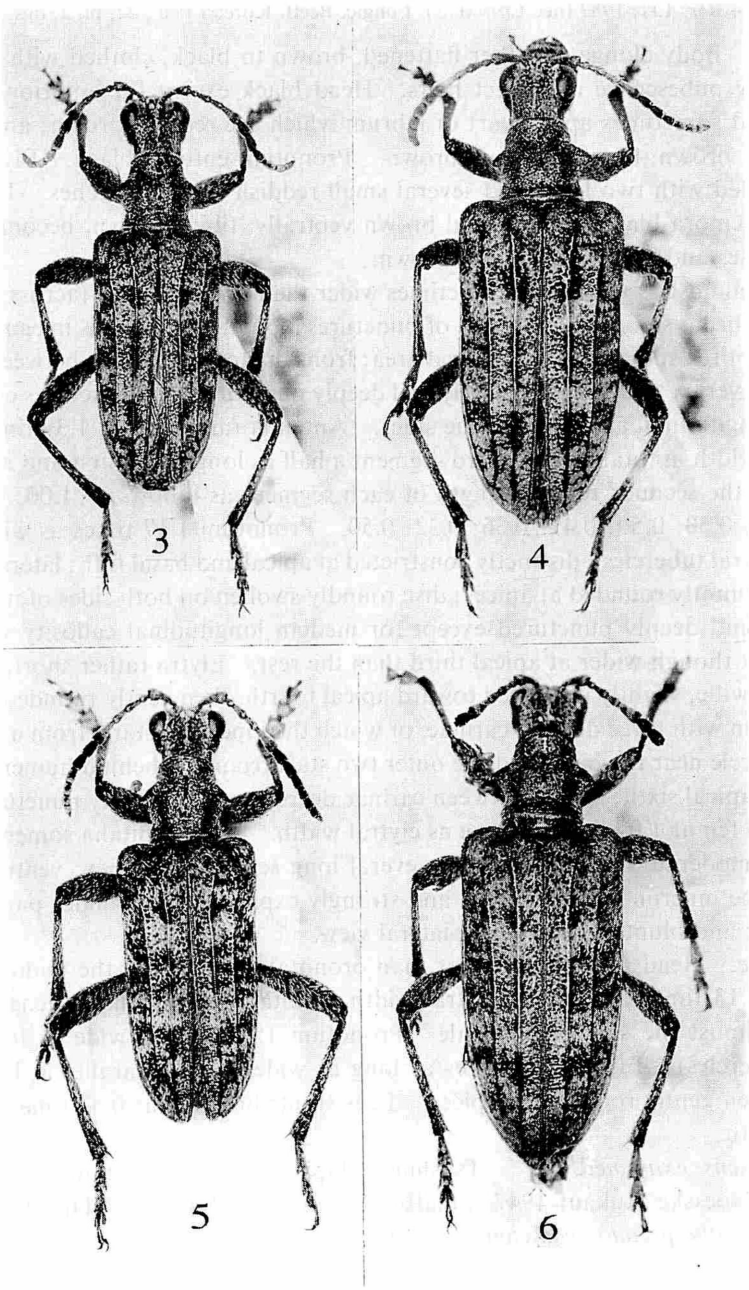
Rhagium (s. str.) ***pseudojaponicum*** PODANÝ

(Figs. 1–6, 15–20)

Rhagium pseudojaponicum PODANÝ, 1964, Acta zool. mex., 7: 26, pl. 6, fig. 3.



Figs. 1–2. *Rhagium pseudojaponicum* PODANÝ; 1, paratype, ♂ (Tsushima, Japan); 2, labeles attached to the paratype.



Figs. 3–6. *Rhagium pseudojaponicum* PODANÝ. —— 3, Kamisaka, Tsushima Is., ♂; 4, same, ♀; 5, Pusan, Korea, ♂; 6, same, ♀.

Rhagium inquisitor: LEE, 1987 (nec LINNAEUS), Longic. Beetl. Korean Pen., 22, pl. 2, figs. 16 a–b.

Male. Body elongate, rather flattened, brown to black, clothed with recumbent pale yellow pubescence and erect hairs. Head black except for anterior margin of clypeus and sometimes apical part of labrum which are reddish brown; antenna with scape dark brown, the remainders brown. Pronotum entirely black. Elytron black and provided with two large and several small reddish brown blotches. Legs brown to black; femora black dorsally and brown ventrally, tibiae brown, becoming darker toward bases and apices, tarsi dark brown.

Head almost as wide as or sometimes wider than pronotal base (across the middle of eyes); labrum smooth with a row of punctures along base; clypeus irregularly punctured except for smooth reddish apical area; frons distinctly concave between antennal insertions; vertex to occiput distinctly and deeply punctured, the punctures closer along median longitudinal area than at the sides. Antenna rather short, 1.39 times as long as elytral width in total length; third segment a half as long as the first and about twice as long as the second; relative length of each segment as follows:— 1.00: 0.27: 0.50: 0.41: 0.77: 0.50: 0.50: 0.41: 0.36: 0.32: 0.50. Pronotum 1.17 times as wide as long (across lateral tubercles), distinctly constricted at apical and basal fifth; lateral tubercles short and bluntly rounded at apices; disc roundly swollen on both sides of median line, distinctly and deeply punctured except for median longitudinal callosity which runs throughout though wider at apical third than the rest. Elytra rather short, 1.95 times as long as wide, slightly narrowed toward apical fourth, then gently rounded to apices; each elytron with three distinct carinae, of which the inner one starts from an indistinct small tubercle near the base, and the outer two start from just behind humerus and are jointed at apical sixth; spaces between carinae deeply and irregularly punctured. Legs stout, hind femur 1.09 times as long as elytral width. Male genitalia somewhat stout; paramere moderate in thickness with several long setae at the apex; ventral plate of median lobe mucronate at the apex and strongly expanded to shoulder part in dorsal view, thick and blunt at the apex in lateral view.

Female. Head slightly narrower than pronotal base (across the middle of eyes). Antenna 1.13 times as long as elytral width in total length; relative length of each segment almost the same as in male. Pronotum 1.2 times as wide as long (across lateral tubercles). Elytra 1.92 times as long as wide, almost parallel in basal three-fourths, then gently rounded to apices. Legs stout; hind femur 0.87 times as long as elytral width.

Specimens examined. 1 ♂, Tsushima, Japan (with the following label: Coll. Prof. Dr. Noesske Ankauf 1947; Staatl. Museum für Tierkunde, Dresden; PARATYPE; *Rhagium pseudojaponicum* mihi, Det. C. Podaný; Slov. nár. múzeum coll. C. Podaný SZ1877); 2 ♂♂, 1 ♀, Kamisaka, Tsushima Isls., 10～11–V–1978, A. ODA leg.; 1 ♂, 1 ♀, Ooboshiyama, Is. Tsushima, 5–V–1980, H. SHIBATA leg.; 1 ♂, 1 ♀, Pusan, Korea, III–1989, N. ENDA leg.; 1 ♂, Saishuto (=Jeju Is., Korea), VI–1910, C. INOUE leg.; 1 ♀, Seiryou, Corea, 12–IV–1928, S. KOSEKI leg.

Remarks. This species is closely allied to *Rhagium inquisitor rugipenne*, and there

still remains problem on its independency because only a few materials from the Asian Continent are available for this study. However, a comparative study with specimens collected on Mt. Altai, Artybash, Russia, which is not far from the type locality of *R. inquisitor rugipenne* REITTER, shows that this species can be distinguished from the latter as follows: elytra shorter (1.95 times as long as wide instead of 2.2 times), antennae shorter (1.39 times as long as elytral width instead of 1.56 times), elytral costae stronger and the punctures on head and pronotum more closely arranged. Besides, the tegmen of the male genitalia is as long as the median lobe (Figs. 15–16, 18–19) instead of being obviously shorter than the mdeian lobe (Figs. 12–13).

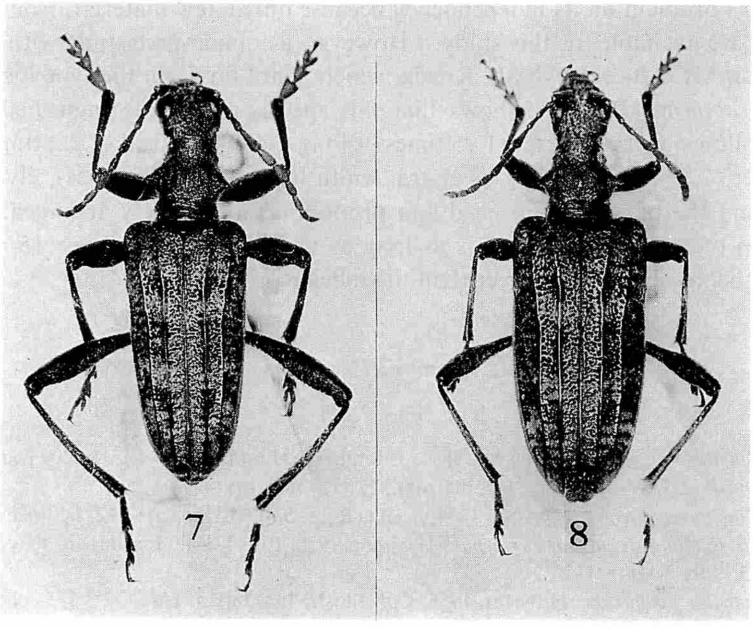
Rhagium (s. str.) ***femorale*** N. OHBAYASHI, sp. nov.

(Figs. 7–11)

Rhagium inquisitor var. *japonicum* BATES, 1884, J. Linn. Soc. London, (Zool.), **18**: 209 [*part.*].
Rhagium inquisitor: HAYASHI, 1963, Ins. matsum., **25**: 129 [nec LINNÉ].
Rhagium inquisitor rugipenne: NAKANE, 1954, Scient. Rept. Saikyo Univ., 1: 192, fig. [nec REITTER].
Rhagium (*Allorhagium*) *inquisitor rugipenne*: HAYASHI, 1955, Col. Illustr. Ins. Japan, **1**, (ed. 1): 23, pl. 10, fig. 17 [nec REITTER].
Rhagium inquisitor japonicum: HAYASHI, 1955, Col. Illustr. Ins. Japan, **1**, (ed. 2): 135, pl. 42, fig. 958. —— NAKANE & OHBAYASHI, 1959, Scient. Rept. Kyoto pref. Univ., **3**: 65, fig. 3 [nec BATES].
Rhagium rugipenne: HAYASHI, 1960, Niponius, Takamatsu, 1 (6): 3–4, fig. 2 [nec REITTER].
Rhagium japonicum: OHBAYASHI, 1963, Icon. Ins. Japon. Col. nat. ed., **2**: 270, pl. 135, fig. 13 [nec BATES].
Rhagium pseudojaponicum: KOJIMA & HAYASHI, 1969, Ins. Life Japan, 1: 8, pl. 3, fig. 4. —— AOKI, 1972, Kontyû, Tokyo, **40**: 168–169, figs. 4, 7. —— KUSAMA & TAKAKUWA, 1983, Long. Beetl. Japan Col., 158, pl. 7, figs. 35, 35 a–c. —— N. OHBAYASHI *et al.*, 1992, Ill. Guide Ident. Longic. Beetl. Japan, 17, 424 c [nec PODANÝ].

Male. Body elongate, rather flattened, brown to black, clothed with recumbent pale yellow to golden yellow pubescence and erect hairs. Head black except for anterior margin of clypeus and basal part of mandibles which are reddish brown; antenna with scape dark brown, the remainders brown. Pronotum black except for apical and basal margins which are more or less reddish. Elytron black with two large and several small reddish brown blotches. Legs brown to black; femora black dorsally and reddish brown ventrally, tibiae brown and darkened toward bases and apices, each tarsal segment brown basally and becoming darker toward apex.

Head wider than pronotal base (across the middle of eyes); labrum smooth with a row of punctures along base; clypeus irregularly punctured except for smooth reddish apical area; frons distinctly concave between antennal insertions; vertex densely, deeply and wrinkly punctured; occiput densely and evenly punctured. Antenna rather long, 1.75 times as long as elytral width in total length; third segment 0.61 times as long as the first and 2.34 times as long as the second; relative length of each segment as follows:— 1.00: 0.26: 0.61: 0.57: 0.87: 0.65: 0.65: 0.52: 0.48: 0.43: 0.65. Pronotum 1.22 times as wide as long (across lateral tubercles), distinctly constricted at apical and basal fifth; lateral tubercles long and acutely pointed postero-dorsad; disc feebly swollen on both

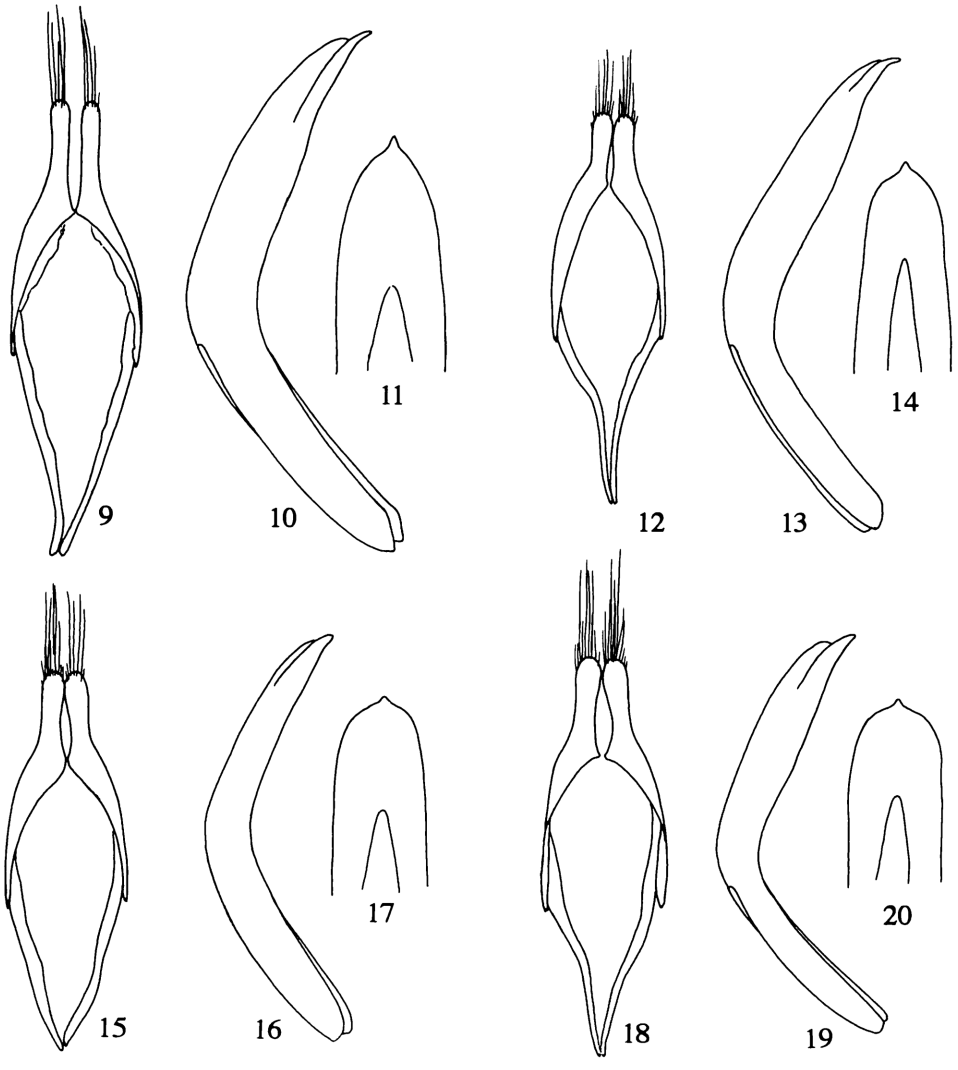


Figs. 7–8. *Rhagium femorale* N. OHBAYASHI, sp. nov. —— 7, Oono-gun, Ôita Pref., paratype ♂; 8, same, paratype ♀.

sides of median line, distinctly and deeply punctured cxcept for median longitudinal callosity which is vague in basal and apical areas. Elytra rather long, 2.07 times as long as wide, distinctly narrowed toward gently rounded apices; each elytron with three distinct carinae, of which the inner one starts from an indistinct small tubercle near the base, and the outer two start from just behind humerus and are jointed at apical seventh; spaces between carinae deeply and irregularly punctured. Legs long and slender; hind femur 1.25 times as long as elytral width. Male genitalia feeble; paramere thin and slender, with a few long setae at the apex; ventral plate of median lobe mucronate at the apex and obliquely expanded posteriad in dorsal view, thin and acute at the apex in lateral view.

Female. Antenna 1.29 times as long as elytral width in total length; third segment 0.53 times as long as the first and 2.42 times as long as the second; relative length of each segment as follows:— 1.00: 0.22: 0.53: 0.49: 0.82: 0.55: 0.55: 0.44: 0.38: 0.33: 0.51. Elytra 1.92 times as long as wide, slightly narrowed toward gently rounded apices. Legs long and slender; hind femur as long as elytral width.

Holotype: ♂, allotype: ♀, Mt. Takao, Tokyo, 27–III–1982, K. TAKAHASHI leg. Paratypes: [Honshu] 10 ♂♂, 7 ♀♀, Gandôko Lake, Iwate Pref., 7–X–1988, M. SUZUKI leg.; 9 ♂♂, 1 ♀, same locality, reared and emerged in X–1988, M. SUZUKI leg.; 7 ♂♂, 4 ♀♀, Tsunagi, Morioka, Iwate Pref., 8–XI–1981, 14–III–1982, 4–IV–1982, 16–V–1982, M. SUZUKI leg.; 2 ♂♂, Yoshibe-zawa, Mt. Hayachine, Iwate Pref., 13–VI–



Figs. 9–20. Male genitalia of *Rhagium* spp. —— 9–11, *Rhagium femorale* N. OHBAYASHI, sp. nov. (Mt. Takao, Tokyo); 12–14, *R. inquisitor rugipenne* REITTER (Mt. Altai, Artybash, Russia); 15–17, *R. pseudojaponicum* PODANÝ (Kamisaka, Tsushima); 18–20, *Rhagium pseudojaponicum* PODANÝ (Pusan, Korea). —— 9, 12, 15, 18, Tegmen in dorsal view; 10, 13, 16, 19, median lobe in lateral view; 11, 14, 17, 20, apical part of median lobe in dorsal view.

1992, 20–VI–1992, H. MAKIHARA leg.; 2 ♂♂, 1 ♀, Tateiwa – Hinoemata, Fukushima Pref., 27～29–VI–1981, N. OHBAYASHI leg.; 2 ♂♂, Funamata-rindô, Hinoemata, Fukushima Pref., 2–VI–1980, K. TAKAHASHI leg.; 1 ♂, 1 ♀, Hinoemata, Fukushima Pref., 26–VI–1967, M. TAKAKUWA leg.; 2 ♂♂, 1 ♀, Shindenbara, Tateiwa, Fukushima Pref., 2–VI–1980, K. TAKAHASHI leg.; 1 ♀, Tateiwa-mura, Fukushima Pref., 29–VI–1981, Y.

NOTSU leg.; 2 ♂♂, Ichimi-mura, N. Aizu, 16–IV–1948, Y. KUROSAWA leg.; 10 ♂♂, 6 ♀♀, same data as the holotype; 1 ♂, Mt. Takao, Tokyo, 6–IV–1949, H. HATTORI leg.; 1 ♂, 1 ♀, same locality, 15–III–1940, H. HASEGAWA leg.; 2 ♂♂, Mt. Daibosatsu, Yamanashi Pref., 29–VI–1967, M. TAKAKUWA leg.; 1 ♂, Mt. Mikuni, Aichi Pref., 9–IV–1978, M. HASEGAWA leg.; 2 ♂♂, Hiwada-Kôgen, Takane-mura, Gifu Pref., 19–VII–1992, N. YUZAWA leg.; 2 ♂♂, Takayama, Gifu Pref., 31–III–1955, H. TORIGAI leg.; [Shikoku] 15 ♂♂, 4 ♀♀, Sanagôchi, Myôdô-gun, Tokushima Pref., 19–X–1975, 26–X–1975, H. IUCHI leg.; 1 ♀, Mt. Tsurugi-san, Tokushima Pref., 12–VII–1984, A. YONETSU leg.; 1 ♂, Mt. Ishizuchi, Ehime Pref., 27–VII–1947, M. MIYATAKE leg.; 1 ♀, same locality, 17–VI–1951, M. MIYATAKE leg.; 1 ♂, Tsuchigoya, Mt. Ishizuchi, Ehime Pref., 5–VII–1984, S. NAGAI leg.; 1 ♂, Omogokei, Ehime Pref., 4–V–1958, K. ÔTA leg.; 1 ♂, same locality, 7–V–1977, Y. NOTSU leg.; 2 ♀♀, Sugitate, Ehime Pref., 4–III–1953, M. MIYATAKE leg.; 1 ♂, 1 ♀, west ravine of Shiratsue, Ehime Pref., 3–V–1968, S. HISAMATSU leg.; 1 ♂, Komenono, Ehime Pref., 5–V–1976, Y. NOTSU leg.; 1 ♂, Kuroson, Kôchi Pref., 30–IV–1956, S. HISAMATSU leg.; 1 ♂, Mt. Kajigamori, Kôchi Pref., 30–V–1960, M. MIYATAKE leg.; 1 ♂, 1 ♀, Yusuhara, Kôchi Pref., 9–XI–1950, J. YAMAMOTO leg.; [Kyushu] 1 ♂, 2 ♀♀, Tashiro, Fukuoka Pref., 25–I–1953, C. KUKIHARA & Y. NOBUKUNI leg.; 1 ♀, Mt. Shôji-iwa, Ôita Pref., 9–I–1979, Y. TSUTSUMIUCHI leg.; 1 ♀, Inonoseto, Ôita Pref., 9–III–1979, S. SASAKI leg.; 1 ♂, Chôjabaru, Ôita Pref., 22–XI–1978, S. SASAKI leg.; 2 ♂♂, 1 ♀, Obira, Ogata-machi, Ohno-gun, Ôita Pref., 18–II–1979, Y. TSUTSUMIUCHI leg.; 1 ♀, Hakuchô-san, Kumamoto Pref., 17–V–1978, K. ÔHARA leg.; 1 ♂, Mt. Takachiho, Kagoshima Pref., 2–V–1967, H. MAKIHARA leg.; 25 ♂♂, 18 ♀♀, Mt. Kurinodake, Kagoshima Pref., III–1976, K. ÔHARA leg.

Remarks. This is a well known species and commonly found in Honshu, Shikoku and Kyushu, Japan. It has rather distinct features such as long slender legs, long antennae, posteriorly narrowed elytra in the male, and so on, and is easily distinguished from the other known Japanese species by these characters. This new species seems most closely related to the Taiwanese species *R. morrisonense* KANO, but can be distinguished by different shape of the pronotum and its tubercles.

要　約

大林延夫：日本産ハイイロハナカミキリ属の1新種記載を含む知見．—— ニセハイイロハナカミキリ *R. pseudojaponicum* PODANÝ の基準標本を調査した結果，本種は長崎県対馬を基準産地とし，朝鮮半島および済州島にも分布する大陸系の種で，近縁の *R. inquisitor rugipenne* REITTER と形態的に区別できる，独立した種だと考えられた．いっぽう，本州，四国，九州に分布し，従来，本種とされていたものは，未記載の新種であることが明らかになったので，ホンドハイイロハナカミキリ *R. femorale* N. OHBAYASHI と命名して記載した．

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Elytra, Tokyo, **22** (1): 180, May 15, 1994

Description of the Male of *Procleomenes malayanus* (Coleoptera, Cerambycidae, Cerambycinae)

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Bioindicator Co. Ltd., Kamiochiai 1-29-7, Shinjuku, Tokyo, 161 Japan

Procleomenes malayanus was described on the basis of a female specimen collected on the central mountains of the Malay Peninsula, and belongs to the group of *P. borneensis* (NIISATO, 1986, p. 103) within the genus. Recently, I was able to examine a male specimen collected from southern Thailand through the courtesy of Mr. Carolus HOLZHCHUH of Vienna. In the following lines, I am going to describe the male of this species for the first time. I am much indebted to Mr. Carolus HOLZHCHUH for loan of the specimen used in this study.

Procleomenes malayanus NIISATO

Procleomenes malayanus NIISATO, 1985, Kontyû, Tokyo, **53**, pp. 123-124, figs. 2, 4; type locality: K. K. Baru of Selangor, W. Malaysia.

Description of male. Head with eyes strongly prominent laterad, more than 1.35 times as wide as pronotal apex. Antennae distinctly longer than body, surpassing elytral apices at the base of 9th segment. Pronotum long and voluminous, 2.39 times as long as the apical width, with lateral tubercles distinct and slightly projected forwards at apices; disc with interspace of swellings strongly coarsely rugose. Measurements of body parts as follows: BL 6.20, AL 7.01, HW 1.15, PL 2.03, PW 1.05, PA 0.85, PB 0.75, EL 2.45, EW 1.03.

Male genital oragan basically similar to that of *P. borneensis* and lightly sclerotized. Median lobe slender, a little less than 2/5 the length of elytra, flattened in profile, though the ventral plate is distinctly curved ventrad at apical 3/8, slightly exposing apical part of the ventral plate in dorsal view; ventral plate with sides arcuately emarginate near the middle, then broadened, and strongly narrowed near apex. Tegmen nearly a half the length of median lobe; paramere broad, gradually narrowed towards apex, with rounded apical margin, provided with irregular-sized setae near apical margin.

Specimen examined. 1 ♂, Ranong, S. Thailand, 1-III-1989 (C. HOLZHCHUH coll.).

Distribution. Malay Peninsula: Selangor of Malaysia, Ranong of Thailand (new record from the territory of Thailand).

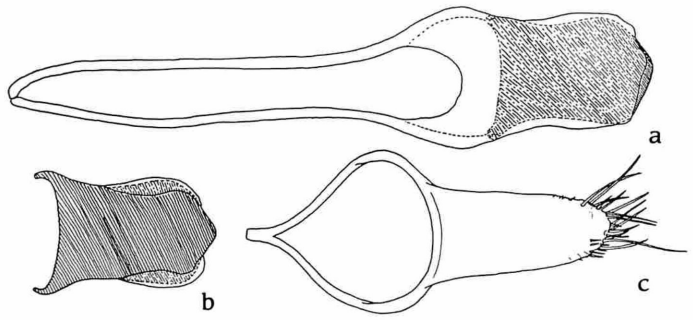

Fig. 1. Male genital organ of *Procleomenes malayanus* NIISATO, from Ranong of S. Thailand; dorsal view of median lobe (a), ventral view of ventral plate of median lobe (b) and dorsal view of tegmen (c).

Elytra, Tokyo, **22** (1): 181–189, May 15, 1994

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

IV. Two New Species of the Subgenus *Pidonia* (s. str.) from Taiwan

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47–15, Ohara 1-chome, Setagaya-ku, Tokyo, 156 Japan

Abstract Two new species of the lepturine genus *Pidonia* are described from the Island of Taiwan. Both belong to the subgenus *Pidonia* (s. str.); one of them, *P.* (*P.*) *flaccidissima*, is related to *P. submetallica*, while the other, named *P.* (*P.*) *angustata*, to *P. meridionalis*.

The present paper contains the result of my study on the species of the genus *Pidonia* obtained on the mountainous areas of southern Taiwan. Two species are new to science and will be named *Pidonia flaccidissima* and *P. angustata*. The holotypes of the new species to be described below will be deposited in the collection of the National Museum of Natural Science, Tai-chung, Taiwan.

I wish herewith to express my hearty thanks to Mr. Kazutoshi SUZUKI who gave me the opportunity to work on this interesting material. My thanks are also due to Mr. Wen-lung CHEN for his kind help in the field.

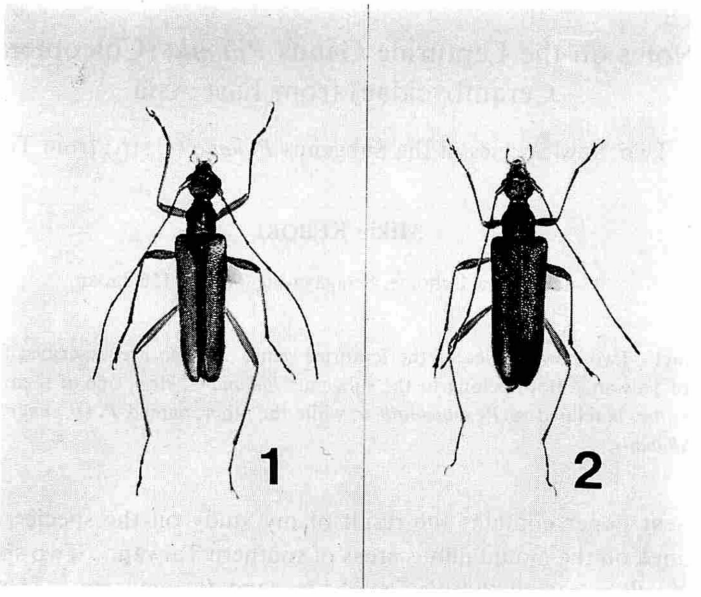
Pidonia (*Pidonia*) *flaccidissima* KUBOKI, sp. nov.

(Figs. 1–6)

Body medium, elongate, slightly tapering apically (male) or robust (female) and furnished with pale fulvous pubescence.

Length: 8.4–6.2 mm (male), 9.9–6.8 mm (female); breadth: 2.1–1.4 mm (male), 2.6–1.7 mm (female).

Color. Male:— Body fulvous to black; head fulvous; temples sometimes infuscate; mouth-parts yellowish fulvous except for reddish brown apex of each mandible; eyes black; antennae fulvous to black; 1st to 5th segments fulvous; 5th segment infuscate at their apices; 6th to 11th segments darkened; prothorax reddish fulvous with black sides; apex and base of pronotum reddish fulvous; scutellum reddish fulvous; coxae, trochanters and femora fulvous; tibiae fulvous, sometimes apex of each tibia faintly dark brown; tarsi dark brown; claws reddish brown. Elytra yellowish fulvous with indistinct black markings. Ventral surface: head fulvous; thorax fulvous; meso- and metasterna black; abdomen fulvous; first and second sternites black. Elytral markings: sutural marking narrowly present; basal marking narrowly present, joining sutural marking; latero-basal marking present, joining basal marking; latero-median



Figs. 1–2. *Pidonia* (*Pidonia*) *flaccidissima* KUBOKI, sp. nov., from Mt. Hsi-nan Shan in southern Taiwan; 1, ♂; 2, ♀.

and latero-posterior markings small, variable, sometimes entirely absent; lateral three markings sometimes fused with one another, forming a narrow submarginal vitta; apical band broadly present, sometimes joining submarginal vitta.

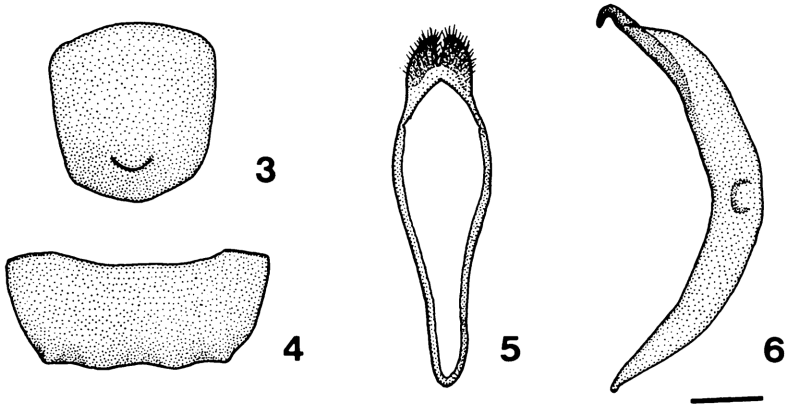
Female:— Body coloration and markings distinctly more developed in female than in male; head reddish brown; temples sometimes infuscate; mouth-parts reddish fulvous except for dark brown apex of each mandible and maxillary palpus; 1st to 5th antennal segments reddish fulvous; 5th segment infuscate at their apices; 6th to 11th segments darkened; prothorax reddish black to entirely black; apex and base of pronotum reddish brown; scutellum reddish brown; coxae, trochanters, femora and tibiae reddish brown; tarsi and claws dark brown; elytra black, rarely having a pair of fulvous stripes at middle. Ventral surface: head and prothorax reddish fulvous; meso- and metasterna black; abdomen reddish fulvous.

Structure. Head broader across eyes than basal width of prothorax (male, 1.21: 1; female, 1.09: 1); terminal segment of maxillary palpus deltoid, strongly broadened apically, obliquely truncate at apex, with straight outer margin in male; terminal segment of maxillary palpus club-shaped, gradually broadened apically, with curved outer margin in female; temples weakly expanded, gradually narrowed posteriorly in anterior half and gently constricted in posterior half, almost impunctate and shining, with several setae; frons subvertical and transverse, covered with coarse punctures, bearing a fine but distinct median longitudinal furrow extending backwards to vertex; vertex weakly convex above, coarsely punctured; two to five supraorbital setae present, especially one

seta very long; gula shining, very sparsely clothed with long pubescence. Eyes relatively prominent, moderately faceted and strongly emarginate at middle of internal margins. Antennae relatively long and slender, inserted just behind the level across frontal margins of eyes; apical one segment surpassing elytral apices in male; antennae barely attaining elytral apices in female; 1st segment distinctly dilated toward apex, weakly shining and sparsely clothed with fine pubescence; 2nd to 11th segments densely clothed with fine appressed pubescence and sparsely with fine erect pubescence; comparative length of each antennal segment as follows:— 5>1+2=3=6>4 (male) or 5>1+2>3>6=4 (female).

Prothorax longer than basal width (male, 1.18: 1; female, 1.06: 1), shallowly constricted both behind apex and before base and dully angulate-prominent laterally just before the middle; breadth across prominent portions slightly broader than base (male, 1.03: 1) or nearly as broad as base (female); basal margin bisinuate, obviously broader than apical margin (male, 1.46: 1; female, 1.49: 1); disk of pronotum convex above, coarsely punctate and sparsely clothed with fine pubescence; posterior lateral setae very long; prosternum shining, clothed with thin pubescence; meso- and metasterna finely punctate, densely clothed with fine appressed pubescence. Scutellum small, triangular, slightly longer than broad and bearing thin pubescence on the surface. Elytra 2.77 times (male) or 2.57 times (female) as long as basal width, gradually narrowed posteriorly (male) or almost parallel-sided (female) and separately subtruncate at apices; surface coarsely and deeply punctate, sparsely clothed with suberect pubescence; interspace between punctures broader than diameter of each puncture.

Legs slender, finely punctate, clothed with short pubescence; femora clavate, with subappressed pubescence; hind femur barely reaching (male) or not reaching (female) elytral apex; tibiae linear, with suberect pubescence; tarsi densely clothed with short pubescence on under surface; first segment of metatarsus longer than the following



Figs. 3–6. *Pidonia* (*Pidonia*) *flaccidissima* KUBOKI, sp. nov., ♂. —— 3, Last tergite; 4, last sternite; 5, lateral lobes of male genitalia, ventral view; 6, median lobe of the same, lateral view. Scale: 0.3 mm.

two taken together; third segment strongly dilated apically, deeply emarginate at the middle of apex.

Abdomen elongate, gradually narrowed toward apex; surface of each sternite densely covered with extremely fine pubescence; in male, apex of last sternite subtruncate and shallowly emarginate triangularly at middle (Fig. 4), apex of last tergite round (Fig. 3); in female, apex of last sternite round, apex of last tergite round.

Male genitalia:— Median lobe long, relatively slender, strongly sclerotized, gradually sclerotized toward apex, moderately curved ventrally, acutely pointed and curving inwards at apex (Fig. 6); lateral lobes shorter than median lobe, deeply bilobed at apex; each lobe relatively short; apex of each lobe obliquely subtruncate, sparsely furnished with relatively short terminal hairs in ventral view (Fig. 5); endophallus long, furnished with a pair of falcate sclerites; diverticulum short, widest near the base and gradually narrowed apically.

Female genitalia:— Spermatheca lightly sclerotized, infuscate in basal half, ovoid, strongly hooked at basal two-thirds and narrowed toward apex; the part continuing to spermathecal duct constricted with transverse crease; spermathecal gland located at lateral wall; vagina enlarged basally; valvifer gradually narrowed apically; basal segment of coxite slightly narrowed apically; apical segment of coxite obtuse at apex, rather lightly sclerotized and infuscate at the inner part and sparsely furnished with sensory pubescence; stylus small, narrow, sclerotized and strongly infuscate except for apex, with long and sparse hairs at the terminal area.

Type series. Holotype: ♂, Mt. Hsi-nan Shan, 1,800 m alt., Kao-hsiung Hsien, 19–IV–1985, Wen-lung CHEN leg. Paratypes: 10 ♂♂, 1 ♀, same data as for the holotype; 3 ♂♂, 1 ♀, same locality as for the holotype, 9–V–1983, W. CHEN leg.; 12 ♂♂, same locality as for the holotype, 16～17–IV–1987, W. CHEN leg.; 2 ♂♂, 1 ♀, same locality as for the holotype, 26–V–1987, W. CHEN leg.; 3 ♂♂, Mt. Nan-feng Shan, Kao-hsiung Hsien, 8–V–1983, W. CHEN leg.; 9 ♂♂, 6 ♀♀, Mt. Shi Shan, 1,500–2,000 m alt., Kaohsiung Hsien, 27–IV–1985, W. CHEN leg.; 5 ♂♂, same locality, 1,800 m alt., 18–VI–1987, W. CHEN leg.; 11 ♂♂, Mt. Feng-kang Shan, 1,500 m alt., Kao-hsiung Hsien, 30–IV–1985, W. CHEN leg.; 1 ♂, Mt. Chu-yun Shan, Kao-hsiung Hsien, 27–V–1987, W. CHEN leg.; 2 ♂♂, Tien-chi, 2,200 m alt., Kao-hsiung Hsien, 4–V–1978, M. KUBOKI leg.; 1 ♂, 1 ♀, same locality, 3–VI–1980, M. KUBOKI leg.; 1 ♀, Li-kuan, 2,000 m alt., Kao-hsiung Hsien, 8–V–1978, M. KUBOKI leg.; 1 ♀, Mt. Pei-ta-wu Shan, 2,000 m alt., Kao-hsiung Hsien, 2–V–1991, M. KUBOKI leg.; 5 ♂♂, 1 ♀, Li-sung, 2,000 m alt., Tai-tung Hsien, 29–IV–1987, M. KUBOKI leg.

Distribution. Southern Taiwan.

Flight periods. April to June.

Flower records. *Prunus*, *Rhododendron*.

Remarks. This new species is closely allied to *Pidonia submetallica* HAYASHI, but can be distinguished from the latter by the following key:

1. Elytra black to dark brown inclining to become dull submetallic green in both sexes; surface of elytron finely and shallowly punctured .....

..... *P. submetallica* HAYASHI.

2. Elytra yellowish fulvous with black markings in male; elytra black, rarely having a pair of fulvous stripes at middle in female; surface of elytron coarsely and deeply punctured, especially in female ..... *P. flaccidissima* sp. nov.

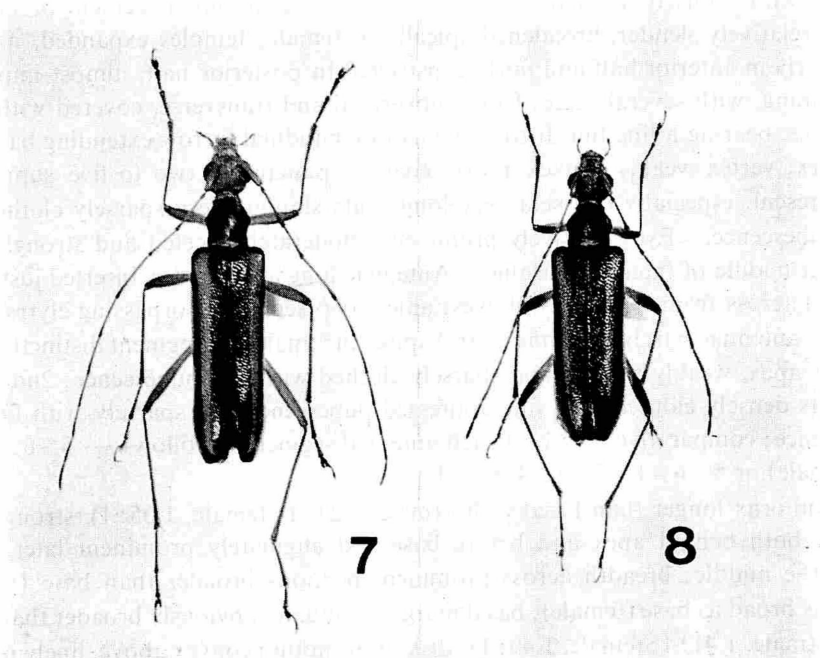
Pidonia (Pidonia) angustata KUBOKI, sp. nov.

(Figs. 7–12)

Body large, elongate, slightly tapering apically (male) or robust (female) and furnished with pale fulvous pubescence.

Length: 10.0–9.0 mm (male), 9.5–8.6 mm (female); breadth: 2.2–2.1 mm (male), 2.5–2.0 mm (female).

Color. Male:— Body fulvous to black; head reddish fulvous; mouth-parts yellowish fulvous except for reddish brown apex of each mandible; eyes black; 1st to 2nd antennal segments fulvous; 3rd and following segments infuscate at their apices; prothorax reddish fulvous, with black markings; apex and base of pronotum reddish fulvous; scutellum reddish fulvous; coxae and trochanters fulvous; femora fulvous, sometimes apex of each femur dark brown; tibiae dark brown; tarsi dark brown to



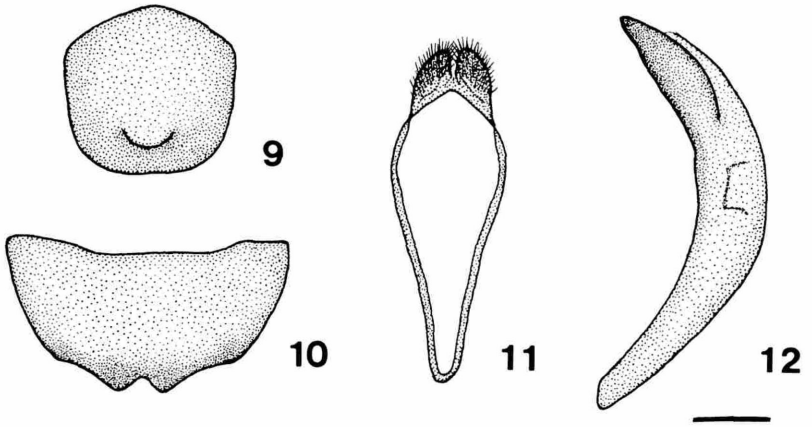
Figs. 7–8. *Pidonia (Pidonia) angustata* KUBOKI, sp. nov., from Mt. Pei-ta-wu Shan in southern Taiwan; 7, ♂; 8, ♀.

black; claws reddish brown. Elytra yellowish fulvous with black markings. Ventral surface: head fulvous; thorax fulvous; meso- and metasterna darkened; abdomen fulvous; first and second sternites dark brown. Elytral markings: sutural marking broadly present, terminating behind base of elytra; lateral three markings always fused with one another, forming a broad submarginal vitta; basal marking narrowly present, joining submarginal vitta; apical band broadly present, joining submarginal vitta.

Female:— Body coloration and markings distinctly more developed in female than in male; head reddish brown; mouth-parts reddish fulvous except for dark brown apex of each mandible and each maxillary palpus; 1st to 2nd antennal segments reddish brown; 3rd and following segments infuscate; thorax black; apex and base of pronotum reddish brown; scutellum reddish brown; coxae and trochanters brownish yellow; femora almost brownish yellow; apex of each femur black; tibiae and tarsi dark brown; claws reddish brown; elytra almost black, having a pair of fulvous stripes at middle. Ventral surface: head, thorax and abdomen brownish yellow; meso- and metasterna black; first to second sternites darkened laterally; last sternite darkened apically. Elytral markings: sutural marking broadly present, terminating behind base of elytra; submarginal vitta broadly present, joining narrow basal marking; apical band broadly present, joining submarginal vitta and sutural marking.

Structure. Head broader across eyes than basal width of prothorax (male, 1.19: 1; female, 1.07: 1); terminal segment of maxillary palpus large, strongly broadened apically with obtusely angulate outer margin in male; terminal segment of maxillary palpus relatively slender, broadened apically in female; temples expanded, narrowed posteriorly in anterior half and fairly constricted in posterior half, almost impunctate and shining, with several setae; frons subvertical and transverse, covered with coarse punctures, bearing a fine but distinct median longitudinal furrow extending backwards to vertex; vertex weakly convex above, coarsely punctured; two to five supraorbital setae present, especially one seta very long; gula shining, very sparsely clothed with long pubescence. Eyes relatively prominent, moderately faceted and strongly emarginate at middle of internal margins. Antennae long and slender, inserted just behind the level across frontal margins of eyes; apical two segments surpassing elytral apices in male; antennae barely attaining elytral apices in female; 1st segment distinctly dilated towards apex, weakly shining and sparsely clothed with fine pubescence; 2nd to 11th segments densely clothed with fine appressed pubescence and sparsely with fine erect pubescence; comparative length of each antennal segment as follows:— $5>6>3>1+2>4$ (male) or $5>6>1+2>3>4$ (female).

Prothorax longer than basal width (male, 1.23: 1; female, 1.05: 1), strongly constricted both behind apex and before base and angulately prominent laterally just before the middle; breadth across prominent portions broader than base (male) or nearly as broad as base (female); basal margin bisinuate, obviously broader than apical margin (male, 1.41: 1; female, 1.49: 1); disk of pronotum convex above, finely punctate and sparsely clothed with fine pubescence; posterior lateral setae very long; prosternum shining, clothed with thin pubescence; meso- and metasterna finely punctate, densely



Figs. 9–12. *Pidonia* (*Pidonia*) *angustata* KUBOKI, sp. nov., ♂. —— 9, Last tergite; 10, last sternite; 11, lateral lobes of male genitalia, ventral view; 12, median lobe of the same, lateral view. Scale: 0.3 mm.

clothed with fine appressed pubescence. Scutellum small, triangular, slightly longer than broad and bearing thin pubescence on the surface. Elytra 2.88 times (male) or 2.59 times (female) as long as basal width, gradually narrowed posteriorly (male) or almost parallel-sided (female) and separately truncate at apices; surface finely and shallowly punctate, sparsely clothed with suberect pubescence; interspace between punctures broader than diameter of each puncture.

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

Abdomen elongate, gradually narrowed toward apex; surface of each sternite densely covered with extremely fine pubescence; in male, apex of last sternite emarginate triangularly at middle (Fig. 10), apex of last tergite round, hind angles round (Fig. 9); in female, apical margin of last sternite round and its apex weakly projecting roundly; apex of last tergite round, shallowly emarginate at middle.

Male genitalia:— Median lobe long, relatively thick, lightly sclerotized, gradually sclerotized toward apex, moderately curved ventrally and acutely pointed at apex (Fig. 12); lateral lobes shorter than median lobe, deeply bilobed at apex; each lobe relatively short; apex of each lobe obliquely subtruncate, very sparsely furnished with short terminal hairs in ventral view (Fig. 11); endophallus relatively short, furnished with a pair of falcate sclerites; diverticulum short, widest near the base, gradually narrowed apically.

Female genitalia:— Spermatheca lightly sclerotized, widest near the base, truncate at the basal part, strongly curved at the apical part and gradually narrowed with ob-

tuse apex; the part continuing to spermathecal duct constricted, with transverse crease; spermathecal gland located at lateral wall; vagina enlarged basally; valvifer gradually narrowed apically; basal segment of coxite slightly narrowed apically; apical segment of coxite obtuse at apex, rather lightly sclerotized, infuscate at the inner part and sparsely furnished with sensory pubescence; stylus medium, narrow, abaxially united to lateral face of coxite, slightly enlarged apically, lightly sclerotized and strongly infuscate except for apex, with long and sparse hairs at the terminal area.

Type series. Holotype: ♂, Mt. Pei-ta-wu Shan, 1,800 m in altitude on the southwestern slope, in Tai-wu Hsiang of Ping-tung Hsien, 2–V–1991, M. KUBOKI leg. Paratypes: 1 ♂, same data as for the holotype; 2 ♂♂, 1 ♀, same locality, 1,700 to 2,050 m alt., 30–IV～3–V–1991, M. KUBOKI leg.; 1 ♂, 3 ♀♀, same locality, 1～3–V–1993, M. KUBOKI leg.; 3 ♂♂, 2 ♀♀, same locality, 30–IV～3–V–1991, K. SUZUKI leg.; 3 ♂♂, 2 ♀♀, same locality, 1～3–V–1993, K. SUZUKI leg.; 1 ♂, Mt. Shi Shan, 2,000 m alt., Kao-hsiung Hsien, 27–IV–1985, W. CHEN leg.; 3 ♂♂, 1 ♀, Mt. Hsi-nan Shan, Kao-hsiung Hsien, 26–V–1987, W. CHEN leg.; 5 ♂♂, 4 ♀♀, Tien-chi, 2,200 m alt., Kao-hsiung Hsien, 7～8–V–1978, M. KUBOKI leg.; 1 ♂, 1 ♀, Li-kuan, 2,000 m alt., Kao-hsiung Hsien, 8–V–1978, M. KUBOKI leg.; 1 ♀, Li-sung, 2,000 m alt., Tai-tung Hsien, 4–VI–1980, M. KUBOKI leg.; 1 ♂, same locality, 29–IV–1987, M. KUBOKI leg.

Distribution. Southern Taiwan.

Flight period. April to June.

Flower records. *Rhododendron*, *Prunus*.

Remarks. This new species has been confused with *Pidonia meridionalis* KUBOKI, but can be distinguished from the latter by the following key:

1. Apex of last sternite deeply obtusely emarginate at middle in male; apex of last tergite slightly obtusely emarginate in male; surface of elytron coarsely and deeply punctured. ..... *P. meridionalis* KUBOKI.
2. Apex of last sternite triangularly emarginate at middle in male; apex of last tergite truncate, hind angles round in male; surface of elytron finely and shallowly punctured. ..... *P. angustata* sp. nov.

要　約

窪木幹夫：東アジア産ヒメハナカミキリ属の知見．IV．台湾南部で発見された *Pidonia* 亜属の2新種．—— 台湾南部の山岳地帯の常緑混交林から採集された *Pidonia* 属の2新種，*P.* (*P.*) *flaccidissima* と *P.* (*P.*) *angustasta* を記載した．前者は *P. submetallica* HAYASHI に近縁であるが，雄の上翅が黄褐色で小さい黒色紋を持つこと，雌の上翅が金属光沢を帯びず黒色でまれに上翅中央縦に黄褐色紋を持つこと，上翅の点刻が粗く深いことなどの差異によって区別できる．また，後者は *P. meridionalis* KUBOKI に似ているが，雄の腹部末端節腹板中央が三角形に切れ込むこと，雄の腹部末端節背板が切形で後端角が丸いこと，上翅が細かく浅く点刻されることなどの点で区別できる．

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Elytra, Tokyo, **22** (1): 189, May 15, 1994

Records of Some *Pidonia* (Coleoptera, Cerambycidae) from the Oga Peninsula, Akita Prefecture, North Japan

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Through the courtesy of Mr. Fukuo SATÔ, Akita City, I had an opportunity to examine some *Pidonia* collected in the *Fagus* forest of Mt. Kenashi-yama, 600–650 m in altitude, the Oga Peninsula, Akita Prefecture, North Japan. All the specimens were collected by him on June 23, 1991. I thank him for his kindness in giving me the specimens.

1. *Pidonia* (*Pidonia*) *obscurior michinokuensis* HAYASHI, 3♂♂.

Femora almost fulvous; apical halves of mid and hind femora sometimes weakly dark; elytra yellowish fulvous with black markings.

2. *Pidonia* (*Pidonia*) *signifera* BATES, 4♂♂.

Femora fulvous to black; apical halves of mid and hind femora black; elytra brownish fulvous with black markings.

3. *Pidonia* (*Cryptopidonia*) *simillima* OHBAYASHI et HAYASHI, 2♂♂, 1♀.
4. *Pidonia* (*Cryptopidonia*) *amentata kurosawai* OHBAYASHI et HAYASHI, 3♂♂, 4♀♀.

Elytral marking distinctly present; sutural marking narrowly (male) or broadly (female) present, vanishing behind scutellum, sometimes reaching elytral base in female; apical band lacking in both sexes.

5. *Pidonia* (*Mumon*) *aegrota* BATES, 8♂♂, 7♀♀.

Ventral surface of abdomen fulvous in both sexes.

Elytra, Tokyo, **22** (1): 190, May 15, 1994

台湾・太平山の冷温帯林の *Pidonia*

窪 木 幹 夫

KUBOKI, M.: Some *Pidonia* (Coleoptera, Cerambycidae) from the Cool-temperate Forest of Mt. Tai-ping Shan in Northeastern Taiwan

台湾の中央山脈の北端に位置する太平山森林遊樂區は，三星山 (2,351 m)，太平山 (1,950 m)，大元山 (1,489 m) などの山やまからなる．この地域は，年平均降水量が 5,000 mm を超え，海抜 500 m 以下は亜熱帯林，500～1,800 m の山麓帯は暖温帯林，1,800 m 以上の山地帯は冷温帯林になっている．冷温帯林の上部は，紅檜，鉄杉などの純林に，下部はこれらと照葉樹の混交林になっている．日本の山地帯は普通，ブナ帯であるが，台湾では落葉樹林がこれらの針葉樹に置き換えられている．

世界的にブナ属は，北半球の温帯地域の北米東部，ヨーロッパ～カフカス山脈，東アジア地域に隔離分布する．日本のブナは *Fagus crenata*，ブナ林は日本列島の植生の中核で，日本の多様な *Pidonia* の重要な生息環境になっている．一方，タイワンブナ *F. hayatae* の分布は遺存的で，中央山脈の北端の三星山と雪山山脈の北端の北插天山～拉拉山に限られる．

筆者は，1989 年から毎年，太平山一帯で *Pidonia* の調査を行なっている．今回は，このうち冷温帯林の *Pidonia* について報告する．採集地は，宜蘭縣大同鄉太平山である．

1. *Pidonia* (*Pidonia*) *occipitalis* GRESSITT, 43 ♂♂, 18 ♀♀, 3-V-1992.

東部の碧緑・神木（花蓮縣）に分布する *P. bivittata* S. SAITO とは上翅斑紋が異なるが，雄の交尾器，末端節腹背板の形態はよく似ている．

2. *Pidonia* (*Pidonia*) *deodara* KUBOKI, 1 ♂, 3-V-1993.

3. *Pidonia* (*Cryptopidonia*) sp., 5 ♂♂, 2 ♀♀, 28-IV-1990.

北部の拉拉山（桃園縣）～鴛鴦湖（新竹縣）に分布する *P. takahashii* KUBOKI に似ているが，上翅の色彩，点刻などに差が認められる．

4. *Pidonia* (*Cryptopidonia*) sp., 2 ♀♀, 3-V-1989.

碧緑・神木に分布する *P. pilushana* S. SAITO に似ているが，上翅の色彩，点刻，前胸部の形態に差が認められる．

5. *Pidonia* (*Cryptopidonia*) *aenipennis* GRESSITT, 6 ♂♂, 3 ♀♀, 2-V-1989.

6. *Pidonia* (*Mumon*) sp., 3 ♂♂, 1 ♀, 3-V-1992.

碧緑・神木に分布する *P. confusa* S. SAITO に似ているが，雄の交尾器や前胸部の形態，上翅の点刻に差が認められる．

太平山一帯は，広範囲な伐採と植林により，原生林はほとんど残っていない．三星山では，タイワンブナ林を確認できなかった．しかしながら，沢沿いや急傾斜地にわずかに残った小規模な原生林や植林地に残された樹木の花から *Pidonia* を採集することができた．

Pidonia は照葉樹の混じる冷温帯下部から採集された．太平山の *Pidonia* の中で特徴的な種は，3 と 4 の *Cryptopidonia* 亜属の 2 種であろう．この亜属は，日本列島～台湾～中国南東部に分布し，ブナ属の東アジアでの分布域と一致する．3 の未記載種は，日本の *P. miwai*, *P. approximata*, *P. lyra* 群に，4 のそれは，日本の *P. oyamae*, *P. chujoi*, *P. fujisana* 群に似ている．これらは日本列島のブナ帯を中心に分布する種である．台湾のブナ林は遺存的であるが，ブナのような落葉樹の混じる照葉樹林に，日本のブナ林の *Pidonia* とよく似た仲間が生息することは興味深いことである．

3, 4, 6 の未記載種は，新種として投稿中である．

Elytra, Tokyo, **22** (1): 191–202, May 15, 1994

The Taiwanese Species of the Cerambycid Genus *Linda* (Coleoptera, Cerambycidae, Lamiinae)

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Abstract The Taiwanese species of the saperdine genus *Linda* are revised. Three species, *Linda annulicornis* MATSUSHITA, *L. pratti signaticornis* SCHWARZER, stat. nov., and *L. femorata* (CHEVROLAT) are recognized in the fauna of Taiwan. *Linda subannulata* BREUNING is regarded as a junior synonym of *L. annulicornis*. The former Taiwanese record of *L. fraterna* (CHEVROLAT) is omitted. A key to the Taiwanese species is provided.

The cerambycid beetles of the genus *Linda* THOMSON comprises unique group of the Saperdini restricted to the temperate to subtropical forests of the Asian Continent and neighbouring islands. The members of the genus are characterized by the presence of tubercles on pronotum, and is divided into two different lineages, *Linda* s. str. and *Dasylinda* THOMSON, by the presence or absence of antennal bristles. In his revisional study, GRESSITT (1947) dealt with fifteen Chinese species of the genus, and suggested that four of them occurred on the Island of Taiwan. After that one species was added to the Taiwanese fauna by BREUNING and OHBAYASHI (1967). According to the recent check-list of the Taiwanese Cerambycidae (NAKAMURA *et al.*, 1992), five species of the genus including the subgenus *Linda* have so far been known from the island; they are: *Linda annulicornis* MATSUSHITA, *L. subannulata* BREUNING, *L. femorata* (CHEVROLAT), *L. signaticornis* SCHWARZER and *L. fraterna* (CHEVROLAT).

In the course of invesetigation of the Taiwanese *Linda*, we became aware of two taxonomical problems to be solved; one was the true affinity of *L. subannulata*, and the other was the distributional record of *L. fraterna* by KANO (1926). Through the courtesy of Dr. N. OHBAYASHI, we had an opportunity to examine the holotype of *L. subannulata* and to compare it with the specimens of *L. annulicornis*. It was revealed that *L. subannulata* was in fact an aberrant form of *L. annulicornis*. As regards the record of *L. fraterna*, KANO (1926) may have recorded it upon a true *fraterna* specimen, since his description almost agrees with this continental species. It seems most probable that he did it on a specimen with misplaced collecting label. Therefore, the record of *L. fraterna* should be omitted from the Taiwanese fauna until new specimens

are collected. Besides, we have regarded *L. signaticornis*, which has so far been known only from Taiwan, as a geographical race of *L. pratti* PIC, as the result of comparative examination of Taiwanese and continental materials.

The purpose of this paper is to revise the Taiwanese species of the genus *Linda*. The three species presently known will be redescribed, and a key to the species will be provided.

The following abbreviations are used in the measurement of body parts: BL – body length, AL – antennal length, HW – maximum width of head, PL – length of pronotum, PW – maximum width of pronotum across lateral tubercles, PA – apical width of pronotum, PB – basal width of pronotum, EL – length of elytra, EW – humeral width of elytra, M – arithmetic mean.

Genus *Linda* THOMSON

Linda THOMSON, 1864, Syst. Ceramb., pp. 200, 400; type species: *Amphionycha femorata* CHEVROLAT.
Miocris FAIRMAIRE, 1902, Bull. Soc. ent. France, **1902**, p. 245; type species: *Miocris nigroscutatus* FAIRMAIRE.

Key to the Taiwanese Species of the Genus *Linda*

1 (3) Antennae uniformly black, fringed with pale pubescence at the base of each segment; ventral surface entirely yellowish.
2 (1) Antennal segments 4–5 reddish at each base; sides of metathorax largely black; body length 14.4–17.2 mm ..... *L. pratti signaticornis*.
3 (4) Body thick; pronotal tubercles strongly prominent; eyes hardly prominent laterad; elytral punctures forming more than 15 irregular rows near the middle; anal sternite of female arcuately and distinctly emarginate at the apex; body length 17.3–20.7 mm ..... *L. annulicornis*.
4 (3) Body slender; pronotal tubercles weak; eyes large and strongly prominent laterad; elytral punctures forming 7 irregular rows near the middle; anal sternite of female subtransversely truncate at the apex; body length 12.9–17.8 mm ..... *L. femorata*.

Linda (s. str.) *annulicornis* MATSUSHITA

(Figs. 1 a–c, 2 a–b, 3 a–b, 4 a, e)

Linda annulicornis MATSUSHITA, 1933, J. Fac. Agric. Hokkaido imp. Univ., **34**, p. 424, pl. 5, fig. 14; type locality: Kagi, Formosa. —— GRESSITT, 1947, Ann. ent. Soc. Am., **40**, p. 547; 1951, Longicornia, **2**, p. 605. —— YU & NARA, 1988, Longic. Beetles Taiwan, p. 93, pl. 20, fig. 34.
Linda subannulata BREUNING, 1966, Bull. Inst. r. Sci. nat. Belg., **42** (19), p. 19 [nom. nov. pro *Linda subannulicornis* BREUNING et OHBAYASHI, 1964]. **Syn. nov.**
Linda subannulicornis BREUNING et OHBAYASHI, 1964, Bull. Jpn. ent. Acad., 1, p. 30; type locality: Hori, Formosa [nom. praeocc.].

Redescription. Large, robust and thick species, having stongly uneven pronotum; appendages short. Colour pale yellowish orange to yellowish orange, black in elytra,

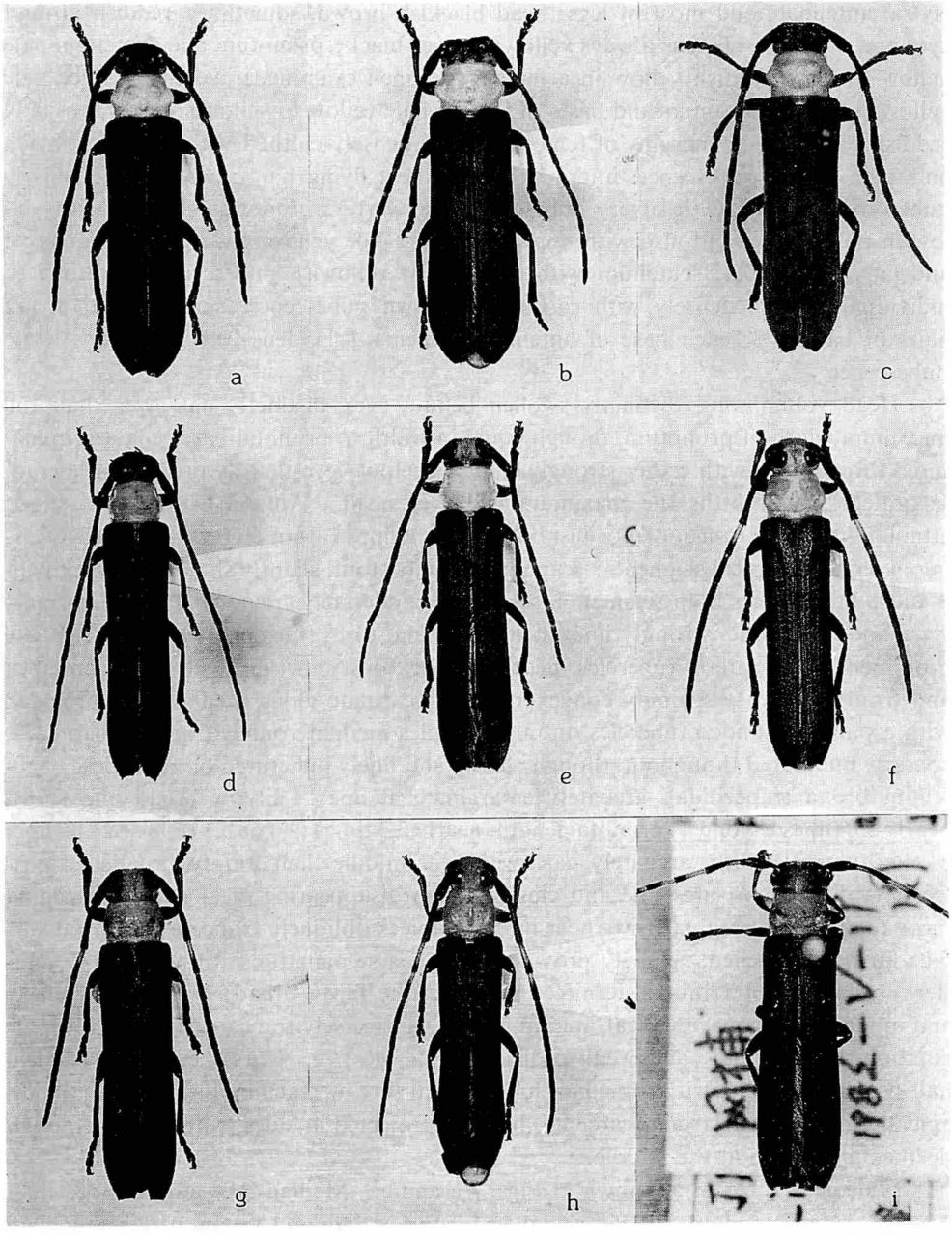

Fig. 1. Habitus of *Linda* (s. str.) spp. —— a–c, *L. annulicornis* MATSUSHITA; a, ♂; b, ♀; c, holotype of *L. subannulata* BREUNING et OHBAYASHI, ♂. —— d–e, *L. femorata* (CHEVROLAT); d, ♂; e, ♀. —— f–g, *L. pratti signaticornis* SCHWARZER, stat. nov.; f, ♂; g, ♀; h, *L. p. pratti* PIC, ♂, from Beijing. —— i, *L. fraterna* (CHEVROLAT), from Guangdong.

elytra, antennae, and most of legs; head blackish brown, sometimes reddish around eyes and on frons, clypeus always yellowish, eyes black; pronotum and scutellum pale yellow (though reddish yellow in a female specimen examined); ventral surface pale yellow; coxae, trochanters and bases of femora pale yellow to yellowish brown, usually reddish on posterior margins of femora. Body densely clothed with brownish black and pale yellow pubescence, intermixed with short flying hairs; head rather densely pubescent, partially with silvery pubescence near vertex; pronotum densely with yellowish pubescence, and also with appressed dense pale yellow pubescence near discal and lateral tubercles; scutellum with blackish or yellowish pubescence according to individuals; elytra densely with castaneous brown pubescence, sparsely with flying hairs in basal 2/3; each base of antennal segments 4–11 densely with silvery white pubescence.

Head voluminous, distinctly swollen behind eyes, distinctly narrower than the maximum width of pronotum, though equal in width to pronotal base, coarsely punctured throughout, with rather strongly convex occiput; eyes hardly prominent laterad, separated by two-fifths the maximum width of head. Antennae thick and short, attaining to apical fourth (♂) or just behind apical third (♀) of elytra, strongly decreasing in length in apical segments; scape moderately stout, slightly shorter than segment 3 and a little longer than segment 4, segment 3 moderately arcuate. Pronotum transverse and very wide, strongly uneven on sides and disc; sides provided with strongly prominent, large lateral tubercles, nearly parallel for a short distance both from apex and from base; disc strongly convex, distinctly carinate along median line, provided with a pair of rounded tubercles on middle and a median rounded one on basal 1/5, coarsely punctured thoughout, though closely and finely punctured on tubercles. Scutellum broad trapezoidal, arcuately emarginate at apex. Elytra broad and short, nearly 5.8 times as long as pronotal length, nearly 3.3 times (♂) or 3.1 times (♀) as long as the humeral width, arcuately narrowed near middle then amply broadened posteriorly; discal punctures fine and close, though disappearing in apical 1/4, forming more than 15 subirregular rows near middle; apices obliquely truncate. Ventral surface finely shagreened, sparsely provided with coarse punctures at the sides of metasternum and 1st abdominal sternite. Anal sternite fairly broad; ♂: subtriangularly and moderately concave, apical margin almost transversely trancate, with small emargination at the middle and weak projections at sides; ♀: weakly concave in apical half near the middle, with a median longitudinal furrow reaching just behind middle; apical margin rather strongly arcuate, broadly projected at sides, with a small though deep emargination at the middle.

Male genital organ as shown in Figs. 4 a and e. Median lobe a little more than 3/10 the length of elytra, thick, straight near the middle and rather strongly arcuate ventrad in profile; ventral plate arcuately narrowed to apex which is rounded at the extremity; endophallus with basal falcate sclerites large, and also provided with short transverse sclerites just before falcate sclerites.

Measurements (in mm). ♂: BL 16.10–19.20 (M 18.22), AL 19.50–20.70 (M 15.74),

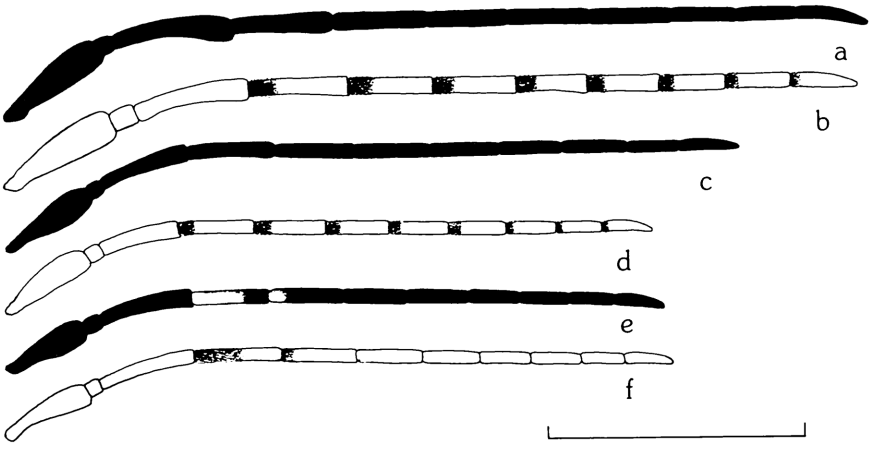

Fig. 2. Antennal segments of *Linda* (s. str.) spp.; a, c, e (♂), showing discal colour; b, d, f (♀), showing annuli of white pubescence. —— a, b, *L. annulicornis* MATSUSHITA; c, d, *L. femorata* (CHEVROLAT); e, f, *L. pratti signaticornis* SCHWARZER, stat. nov. Scale: 5 mm.

HW 15.00–16.50 (M 15.57), PL 2.30–2.90 (M 2.54), PW 3.50–4.10 (M 3.76), PA 2.30–2.90 (M 2.60), PB 3.00–3.40 (M 3.18), EL 13.80–16.40 (M 14.58), EW 4.20–4.70 (M 4.42). ♀: BL 19.50–20.70 (M 20.22), AL 14.80–16.70 (M 16.04), HW 3.40–3.70 (M 3.56), PL 2.30–3.00 (M 2.70), PW 4.30–4.50 (M 4.34), PA 3.20–3.30 (M 3.24), PB 3.50–3.70 (M 3.64), EL 15.00–16.20 (M 15.80), EW 4.90–5.30 (M 5.12).

Specimens examined. 1 ♂, Lushan, Jenai Hsiang, Nantou Hsien, 24–V–1973, K. KOJIMA leg.; 1 ♀, Shang-Paling, Fushing Hsiang, Taoyuan Hsien, 24–IV–1978, S. SAITO leg.; 1 ♀, Shia-Paling, Fushing Hsiang, 12–V–1988; Ssu-yuanakou, Ilan Hsien, 30–V–1993, Q.-G. LUO leg.; 1 ♂, Jenai Hsiang, Nantou Hsien, 16–VII–1968, M. TOMOKUNI leg.; 1 ♂, Nanshanchi, Jenai Hsiang, 20–V–1977, T. NIISATO leg.; 1 ♀, same locality & collector, 28–III–1978; 1 ♀, Lienhwachi, Yuchih Hsiang, Nantou Hsien, 9–V–1978, same collector; 1 ♀, Shizutou, Jenai Hsiang, 11～15–V–1991, Y. SHINTANI leg.; 1 ♀, Mt. Kuantou Shan, Jenai Hsiang, 20–IV–1986; 1 ♂, Sungkang 2,100 m alt.), Jenai Hsiang, 16–VI–1991, Q.-G. LUO leg.; 1 ♂ (holotype of *L. subannulata*), 'Hori, Formosa, VI–1963', R. KAWASAKI leg.; 1 ♂ (holotype of *L. annulicornis*), 'Kagi, Taiwan, V–1923, S. HIRAYAMA'.

Notes. Linda subannulata was separated from *L. annulicornis* mainly by configuration of tubercles on the pronotum and puntuation of the elytra. Actually, the holotype of *L. subannulata* is strange in facies due to reddish body, which gives us an impression of a peculiar species. Our comparative examination of an adequate series of *L. annulicornis* and the holotype of *L. subannulata* has revealed that no morphological difference exists between the two species. The latter is an individual variation within the same species and should be regarded as a junior synonym of *L. annulicornis*. It is not certain whether the reddish coloration of the holotype of *L. subannulata* was

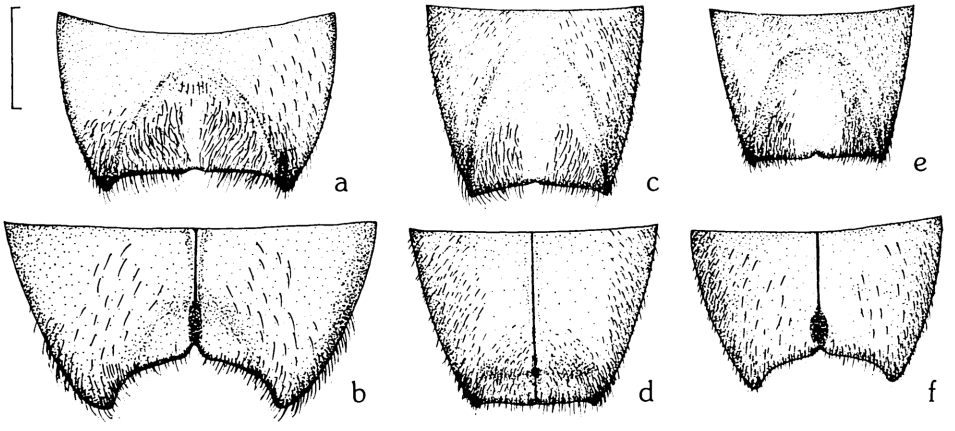

Fig. 3. Anal sternite of *Linda* (s. str.) spp.; a, c, e (♂), b, d, f (♀). —— a, b, *L. annulicornis* MATSUSHITA; c, d, *L. femorata* (CHEVROLAT); e, f, *L. pratti signaticornis* SCHWARZER, stat. nov. Scale: 2 mm.

caused by immaturity or aberrancy.

Ecological information including that of host plants of *L. annulicornis* has been almost unknown. The adult in flight is usually found on slopes at the edges of broad-leaved forests under cloudy weather.

Linda (s. str.) *femorata* (CHEVROLAT)

(Figs. 1 d–e, 2 c–d, 3 c–d, 4 b, f)

Amphionycha femorata CHEVROLAT, 1852, Revue Zool., (2), **4**, p. 419.

Linda femorata: THOMSON, 1864, Syst., Ceramb., p. 122. —— LACORDAIRE, 1872, Gen. Coléopt., **9**, p. 870. —— SCHWARZER, 1925, Ent. Blätt., **21**, p. 152. —— SAVIO, 1929, Notes Ent. chin., **1**, pp. 1, 4. —— MATSUSHITA, 1933, J. Fac. Agric. Hokkaido imp. Univ., **34**, p. 425. —— GRESSITT, 1937, Lingnan Sci. J., **16**, p. 620; 1939, ditto, **18**, p. 108; 1939, Notes Ent. chin., **6**, p. 127; 1940, ditto, **7**, p. 197; 1942, Lingnan nat. Hist. Surv. & Mus. Spec. Publ., **7**, p. 10; 1942, ditto, **8**, p. 41; 1947, Ann. ent. Soc. Am., **40**, p. 549; 1951, Longicornia, **2**, p. 605. —— PU, 1980, Ecol. Ins., Fauna China, **19**, p. 118, pl. 12, fig. 165. —— HUA, 1992, Icon. For. Ins. Hunan China, p. 505, fig. 1568; HUA, NARA & YU, 1993, Longic. Beetles Hainan & Guangdong, pp. 170, 304, fig. 391 a–b.

Redescription. Slender and medium-sized species, with elongate hind body. Colour yellowish orange with nearly black appendages and elytra; head black to reddish brown, especially infuscate in mandibles and labrum, and near vertex; eyes black; pronotum and scutellum yellow; elytra brownish black to black; ventral surface reddish yellow; antennae black; legs black though coxae, trochanters, and posterior margins of femora are reddish yellow. Body clothed with pale or yellowish pubescence; head sparsely pubescent on posterior part, though moderately so on frons; pronotum with dense appressed yellow pubescence and a few long flying hairs; elytra densely with brownish pubescence, with basal portion provided with a few long flying hairs; anten-

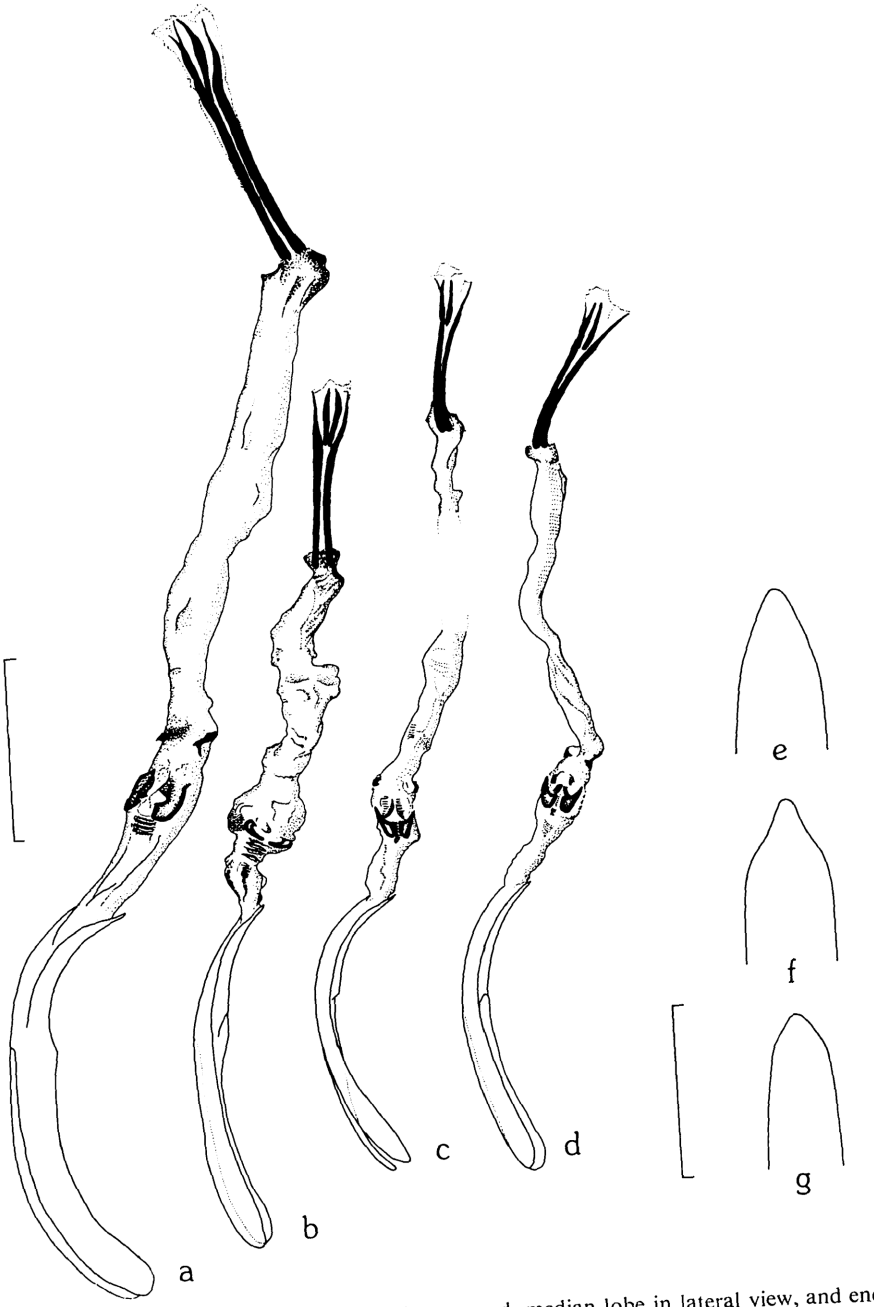

Fig. 4. Male genital organ of *Linda* (s. str.) spp.; a–d, median lobe in lateral view, and endophalli; e–g, apical part of median lobe in ventral view. —— a, e, *L. annulicornis* MATSUSHITA; b, f, *L. femorata* (CHEVROLAT); c, g, *L. pratti signaticornis* SCHWARZER, stat. nov.; d, *L. pratti pratti* PIC. Scale: 2 mm (for Figs. a–d) and 1 mm (for Figs. e–g).

nae with each base of segments 4–6 rather moderately (sometimes sparsely) with silvery white pubescence.

Head small with strongly prominent eyes, slightly narrower than the maximum width of pronotum, closely provided with medium-sized punctures, with weakly raised occiput; eyes rather approximate to each other, separated by a half the maximum width of head. Antennae slightly shorter than body, fairly slender, not strongly decreasing in length in apical segments; scape moderately stout, slightly shorter than segment 3 and nearly equal in length to segment 4. Pronotum relatively long, not so uneven on sides and disc, sparsely provided with shallow punctures; sides with weak, though large, swellings at a level between apical and basal 1/4, parallel near bases; disc with median swelling evenly convex and forming a diamond-shape, and also with oblique lateral swellings on posterior portion to the median one. Scutellum broad linguiform. Elytra long and slender, nearly 6.6 times as long as pronotal length, nearly 3.9 times (♂) or 3.8 times (♀) as long as the humeral width, weakly and arcuately emarginate at sides; punctures nearly rounded, sparse, forming 7 subirregular rows near middle; apices emarginate, with external teeth. Ventral surface finely shagreened, with moderate punctures at the sides of metasternum. Anal sternite not so broad; ♂: deeply concave, deepest at apical 2/5, apical margin weakly arcuate, with vestigial emargination at the middle; ♀: provided with a median longitudinal furrow reaching just before apex, apical margin very weakly bisinuate, with weak projection at the sides.

Male genital organ as shown in Figs. 4 b and f. Median lobe 3/10 the length of elytra, thickened near the middle, weakly arcuate in apical half in profile; ventral plate broad, straightly narrowed near apex, then arcuately and weakly emarginate at the sides, and bluntly pointed; endophallus with basal falcate sclerites narrow, provided with weak transverse sclerites just before the falcate ones.

Measurements (in mm). ♂: BL 12.90–17.80 (M 15.53), AL 11.10–15.20 (M 13.20), HW 2.30–2.80 (M 2.63), PL 1.60–2.30 (M 2.01), PW 2.50–3.20 (M 2.80), PA 1.70–2.30 M 2.01), PB 2.20–2.80 (M 2.45), EL 10.40–14.60 (M 12.45), EW 2.70–3.70 (M 3.20). ♀: BL 16.50, AL 13.00, HW 2.70, PL 2.10, PW 3.00, PA 2.30, PB 2.50, EL 13.00, EW 3.40.

Specimens examined. 1 ♂, Mt. Lala Shan, Taoyuan~Taipei Hsiens, 9–V–1978, T. SHIMOMURA leg.; 1 ♀, same locality, 16–VI–1982, M. NISHIMURA leg.; 1 ♂, Pilu-Shenmu, Hualien Hsien, 31–VII–1986, Q.-G. LUO leg.; 1 ♂, Lienhwachi, Yuchi Hsiang, Nantou Hsien, 24–III–1981, T. SHIMOMURA leg.

Distribution. Taiwan; Jiangsu, Zhejiang, Shaanxi, Jiangxi, Fujian, Guangdong, Sichuan, Guizhou, Guangxi Zhuangzu Ziziqu, Yunnan.

Notes. *Linda femorata* is characterized by elongate hind body and slender unicoloured antennae. Though somewhat similar to *L. annulicornis* in the pubescent annuli of antennal segments, *L. femorata* has fairly slender body with almost even pronotal disc.

This species may be the rarest of the Taiwanese members of *Linda*, since we have been able to examine only four specimens recorded above. According to PU (1980),

the larvae of this species are known as a twig borer of apple trees in Continental China.

Linda (s. str.) *pratti signaticornis* SCHWARZER, stat. nov.

(Figs. 1 f–g, 2 e–f, 3 e–f, 4 c, g, 5 a–c)

Linda signaticornis SCHWARZER, 1925, Ent. Blätt., **21**, p. 154; type localities: Kosempo, Kankau & Sokutsu. —— MATSUSHITA, 1933, J. Fac. Agric. Hokkaido imp. Univ., **34**, p. 424. —— GRESSITT, 1947, Ann. ent. Soc. Am, **40**, p. 554; 1951, Longicornia, **2**, p. 607. —— YU & NARA, 1988, Longic. Beetles Taiwan, p. 93, pl. 20, fig. 33.

Redescription. Medium-sidzed species of rather robust body, with stout appendages. Colour reddish yellow to orange, with black elytra and legs; head largely reddish yellow, though always black near antennal insertions, eyes and most of mouthparts excluding labrum, sometimes marked with a pair of black triangular spots on middle of occiput; pronotum and scutellum yellow; elytra black; ventral surface reddish yellow to orange, infuscate near sides of metathorax; antennae black with reddish bases of segments 4–5; legs black except for reddish trochanters. Body clothed with pale or yellowish pubescence; head rather densely pubescent, usually with sparse blackish ones on posterior half, sides of frons and near vertex; pronotum densely with appressed pale yellow pubescence and a few long flying hairs; scutellum with pale hairs along margins; elytra densely with castaneous brown pubescence sparsely intermixed with flying hairs; antennae with basal half of segment 3 and base of 4 with silvery white pubescence,

Head rather large, slightly narrower than the maximum width of pronotum, closely provided with large punctures near vertex, finely rugose on apical half of frons, with strongly raised occiput; eyes not so approximate to each other, separated by 1/3 the width of head. Antennae fairly shorter than body, thick, moderately decreasing in length in apical segments; scape weakly stout, a little shorter than segment 3 and nearly equal to or a little longer than segment 4. Pronotum rather wide and moderately contracted to apex, finely rugose throughout and intermixed with a few moderate punctures; sides subparallel in front and just before base, with large and arcuate swellings; disc strongly convex, with a median longitudinal swelling and a pair of lateral ones rather obtuse. Scutellum rather small, deeply and triangularly concave at apex, polished on surface. Elytra moderately long though not so slender, nearly 5.5 times as long as pronotal length, nearly 3.51 times (♂) or 3.23 times (♀) as long as the humeral width, gently narrowed just before the middle, then moderately dilated to apices which are obliquely truncate or very shallowly emarginate; discal punctures nearly rounded and rather large, becoming shallower and more obvious towards apices, forming 7–8 subirregular rows near basal 1/3. Ventral surface finely shagreened, provided with coarse punctures at the sides of metathorax and basal abdominal sternite. Anal sternite relatively wide; ♂: disc weakly and rather broadly concave, gently declivous to apex, apical margin transversely truncate, with very small projections at the sides and with minute concavity at the middle; ♀: a median longitudinal furrow reaching

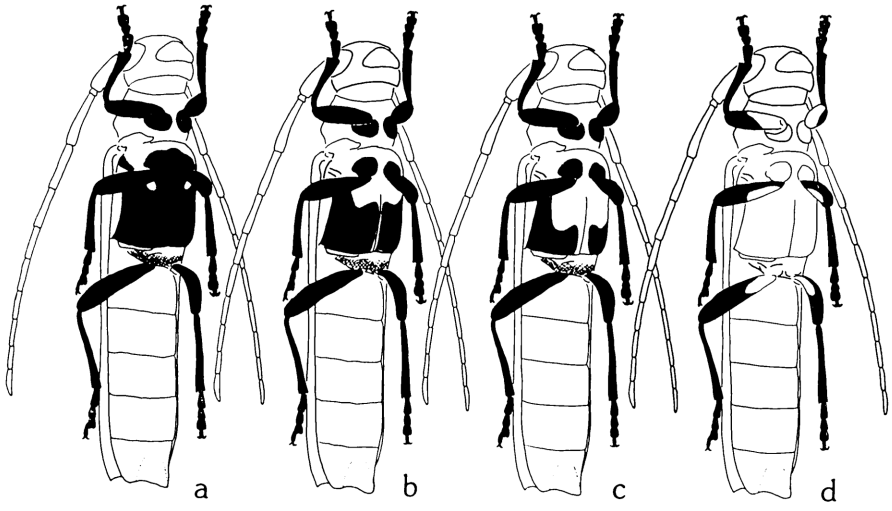

Fig. 5. *Linda* (s. str.) *partti* subspp., latero-ventral view, showing blackish parts. —— a–c, *L. pratti signaticornis* SCHWARZER, stat. nov.; d, *L. pratti pratti* PIC.

apical 1/3, apical margin moderately arcuate and rather broadly projected at the sides, with small moderate emargination at the middle.

Male genital organ as shown in Figs. 4 c and g. Median lobe a little less than 3/10 the length of elytra, not so thick, and rather strongly arcuate in profile; ventral plate straightly narrowed just behind apex, then rather strongly attenuate, apex bluntly rounded; endophallus with basal falcate sclerites medium-sized and narrowly pointed externally.

Measurements (in mm). ♂: BL 14.40–16.40 (M 15.30), AL 12.10–13.30 (M 12.34), HW 2.70–2.80 (M 2.74), PL 1.80–2.10 (M 2.04), PW 2.70–3.20 (M 2.92), PA 2.10–2.50 (M 2.18), PB 2.30–2.70 (M 2.52), EL 11.00–12.30 (M 11.86), EW 3.10–3.60 (M 3.38). ♀: BL 15.20–17.20 (M 16.10), AL 11.60–13.50 (M 12.30), HW 2.90–3.20 (M 2.94), PL 2.00–2.30 (M 2.14), PW 2.90–3.50 (M 3.16), PA 2.30–2.60 (M 2.40), PB 2.60–3.10 (M 2.76), EL 12.10–13.20 (M 11.70), EW 3.40–4.10 (M 3.62).

Specimens examined. 1 ♂, Wulai, Taipei Hsien, 13–VI–1971, K. KOJIMA leg.; 1 ♂, same locality, 1–VI–1976, H. MAKIHARA leg.; 1 ♀, nr. Suling, Fushing Hsiang, Taoyuan Hsien, 1–V–1981, T. SHIMOMURA leg.; 1 ♂, Puli, Nantou Hsien, VI–1963; 1 ♂, Nanshanchi, Jenai Hsiang, Nantou Hsien, 26–V–1975, K. AKIYAMA leg.; 1 ♀, same locality, 20–V–1972, S. OKAJIMA leg.; 1 ♀, same locality, 27–V–1972, M. SAKAI leg.; 1 ♀, same locality, 27–IV–1978, T. NIISATO leg.; 1 ♀, same locality, 10–VIII–1992, Q.-G. LUO leg.; 1 ♂, Wushe, Jenai Hsiang, 10–VI–1975, M. KUBOTA leg.; 4 ♂♂, 1 ♀, Lushan, Jenai Hsiang, 7～8–VI–1976, H. MAKIHARA leg.; Sungkang, Jenai Hsiang, 25–IV–1991, Q.-G. LUO leg.; 1 ♀, Jiyuetan, Taichung Hsien, 23–V–1972, M. SAKAI leg.; 1 ♂, Tehuashe, Jiyuetan, 3–V–1978, Y. KOMIYA leg.; 1 ♀, 'Horai (Paolai)', 20–VII–1968, K. YAMAMOTO leg.

Comparative specimens examined. *Linda pratti pratti* PIC: 2 ♂♂, Beijing Zhiwuyuan, Beijing Shi, China, 29～30-VI-1992, M. FUKAYA leg.

Distribution. Taiwan.

Notes. *Linda signaticornis* was originally described from Kosempo, Kankau and Sokutsu, and has so far been known as being endemic to Taiwan, According to our comparative examination, this species almost completely agrees with *L. pratti* occurring in North to Northeast China except for coloration of metathorax and legs. The continental species has entirely yellowish metathorax and basal parts of legs (coxae, trochanters and bases of femora) instead of blackish ones. Although the median lobe of male genital organ of *L. pratti* is rather weakly arcuate than in that of *L. signaticornis*, other fundamental characters are common between the two species. Therefore, *L. singnaticornis* should be regarded as a geographical race of *L. pratti*.

This is a relatively common species in most mountainous areas of Taiwan. The adults are usually found on the undersides of leaves of pear trees in orchard.

Acknowledgements

We would like to thank Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his constant guidance and reading through the manuscript of this paper, and Prof. Lizhong HUA of Zhongshan University, Guangzhou, and Assoc. Prof. Toshio KUMATA of Hokkaido University, Sapporo, for allowing us to examine the collection preserved in their laboratories. We are grateful to the following persons for data and loan of specimens in the course of this study: Drs. Midori FUKAYA, Keizo KOJIMA, Yoshiaki KOMIYA, Shingo NAKAMURA and Nobuo OHBAYASHI, Messrs. Michiaki HASEGAWA, Hiroshi MAKIHARA, Akira NISHIYAMA, Tarô OGURI, Tôru SHIMOMURA, Yoshinori SHINTANI, Masatoshi TAKAKUWA and Masaaki TOMOKUNI. Thanks are also due to Ms. Zhang HUA for assistance in laboratory works.

要　　約

新里達也・日下部良康：台湾産のハバビロリンゴカミキリ属の再検討．―― ハバビロリンゴカミキリ属 *Linda* は，リンゴカミキリ属 *Oberea* に比較的近縁で，体が幅広く前胸背板が瘤状に隆起する特異な種によって構成されている．台湾からこれまでに，KANO (1926), GRESSITT (1947), NAKAMURA ほか (1992) などにより，5 種の分布が知られていたが，これらは同物異名や誤認記録を含んでいたために，正確な実態が明らかではなかった．こんかい，基準標本を含む台湾産や大陸産の標本の比較検討を行なった結果，*L. annulicornis* MATSUSHITA, *L. femorata* (CHEVROLAT) および *L. pratti signaticornis* SCHWARZER, stat. nov. の 3 種を真の台湾産として認めた．本論文では，これら 3 種の再記載を行なうとともに，これまで台湾から記録のある種のうち，*L. subannulata* BREUNING を *L. annulicornis* のシノニムとして，また *L. signaticornis* SCHWARZER を中国北部～東部に分布する *L. pratti* PIC の亜種として，それぞれ扱った．さらに，KANO (1926) による *L. fraterna* (CHEVROLAT) の記録を誤認として台湾産から除外した．

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世界のクワガタムシ約1200種のうち，2/3にあたる約800種が，カラーで図示された画期的な「世界のクワガタムシ大図鑑」（含む日本産）が発行されます。

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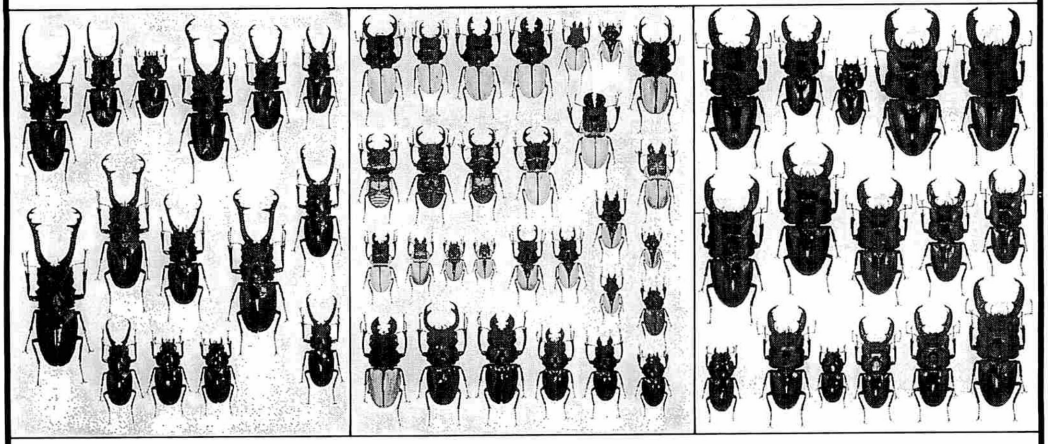

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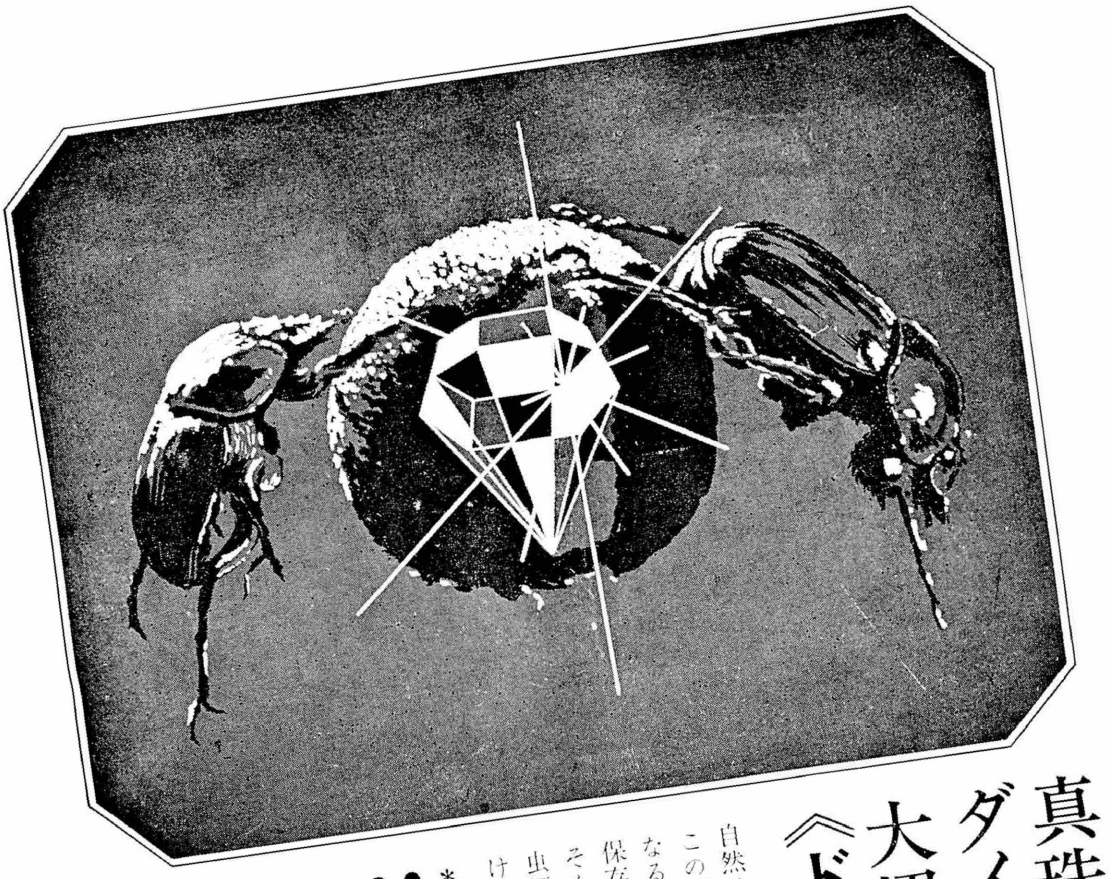

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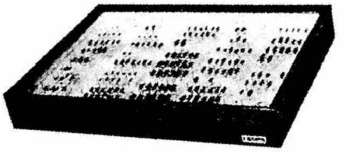

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