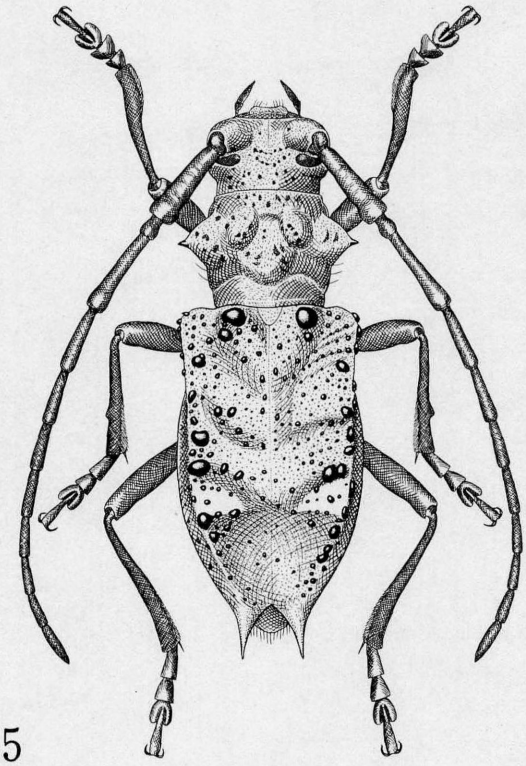
ISSN 0387−5733

ELYTRA

Vol. 20 No. 2



NOV. 15 1992

日本鞘翅学会

THE JAPANESE SOCIETY OF COLEOPTEROLOGY
TOKYO

ELYTRA

日 本 鞘 翅 学 会

The Japanese Society of Coleopterology

〒169 東京都新宿区百人町 3-23-1 国立科学博物館分館動物研究部
c/o Department of Zoology, National Science Museum (Nat. Hist.),
3-23-1 Hyakunin-chô, Shinjuku, Tokyo, 169 Japan

会 長 (President): 上野俊一 (Shun-Ichi UÉNO)
副会長 (Vice-President): 露木繁雄 (Shigeo TSUYUKI)

Printed by Kokusai Bunken Insatsusha Co., Ltd.,
3-8-8, Takadanobaba, Shinjuku, Tokyo, 169 Japan

表 紙: フジコブヤハズカミキリ
Cover: *Mesechthistatus fujisanus* HAYASHI
[*del.* Sumao KASAHARA]

The ELYTRA welcomes original articles dealing with various aspects of coleopterology. It is published biannually by the Japanese Society of Coleopterology. We are willing to exchange with any publication relating to the study of Coleoptera.

All inquiries concerning the ELYTRA should be addressed to: Tatsuya NIISATO, Secretary, c/o Department of Zoology, National Science Museum (Nat. Hist.), 3-23-1 Hyakunin-chô, Shinjuku, Tokyo, 169 Japan.

Elytra, *Tokyo*, **20** (2): 131–135, Nov. 15, 1992

Note sur quelques *Carabus* (*Apotomopterus*, *Carabus*, *Rhigocarabus*, *Diocarabus*) (Coleoptera, Carabidae) nouveaux ou mal connus de l'Asie orientale

Thierry DEUVE

Muséum National d'Histoire Naturelle, Laboratoire d'Entomologie,
45, rue Buffon, F–75005 Paris, France

et

Yûki IMURA

Shinohara-chô 1249–8, Kôhoku-ku, Yokohama, 222 Japan

Abstract Three new subspecies of the genus *Carabus* (=Carabina) are described from Sichuan, Tibet and Siberia: *Carabus* (s. str.) *nestor emeicola* n. subsp. from Sichuan, *C.* (*Rhigocarabus*) *morawitzianus mayumiae* n. subsp. from Tibet, and *C.* (*Diocarabus*) *truncaticollis dorogostaiskianus* n. subsp. from the Amur Basin. *Carabus* (*Apotomopterus*) *tenuimanus* DEUVE et IMURA, 1990, is downgraded to a subspecies of *C.* (*A.*) *delavayi* FAIRMAIRE, 1886.

L'étude de quelques *Carabus* (=Carabina) asiatiques de collections anciennes ou provenant de récoltes plus récentes nous a permis de relever la présence de trois sous-espèces nouvelles originaires du Sichuan, du Tibet et des Monts Iablonov en Sibérie orientale. Nous en donnons ci-dessous les descriptions respectives et profitons de cette occasion pour rectifier la position systématique de *Carabus* (*Apotomopterus*) *tenuimanus* DEUVE et IMURA, 1990, qu'il convient désormais de considérer comme une sous-espèce, certes très caractérisée, de *C.* (*A.*) *delavayi* FAIRMAIRE, 1886.

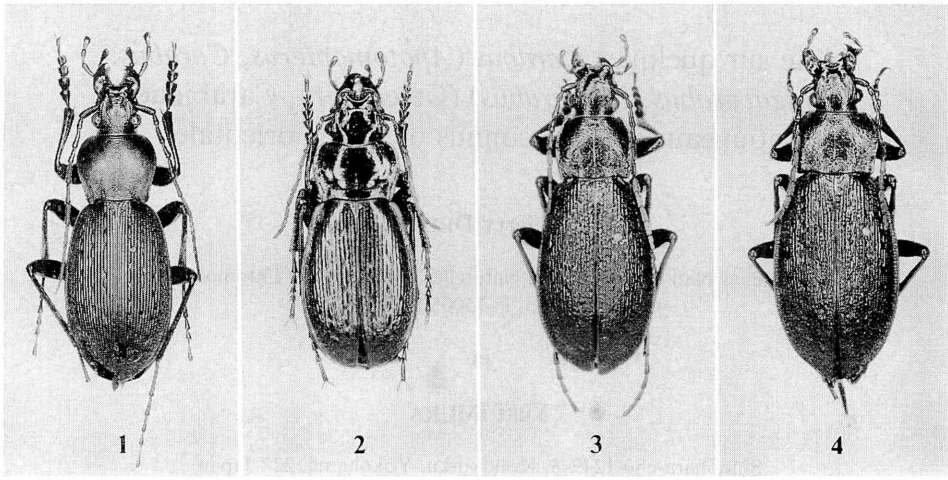
Pour la communication de matériel pour étude, nous remercions et tenons à assurer de notre reconnaissance MM. Hisatoshi KEZUKA, Satoshi KOIWAYA, Jan MACEK, Kiyoyuki MIZUSAWA et M[lle] Mayumi ISSHIKI. Le Dr. Shun-Ichi UÉNO voudra bien trouver ici l'expression de notre gratitude pour l'acceptation de ce manuscrit dans la revue *Elytra*.

1. ***Carabus*** (s. str.) ***nestor emeicola*** DEUVE et IMURA, n. subsp.

(Figs. 1, 5–8)

Holotype: 1 ♂, Chine, Sichuan, Mont Emei Shan, 1.700 mètres, 15 mai 1986, *in* coll. H. KEZUKA. Paratype: 1 ♂, Chine, Sichuan, Mont Emei Shan, 1.000 mètres, 4–20 mai 1989, *in* coll. J. MACEK.

Longueur: 26–27 mm. Largeur: 8,5–9,0 mm. Noir concolore, cependant terne,



Figs. 1–4. Habitus des taxons nouveaux, vue dorsale. — 1, *Carabus* (s. str.) *nestor emeicola* n. subsp., holotype; 2, *C.* (*Rhigocarabus*) *morawitzianus mayumiae* n. subsp., holotype; 3, *C.* (*Diocarabus*) *truncaticollis dorogostaiskianus* n. subsp., holotype; 4, *idem.*, allotype.

peu luisant. Appendices noirs.

Très proche morphologiquement de *nestor* BREUNING, mais plus grand et plus allongé, plus délié, notamment le pronotum moins transverse (lt/Lt=1,32) et proportionnellement plus petit. Les élytres sont noir-gris et non pas teintés d'un lustre brunâtre. Edéage du mâle (figs. 5–6) sensiblement identique, mais l'endophallus (figs. 7–8) présentant quelques différences: le digitulus un peu plus court et plus large, son sommet plus arrondi; le lobe latéral (*l.l.1*) à proximité de la paraligula plus développé; surtout, les lobes latéraux et symétriques (*l.l.2*) situés entre le gonopore et le digitulus sont beaucoup plus longs.

Ces différences portant sur la morphologie de l'endophallus sont somme toute mineures, de même que celles entre les caractères externes, de sorte qu'il semble prudent de considérer *emeicola* et *nestor* comme deux taxons d'une même espèce. Une étude de nombreux exemplaires appartenant à plusieurs populations pourrait permettre dans l'avenir d'élever *emeicola*, le cas échéant, au rang d'espèce.

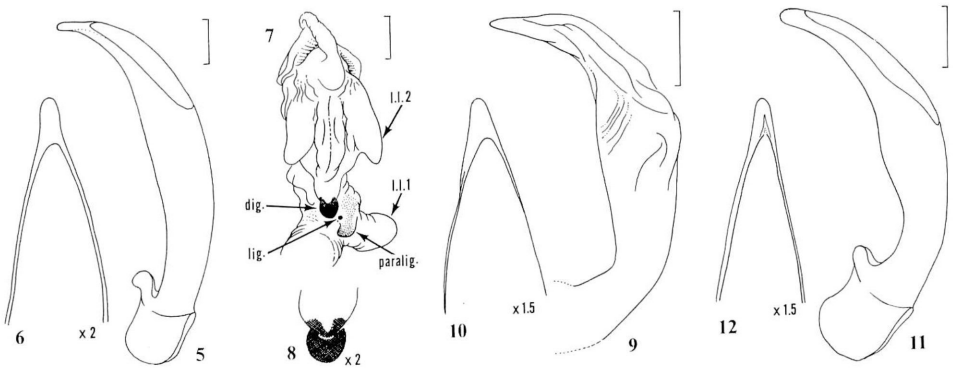
Carabus nestor BREUNING (1934), décrit du Sichuan, nous est aussi connu du Hubei occidental: Hefeng Xian, 1.400 mètres, 21 juillet 1989, *in* coll. Academia Sinica, Pékin.

2. ***Carabus* (*Rhigocarabus*) *morawitzianus mayumiae*** DEUVE et IMURA, n. subsp.

(Figs. 2, 9–10)

Holotype: 1 ♂, Chine, Tibet, Mont Nyainqêntanglha Shan, 18–19 juillet 1991, *in* coll. National Science Museum (Nat. Hist.), Tokyo. Paratypes: 3 ♀♀, même provenance, *in* coll. Y. IMURA.

Longueur: 16,5–18,5 mm. Largeur: 6,5–7,0 mm. Coloris brun cuivré délavé



Figs. 5–12. Genitalia mâles des taxons nouveaux. —— 5, *Carabus* (s. str.) *nestor emeicola* n. subsp., lobe médian, vue latérale; 6, *idem.*, vue frontale du sommet; 7, *idem.*, endophallus en extension montrant le digitulus (*dig.*), le ligulum (*lig.*), la paraligula (*paralig.*) et les lobes latéraux membraneux (*l.l.*); 8, *idem.*, détail du digitulus; 9, *C.* (*Rhigocarabus*) *morawitzianus mayumiae* n. subsp., lobe médian, vue latérale (ce spécimen est immature, de sorte que l'édéage représenté ici a subi une faible déformation); 10, *idem.*, vue frontale du sommet; 11, *C.* (*Diocarabus*) *truncaticollis dorogostaiskianus* n. subsp., lobe médian, vue latérale; 12, *idem.*, vue frontale du sommet. Echelle: 1 mm.

de vert, surtout sur les élytres. Appendices noirs, seulement la base des antennes et des mandibules par endroits un peu rougeâtre.

Morphologiquement proche de *morawitzianus* SEMENOW (1887), mais facilement reconnaissable à sa sculpture élytrale homodyname, bien plus régulière et mieux marquée: les intervalles primaires interrompus en chaînons moyens, les secondaires et tertiaires de même force, bien distincts, saillants, en lignes à peu près continues. La sous-espèce *mayumiae* se distingue aussi de la forme typique par ses appendices noirs.

3. ***Carabus* (*Diocarabus*) *truncaticollis dorogostaiskianus*** DEUVE et IMURA, n. subsp.

(Figs. 3–4, 11–12)

Holotype: 1 ♂, Sibérie orientale, région de l'Amour, chaîne Iablonov, Golets (DOROGOSTAÏSKI, 21 juin 1914), *in* coll. National Science Museum (Nat. Hist.), Tokyo. Allotype: 1 ♀, Sibérie orientale, région de l'Amour, Golets, à 10–20 verstes du lac Okopone (DOROGOSTAÏSKI, 18 juin 1914), *in* coll. K. MIZUSAWA.

Longueur: 19 mm. Largeur: 6,5 mm. Noir concolore luisant, avec, chez l'allotype, une faible teinte de fond cuivré rougeâtre. Appendices noirs, les tibias brun rouge sombre.

Carabus truncaticollis ESCHSCHOLTZ est ici compris au sens large, c'est-à-dire regroupant *polaris* POPPIUS et *fleischeri* REITTER.

Morphologiquement proche de *fleischeri* REITTER (1898), *dorogostaiskianus* s'en distingue par sa taille un peu plus grande, sa forme plus allongée, le coloris des ap-

pendices plus sombre, le dernier article des palpes maxillaires plus étiré et étroit, les antennes plus longues, dépassant en arrière de 4,5 articles la base du pronotum, la sculpture élytrale plus irrégulière, confuse mais finement ciselée, l'édéage du mâle à apex plus allongé (figs. 11–12).

4. *Carabus* (*Apotomopterus*) *delavayi tenuimanus* DEUVE et IMURA, n. stat.

Carabus (*Apotomopterus*) *tenuimanus* DEUVE et IMURA, 1990, Elytra, Tokyo, **18**: 2.

Dans une publication récente, nous avons décrit *tenuimanus* comme bonne espèce, qui se distinguait de *C. delavayi* FAIRMAIRE par les protarses du mâle nullement dilatés, et par une morphologie très différente du lobe médian de l'édéage et de l'endophallus. Si le premier caractère invoqué reste valable, en revanche la description que nous avons donnée des genitalia fait suite à une erreur de manipulation et s'appliquait en réalité à l'espèce du Jiangxi: *C.* (*A.*) *luschanensis* HAUSER. En effet, d'autres récolteurs nous ont fait parvenir entre-temps pour étude des spécimens de *C. tenuimanus* dont nous avons pu extraire l'édéage, et un pénis parfaitement identique a été retrouvé sous un de nos exemplaires de *C. luschanensis*. Il y a eu évidemment permutation.

L'édéage de *tenuimanus* est similaire à cellui de *C. delavayi*. Il semble préférable en conséquence de tenir *tenuimanus* pour une sous-espèce, cependant bien caractérisée par les protarses mâles non dilatés.

要　約

Thierry DEUVE・井村有希: 東アジア産のオサムシ4種に関する知見. —— 中国およびロシア東部から得られた4種のオサムシを検し，みっつの新亜種記載とひとつの分類学的位置の変更を行った. 1) 中国四川省中部の峨眉山から，*Carabus* (s. str.) *nestor emeicola* subsp. nov. を記載した. 同省東部の金佛山に産する基亜種に比し，やや大型で，前胸背板の幅が広く，陰茎内袋膜状部と交尾片の形態が異なることにより識別される. 2) 西蔵自治区のラサ北方に位置する念青唐古拉山から，*C.* (*Rhigocarabus*) *morawitzianus mayumiae* subsp. nov. を記載した. チベット東部に産する基亜種に近いが，上翅彫刻はほぼ同規的で，各原線，とりわけ第2次および第3次原線がより顕著に膨隆する. 3) ロシア東部のヤブロノイ山脈から *C.* (*Diocarabus*) *truncaticollis dorogostaiskianus* subsp. nov. を記載した. 亜種 *fleisheri* (独立種とされることもあるが，ここでは *truncaticollis* の1亜種とみなしておく) に近いが，肢の色彩はより暗く，小顎肢末端節と触角はより長く，上翅彫刻は不規則でより強く刻まれ，陰茎先端がやや長い. 4) 云南省北部の玉龍雪山を基産地とする *C.* (*Apotomopterus*) *tenuimanus* DEUVE et IMURA を，独立種から *C.* (*A.*) *delavayi* の1亜種に降格した. これは，原記載論文において筆者らが図示した本種の ♂ 交尾器 (1990, p. 4, fig. 11 a–c) が，標本を扱う際の手違いにより，じつは江西省北部の庐山に産する *C.* (*A.*) *luschanensis* のものであり，真の *tenuimanus* の交尾器形態は *C.* (*A.*) *delavayi* のそれと大きい差のないことが確認されたためである.

Références

BREUNING, S., 1934. Ueber Carabini. *Folia zool. hydrobiol.*, **6**: 29–40.

DEUVE, Th., 1991. La nomenclature taxonomique du genre *Carabus*. 197 pp. Paris, Venette: Sciences Nat (éd.).

——— & Y. IMURA, 1990. Nouveaux *Carabus* (*Apotomopterus*, *Morphocarabus*, *Scambocarabus*) (Coleoptera, Carabidae) des régions montagneuses de Chine. *Elytra*, *Tokyo*, **18**: 1–13.

FAIRMAIRE, L., 1886. Diagnoses de Coléoptères nouveaux. *Le Natur.*, **8**: 223–224.

HAUSER, G., 1919. Weitere Beiträge zur Gattung *Apotomopterus*. *Soc. ent.*, **34**: 25–26.

IMURA, Y., 1990. Systematic position of *Carabus yunnanus* and the allied species (Coleoptera, Carabidae) from China, with description of a new species. *Elytra*, *Tokyo*, **18**: 137–153.

REITTER, E., 1898. Siebzehnter Beitrag zur Coleopteren-Fauna des russischen Reiches. *Wien. ent. Ztg.*, **17**: 109–127.

SÉMENOW, A., 1887. Insecta in itinere Cl. N. PRZEWALSKII in Asia Centrali novissime lecta. V. G. *Carabus*. *Horae Soc. ent. ross.*, **21**: 165–175.

Elytra, *Tokyo*, **20** (2): 135, Nov. 15, 1992

A New Record of *Apotomopterus* (*Taiwanocarabus*) *masuzoi* (Coleoptera, Carabidae) from Central Taiwan

Yûki IMURA

Shinohara-chô 1249–8, Kôhoku-ku, Yokohama, 222 Japan

Apotomopterus (*Taiwanocarabus*) *masuzoi* IMURA et M. SATÔ (1989, p. 103, figs. 1–5) is the most recently described species of the Taiwanese Carabina, so far known from Mt. An-ma Shan, which lies near the southwestern end of the Hsüeh-shan Mountain Range. Through the courtesy of Dr. Shun-Ichi UÉNO, I was recently given an opportunity to examine a specimen of this species obtained from Mt. Cho-she-ta Shan, which is about 48.5 km distant to the south by east from the type locality. The collecting data are as given below:

1 ♀, Mt. Cho-she-ta Shan, Wu-lin-pan, 2,220 m alt., Jen-ai Hsiang, Nan-t'ou Hsien, Central Taiwan, 19–V–1991, S.-I. UÉNO & Y. NISHIKAWA leg. (in coll. Y. IMURA).

The Cho-she-ta Shan specimen is slightly different from the type series in the condition of the elytral intervals, which are a little less strongly raised. It is, however, otherwise identical with the latter.

In closing this brief report, I wish to thank Dr. Shun-Ichi UÉNO and Prof. Yoshiaki NISHIKAWA for their kindness in submitting the invaluable specimen to me for study.

Reference

IMURA, Y., & M. SATÔ, 1989. A new subgenus and species of *Apotomopterus* (Coleoptera, Carabidae) from Taiwan. *Elytra*, *Tokyo*, **17**: 101–108.

Elytra, *Tokyo*, **20** (2): 136, Nov. 15, 1992

新 刊 紹 介

La Nomenclature Taxonomique du Genre *Carabus*. Bibliothèque Entomologique, 4. By Thierry DEUVE. 197 pp., 60 figs. 1991. Sciences Nat, France.

パリ自然史博物館の Th. DEUVE による，世界のオサムシの分類目録である．いわゆる狭義のオサムシ（オサムシ亜族 Carabina）だけを扱ったものだが，200 ページ近いボリュームがあり，モノクロながらおもだった種の標本写真（計 60 カット）も随所に配されている．

著者は，往年の大家 BREUNING と同様，オサムシ亜族を 1 属 *Carabus* として扱う主義であるが，その下の群の分類には，わが国の石川により提唱された♂交尾器内袋の形質に基づく体系を応用している点が，本目録の大きい特徴である．ただし，石川の 3 群 (Spinulati, Carabogenici, Multistriati) に対し，DEUVE は Carabogenici をさらに Digitulati, Lipastromorphi, Archicarabomorphi (それぞれ石川の属 *Carabus*, *Lipaster*, *Ischnocarabus* に相当) のみっつに分割し，その下に多くの亜属を認めて，世界のオサムシを 5 群 86 亜属 698 種に分類している．はじめの 4 群はそれぞれ 3 ないし 6 亜属から構成されているのでそれなりにまとまりもよいが，さいごの多条オサムシ群 Multistriati にはなんと 69 もの亜属が含まれている．多条オサムシ群内の系統分類は今後の研究に待つ部分が大きいとはいえ，もう少しシェイプ・アップしてもよかったのではないだろうか．

本文の構成は，各群の定義と分布域の説明に続き，亜属名とそのシノニミック・リスト，さらに各種のリストが続く．種ごとに簡単な分布域が記され，その下にアルファベット順のいわゆる“亜種リスト”にあたるものが置かれている．ただし，これには natio や色彩変異といった亜種より下の階次の名称として記載されたものも含まれ，現行命名規約上適格か否かの検討，あるいはシノニム関係の整理などは敢えてなされていない．本人の弁によれば，そこまでの作業はとても無理であったとのことだが，たとえばマイマイカブリの項目には 29，ヨーロッパのコガネオサ *C. auronitens* にいたってはなんと 201 とおりもの名が並んでいてなんとも壮観である．巻末に種名までの索引しかないことも，目録を活用するうえでは意外に不便で，たとえばオシマルリオサはオオルリオサに含められているので，*munakatai* ではなく *gehinii* で引かなければみつけることができない．

ホソヒメクロオサの帰属やツシマカブリモドキの分布など，日本産のものに限っても明らかな誤りが散見される．おそらく全体としてはかなりの見落としや誤りを含んでいるだろう．また，どちらかといえば，彼みずからが最近になって記載した中国産種を優先した，ややクセのある分類となっているようにも見うけられる．しかしながら，BREUNING 以来 60 年ぶりに，世界のオサムシ全種を分類学的に整理し直してまとめた功績は素直に評価すべきであろうし，なによりもわれわれオサムシ愛好家にとってまことに便利な本である．おそらく，著者の DEUVE 自身がもっとも欲し，今後の叩き台とするべくまとめた目録であるにちがいない．竹のカーテンの陰からここ数年，ようやくベールを脱ぎはじめた中国産種に関する知見の増大ぶりから推察するに，おそらく数年を経ずして改訂が必要になってくることと思われるが，著者本人もその心づもりのようである．より充実した第 2 版を期待したい．

（井村有希）

Elytra, Tokyo, **20** (2): 137–143, Nov. 15, 1992

A New Anophthalmic *Trechiama* (Coleoptera, Trechinae) from Central Hokkaido, Northeast Japan[1,2)]

Shun-Ichi UÉNO

Department of Zoology, National Science Museum (Nat. Hist.),
3–23–1 Hyakunin-chô, Shinjuku, Tokyo, 169 Japan

and

G. Sh. LAFER

Institute of Biology and Pedology, Far East Branch of the
Russian Academy of Sciences, Vladivostok 22, 690022 Russia

Abstract A new anophthalmic species of the trechine genus *Trechiama* is described from the southern part of the Sorachi Hills in central Hokkaido, Northeast Japan, under the name of *T. kuznetsovi*. It belongs to the group of *T. borealis*, and is mainly characterized by the peculiarly shaped pronotum with at least a pair of discal setae and the unique conformation of male genitalia.

Since the trechine fauna of the Hidaka and the Yûbari Mountain Ranges in central Hokkaido was dealt with by the senior author in 1971, nothing has been added to our knowledge about the *Trechiama* species occurring in this northern island of Japan. It is true that a strange *Trechiama*-like trechine beetle, *Accoella akirai* S. UÉNO (1990, p. 170, fig. 1), was discovered at the southern tip of southwestern Hokkaido, but it has no direct relationship with the group of *Trechiama borealis*, to which all the five, previously known species belong. This species-group is considered to have been derived from an ancestral species of the group of *T. oreas*, which somehow reached southern central Hokkaido across the sea by sweepstakes dispersal (cf. UÉNO, 1971, pp. 7, 26).

Recently, through the Russo-Japanese co-operative investigations of the East Asian insect fauna, a new species of anophthalmic *Trechiama* of the group of *T. borealis* was unexpectedly discovered at the southern part of the Sorachi Hills, which run at the western side of the Yûbari Range parallel to it and can be regarded as a branch ridge of the latter. Most striking is that this new trechine occurs at the foot of a hill only 519 m in height, whereas all the other members of the same species-group inhabit the alpine or the subalpine zone above 1,000 m in altitude. It will be described in the present paper under the name of *Trechiama kuznetsovi*.

1) This study is supported in part by the Grant-in-aid for Scientific Research No. 03640633 from the Ministry of Education, Science and Culture, Japan.

2) Report No. 17 from the Japan/Russia Cooperative East Asian Entomological Program.

The abbreviations used herein are the same as those explained in the senior author's 1971 paper (p. 6).

The authors wish to express their deep indebtedness to Dr. V. N. KUZNETSOV, Dr. A. B. EGOROV, Messrs. Susumu KANENO and Masahiro ÔHARA either for their kind help in the field or for obtaining additional information about the habitat of the new species.

Trechiama (s. str.) ***kuznetsovi*** S. UÉNO et LAFER, sp. nov.

(Figs. 1–3)

Length: 4.95–5.80 mm (from apical margin of clypeus to apices of elytra).

Belonging to the group of *T. borealis* and related to *T. inflexus* S. UÉNO (1971, pp. 8, 18, figs. 12–14) from Mt. Ashibetsu-daké and Mt. Yûbari-daké, both of which lie on the Yûbari Mountain Range, but distinguished at first sight from that species by its larger size, darker coloration, larger prothorax with much ampler and squarer basal part, much less sinuate sides, less acute hind angles and at least a pair of discal setae, more ovate elytra with broader basal parts, more salient shoulders and much deeper and distinctly punctate striae, the 5th of which joins apical striole, and differently shaped aedeagus with differentiated coupulatory pieces.

Body robust, with small head, fairly large subcampanulate prothorax and large ovate hind body. Colour reddish brown, darker than in *T. inflexus*, shiny, and faintly iridescent on elytra; palpi, apical halves of antennae, and legs more or less lighter than dorsum.

Head small, about as wide as or slightly wider than long, widest a little behind middle, and moderately depressed above, with wide neck and shallow neck constriction; frontal furrows deep throughout, rather feebly curved and not angulate at middle; frons and supraorbital areas moderately convex; microsculpture distinct, mostly consisting of transverse meshes and lines; trace of eyes distinct though small; genae feebly and evenly convex, completely devoid of hairs; neck constriction shallow and not sharply marked; labrum transverse, widely emarginate at apex; mandibles fairly slender, briefly but sharply arcuate at apices; mentum tooth porrect and bifid; palpi slender, with penultimate segments gradually dilated towards apices and apical segments gradually tapered towards blunt tips; antennae filiform though rather short, reaching or extending slightly beyond basal third of elytra, segment 2 the shortest, slightly shorter than each of segments 8–10 and three-fourths as long as segment 3, which is about as long as 4 or 5, segments 6 and 7 subequal in length and slightly shorter than the preceding segments, segment 8 about three-eighths as wide as long, terminal segment the longest, obviously longer but narrower than scape.

Pronotum subcampanulate, much wider than head, distinctly wider than long, widest at about two-thirds from base or a little behind that level, and much more strongly contracted at apex than at base; PW/HW 1.38–1.49 (M 1.43), PW/PL 1.18–1.28 (M 1.22), PW/PA 1.47–1.56 (M 1.53), PW/PB 1.09–1.17 (M 1.13); sides gently

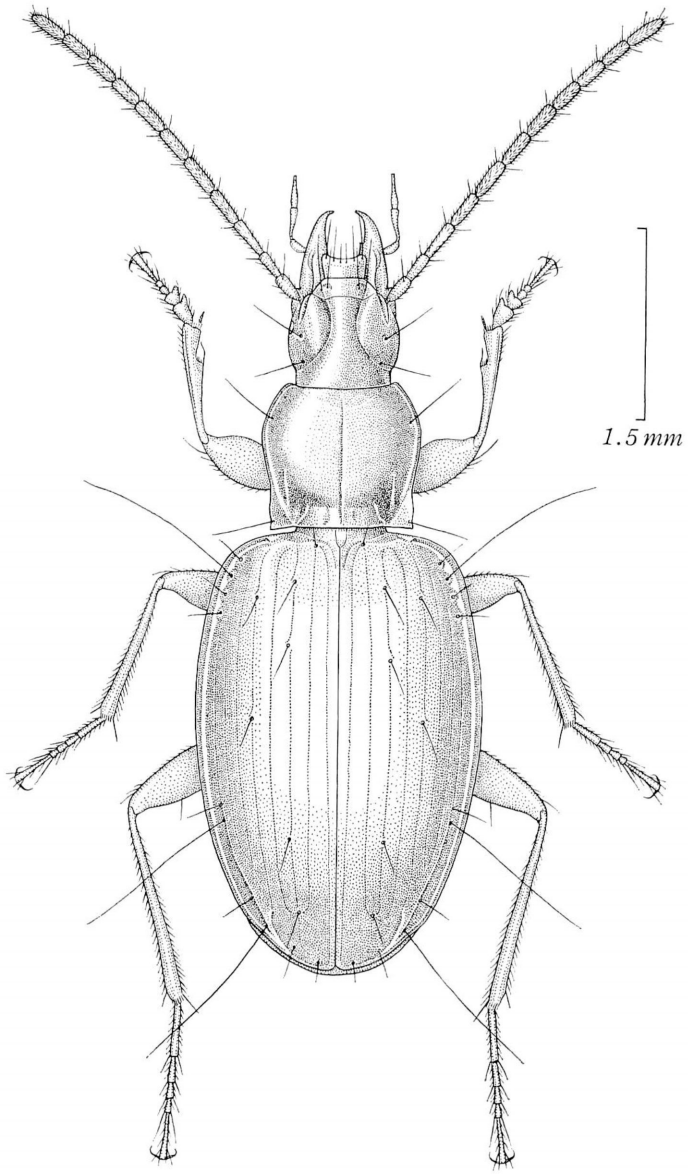


Fig. 1. *Trechiama* (s. str.) *kuznetsovi* S. UÉNO et LAFER, sp. nov., ♂, from Noborikawa in central Hokkaido.

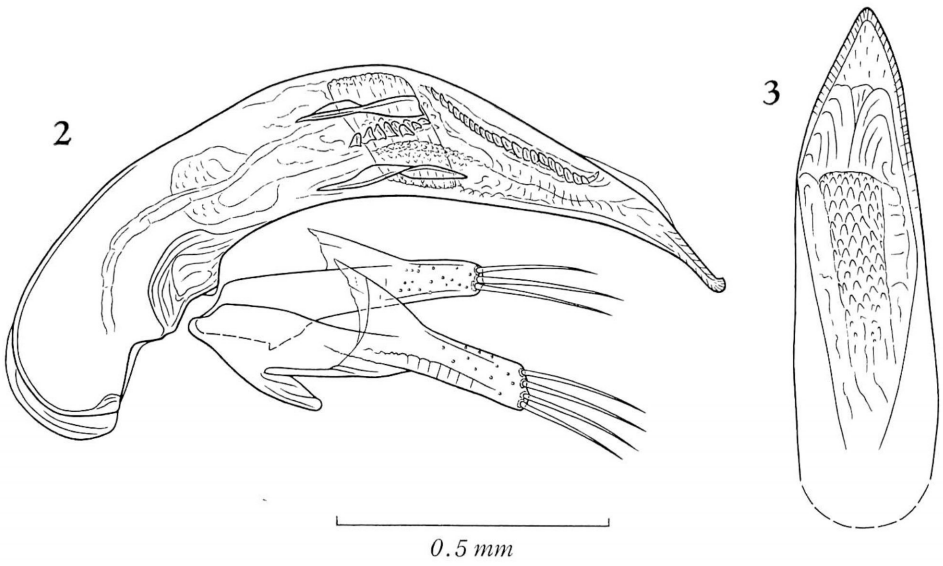
and evenly arcuate in front, slightly sinuate at about basal third, and then either subparallel or slightly convergent towards hind angles, which are rectangular though often obtusely denticulate laterad at the corners; lateral borders narrow in front, becoming wider behind middle, and widely reflexed in basal part; both lateral and postangular

setae present, the latter slightly removed forwards; apex either straight or slightly emarginate, with front angles obtusely produced forwards; base much wider than apex, PB/PA 1.29–1.42 (M 1.35), either almost straight or very slightly bisinuate; surface convex and smooth, usually with a pair of discal setae at about three-fifths from base, sometimes also with an additional seta on one side; basal part very wide, ample; microsculpture formed by fine transverse lines, though partially degenerated; median line deeply impressed, somewhat widened in basal area and almost reaching base; apical transverse impression obsolete, basal one deep though mostly contained in large basal foveae and interrupted at middle; basal foveae large and deep, somewhat uneven at the bottom, and divergent anteriorly; postangular carinae distinct though sometimes obtuse; basal marginal area more or less uneven.

Elytra ovate, much wider than prothorax and obviously longer than wide, usually widest at about three-sevenths from bases, and more gradually narrowed towards apices than towards bases, with broad ample basal parts; EW/PW 1.58–1.72 (M 1.66), EL/EW 1.47–1.57 (M 1.52); shoulders distinct though rounded; humeral borders reaching the base of interval 6 but not the base of stria 5 as the latter abruptly curves inwards at the basal portion; sides widely reflexed before middle, gently arcuate from behind shoulders to the level of the apicalmost pore of the marginal umbilicate series, and then conjointly rounded at apices, each usually with very slight preapical emargination; surface convex though rather widely depressed on the disc, with steep apical declivity; microsculpture mostly obliterated, though consisting of fine transverse lines; striae entire, deeply impressed and clearly punctate throughout, striae 4–5 inwardly curved at the basal parts, 8 deepened behind the middle set of marginal umbilicate pores; scutellar striole deep; apical striole also deep, rather strongly arcuate, and joining stria 5; intervals slightly convex on the disc; apical carina prominent; stria 3 with three setiferous dorsal pores at 1/9–1/8, about 1/3 and about 2/3 from base respectively; preapical pore situated at the apical anastomosis of striae 2 and 3, and much more distant from apex than from suture; stria 5 with two setiferous dorsal pores at 1/7–1/5 and 3/7–1/2 from base respectively; humeral set of marginal umbilicate pores regular, the four pores being ranged equidistantly.

Ventral surface smooth; anal setae as usual for a member of the *borealis* group. Legs rather stout; protibiae straight, moderately dilated towards apices, each with a deep longitudinal groove on the external face; tarsi not particularly slender; in ♂, two proximal segments of each protarsus widely dilated, stoutly produced inwards at apices, and furnished beneath with adhesive appendages.

Male genital organ fairly large and heavily sclerotized. Aedeagus elongate, three-eighths as long as elytra, gently arcuate from base to apex, lightly depressed, tubular in basal half, and gradually narrowed from behind middle in profile, with apical lobe flattened and moderately curved ventrad; basal part elongate, not abruptly bent, with small basal orifice, whose sides are deeply emarginate; sagittal aileron present though narrow; apical lobe elongated subtriangular in dorsal view, very narrow and dorsally tuberculate at the tip in lateral view; ventral margin shallowly, widely and unevenly



Figs. 2–3. Male genitalia of *Trechiama* (s. str.) *kuznetsovi* S. UÉNO et LAFER, sp. nov., from Noborikawa in central Hokkaido; left lateral view (2), and apical part of aedeagus, dorso-apical view.

emarginate in profile. Inner sac armed with three anisotopic copulatory pieces, one right lateral and two left lateral, and two groups of sclerotized teeth; right lateral copulatory piece vertical, lamellar and rolled; left lateral ones narrow and twisted, horizontally lying one above the other at the middle of aedeagus and partially enveloped with minute scales covering folded sac membrane; proximal teeth-patch left lateral, lying just below dorsal sclerite, consisting of large teeth, and mostly covered with minute scales of sac membrane; dorso-apical teeth-patch much larger than the left lateral, horizontally extending backwards from apical orifice. Styles large and elongate, left style being much larger than the right, each usually bearing four long setae at the apex, though the right style sometimes lacks one of them.

Type series. Holotype: ♂, allotype: ♀, 2–VII–1992, V. N. KUZNETSOV leg. Paratypes: 5 ♂♂, 4 ♀♀, 2–VII–1992, V. N. KUZNETSOV leg.; 1 ♂, 2–VII–1992, S. KANENO leg.; 4 ♂♂, 1 ♀, 20–VII–1992, M. ÔHARA leg.

The holotype and allotype are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are distributed to the above collection and that of the Institute of Biology and Pedology, Far East Branch of the Russian Academy of Sciences, Vladivostok.

Type locality. Noborikawa, 240 m in altitude, of Momijiyama in Yûbari-shi, central Hokkaido, Northeast Japan.

Notes. Because of the broad body form, broad basal part of pronotum and elongate aedeagus, this new species is most closely related to *T. inflexus* S. UÉNO of the

Yûbari Mountains. This is also suggested by the geographical situation of the type locality, which is only 23 km distant to the south-southwest by west from Mt. Yûbari-daké and lies near the spot where the southern extension of the Yûbaris approaches to that of the Sorachis. The new species is, however, considerably different from the latter not only in external morphology but also in aedeagal structure. The presence of discal setae on pronotum is of particular interest, since these setae are known to exist only in *T. watanabei* S. UÉNO (1971, pp. 7, 15, fig. 11), which occurs at the middle altitude of Mt. Tottabetsu-daké of the Hidakas, and are absent in all the high altitude members of the species-group. Besides, the differentiated inner armature of male genitalia is unique to *T. kuznetsovi*. Though the aedeagal tube itself resembles that of *T. inflexus*, this species possesses a hyaline vertical lamella as is found in *T. borealis* S. UÉNO (1961, p. 331, figs. 1–2; 1971, pp. 7, 8, figs. 1–6) in addition to two narrow sclerites.

The habitat of *T. kuznetsovi* was found along a narrow stream near Kaedé coal mine. This stream is one of the headsprings of the Horoka-kuruki-gawa, a tributary of the Yûbari-gawa River that flows northwest into the Sea of Japan. There is a small dam across the narrow stream at an elevation of 240 m, forming a thin deposit of soil and gravel at its base. It is this spot that harbours the trechine beetle, which is neither upper hypogean nor even endogean at least early in the summer. All the type specimens were found either from beneath stones or from the thin deposit of soil, and were fairly active when exposed.

The discovery of *T. kuznetsovi* at a low altitude of the Sorachi Hills suggests that other new species of the same lineage could be found on the low hills at the eastern side of the Ishikari Lowland. It is to be hoped that careful investigations, particularly of the upper hypogean zone, will be made in that part of Hokkaido in near future and bring those trechine beetles to light.

要　約

上野俊一・G. Sh. LAFER: 道央地方産ナガチビゴミムシ属の1新盲目種. —— 北海道空知山地の南部，夕張市紅葉山登川で発見されたナガチビゴミムシ属の盲目種を新種と認め，ズンドウメクラチビゴミムシ *Trechiama* (s. str.) *kuznetsovi* S. UÉNO et LAFER と命名し記載した．この種はヒダカメクラチビゴミムシ種群に属し，夕張山地の高山帯から知られるユウバリメクラチビゴミムシに類縁が近いが，大型で，基部の異常に広い前胸背板に1対以上の背剛毛があり，雄交尾器の形状もいちじるしく異なっている．同じ種群の既知種がすべて高山性ないし亜高山性であるのに対して，この新種が標高わずか 240 m の山麓に生息することは，今後も新しい盲目種の発見があるだろうと予測させるものである．

References

UÉNO, S.-I., 1961. Alpine trechids from Hokkaido, Japan. III. Occurrence of *Trechiama* in Hokkaido. *Mem. Coll. Sci. Univ. Kyoto*, (B), **28**: 331–336, 1 pl.

UÉNO, S.-I., 1971. The trechine beetles of the Hidaka and the Yûbari Mountain Ranges in Hokkaido, northern Japan. *Mem. natn. Sci. Mus., Tokyo*, (4): 5–28.

——— 1990. The anophthalmic trechine beetles from the southwestern tip of Hokkaido, Northeast Japan. *Elytra, Tokyo*, **18**: 167–173.

Elytra, Tokyo, **20** (2): 143, Nov. 15, 1992

A New Locality of *Trechiama sichotanus* (Coleoptera, Trechinae)

Shun-Ichi UÉNO and G. Sh. LAFER

Trechiama (*Leptepaphiama*) *sichotanus* (LAFER) (originally *Leptepaphiama sichotana* LAFER, 1989, Opred. Nasek. Dal'nego Vostoka SSSR, **3** (1), p. 143, fig. 89–1) is a remarkable trechine beetle described from four females collected in the subalpine zone of Mt. Lysaya on the Khrebet Partizanskij u Benevskogo in Primorskij Kray. They were found from under stones lying beside the headspring of a narrow stream at 1,400–1,500 m in altitude.

On a recent collecting trip, a female specimen of this species was collected on the western side of the same mountain range to the southwest of the type locality. It was dug out from the upper hypogean zone about 50 cm below the surface at an elevation of only 480 m. This can be considered to be an example of the well known fact that anophthalmic or microphthalmic trechine beetles occur underground at low elevations but are rather frequently met with on or near the surface at the heights of mountains.

The collecting data of the specimen in question are as follows: 1 ♀, Mt. Konstantinopol, Malaja Muladza Valley, 480 m alt., Partizanskij Khrebet, Partizanskij Co., Primorskij Kray, 13-VIII-1992, S. UÉNO leg. (NSMT).

This specimen, 6.00 mm in the length of body, is somewhat different from the type series in the shape of pronotum, which is more widely dilated anteriad and has the sides more strongly arcuate in front, but otherwise agrees with the latter in all the important points. The standard ratios of its body parts are as follows [those of the type series are given in brackets]: PW/HW 1.43 [1.34–1.38], PW/PL 1.11 [1.07–1.10], PW/PA 1.49 [1.45–1.48], PW/PB 1.64 [1.52–1.53], PB/PA 0.91 [0.95–0.97], EW/PW 1.86 [1.87–1.90], EL/EW 1.45 [1.44–1.47].

Elytra, Tokyo, **20** (2): 144, Nov. 15, 1992

新 刊 紹 介

Opredelitel' Nasekomykh Dal'nego Vostoka SSSR v Shesti Tomakh. Tom 3. Zhestkokrylye, Ili Zhuki. Chast' 2. [Определитель Насекомых Дальнего Востока СССР в Шести Томах. Том 3. Жесткокрылые, Или Жуки. Часть 2]. Ed. P. A. Lera [П. А. ЛЕРА]. 704 pp. 1992. Nauka, Leningrad.

1990年の刊行が予定されていながら，ロシア国内の混乱や経済事情の極端な悪化で，刊行が延び延びになっていた上記シリーズ甲虫類の第2部が，この7月にようやく日の目をみた．巻末に記されている発行日付より，さらに半年ほど遅れての上梓である．ちょうどウラジオストク市を訪れていたわたしたちは，梱包がほどかれたばかりの本書を手にすることができ，大きい感激を味わうとともに，その内容の充実していることに驚かされた．

予告されていたように，ヒゲブトコメツキ科からハムシ科までがまとめられているが，ツヤヒメマキムシ科，カミキリモドキ科，アリモドキ科，ツチハンミョウ科およびカミキリムシ科の5科は含まれていない．このうちのカミキリムシ科だけは，ゾウムシ上科とともに，もともと第3部への収載を予定されていたものらしいが，他の4科については執筆者がなかったか，あるいは原稿が間に合わなかったものと思われる．巻末に補遺の項があって，オサムシ科ナガゴミムシ亜科のヒラタゴミムシ類 (G. Sh. Lafer)，ゴミムシダマシ科の全部 (G. S. Medvedev)，ナガクチキムシ科の 1 新種の記載 (N. B. Nikitsky) などが掲載され，さらにオサムシ科などの若干種について検索表の訂正があるが，このゴミムシダマシ科なども，おそらく本文の編集が終わってからつけ加えられたものだろう．

本文の記述は 15 人の研究者の共同執筆で，その内訳は次のようになっている．N. N. Dubrovin (クチキムシ科)，A. B. Egorov (ヒゲブトコメツキ科，ヒョウホンムシ科，ジョウカイモドキ科，キカワムシ科，ハムシダマシ科など 7 科)，A. B. Egorov & G. Sh. Lafer (ツヤキカワムシ科)，V. G. Grachev (コメツキダマシ科)，A. G. Kirejtshuk (ケシキスイ科，ヒゲブトケシキスイ科)，G. O. Krivolutskaja (ナガシンクイ科，カッコウムシ科，ツツシンクイ科，ヒラタムシ科，コメツキモドキ科，オオキノコムシ科など8科)，V. N. Kuznetsov (テントウムシ科)，G. Sh. Lafer (ヒメトゲムシ科，カツオブシムシ科，オオキスイ科，ミジンムシ科，テントウムシダマシ科，オオハナノミ科，クビボソムシ科など 15 科)，G. Sh. Lafer & A. B. Egorov (アカハネムシ科)，G. Ju. Ljubarsky (キスイムシ科)，V. D. Logvinovskij (シバンムシ科)，L. N. Medvedev (ベニボタル科，ハムシ科)，L. N. Medvedev & A. B. Ryvkin (ホタル科，ジョウカイボン科)，N. B. Nikitsky (コクヌスト科，ホソカタムシ科，ナガクチキムシ科，クビナガムシ科，ホソキカワムシ科，ハネカクシダマシ科，ヘリハネムシ科，タマムシモドキ科など 19 科)，N. B. Nikitsky & G. Sh. Lafer (マキムシモドキ科)，V. K. Odnosum (ハナノミ科)，A. B. Ryvkin (ホタルダマシ科)，S. V. Saluk (ヒメマキムシ科)．

この一覧でもわかるように，執筆者の多くがかなり多様な科を担当し，しかも水準以上の成果を挙げている．これを可能にしたのがサンクト・ペテルブルグなどに集積されている豊富な文献や比較標本で，国の中心となる充実した研究博物館の存在がいかに重要であるかを改めて認識させられる．

(上野俊一)

Elytra, *Tokyo*, **20** (2): 145–150, Nov. 15, 1992

Occurrence of a New Oculate *Trechiama* (Coleoptera, Trechinae) on the Abukuma Hills in Eastern Honshu, Japan[1)]

Shun-Ichi UÉNO

Department of Zoology, National Science Museum (Nat. Hist.),
3–23–1 Hyakunin-chô, Shinjuku, Tokyo, 169 Japan

Abstract A new oculate species of the trechine genus *Trechiama* is described from a sink near the highest point of the Abukuma Hills in eastern Honshu, Central Japan. It belongs to the *nivalis* complex of the group of *T. oreas*, and is considered to be a relict of a past dispersal of the species-group. The new name given is *Trechiama abcuma* sp. nov.

The old hills called the Abukumas, which stretch for about 200 km along the Pacific coast of eastern Honshu, are not rich in the trechine fauna, though various interesting beetles have been recorded from the range, in particular from its eastern side. Only one upper hypogean species, *Kurasawatrechus zenbai* S. UÉNO (1990, p. 176, figs. 1–2), has been added to our knowledge, since two cave-dwelling species were first recorded from the range nearly twenty years ago (cf. UÉNO, 1974).

Late in the summer of 1990, the annual meeting of the three major speleological groups of Japan was held at Takiné-machi at the central part of the Abukuma Hills. The main purpose of this meeting was to explore the Abukuma-dô cave system, which was formerly known as three different caves, Oni-ana, Ohtakiné-dô and Abukuma-dô, but was later found to be a complex of caves connected with one another by squeezes and narrow shafts.

On the first day of the exploration, a trechine beetle, unfortunately a female, was obtained by Tadaaki YANAGISAWA in a room at the uppermost part of the Ohtakiné-dô section. This was most unexpected, since the cave had repeatedly been examined by biospeologists and never yielded trechines before. Later examination proved it to be a member of the *nivalis* complex of the group of *Trechiama oreas*, which had theretofore been unknown from the Abukumas. It was, however, impossible to determine its true identity, because all the five species of the *nivalis* complex described up to that time are extremely similar to one another in external morphology and can be confidently classified only by diagnostic characters of male genitalia (cf. UÉNO, 1986, 1989).

The room in which the trechine specimen was collected is one of the most deserted parts of the whole cave system. On rainy days, however, it is fed by a narrow stream coming down from the bottom of a large sink thickly covered with trees. It was

1) This study is supported by the Grant-in-aid for Scientific Research No. 03640633 from the Ministry of Education, Science and Culture, Japan.

therefore surmised that the original habitat of the trechine beetle might be somewhere in that sink, and that the specimen in question had been carried down into the cave by a flood after a heavy rain. Thus, our searches were concentrated on that part of the karstic area. Needless to say, the cave itself was also repeatedly examined both by naked eyes and by trappings. Nevertheless, our efforts were repaid only after two years; a second specimen, male, was at last found out in July of this year from beneath a very large stone embedded at the side of the stream just outside the entrance to Ohtakiné-dô, or at the deepest point of the sink.

An examination of its genitalia has proved beyond all doubt that the trechine is an isolated new species of the *nivalis* complex. In view of the zoogeographical importance of the discovery, I am going to describe it in the present paper under the name of *Trechiama abcuma*. This specific name is a Latinized variant of Abukuma and seems most appropriate to the new species, since its type locality not only lies in the Abukuma-dô cave system but is situated at the centre of the Abukuma Hills. The abbreviations used herein are the same as those explained in previous papers of mine.

Before going further, I wish to express my deep indebtedness to Mr. & Mrs. Shinzaburo SONE, and Messrs. Hirohisa KIZAKI, Sumao KASAHARA and Tadaaki YANAGISAWA for giving me the opportunity to report on this important discovery. But for the indefatigable searches made by SONE and KIZAKI, the male of this rare species could never have been brought to light.

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

(Figs. 1–3)

Length: 5.20–5.25 mm (from apical margin of clypeus to apices of elytra).

Belonging to the *nivalis* complex of the group of *T. oreas* and externally similar to *T. kurosawai* S. UÉNO (1986, p. 140, figs. 8–10) of the Azuma Mountains, only differing from the latter in the broader base of pronotum and the more elongate elytra. It is, however, evidently different from *T. kurosawai*, and from all the other described forms of the same species-complex, in the configuration of male genitalia, as will be described later.

Colour as in *T. kurosawai*, dark reddish brown with more or less lighter appendages. Head identical with that of *T. kurosawai*; genae about three-fourths as long as eyes; antennae reaching basal two-fifths of elytra in ♂, basal three-eighths of elytra in ♀. Pronotum also similar to that of *T. kurosawai*, but a little more strongly contracted at apex and less strongly so at base, with more strongly arcuate sides, which are most widely distant at about four-sevenths and deeply sinuate at about one-eighth from base respectively. Elytra more elongate than in *T. kurosawai*, with more effaced shoulders, more pointed apices, and obviously deeper striae, but otherwise similar to the latter; stria 3 with three setiferous dorsal pores at about 1/8, 1/3 and 5/8 from base respectively, stria 5 with a single setiferous dorsal pore at about basal 1/8. Legs as in *T. kurosawai*. Standard ratios of body parts: PW/HW 1.42 in the holotype (H),

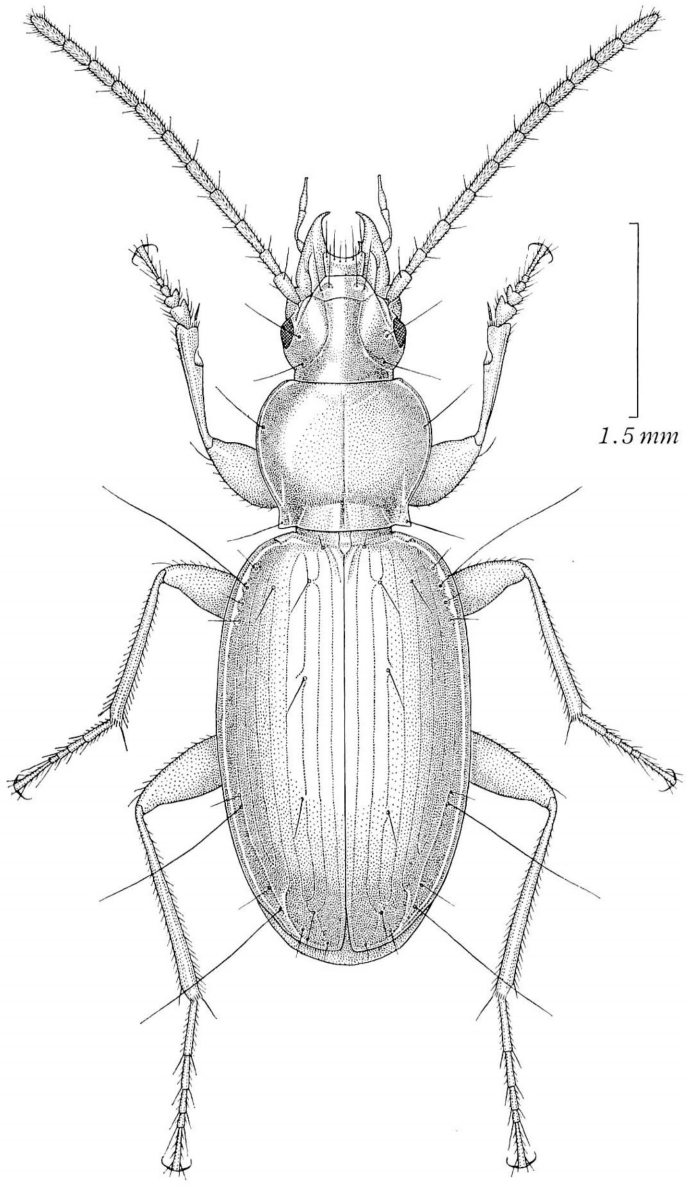
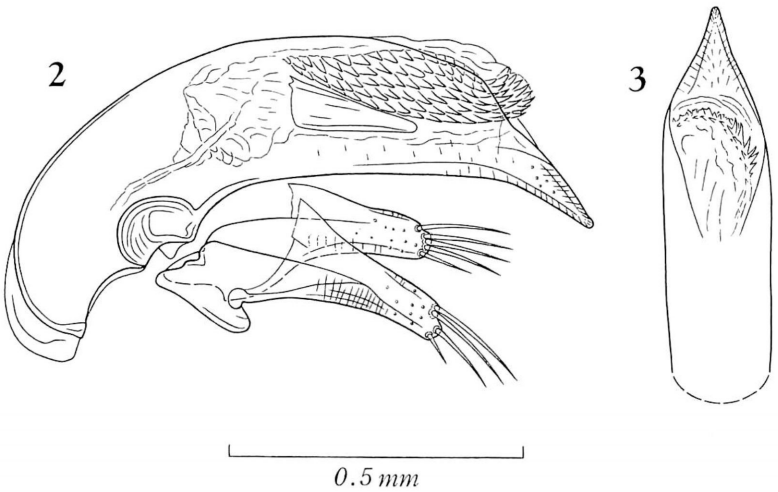


Fig. 1. *Trechiama* (s. str.) *abcuma* S. UÉNO, sp. nov., ♂, from the entrance to Ohtakiné-dô Cave at the bottom of Oni-ana Sink.

1.41 in the allotype (A), PW/PL 1.19 in H, 1.18 in A, PW/PA 1.62 in H, 1.54 in A, PW/PB 1.35 in H, 1.36 in A, PB/PA 1.20 in H, 1.14 in A, EW/PW 1.45 in H, 1.44 in A, EL/EW 1.62 in H, 1.61 in A.



Figs. 2–3. Male genitalia of *Trechiama* (s. str.) *abcuma* S. UÉNO, sp. nov., from the entrance to Ohtakiné-dô Cave at the bottom of Oni-ana Sink; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

Male genital organ closer to those of *T. akinobui* S. UÉNO (1986, p. 137, figs. 5–7) than to those of *T. kurosawai*, particularly in the conformation of inner armature, though the aedeagal tube itself is something intermediate between the two. Aedeagus small though moderately sclerotized, about three-tenths as long as elytra, short, compressed, hardly arcuate at middle though the dorsal margin is semicircularly rounded from base to apex in lateral view, and nearly parallel-sided in dorsal view, with fairly large basal part and narrowly produced apical lobe; basal part gently curved ventrad, shallowly emarginate at the sides of basal orifice, and with fairly large sagittal aileron; viewed dorsally, apical lobe broad at the base, rapidly narrowed apicad, and produced into a narrow distal part which is blunt at the extremity; viewed laterally, apical lobe narrow, moderately curved ventrad, and rather pointed at the extremity; ventral margin hardly emarginate at middle in profile. Inner sac armed with a relatively small copulatory piece and a large dorsal patch of heavily sclerotized teeth; copulatory piece elongated subtriangular, about two-ninths as long as aedeagus, somewhat spatulate, and blunt at the apex; teeth-patch about three-sevenths as long as aedeagus, much larger than copulatory piece, longitudinally extending above the latter to apical orifice, and irregularly spatulate as a whole. Styles broad, left style longer but not broader than the right; in the holotype, the left style bears four apical setae, the ventralmost one of which is much smaller than the others, while the right one bears five short setae at the apex.

Type series. Holotype: ♂, entrance to Ohtakiné-dô Cave, 26–VII–1992, S. & N. SONE and H. KIZAKI leg. Allotype: ♀, Ohtakiné-dô Cave, 25–VIII–1990, T. YANA-

GISAWA leg. Both deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Entrance part of the limestone cave called Ohtakiné-dô, at the bottom of Oni-ana Sink, 630 m in altitude, on Sendaihira of Tokiwa-machi in Fukushima Prefecture, eastern Honshu, Central Japan.

Notes. It is difficult to determine to which of the previously described species *T. abcuma* is most closely related. Its type locality is geographically nearest to that of *T. kurosawai*, about 57 km distant to the southeast from the latter. They are, however, widely separated from each other by the alluvium of the Abukuma-gawa River, and are also different in the nature of the mountains, the former lying on old non-volcanic hills and the latter on recent volcanoes.

The aedeagal structure of *T. abcuma* suggests that the species may be related more closely to *T. akinobui* than to *T. kurosawai*; if this is actually the case, we shall confront a very difficult problem to solve. *Trechiama akinobui* is localized on recent volcanoes in the vicinities of the Ozegahara Moor, which is not only distant for more than 130 km to the west-southwest from the Abukuma-dô Caves, but is beyond the Abukuma-gawa Alluvium, the Nasu Volcanoes and the Taishaku Mountains. No trechines of the group of *Trechiama oreas* have been found on these intervening mountains, and the derivation of *T. akinobui* has been sought in the north (cf. UÉNO, 1986, p. 139), not in the east. In any case, *T. abcuma* must be a relict of a past dispersal of the *nivalis* complex, which must have widely spread over the Abukumas at some time in the Pleistocene but survives now as a small isolated colony in a wet depression near the highest point of the hills.

The Abukuma-dô cave system lies under the karstic ridge called Sendaihira stretching on the borders between Takiné-machi and Tokiwa-machi. It is situated at the western side of Mt. Ohtakiné-yama, 1,192 m in height, which is the highest point of the Abukuma Hills. The large sink called Oni-ana lies at the eastern side of the ridge, 4.8 km west-southwest of the top of Mt. Ohtakiné-yama, and is thickly covered with a mixed temperate forest, the floor of which is always humid. A narrow stream emerges at the eastern side of the sink, flows down across it, and enters into the cave from the Ohtakiné-dô entrance. It is the colluvia deposited along this stream that seem to harbour *T. abcuma*. As was already described in the introduction of this paper, the holotype of the trechine beetle was found from beneath a large embedded stone at the bottom of the sink, while the allotype was found from under a stone in the uppermost room of the cave not far from the entrance. The surface portion of the stream is by no means long, and still more, favourable colluvia have been formed only along its lowest part. This seems to mean that the habitat of the trechine beetle is much restricted even within the forested sink, and it may be the reason why the trechine beetle is exceedingly rare.

要　約

上野俊一：阿武隈山地における有眼ナガチビゴミムシの発見．―― 阿武隈山地の最高点，大滝根山の西側に位置する鬼穴ドリーネの底から，ナガチビゴミムシ属の有眼の1新種を記載し，これにアブクマナガチビゴミムシ *Trechiama abcuma* S. UÉNO という新名を与えた．この種は，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系列に属するが，既知の5種からやや孤立し，過去の分布模様の片鱗を示す遺存的なものだろうと考えられる．

References

UÉNO, S.-I., 1974. The cave trechines (Coleoptera, Trechinae) of the Abukuma Hills in East Japan. *Bull. natn. Sci. Mus., Tokyo*, **17**: 105–116, 2 folders.

―― 1986. New oculate *Trechiama* (Coleoptera, Trechinae) from the Province of Aizu in Central Japan. *Ent. Pap. pres. Kurosawa, Tokyo*, 131–142.

―― 1989. New oculate *Trechiama* (Coleoptera, Trechinae) from Miyagi Prefecture, Northeast Japan. *Elytra, Tokyo*, **17**: 123–133.

―― 1990. Occurrence of a new *Kurasawatrechus* (Coleoptera, Trechinae) at the central part of the Abukuma Hills, East Japan. *Ibid.*, **18**: 175–178.

Elytra, Tokyo, **20** (2): 150, Nov. 15, 1992

新　刊　紹　介

The Biogeography of Ground Beetles of Mountains and Islands. Ed. by G. R. NOONAN, G. E. BALL & N. E. STORK. vii+256 pp. 1992. Intercept, Andover.

1988年7月，カナダのヴァンクーバー市で開催された第18回国際昆虫学会議の会期中に，6～7の両日にわたって，ゴミムシ類の生物地理に関するシンポジウムが開かれた．その5年前に亡くなった P. J. DARLINGTON, JR. の功績を記念したもので，主題は「山地性および島嶼性ゴミムシ類の生物地理」，ただし，孤立した高山は一種の島だとも考えられるし，ハンミョウ類の生息する砂地も生態的な島だといえなくもないので，結局のところは，島嶼の生物地理学をテーマにしたものだった．

このシンポジウムに招かれた 11 題の報告に，シベリア南部の高山性ゴミムシ相に関する論文1篇を加えて1冊にまとめたのが本書である．9ヵ国の研究者が，さまざまな地域のゴミムシ類を対象にして，さまざまな角度から検討を加えているので，どの論文を取りあげてもそれなりにおもしろいが，オーストラリア北部の山地が豊富なゴミムシ相を維持し，多くの種を分化させたとする M. BAEHR の解析や，*Mecyclothorax* がタヒチの山地で，信じられないほど多様な種分化を起こしていることを明らかにした G. G. PERRAULT の報告などはとくに興味深い．

ゴミムシ類を題材にした書物は，ここ 10 年あまりのあいだになん冊も出版され，研究の現状と進展を知るのに大きく貢献してきたが，本書もまたゴミムシ類に関する話題をゆたかにすることだろう．

（上野俊一）

Elytra, Tokyo, **20**(2): 151–154, Nov. 15, 1992

A New *Kurasawatrechus* (Coleoptera, Trechinae) from the Ôi-gawa Drainage Area, Central Japan[1)]

Shun-Ichi UÉNO

Department of Zoology, National Science Museum (Nat. Hist.),
3–23–1 Hyakunin-chô, Shinjuku, Tokyo, 169 Japan

Abstract A new species of the trechine genus *Kurasawatrechus* is described from the Ôi-gawa drainage area, Central Japan. It is closely related to *K. kawaguchii* S. UÉNO, but can be recognized mainly on the peculiarities of its male genitalia.

In the present paper, a new anophthalmic trechine beetle belonging to the genus *Kurasawatrechus* will be described from near the southern end of the Southern Japanese Alps. It is an endogean species occurring at an altitude of only 320 m. It is closely related to *K. kawaguchii* S. UÉNO (1973, p. 20, figs. 4–6; 1979, p. 117), but the latter is restricted to the northern part of the same massif, and occurs either at higher places above 1,800 m in altitude or in a cave lying at an elevation of 950 m.

The abbreviations used herein are the same as those explained in my 1973 paper (p. 16).

I wish herewith to express my deep appreciation to Messrs. Sumao KASAHARA and Shinzaburo SONE for their kind help in the field.

Kurasawatrechus sonei S. UÉNO, sp. nov.

(Figs. 1–3)

Length: 3.25–3.55 mm (from apical margin of clypeus to apices of elytra).

Closely allied to *K. kawaguchii* and agreeing with the latter in every detail, with the exception of different configuration of pronotum, aedeagus and aedeagal apical lobe.

Colour as in *K. kawaguchii*. Head with its appendages perfectly similar to that of *K. kawaguchii*. Pronotum longer than in *K. kawaguchii*, with longer basal part and broader base; PW/HW 1.38 in the holotype (H), 1.42 in the paratype (P), PW/PL 1.03 in H, 1.07 in P, PW/PA 1.35 in H, 1.36 in P, PW/PB 1.21 in H, 1.25 in P, PB/PA 1.12 in H, 1.09 in P; sides a little more feebly arcuate in front than in *K. kawaguchii*, more shallowly sinuate at about three-tenths from base, and then almost parallel to each other towards hind angles, which are nearly rectangular; dorsum more densely pubescent; microsculpture mostly more transverse and less sharply impressed than

1) This study is supported by the Grant-in-aid for Scientific Research No. 03640633 from the Ministry of Education, Science and Culture, Japan.

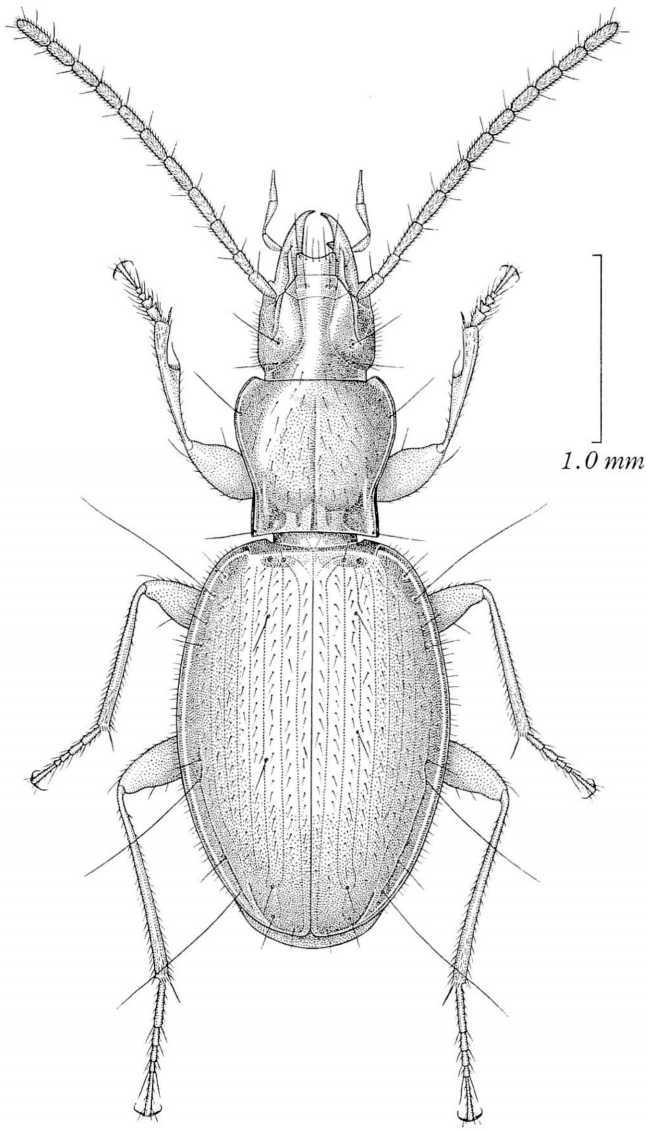
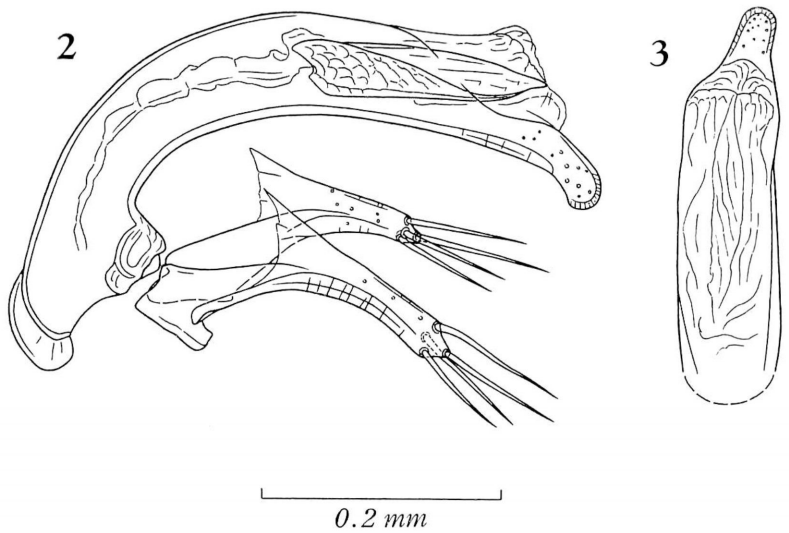


Fig. 1. *Kurasawatrechus sonei* S. UÉNO, sp. nov., ♂, from Yoko-sawa in Honkawané-chô.

in *K. kawaguchii*. Elytra as in *K. kawaguchii*, though the striae are entire, more deeply impressed even at the side and more clearly crenulate; EW/PW 1.69 in H, 1.70 in P, EL/EW 1.42 in H, 1.43 in P. Ventral surface and legs as in *K. kawaguchii*.

Male genital organ very small though moderately sclerotized, evidently differing from that of *K. kawaguchii* in the shorter aedeagus with narrower, ventrally curved



Figs. 2–3. Male genitalia of *Kurasawatrechus sonei* S. UÉNO, sp. nov., from Yoko-sawa in Honkawané-chô; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

apical lobe. Aedeagus only two-ninths as long as elytra, tubular and arcuate, with the basal part rather strongly bent ventrad; sagittal aileron distinct though not particularly large; viewed dorsally, apical lobe short, abruptly narrowed from behind apical orifice, inclined to the left, nearly parallel-sided, and rounded at the extremity; viewed laterally, apical lobe strongly curved ventrad and rather widely rounded at the apex; ventral margin widely emarginate in profile, more deeply before middle than behind. Copulatory piece as in *K. kawaguchii*, about four-ninths as long as aedeagus. Styles narrow, especially in apical halves, left style obviously longer than the right, each bearing four apical setae.

Female unknown.

Type series. Holotype: ♂, paratype: 1 ♂, 9–V–1992, S. UÉNO & S. SONE leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Yoko-sawa, 320 m in altitude, of Sawama in Honkawané-chô, Shizuoka Prefecture, central Honshu, Japan.

Notes. Though closely similar to *K. kawaguchii*, *K. sonei* is regarded as a full species mainly because of the peculiarities of its aedeagus. It occurs near the southern end of the Southern Japanese Alps, whereas all the three known localities of *K. kawaguchii* lie at the northern part of the mountain range or on its northern continuation. The distance from the type locality of *K. sonei* to the Kitazawa-tôgé, the southernmost known locality of *K. kawaguchii*, is about 68 km.

Kurasawatrechus sonei is an endogean species inhabiting the upper layer of col-

luvia at the depth of 10 cm or so. The two specimens known were found at the sides of two different gullies lying side by side on the right side of the Yoko-sawa, a small tributary of the Ôi-gawa River. These gullies are situated at the southeastern foot of Mt. Sawaguchi-yama lying on a branch ridge of the Akaishi Mountain Range, and are not far from the town of Senzu.

要　　約

上野俊一: 大井川流域で発見されたクラサワメクラチビゴミムシ属の1新種. —— 1992年5月に行なわれた日本鞘翅学会の例会で，大井川流域の静岡県本川根町沢間横沢から，クラサワメクラチビゴミムシ属の地中性の一種が発見された．精査の結果，この種は南アルプス北部に分布するカマナシメクラチビゴミムシに類縁が近いが，雄交尾器などに明らかな相違点のあることがわかったので，同群の新種と認めて，ソネメクラチビゴミムシ *Kurasawatrechus sonei* S. UÉNO と命名し記載した．

References

UÉNO, S.-I., 1973. Two new endogean *Kurasawatrechus* (Coleoptera, Trechinae) from the Japanese Alps. *Bull. natn. Sci. Mus., Tokyo*, **16**: 15–22.

—— 1979. The blind trechine beetles of the genus *Kurasawatrechus* from the Southern Japanese Alps. *Mem. natn. Sci. Mus., Tokyo*, (12): 113–122.

Elytra, Tokyo, **20** (2): 155–159, Nov. 15, 1992

Occurrence of a New *Badister* (Coleoptera, Carabidae) in Tokyo, Japan

Seiji MORITA

Motoazabu 1–3–28–405, Minato-ku, Tokyo, 106 Japan

Abstract A new licinine carabid beetle, *Badister* (*Baudia*) *nakayamai* sp. nov., is described from Tokyo, Central Japan. It is a very small species, and is closely allied to *B.* (*B*) *nigriceps* MORAWITZ.

In Japan, our knowledge concerning small licinine beetles belonging to the subgenus *Baudia* is still insufficient as compared with any other carabid groups. These beetles are usually rare and only a few examples have hitherto been known from single populations. To make the matter worse, diagnostic characters adopted for identifying European species do not serve by themselves for classifying Japanese species of licinine carabids. The only exception is *Badister vittatus* BATES from Hokkaido and Honshu, a remarkable species redescribed by KASAHARA and MORI (1990, p. 1) on the basis of newly obtained materials.

Recently, unexpected discovery of a new species belonging to the subgenus *Baudia* was made by Mr. F. NAKAYAMA at the heart of Tokyo Metropolis. Additional materials were obtained from the same collecting site and were recorded under the name of "*Badister marginellus*" (IZUMI, 1990, p. 6). At my request, both the collectors submitted for my study a short series of their specimens. Besides, I was given an opportunity to examine the holotype of *B. marginellus* BATES through the courtesy of Dr. STORK. After a comparative study, it became evident that IZUMI's record was based on his misidentification and that the species in question must belong to a new one. I am, therefore, going to give a full description of the species in the present paper. The abbreviations used herein are the same as those explained in my previous paper (cf. 1992, p. 15).

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critical reading of the original manuscript of this paper. My thanks are also due to Dr. N. E. STORK and Dr. Stuart J. HINE of the Natural History Museum, London, for loan of type material under their care, to Dr. G. Sh. LAFER of the Institute of Biology and Pedology, Vladivostok, for his kind offer of Siberian specimens of *Badister*, and to Messrs. Fuki NAKAYAMA and Atsuo IZUMI for their kind help.

Badister* (*Baudia*) *nakayamai MORITA, sp. nov.

[Japanese name: Chibi-katakiba-gomimushi]

(Figs. 1–5)

Badister marginellus: IZUMI, 1990, Coleopt. News, Tokyo, (90), p. 6.

Length: 3.54–4.04 mm (from apical margin of clypeus to apices of elytra); very small species.

Head black; pronotum reddish brown, though the apical and basal margins are darker than the disc; elytra black with iridescent lustre; basal part, interval 1 and sides brown; clypeus, labrum, mandibles, palpi, segments 1 and 7–11 of antennae, and legs reddish brown; remaining segments of antennae dark brown; ventral side of pronotum and epipleura reddish brown; rest of ventral side black.

Head large and convex, without puncture; PW/HW 1.39–1.48 (M 1.44) in 3 ♂♂, 1.34–1.43 (M 1.40) in 4 ♀♀; frontal furrows entirely obliterated; eyes moderately convex; two pair of supraorbital setae lying on lines divergent posteriad; neck wide and long; apices of mandibles rather obtuse (not truncate); microsculpture sharply impressed, composed of polygonal meshes, its meshes being larger in ♂ than in ♀;

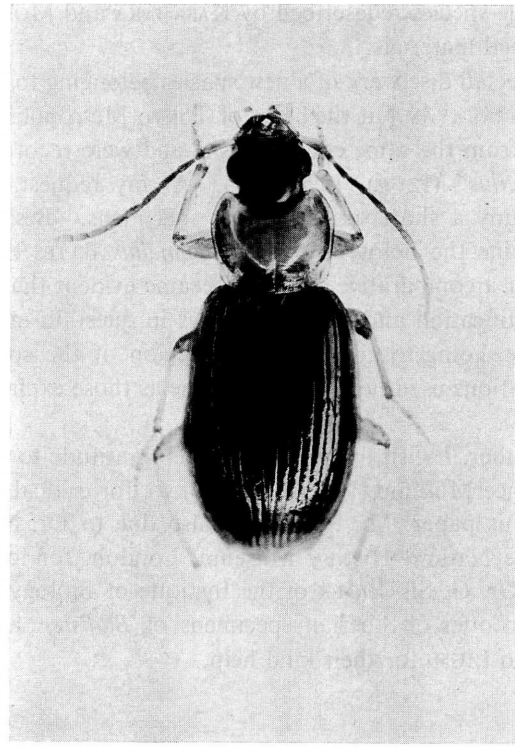
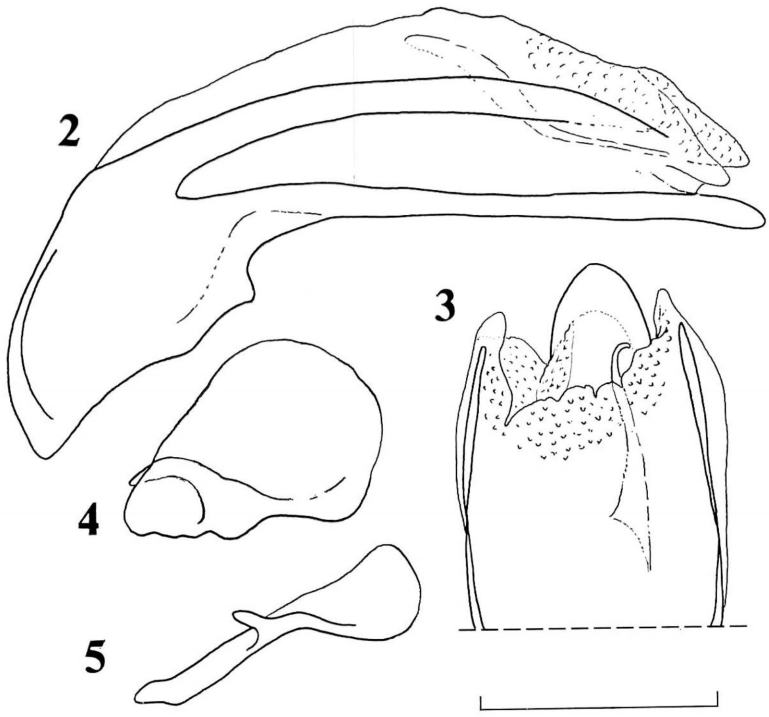


Fig. 1. *Badister* (*Baudia*) *nakayamai* MORITA, sp. nov., ♂, from Ikegami in Tokyo.



Figs. 2–5. Male genital organ of *Badister* (*Baudia*) *nakayamai* MORITA, sp. nov.; 2, aedeagus, left lateral view; 3, apical part of aedeagus, dorso-apical view; 4, left paramere, left lateral view; 5, right paramere, left lateral view. (Scale: 0.3 mm.)

antennae rather short, reaching basal 3/11 of elytra; relative lengths of antennal segments as follows: I: II: III: IV: V: VI: XI=1: 0.38: 0.73: 0.89: 0.90: 0.83: 0.91.

Pronotum transverse, PW/PL 1.30–1.39 (M 1.34) in 3 ♂♂, 1.42–1.50 in 4 ♀♀, PW/PA 1.44–1.47 (M 1.45) in 3 ♂♂, 1.39–1.45 (M 1.42) in 4 ♀♀, PW/PB 1.18–1.24 (M 1.23) in 3 ♂♂, 1.19–1.28 (M 1.23) in 4 ♀♀; surface convex though depressed on the basal part; apical margin widely emarginate, much narrower than base, PA/PB 0.82–0.86 (M 0.85) in 3 ♂♂, 0.84–0.89 (M 0.87) in 4 ♀♀; sides moderately arcuate and convergent posteriad, very slightly sinuate just before hind angles; each marginal gutter very close to side margin inside apical angle, but becoming widely distant posteriad and continuing into basal fovea; apical angles strongly advanced and rounded at the tips; hind ones obtuse; base arcuately oblique inside each hind angle, and almost straight at middle; median line clearly impressed, somewhat widening basally; basal fovea large but shallow; microsculpture composed of irregularly transverse lines.

Elytra oblong, moderately convex; EL/PW 1.43–1.48 (M 1.46) in 3 ♂♂, 1.44–1.48 (M 1.45) in 4 ♀♀, EL/EW 1.43–1.47 (M 1.45) in 3 ♂♂, 1.44–1.48 (M 1.47) in 4 ♀♀; basal border weakly curved; sides evenly arcuate, but subtruncated at apices; scutellar striole long, joining stria 1; striae impunctate, not reaching base; intervals flat, im-

punctate; interval 3 with 2 pores, both adjoining stria 2; microsculpture composed of fine transverse lines, though more or less irregular and partially obliterated. Wings full.

In ♀, anal sternite with two pair of setae which lie almost on a straight transverse line. Legs slender; TL/HW 1.11–1.26 (M 1.18) in 2 ♂♂ and 3 ♀♀; in ♂, protarsal segments 1–3 dilated, and with median sulcus on dorsal side; meso- and metatarsi each with median sulcus on dorsal side, which is sometimes rudimentary or disappears.

Male genital organ lightly sclerotized and small; aedeagus with two lateral sclerotized stripes; apex of aedeagus simply rounded without apical spine (cf. BALL, 1959, p. 221)*; ventral surface of aedeagus longitudinally concave; copulatory piece elongate with the apical part prolonged and curved; left paramere wide, right one rather elongate.

Type series. Holotype: ♂, 19–XII–1989, allotype: ♀, 20–XII–1989, A. IZUMI leg. Paratypes: 1 ♂, 3 ♀♀, 12–XII–1989, F. NAKAYAMA leg.; 3 ♂♂, 2 ♀♀, 14–XII–1989, F. NAKAYAMA leg.; 1 ♂, 20–XII–1989, A. IZUMI leg.; 1 ♀, 4–I–1990, A. IZUMI leg.; 1 ♂, 28–I–1990, A. IZUMI leg.

The holo- and allotypes are preserved in the National Science Museum (Nat. Hist.), Tokyo. The paratypes are distributed to the private collections of the author and both the collectors.

Locality. Ikegami, Ohta-ku, Tokyo, Central Japan.

Notes. The present new species can be easily distinguished from *B. marginellus* BATES (1873, p. 258) by smaller body and darker coloration. Of the four species belonging to the subgenus *Baudia*, this new species is most closely allied to *B.* (*Baudia*) *nigriceps* MORAWITZ (1863, p. 36). It is, however, distinguished from it mainly by the following points: 1) smaller body; 2) different coloration; 3) more covex dorsum; and 4) shorter antennae.

要　約

森田誠司：東京で発見されたカタキバゴミムシの1新種．——東京都大田区で採集された，カタキバゴミムシ属の *Baudia* 亜属に属する1新種，チビカタキバゴミムシ *Badister* (*Baudia*) *nakayamai* を記載した．本種は，はじめキベリカタキバゴミムシとして記録されたが，正基準標本と比較した結果，新種と認められた．むしろ，クロズカタキバゴミムシ *B.* (*Baudia*) *nigriceps* MORAWITZ に近縁なものであろうと思われる．

References

BALL, G. E., 1959. A taxonomic study of the North American Licinini with notes on the Old World species of the genus *Diploceila* BRULLÉ (Coleoptera). *Mem. Am. ent. Soc.*, (16): i+1–258, pls.

* My treatment with a few drops of lactic acid has revealed that the drawing of aedeagal apical part (cf. fig. 3) is somewhat expansive.

1–15, i–iv.

BATES, H. W., 1873. On the geodephagous Coleoptera of Japan. *Trans. ent. Soc. London*, **1873**: 219–322.

HABU, A., 1975. Carabid beetles Mr. A. SUGIMOTO taken in Ishigaki Is., Ryukyus, by a black-light trap (Coleoptera, Carabidae). *Ent. Rev. Japan, Osaka*, **28**: 69–84, pls. 7–9.

IZUMI, A., 1990. Records of three carabids from Tokyo. *Coleopt. News, Tokyo*, (90): 6. (In Japanese.)

KASAHARA, S., & M. MORI, 1986. Notes on Japanese ground beetles, II. *Badister vittatus* BATES rediscovered in Hokkaido, North Japan. *Coleopt. News, Tokyo*, (73): 1–2. (In Japanese.)

LAFER, G. Sh., 1989. Podotriad Adephaga. *In* LERA, P. A. (ed.), *Opredelitel' Nasekomykh Dal'nego Vostoka SSSR v Shesti Tomakh*, **3**(1): 67–257. (In Russian.)

MORAWITZ, A., 1863. Beitrag zur Käferfauna der Insel Jesso. Erste Lieferung. Cicindelidae et Carabici. *Mém. Ac. imp. Sci. St.-Pétersb.*, (VII), **6**(3): i–iii+1–84.

NAKANE, T., 1985. The beetles of Japan (new series). 70. *Nat. & Ins., Tokyo*, **20**(11): 22–26. (In Japanese.)

Elytra, Tokyo, **20** (2): 159–160, Nov. 15, 1992

A Record of *Synuchus nivalis uenoi* LINDROTH (Coleoptera, Carabidae) from North Japan

Seiji MORITA

Motoazabu 1-3-28-405, Minato-ku, Tokyo, 106 Japan

In his revision of the genus *Synuchus*, LINDROTH (1956) described a small platynine carabid from Central Japan under the name of *Synuchus uenoi*. This species seems very rare in Japan, since only a few records have been given by HABU (1978) and MATSUMOTO (1981) since then. According to LAFER (1976, p. 30), it was regarded as a subspecies of the European species, *S. nivalis* (ILLIGER). Studying my collection of platynine carabids, I found a specimen of this beetle collected by myself in Wakkanai-shi, North Japan. In this short report, I am going to record it.

Synuchus (*Synuchus*) *nivalis uenoi* LINDROTH

Synuchus uenoi LINDROTH, 1956, Trans. r. ent. Soc. London, **108**: 495, 508, figs. 10 c, 13 c; type locality: Utsukushigahara, Nagano Pref., Japan. —— HABU, 1972, Mushi, Fukuoka, **46**: 33. —— TANAKA, 1985, Coleopt. Japan Col., Osaka, **2**: 133.

Synuchus (*Synuchus*) *uenoi*: HABU, 1978, Fauna Japonica, Tokyo, p. 335, figs. 677, 679, 682, 685, 687, 690, pl. 28, fig. 4.

Synuchus nivalis uenoi: LAFER, 1976, Trud. biol.-pochvenn. Inst., Vladivostok, **43**: 30, figs. 20–24.
Synuchus (*Synuchus*) *nivalis uenoi*: LAFER, 1989, Opred. Nasek. Dal'nego Vostoka SSSR, **3**(1): 154, figs. 96–8, 97–4, 99–7, 8.

Specimen examined. 1 ♂, Wakkanai-shi, Hokkaido, North Japan, 4–VII–1982, S. MORITA leg.

Range. Japan (Hokkaido, Nagano Pref.); North Korea; Russia (Primorskij Kray).

Notes. Unfortunately, my specimen is teneral and has an extremely deformed aedeagus. With the exception of subspecific assignment, it is rather easy to identify it with LINDROTH's species, since *uenoi* is distinctive, especially in the shape of aedeagal apical part, among its close relatives. However, my collection of this species is not satisfactory for taxonomic study, so that I prefer to follow LAFER in regarding the Japanese form as a subspecies of *S. nivalis*.

In preparing this short report, I am deeply indebted to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reading the manuscript. I am also indebted to Dr. G. Sh. LAFER of Vladivostok for his kind help.

References

HABU, A., 1972. On some Carabidae found by Dr. S.-I. UÉNO in Hokkaido, North Japan (Coleoptera, Carabidae). *Mushi, Fukuoka*, **46**: 29–38.

——— 1978. Carabidae: Platynini (Insecta: Coleoptera). *Fauna Japonica*. viii+447 pp., 36 pls. Keigaku Publ., Tokyo.

LAFER, G. Sh., 1976. Obzor vidov jujelits Tribe Agonini (Coleoptera, Carabidae) Dal'nego Vostoka SSSR. 1. *Trud. biol.-pochvenn. Inst., Vladivostok*, **43**: 18–40. (In Russian.)

——— 1989. Podotriad Adephaga. *In* LERA, P. A. (ed.), *Opredelitel' Nasekomykh Dal'nego Vostoka SSSR v Shesti Tomakh*, **3**(1): 67–257. (In Russian.)

LINDROTH, C. H., 1956. A revision of the genus *Synuchus* GYLLENHAL (Coleoptera: Carabidae) in the widest sense with notes on *Pristosia* MOTSCHULSKY (*Eucalathus* BATES) and *Calathus* BONELLI. *Trans. r. ent. Soc. London*, **108**: 485–585.

MATSUMOTO, H., 1981. On carabid beetles from Hokkaido (II). *Jezoensis*, (8): 47–68. (In Japanese.)

TANAKA, K., 1985. Carabidae (Pterostichinae, Zabrinae). *In* UÉNO, S.-I., Y. KUROSAWA & M. SATÔ (eds.), *The Coleoptera of Japan in Color*, **2**: 105–138. Hoikusha, Osaka. (In Japanese.)

Elytra, Tokyo, **20** (2): 161–166, Nov. 15, 1992

Occurrence of *Morionidius* (Coleoptera, Carabidae) in Japan

Sumao KASAHARA

Nishifuna 4–9–13, Funabashi City, Chiba, 273 Japan

and

Norio OHTANI

Miirihigashi 2–74–5, Asakita-ku, Hiroshima City, 731–02 Japan

Abstract The morionine carabid genus *Morionidius* CHAUDOIR is recorded for the first time from Japan, and its new species, *M. insularis* sp. nov., is described from Is. Yaku-shima, off southern Kyushu.

The morionine carabid genus *Morionidius* was established by CHAUDOIR (1880, pp. 380–383) for the Bornean species, named *doriae* at the same time. After that, ANDREWES (1921, pp. 203–205) redescribed the genus, and introduced in the same article the second species, *charon*, from Tonkin and Laos. This small but peculiar genus is mainly characterized by well convex body with securiform labial palpi, and the terminal abdominal sternite bearing a series of setiferous pores along the apical margin in the female. It has not been known in our fauna up to the present.

However, an unnamed species doubtless belonging to the same genus occurs on Is. Yaku-shima, off southern Kyushu, Southwest Japan. It is distinct from the other species by larger body with longer parallel-sided elytra, and seems to be new to science. In this paper, we are going to describe it under the name of *Morionidius insularis* sp. nov. The abbreviations used herein were already explained in previous papers of the senior author.

Before going further, we wish to express our deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his advice and for reading the manuscript of this paper. Thanks are also due to Messrs. Atsushi KATÔ, Tokuzô OHMOTO and Ken ODANAKA for their kindness in supplying with the materials. We are grateful to Mr. Yasutoshi SHIBATA for taking a photograph of the type specimen of *M. charon* ANDREWES preserved in the collection of the British Museum (Nat. Hist.).

Morionidius insularis sp. nov.

[Japanese name: Yakushima-ô-kuchiki-gomimushi]

(Figs. 1–5)

Description. Length (measured from apex of labrum to apices of elytra) 14.3–21.3 mm. Width 4.9–7.0 mm. General appearance cylindrical, very shiny, black. Head quadrate, convex; eyes well convex, hemispherically prominent together with temporae, which are shorter than eyes, and weakly tumid; mandibles stout, strongly arcuate, abruptly narrowed in apical halves, and acutely pointed at apices; labrum gently emarginate, and rounded on each side at the apex; clypeus gently emarginate at apex; supra-antennal portions rectangularly angulate, and slightly produced laterad on each side; clypeal suture distinctly impressed between frontal furrows, though becoming finer outside of furrows, and with rather distinct convexities; frontal furrows

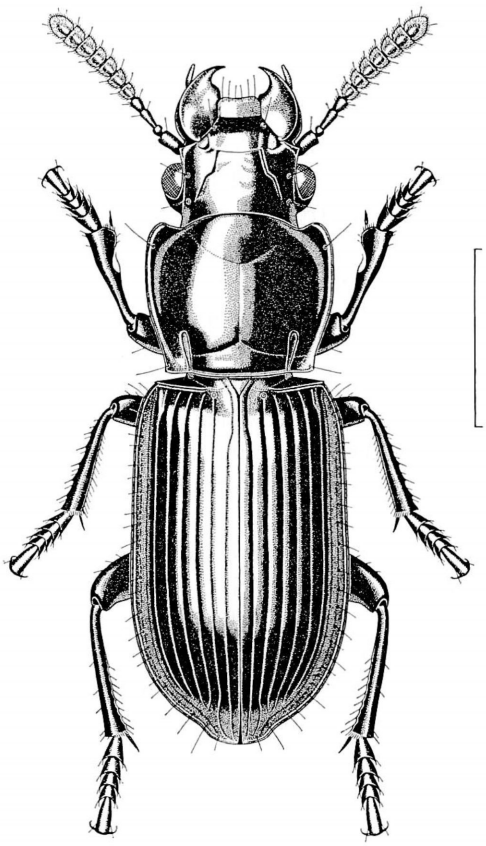
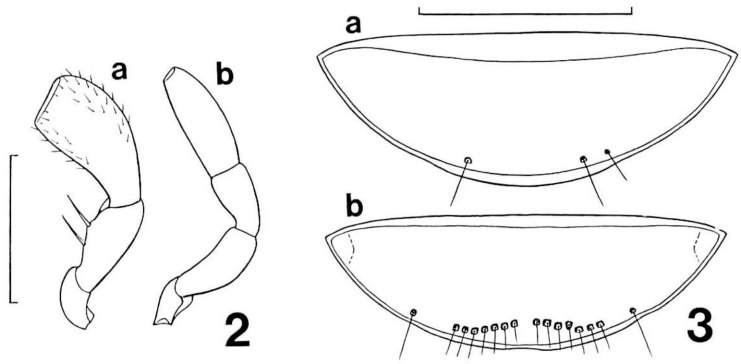


Fig. 1. *Morionidius insularis* sp. nov., ♂, from Is. Yaku-shima, Kagoshima Pref. Scale 4 mm (a small individual).

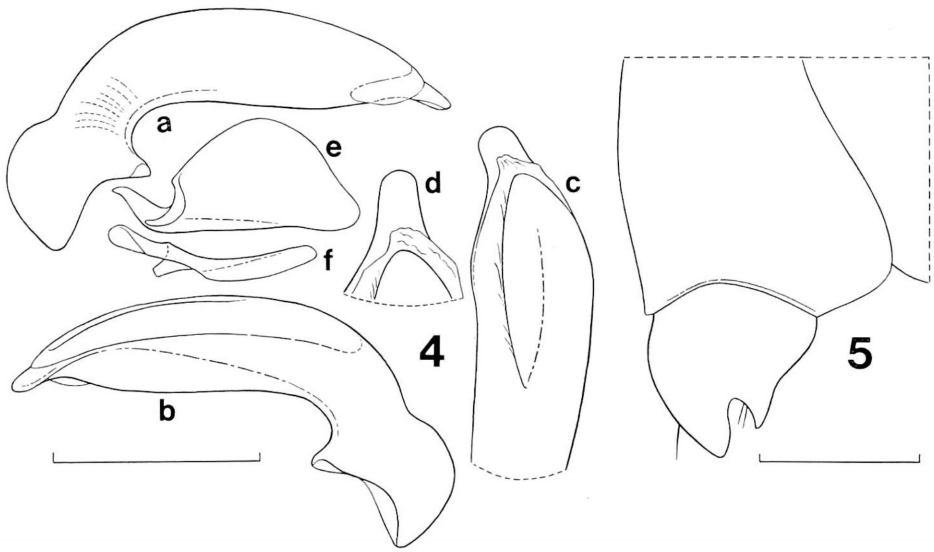


Figs. 2–3. Left palpi and terminal abdominal sternite of *Morionidius insularis* sp. nov., from Is. Yaku-shima, Kagoshima Pref. —— 2. Left palpi in the male, ventral view; a, labial palpus; b, maxillary palpus. —— 3. Terminal abdominal sternite; a, in the male; b, in the female.

deeply and linearly impressed, divergent posteriad, extending to a little behind the post-eye level, and lightly sinuate at middle; lateral grooves becoming deeper and wider at the sides of eyes; mentum tooth simple, though finely rugose on the surface; terminal segment of maxillary palpus cylindrical, truncate at the apex; terminal segment of labial palpus apically dilated to the middle, securiform, and sparsely pubescent; configuration of palpi identical in both sexes; antennae short and thick, moniliform, pubescent from the apical part of segment 4, though the median part of each segment is more or less glabrous, segments 5–10 each wider than long.

Pronotum trapezoidal, well convex, widest at about apical third, about a fifth as wide as head (PW/HW 1.18–1.23, mean 1.21), as wide as long in a similar proportion (PW/PL 1.20–1.23, mean 1.22), ca. 1.3 times as wide as base (PW/PBW 1.26–1.30, mean 1.27); lateral margins almost parallel to each other in apical halves, then gently convergent posteriad, and slightly sinuate before basal angles, which are rectangular; lateral side rather widely and evenly depressed along margins; apical margin arcuate, its median part produced farther than apical angles, though the latter are also more or less produced and rounded at the tips; basal margin almost straight, bordered throughout; median line fine and shallow, often interrupted by notches; apical and basal transverse impressions obsolete, but the latter is sometimes distinct; basal foveae relatively deep, each with a clearly engraved distinct furrow at the bottom; surface smooth, though transverse wrinkles and microsculpture are partially and slightly visible.

Wings full. Elytra oblong, parallel-sided, well convex, a little wider than pronotum (EW/PW 1.14–1.16, mean 1.15), ca. 2.37 times as long as pronotum (EL/PL 2.29–2.43, mean 2.37), ca. 1.7 times as long as wide (EL/EW 1.67–1.71, mean 1.70); basal border incomplete, reaching the base of stria 3, almost straignt, though slightly



Figs. 4–5. Genitalia of *Morionidius insularis* sp. nov., from Is. Yaku-shima, Kagoshima Pref. —— 4. Male genitalia; a–d, aedeagus; a, left lateral view; b, right lateral view; c, apical half in dorsal view; d, apical lobe in dorsal view in a longer case; e, left paramere; f, right paramere. Scale 1 mm. —— 5. Left stylus with a part of hemisternite. Scale 0.15 mm.

waved at the base of stria 5, and dentate at shoulder; shoulders obtusely angulate; lateral margins parallel to each other from behind shoulders to apical third, then roundly convergent to apices, preapical emarginations short and shallow, sutural angles defined; scutellar striole absent; striae clearly impressed throughout, though irregularly and minutely notched at the bottoms; stria 2 arising from basal pore; intervals nearly flat; interval 3 without dorsal pore; marginal series of pores 25–26 in number, widely spaced at middle; apical and preapical pores lying on stria 7; surface very smooth; microsculpture visible, formed by very fine transverse meshes.

Venter wholly smooth; prosternal process shallowly depressed at middle, bordered at the apex; metepisterna long, ca. 2.7 times as long as wide; terminal sternite with a pair of setiferous pores along the apical margin in the male, sometimes with an extra pore at the outer side of the ordinary one; 12–14 setiferous pores arranged in a transverse row between the primary pores in the female. Legs stout; tarsi broad and flat, dorsally glabrous, claw segment glabrous on the ventral surface, basal three segments of protarsus each with a pair of adhesive hairs on the ventral side in the male.

Aedeagus small though stout, obtusely bent at basal third, and with a dorsal ligula inclined to the left, extending almost to the base of apical lobe; apical part gently curved rightwards in dorsal view, apical lobe flat, as long as wide or sometimes longer than wide, and rounded at the apex; left paramere large and wide, triangular, rounded at

Fig. 6. Type specimen of *Morionidius charon* ANDREWES, from Xieng Khouang, Laos, and its labels preserved in the collection of the British Museum (Nat. Hist.). Photo by Y. SHIBATA.

the apex; right paramere slender, weakly curved at middle, and rounded at the apex. Styli in the female very small and short, almost as long as wide, marginal spines absent, each outer margin with a deep cleft near the apex.

Type series. Holotype: ♂, Ohkawa-rindô, Is. Yaku-shima, Kagoshima Pref., 27–VII–1990, N. OHTANI leg.; allotype: ♀, same locality as for the holotype, 18–VII–1989, T. OHMOTO leg. Paratypes: 1 ♂, same data as for the holotype; 1 ♀, Shiratani-rindô, Is. Yaku-shima, Kagoshima Pref., 17–VII–1983, A. KATÔ leg.

The holo- and allotypes are preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are deposited in the authors' collection.

Notes. The present new species somewhat resembles *M. charon* ANDREWES in general appearance, but is easily discriminated from the latter by larger body with longer parallel-sided elytra. Judging from the cylindrical body with peculiarly small styli in the female, members of *Morionidius* seem to have a different mode of life from those of *Morion*, though both the genera are saproxylophilous.

要　　約

笠原須磨生・大谷規夫：日本新記録のオオクチキゴミムシ属とその1新種. —— クチキゴミムシ族 Morionini のオオクチキゴミムシ属 *Morionidius* は，いちじるしく中高の体に斧形の下唇肢をもち，雌の腹板末端節は後縁に多数の有毛孔点が並ぶ特徴的なグループである．これまでに，ボルネオ，ラオス，トンキン（現在の北ヴェトナム）から2種が知られるのみで，日本からは未記録であった．九州南端の屋久島に本属の種が生息することは，かなり以前から知られていたが，既知のどの種とも明らかに区別できる新種であることが判明したので，これをヤクシマオオクチキゴミムシ *M. insularis*

と命名記載した．なお，屋久島には同族のクチキゴミムシ *Morion japonicum* BATES も分布する (KASAHARA & SATÔ, 1990, p. 187)．両者はともに朽木性であるが，体形や雌交尾器の先端節にみられる形態上のいちじるしい相違から，両者の生態は相互にかなり異なるものと考えられる．

References

ANDREWES, H. E., 1951. Notes sur les Carabique orientaux. III. *Annls. Soc. ent. Belg.*, **61**: 202–210.
——— 1930. Catalogue of Indian Insects. Part 18 —— Carabidae. i+xxii+389 pp. Government of India, Calcutta.
CHAUDOIR, M. DE, 1880. Essai monographique sur les Morionides. *Bull. Soc. imp. Natur. Moscou*, **55** (2): 317–384.
CSIKI, E., 1929. Carabidae: Harpalinae 3. *In* JUNK, W., & S. SCHENKLING (eds.), *Coleopterorum Catalogus*, pars 104 (pp. 347–527). W. Junk, Berlin.
KASAHARA, S., & M. SATÔ, 1990. The Japanese species of the genus *Morion* (Coleoptera, Carabidae). *Elytra, Tokyo*, **18**: 185–191.

Elytra, Tokyo, **20** (2): 166, Nov. 15, 1992

A Record of *Lebia viridis* (Coleoptera, Carabidae) from Northern Kwantô, Japan

Sumao KASAHARA

Nishifuna 4-9-13, Funabashi City, Chiba, 273 Japan

In recent years, an imported North American lebiine carabid beetle, *Lebia viridis* SAY, has been recorded from various places in the Kwantô District of central Honshu, Japan. Here I will report it from the foot of the Nasu Mountains in Tochigi Prefecture. So far as I am aware, this is the northernmost known locality of the species in Japan.

Specimen examined. 1 ex., Senbonmatsu, Nishinasuno-chô, Tochigi Pref., 12-V-1992, S. OHMOMO leg. Collected by sweeping lawn.

I thank Dr. Sadahiro OHMOMO for his kindness in supplying with the material.

Elytra, Tokyo, **20** (2): 167–182, Nov. 15, 1992

A Revision of the Japanese Species of the Genus *Atholus* (Coleoptera, Histeridae), Part 1[1)]

Masahiro ÔHARA

Otaru Museum, Ironai 2–1–20, Otaru, Hokkaido, 047 Japan

Abstract The Japanese species of the genus *Atholus* THOMSON are revised, with figures of male genitalia and some taxonomic features. This paper is the first part of the revision. The genus and three species, *bimaculatus*, *coelestis* and *depistor* are redescribed and a key to the Japanese species is given.

Introduction

The genus *Atholus* THOMSON has been represented by 82 known species, known from the Holarctic, Ethiopian and Oriental Regions and the Mexican Subregion. In the present revision, I recognize 5 species of the genus from Japan, all known, but not yet studied in detail. In this study, they are redescribed, and their important taxonomic features are illustrated; especially their genitalia are figured for the first time.

Species of *Atholus* have no single distinctive features useful for discriminating them from those of the other genera, but are characterized by the combination of the following characters: anterior margin of mesosternum outwardly arcuate, but sometimes the median portion is narrowly emarginate inwards; antero-lateral angle of protibia bearing 2 or 3 denticles, the denticles closely appressed each other; profemoral stria incomplete, though nearly complete or at least represented by a half, not short; surface of pronotum usually with excavation within antero-lateral angles of lateral stria.

Depositories of material are indicated by the following abbreviations under each species: BSM (Bishop Museum, Honolulu); EIHU (Entomological Institute, Hokkaido University, Sapporo); NA (Dr. T. NAKANE's collection, Chiba); NSMT (National Science Museum (Nat. Hist.), Tokyo).

Genus *Atholus* THOMSON, 1859

Atholus THOMSON, 1859, 76 [type species: *Hister bimaculatus* LINNAEUS, 1758, 358, originally designated]; SCHMIDT, 1885, 288; GANGLBAUER, 1899, 369; LEWIS, 1906, 402; BICKHARDT, 1917, 159, 162; 1919, 13, 137, 139; AUZAT, 1916, 93; ARNETT, 1962, 378, 381; HALSTEAD, 1963, 7, 8; WITZGALL, 1971, 179, 183; KRYZHANOVSKIJ & REICHARDT, 1976, 382; MAZUR, 1984, 210.

1) This study was partly supported by a Grant-in-Aid, Ministry of Education, Science and Culture, Japan, No. 610950221833 (1990).

Peranus LEWIS, 1906, 401 [type species: *Hister scutellaris* ERICHSON, 1834, 151], synonymized by KRYZHANOVSKIJ & REICHARDT, 1976, 384.

Atholister REITTER, 1909, 286 [type species: *Hister scutellaris* ERICHSON], synonymized by HEYDEN, 1910, 317.

Euatholus KRYZHANOVSKIJ in KRYZHANOVSKIJ & REICHARDT, 1976, 387 [type species: *Hister duodecimstriatus* SCHRANK, 1781, 39], synonymized by MAZUR, 1984, 210.

Description. Body oval or oblong-oval, moderately convex or feebly depressed, and usually uniformly black or rarely with red macula on elytra; antennae, legs and mouth parts usually piceous. Head with normal frontal stria which runs along the margin for a short distance, the middle of stria usually curved inwards (sometimes angulate); surface of frons sometimes excavated. Pronotum usually with 1 lateral stria, the posterior portion of the stria often shortened, rarely with 2 or 3 striae; marginal stria crenate and complete or rarely shortened; more or less deep excavation present behind anterior angle, which is coarsely and densely punctate in most species. Elytra strongly striate; subhumeral striae absent or rudimentarily present medially; oblique humeral stria usually lightly impressed on basal third; 1st–4th dorsal striae usually complete, 5th and sutural striae complete or abbreviated basally; rarely apical ends of these striae extending inwardly. Propygidium and pygidium coarsely or finely punctate. Basal margin of prosternal keel usually truncate straight or slightly round; carinal striae usually absent. Anterior margin of mesosternum usually round and outwardly arcuate, or rarely truncate narrowly on median portion. Protibia broadly expanded and stout, the antero-lateral angle bearing 2 or 3 denticles. Profemur always with marginal stria along basal margin on ventral side, the stria nearly complete or at least half of the stria present.

Key to the Japanese Species of the Genus *Atholus*

1 (2) Elytra red maculate. ..... *A. bimaculatus* (LINNAEUS, 1758)

2 (1) Elytra entirely black.

3 (4) Lateral pronotal stria present on apical half. Apical end of 3rd elytral dorsal stria strongly bent inwards. ..... *A. coelestis* (MARSEUL, 1857)

4 (3) Lateral pronotal stria nearly entire. Third elytral dorsal stria normal.

5 (6) Fifth elytral dorsal stria present on apical half. .. *A. pirithous* (MARSEUL, 1873)

6 (5) Fifth elytral dorsal stria nearly complete.

7 (8) Lateral disk of metasternum with long hairs. Anterior margin of prosternal lobe narrowly truncate on medium. Punctation of propygidium even. .... *A. depistor* (MARSEUL, 1873)

8 (7) Lateral disk of metasternum without hair. Anterior margin of prosternal lobe round. Punctation of propygidium becoming coarser basally. .... *A. duodecimstriatus quatuordecimstriatus* (GYLLENHAL, 1808)

Atholus bimaculatus (LINNAEUS, 1758)

[Japanese name: Aka-mon-emma-mushi]

(Figs. 1, 2, 5 & 9 A, F)

Hister bimaculatus LINNAEUS, 1758, 358; PAYKULL, 1811, 34; MARSEUL, 1854, 582, t. 10, f. 142 [8^{e} groupe]; SCHMIDT, 1885, 294 [*Hister* (VIII Gruppe)].
Hister (*Atholus*) *bimaculatus*: GANGLBAUER, 1899, 369; AUZAT, 1916, 93.
Hister (*Atholister*) *bimaculatus*: REITTER, 1909, 286.
Hister (*Peranus*) *bimaculatus*: BICKHARDT, 1910, 52 [catalogued]; BICKHARDT, 1917, 192.
Atholus bimaculatus: LEWIS, 1906, 402; MAZUR, 1984, 211.
Atholus (*Euatholus*) *bimaculatus*: KRYZHANOVSKIJ & REICHARDT, 1976, 385; HISAMATSU & KUSUI, 1984, 17 [noted; key]; HISAMATSU, 1985, 228, pl. 41, f. 61 [noted; key; photo].
Peranus bimaculatus: LEWIS, 1910, 56.
Hister fimetarius SCOPOLI, 1763, 13, synonymized by FABRICIUS, 1775, 53.
Hister diluniator VOET, 1793, 46.
Hister apicatus SCHRANK, 1798, 452, synonymized by HOFFMAN, 1803, 50.
Hister erythropterus FABRICIUS, 1798, 38, synonymized by SCHÖNHERR, 1806, 94.
Hister obliquus SAY, 1825, 37, synonymized by J. L. LECONTE, 1859, 264.
Hister bimaculatus ab. *morio* SCHMIDT, 1885, 296.
Hister bimaculatus var. *spissatus* REY, 1888, 4.

Description. Male and female. Body length, PPL (=length between anterior angles of pronotum and apex of pygidium): male, 3.71–4.28 mm, female, 4.05–4.66 mm, PEL (=length between anterior angles of pronotum and apices of elytra): male, 3.05–3.76 mm, female, 3.71–3.38 mm. Width: male, 2.48–3.05 mm, female, 2.76–3.05 mm. Biometric data are given in Table 1. Body oblong-oval and shining. Elytra with red spots, rest of body black; antennae, tibiae and tarsi dark brown.

Frontal stria of head (Fig. 1 A) complete, carinate and inwardly angulate at middle on anterior portion; disk densely covered with coarse punctures which are separated by about their diameter. Labrum short, transversely oblong.

Pronotal sides (Fig. 1 B) regularly arcuate and convergent apically. Apical angle acute. Marginal pronotal stria present on apical half along lateral margin, and broadly interrupted anteriorly behind head. Lateral pronotal stria deeply impressed, the lateral portion sparsely crenate, far distant from lateral margin and abbreviated on basal fifth, the anterior portion nearly straight and densely crenate. Area within the antero-lateral angle of lateral stria feebly excavated and densely and coarsely punctate, the punctures irregularly strewn, being separated from one another by a half to twice their diameter; interspace among the coarse punctures sparsely with fine punctures; narrow band along posterior margin covered with large, round and deep punctures. Ante-scutellar area with a short longitudinal puncture.

Marginal epipleural stria clearly impressed on apical half and area outside the stria deeply depressed. Marginal elytral stria deeply and completely impressed, area outside the stria deeply depressed and coarsely punctate. Lateral margin of elytron strongly carinate. Subhumeral stria absent (Fig. 1 B). Oblique humeral stria lightly impressed on basal third. First – 5th dorsal striae deeply impressed, complete and

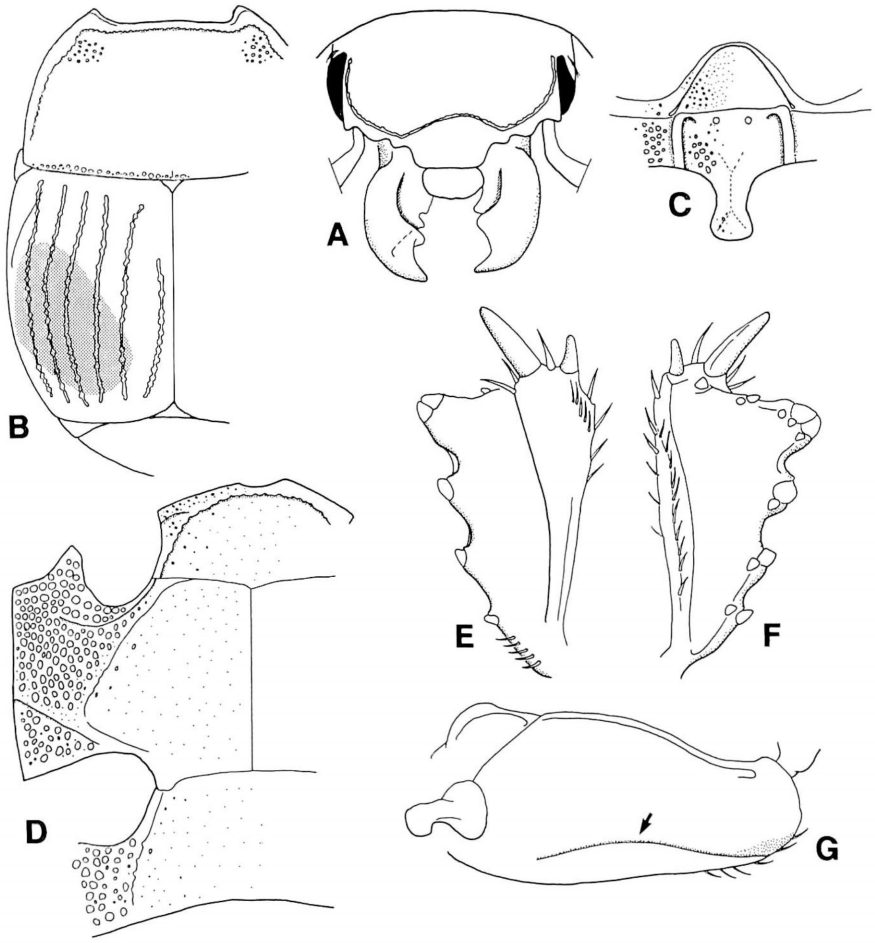


Fig. 1. *Atholus bimaculatus* (LINNAEUS). A, Head, frontal view; B, pronotum and left elytron, dorsal view; C, prosternum; D, meso-, metasterna and 1st abdominal sternum; E, protibia, dorsal view; F, ditto, ventral view; G, profemur, ventral view.

sparsely and coarsely crenate, the basal end of 5th inwardly bent. Sutural stria deeply impressed on apical two-thirds. Disk of elytra sparsely clothed with fine punctures which are separated by three to five times their diameter.

Propygidium (Fig. 9 A) sparsely covered with coarse, ocelloid and deep punctures which are separated by a half to twice their diameter, the punctures becoming finer and denser towards margin; interspace among the coarse punctures evenly covered with moderate-sized punctures which are separated by about twice their diameter. Pygidium (Fig. 9 F) irregularly scattered with coarse punctures which are separated by one to four times their diameter, becoming coarser basally; interspace among the coarse punctures evenly and moderately punctate.

Table 1. Biometric data for *Atholus bimaculatus* (LINNAEUS).

Part measured	Male	Female
APW	1.09–1.24 (1.13±0.02) 9	1.14–1.24 (1.21±0.01) 6
PPW	2.28–2.76 (2.45±0.05) 9	2.52–2.76 (2.66±0.04) 6
PL	1.09–1.38 (1.21±0.03) 9	1.29–1.67 (1.43±0.03) 6
EL	1.67–2.09 (1.85±0.04) 9	1.90–2.14 (2.03±0.03) 6
EW	2.48–3.05 (2.66±0.06) 9	2.76–3.05 (2.91±0.04) 6
ProW	1.52–1.81 (1.62±0.03) 9	1.71–1.86 (1.79±0.02) 6
ProL	0.67–0.90 (0.78±0.02) 8	0.81–0.90 (0.86±0.01) 6
PyL	0.86–1.09 (0.95±0.02) 9	0.86–1.05 (0.98±0.03) 6
PTL	0.86–1.00 (0.90±0.02) 9	0.95–1.00 (0.97±0.01) 6
MSTL	0.71–0.90 (0.78±0.02) 9	0.76–0.90 (0.83±0.02) 6
MTTL	0.86–1.05 (0.93±0.02) 9	1.03–1.09 (1.03±0.02) 6

Measurements in mm. APW – width between anterior angles of pronotum; PPW – width between posterior angles of pronotum; PL – length of pronotum in middle; EL – length of elytron along sutural line; EW – maximal width between outer margins of elytra; ProW – maximal width of propygidium in mesial; ProL – length of propygidium in mesial; PyL – length of pygidium; PTL – length of protibia; MSTL – length of mesotibia; MTTL – length of metatibia. The table reads: range (mean±standard error) number of specimens measured.

Anterior margin of prosternal lobe (Fig. 1 C) triangularly produced, the top rounded; marginal stria deeply impressed and complete, the lateral portion rather distant from the margin; disk evenly and moderately punctate, the punctures becoming coarser and denser laterally. Prosternal keel narrow, the posterior half broad and forming a triangular plane; carinal striae absent; disk sparsely and moderately punctate, the punctures becoming coarser laterally on apical half. Descending lateral stria deeply and completely impressed and strongly carinate.

Anterior margin of mesosternum (Fig. 1 D) outwardly arcuate, the median portion slightly emarginate; marginal stria complete, deeply impressed and densely crenate, a short stria present behind the antero-lateral angle on each side; disk sparsely scattered with coarse punctures and intermingled with fine punctures among coarse ones. Meso-metasternal suture straight, clearly impressed and complete. Post-mesocoxal stria extending obliquely along posterior margin of mesocoxa, the outer end attaining to middle of the lateral disk of metasternum. Lateral metasternal stria deeply impressed, carinate and obliquely extending posteriorly, the apical end attaining to basal two-thirds of the disk, and not united with oblique stria which inwardly extends from the apical two-thirds of metasterno-metepisternal suture. Intercoxal disk of metasternum sparsely scattered with moderate punctures which are separated by four to five times their diameter. Lateral disk densely covered with large, round and shallow punctures; surface with short hairs.

Punctation of intercoxal disk of 1st abdominal sternum similar to that of intercoxal disk of metasternum; lateral stria deeply impressed and complete.

Protibia well expanded apically, with 5 denticles on outer lateral margin, the basal one very small and the apical two appressed together on apical angle; 2 small

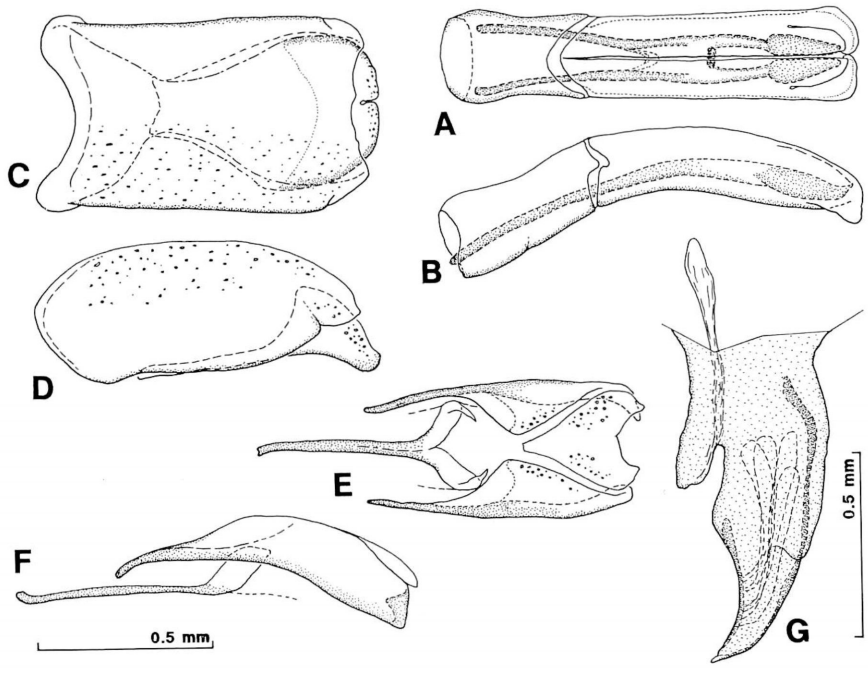


Fig. 2. *Atholus bimaculatus* (LINNAEUS). Male genitalia (A–F). A, Aedeagus, dorsal view; B, ditto, lateral view; C, 8th tergite and sternum, dorsal view; D, ditto, lateral view; E, 9th and 10th tergites and 9th sternum (spicules), dorsal view; F, ditto, lateral view. G, Female genitalia, spermatheca and bursa copulatrix, lateral view (left side).

denticles present on apical margin. Profemoral stria abbreviated on basal fourth, and most distant from the posterior margin at middle. Mesotibia with 2 rows of strong spines on outer margin, the dorsal one consisting of 7 spines, of which apical three are very long, the ventral one consisting of 8 spines which are shorter than those of the dorsal one. Metatibia with 2 rows of strong spines on outer margin, the dosal one consisting of 8 spines, the 3 spines on apical angles very long, and the ventral one consisting of 7 short spines.

Male genitalia as shown in Fig. 2 A–F.

Female genitalia as shown in Fig. 2 G.

Specimens examined. 9 ♂♂ and 7 ♀♀. <Oki Is.> 1 ♂, 1 ♀, Urago, Dôzen, 7–VII–1955, N. TAMU & K. TSUKAMOTO leg. (NA); 7 ♂♂, 3 ♀♀, Urago, Dôzen, Oki, 5–VIII–1955, N. TAMU & K. TSUKAMOTO leg. (NA). <Tsushima Is.> 1 ♂, 3 ♀♀, Hitakatsu, 7–IX–1964, T. NAKANE leg. (NA).

Distribution (Fig. 5). Japan (Kyushu; Oki Is.; Iki Is.; Tsushima Is.); Europe; Holarctic; Argentina (introduced); Chad (introduced); India; Tenasserim.

Remarks. So far as the Japanese species are concerned, *A. bimaculatus* is easily recognized on the presence of a reddish spot on each elytron.

Atholus coelestis (MARSEUL, 1857)

[Japanese name: Sujimagari-emma-mushi]

(Figs. 3–5 & 9 B, C)

Hister coelestis MARSEUL, 1857, 416, t, 10, f. 59 [China].
Hister (*Atholus*) *coelestis*: BICKHARDT, 1910, 53 [catalogued]; 1917, 193 [catalogued]; DESBORDES, 1919, 399 [Tonkin, Annam, Cochinchine]; 1921, 10 [Inde]; KAMIYA & TAKAGI, 1938, 31 [listed].
Atholus coelestis: LEWIS, 1906, 402; 1915, 55 [Formosa].
Atholus (*Euatholus*) *coelestis*: HISAMATSU & KUSUI, 1984, 17 [noted, key].
Atholus (*Euatholus*) *coelestes* [sic]: HISAMATSU, 1985, 228, pl. 41, f. 61 [noted, key, photo].
Hister femoralis MOTSCHULSKY, 1863, 449, synonymized by LEWIS, 1885, 465.

Description. Male and female. Body length, PPL: male, 2.57–3.81 mm, female, 3.09–3.57 mm, PEL: male, 2.14–2.67 mm, female, 2.52–2.90 mm. Width: male, 1.86–2.28 mm, female, 2.17–2.57 mm. Biometric data are given in Table 2. Body oval, feebly depressed, black and shining; tibiae, tarsi and antennae reddish brown.

Frontal stria of head (Fig. 3 A) complete and carinate, feebly angulate inwards at middle on anterior portion; disk densely covered with coarse punctures which are separated from one another by their diameter.

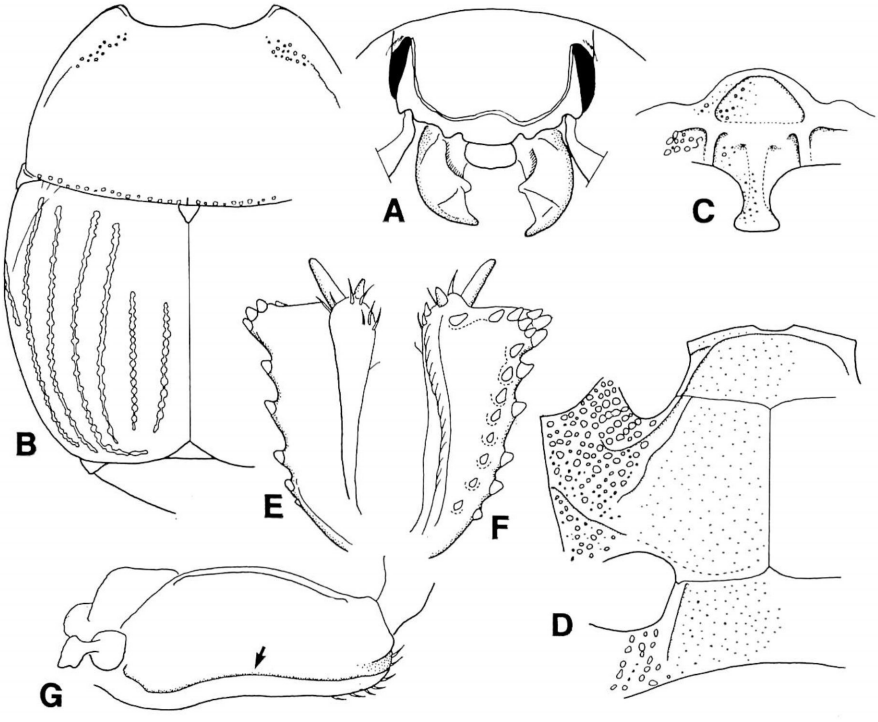


Fig. 3. *Atholus coelestis* (MARSEUL). A, Head, frontal view; B, pronotum and left elytron, dorsal view; C, prosternum; D, meso-, metasterna and 1st abdominal sternum; E, protibia, dorsal view; F, ditto, ventral view; G, profemur, ventral view.

Table 2. Biometric data for *Atholus coelestis* (MARSEUL).

Part measured	Male	Female
APW	0.76–0.95 (0.89±0.01) 20	0.86–1.05 (0.97±0.01) 20
PPW	1.67–2.05 (1.93±0.02) 20	2.00–2.33 (2.17±0.02) 20
PL	0.86–1.07 (0.95±0.01) 20	0.90–1.19 (1.06±0.02) 20
EL	1.24–1.48 (1.38±0.01) 20	1.43–1.59 (1.54±0.01) 20
EW	1.86–2.28 (2.14±0.02) 20	2.17–2.57 (2.41±0.02) 20
ProW	1.00–1.33 (1.20±0.01) 20	1.24–1.48 (1.35±0.01) 20
ProL	0.45–0.55 (0.49±0.01) 20	0.48–0.67 (0.55±0.01) 20
PyL	0.57–0.76 (0.61±0.01) 20	0.62–0.81 (0.71±0.01) 20
PTL	0.55–0.71 (0.66±0.01) 20	0.67–0.81 (0.74±0.01) 20
MSTL	0.45–0.62 (0.57±0.01) 19	0.57–0.74 (0.67±0.01) 20
MTTL	0.62–0.76 (0.72±0.01) 20	0.71–0.90 (0.83±0.01) 19

Marginal pronotal stria present on apical third laterally, but absent anteriorly except behind apical angle. Lateral pronotal stria (Fig. 3 B) short, present on middle of each lateral side, and one-third as long as pronotum. Disk densely covered with moderate punctures which are shallow and separated by about their diameter; area behind the apical angle of lateral stria feebly excavated, and sparsely covered with coarse punctures which are separated by two or three times their diameter; posterior margin with a row of coarse, longitudinal and deep punctures. Ante-scutellar area with a short longitudinal puncture.

Epipleural fossette of elytra sparsely clothed with fine punctures. Marginal epipleural stria absent. Marginal elytral stria complete and deeply impressed. External subhumeral stria absent. Internal subhumeral stria (Fig. 3 B) rudimentary, briefly present on middle. Oblique humeral stria lightly impressed on basal third. First–4th dorsal striae complete, apical ends of 1st to 3rd extending inwardly, the 3rd reaching near apical end of 5th stria. Fifth dorsal stria present on apical two-thirds. Sutural stria present on apical half, the basal end a little before the middle. Disk of elytron evenly covered with moderate punctures which are separated by about twice their diameter.

Pygidia with alutaceous ground sculpture. Propygidium (Fig. 9 B) sparsely and irregularly scattered with coarse punctures which are separated by one to six times their diameter, the punctures becoming sparser apically; interspace among the coarse punctures densely covered with fine punctures. Punctation of pygidium (Fig. 9 G) similar to that of propygidium, though the coarse punctures become finer toward apex.

Anterior margin of prosternal lobe (Fig. 3 C) round, its marginal stria complete and deeply impressed and carinate; disk densely and coarsely punctate laterally. Prosternal keel narrow and without carinal stria; descending lateral stria deeply impressed and complete.

Anterior margin of mesosternum (Fig. 3 D) slightly and outwardly arcuate, but the median portion is slightly emarginate inwards; marginal stria complete, sparsely

crenate and carinate. A short stria present behind antero-lateral angle. Disk of mesosternum sparsely clothed with fine punctures which are separated by two to four times their diameter. Meso-metasternal suture clearly impressed, complete and angulate at middle. Lateral metasternal stria well impressed, extending obliquely and posteriorly, near to but not united with the oblique stria which inwardly extends from the middle of metasterno-metepisternal suture. Punctation of intercoxal disk of metasternum similar to that of mesosternum. Post-mesocoxal stria extending posteriorly and obliquely, attaining to the middle of lateral disk. Lateral disk densely covered with large, round and shallow punctures and without hair; interspace among the large ones sparsely and finely punctate.

Punctation of intercoxal disk of 1st abdominal sternum similar to that of metasternum, but somewhat denser; lateral stria deeply impressed and a little shortened apically.

Protibia (Fig. 3 E & F) with 7 or 8 denticles on lateral outer margin and 5 small denticles on anterior margin, three of these denticles occurring on apical angle. Ventral surface of protibia with a row of 8 small denticles along outer lateral margin.

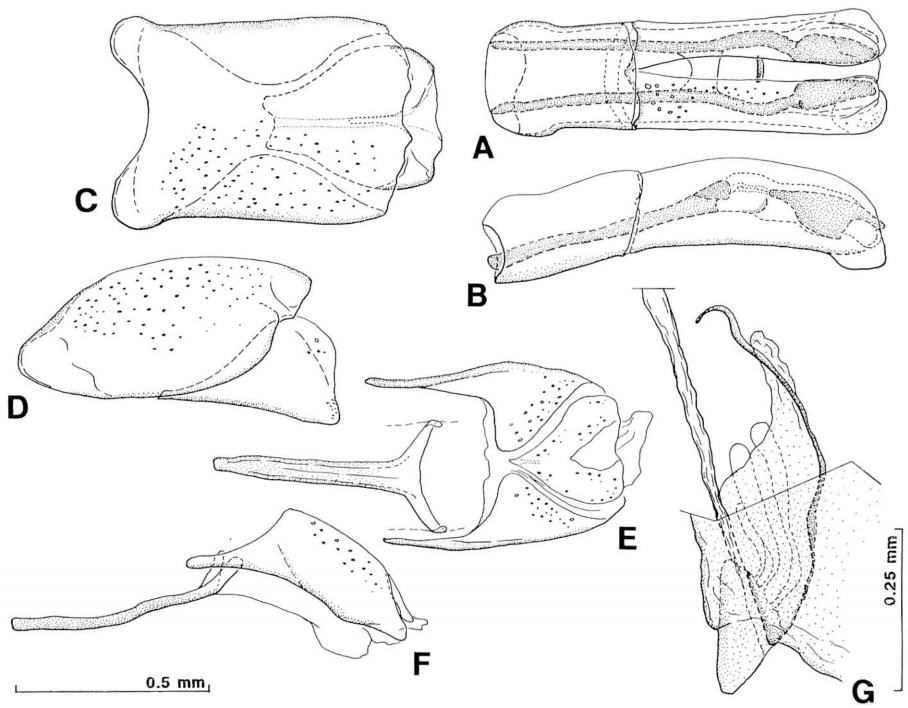


Fig. 4. *Atholus coelestis* (MARSEUL). Male genitalia (A–F). A, Aedeagus, dorsal view; B, ditto, lateral view; C, 8th tergite and sternum, dorsal view; D, ditto, lateral view; E, 9th and 10th tergites and 9th sternum (spicules), dorsal view; F, ditto, lateral view. G, Female genitalia, spermatheca and bursa copulatrix, lateral view (left side).

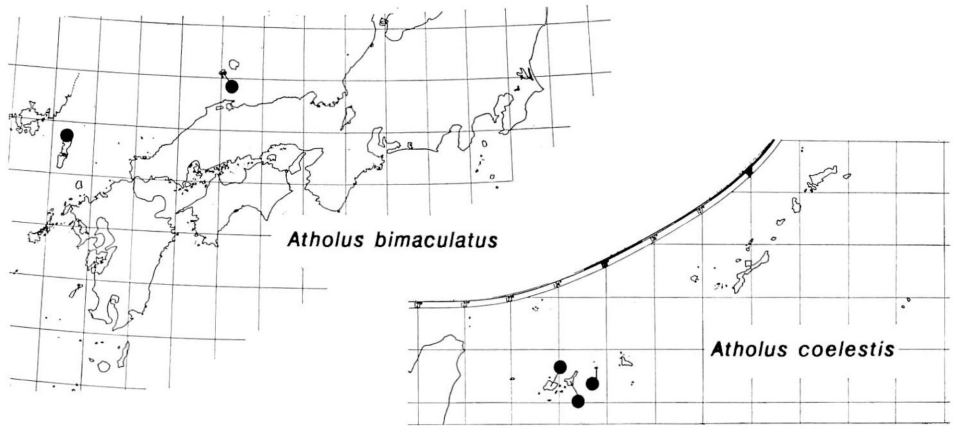


Fig. 5. Collection sites of *Atholus bimaculatus* (LINNAEUS) and *A. coelestis* (MARSEUL).

Profemur (Fig. 3 G) almost completely with femoral stria. Meso- and metatibiae each bearing 7 or 8 long spinules.

Male genitalia as shown in Fig. 4 A–F.

Female genitalia as shown in Fig. 4 G.

Specimens examined. 21 ♂♂, 23 ♀♀ and 63 exs.

[Nansei Isls.] <Tarama Is.> 1 ♂, 1 ♀, 3 exs., Tarama Is., 2–X–1984, Y. KUSUI leg. <Zamami Is.> 2 ♂♂, 1 ♀, 2 exs., 27–VII–1987, Y. KUSUI leg. <Iriomote Is.> 1 ♀, 1 ex., Uehara, 22–III–1975, N. NISHIKAWA leg.; 2 exs., ditto, 17–III–1985, K. NAKAMINE leg.; 8 ♂♂, 3 ♀♀, Ôtomi, 17–III–1985, S. MASUDA leg.; 8 ♂♂, 11 ♀♀, 26 exs., ditto, K. NAKAMINE leg.; 2 ♂♂, 5 ♀♀, 24 exs., Iriomote Is., 19 & 20–X–1988, M. ÔHARA leg.; 1 ex., ditto, 22–III–1982, M. KIUCHI leg. <Ishigaki Is.> 1 ♀, Isobe, 29–III–1984, YOSHIDA leg.; 4 exs., Hirakubozaki, 24–VIII–1987, H. TANAKA leg.

Distribution (Fig. 5). Japan (Nansei Isls.); Continental China; Taiwan; India; Sri Lanka; Indonesia; Java; Celebes.

Remarks. This species is easily distinguished from all the other Japanese species of the tribe Histerini by the pronotal lateral stria incomplete and by the apical end of the 3rd dorsal stria of elytra extending inwardly, attaining to near the apical end of the 5th dorsal stria.

Atholus depistor (MARSEUL, 1873)

[Japanese name: Munakubo-emma-mushi]

(Figs. 6–8 & 9 C, H)

Hister depistor MARSEUL, 1873, 224 [Japan: Nagasaki, Kiu-siu (=Kyushu)].

Hister (Peranus) depistor: BICKHARDT, 1910, 53 [catalogued]; 1917, 192 [catalogued]; MÜLLER, 1937, 130 [Japan; Mongol]; KAMIYA & TAKAGI, 1938, 31 [listed]; ÔSAWA & NAKANE, 1951, 6 [noted; figured].

Peranus depistor: LEWIS, 1906, 402; 1915, 55 [Formosa]; NAKANE, 1963, 70.
Atholus (Atholus) depistor: KRYZHANOVSKIJ & REICHARDT, 1976, 386; NAKANE, 1981, 10 [listed]; HISAMATSU & KUSUI, 1984, 17 [key; noted]; HISAMATSU, 1985, 228, pl. 41, f. 17 [noted; key; photo].

Description. Male and female. Body length, PPL: male, 4.43–5.47 mm, female, 4.66–6.19 mm, PEL: male, 3.83–4.43 mm, female, 3.95–4.90 mm. Width: male, 2.86–3.81 mm, female, 3.33–4.24 mm. Biometric data are given in Table 3. Body oblong-oval, convex, black and shining; antennae, tibiae, and tarsi dark brown.

Frontal stria of head (Fig. 6 A) complete, carinate, densely crenate and inwardly angulate at middle. Disk wholly covered with reticulous ground sculpture, and sparsely covered with fine punctures which are separated from one another by about three times their diameter. Labrum transversely oblong. Dorsal surface of mandible

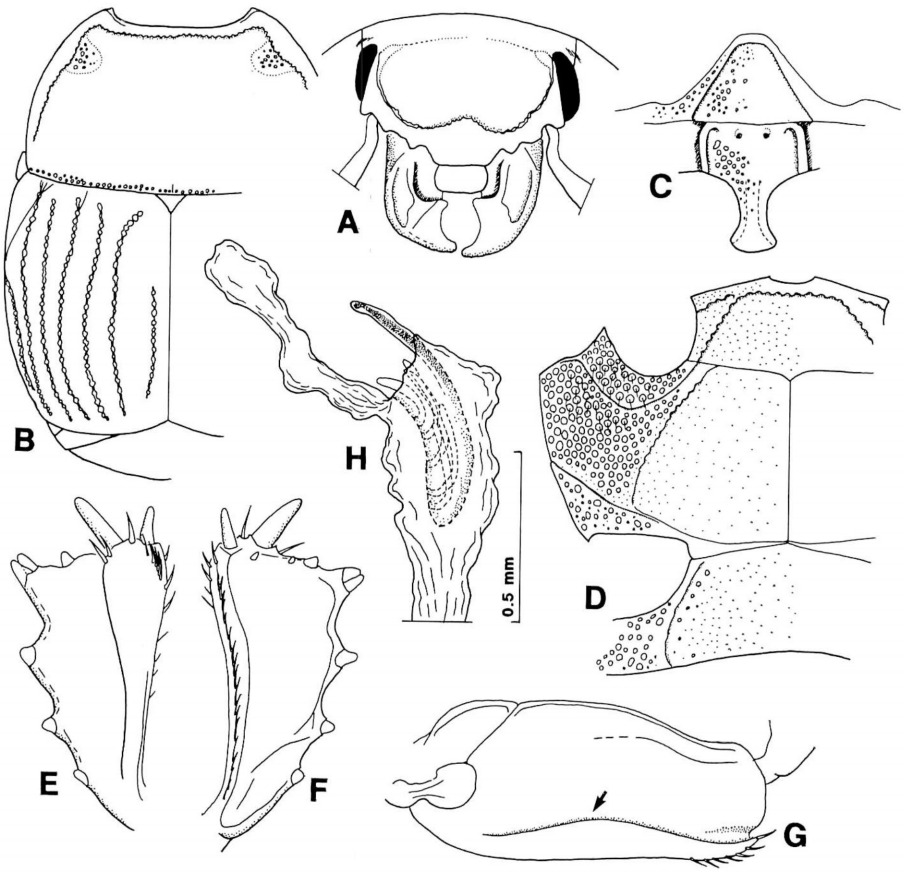


Fig. 6. *Atholus depistor* (MARSEUL). A, Head, frontal view; B, pronotum and left elytron, dorsal view; C, prosternum; D, meso-, metasterna and 1st abdominal sternum; E, protibia, dorsal view; F, ditto, ventral view; G, profemur, ventral view; H, female genitalia, spermatheca and bursa copulatrix, lateral view (left side).

with a strong carina along outer margin.

Pronotal sides (Fig. 6 B) regularly arcuate, but in the apical half strongly convergent anteriorly. Apical angles acute. Marginal pronotal stria present on apical half laterally and broadly interrupted anteriorly behind head. Lateral pronotal stria strongly impressed and densely crenate, the lateral portion shortened on basal fourth and rather widely distant from the pronotal lateral margin. Area within the antero-lateral angle of lateral stria deeply excavated and densely and largely punctate. Disk wholly covered with reticulous ground sculpture, and sparsely scattered with fine punctures. Ante-scutellar area with a short longitudinal puncture.

Epipleura of elytra deeply and longitudinally excavated, and densely and coarsely punctate. Marginal epipleural stria clearly impressed on apical two-thirds along epipleural margin. Marginal elytral stria deeply impressed and complete. Lateral margin of elytron strongly carinate. External subhumeral stria (Fig. 6 B) present briefly on median portion, as an arc. Internal subhumeral stria variable, shortly present medially. These subhumeral striae often fused with each other, the apical end of the external stria and the basal end of the internal one united into a continuous stria, which is half to two-thirds as long as elytra. Oblique humeral stria lightly impressed on basal third. First to 5th dorsal striae complete and sparsely and coarsely crenate, the 5th outwardly arcuate. Sutural stria present on apical two-thirds or less. Disk of elytra wholly and coarsely covered with reticulous sculpture.

Propygidium (Fig. 9 C) evenly and coarsely covered with round and deep punctures which are separated from one another by half to one their diameter, and sparsely intermingled with fine punctures; interspace among punctures wholly covered with microscopic alutaceous ground sculpture. Punctation of pygidium (Fig. 9 H) similar to that of propygidium, but the punctures are much denser and become finer apically.

Anterior margin of prosternal lobe (Fig. 6 C) narrowly truncate medially; marginal stria deeply impressed, carinate and complete, the lateral portion rather distant from lateral margin; disk sparsely and finely punctate medially and densely covered with coarse punctures laterally. Prosternal keel narrow, the anterior half descending;

Table 3. Biometric data for *Atholus depistor* (MARSEUL).

Part measured	Male	Female
APW	1.09–1.55 (1.38±0.02) 20	1.33–1.67 (1.49±0.02) 20
PPW	2.62–3.38 (3.11±0.04) 20	2.88–3.76 (3.37±0.06) 20
PL	1.29–1.67 (1.51±0.02) 20	1.43–1.86 (1.64±0.03) 20
EL	1.95–2.38 (2.24±0.03) 20	2.24–2.81 (2.46±0.04) 20
EW	2.86–3.81 (3.43±0.05) 20	3.33–4.24 (3.75±0.06) 20
ProW	1.90–2.28 (2.07±0.02) 20	2.00–2.52 (2.29±0.04) 20
ProL	0.86–1.00 (0.92±0.01) 19	0.86–1.14 (0.99±0.01) 20
PyL	0.81–1.09 (0.94±0.02) 20	0.86–1.29 (1.07±0.03) 20
PTL	0.95–1.24 (1.12±0.02) 19	0.95–1.38 (1.18±0.02) 20
MSTL	0.86–1.24 (1.04±0.02) 19	0.95–1.29 (1.09±0.02) 20
MTTL	1.05–1.43 (1.28±0.02) 19	1.19–1.57 (1.37±0.02) 20

carinal stria absent; disk sparsely clothed with fine punctures which are separated by about three times their diameter, the punctures becoming coarser on sides of apical half. Descending lateral stria deeply impressed, carinate and complete.

Anterior margin of mesosternum (Fig. 6 D) outwardly arcuate, but the median portion is slightly and narrowly emarginate; marginal stria strongly carinate, sparsely and coarsely crenate, and complete; a short oblique stria present between the marginal stria and the antero-lateral angle on each side; disk evenly covered with fine punctures

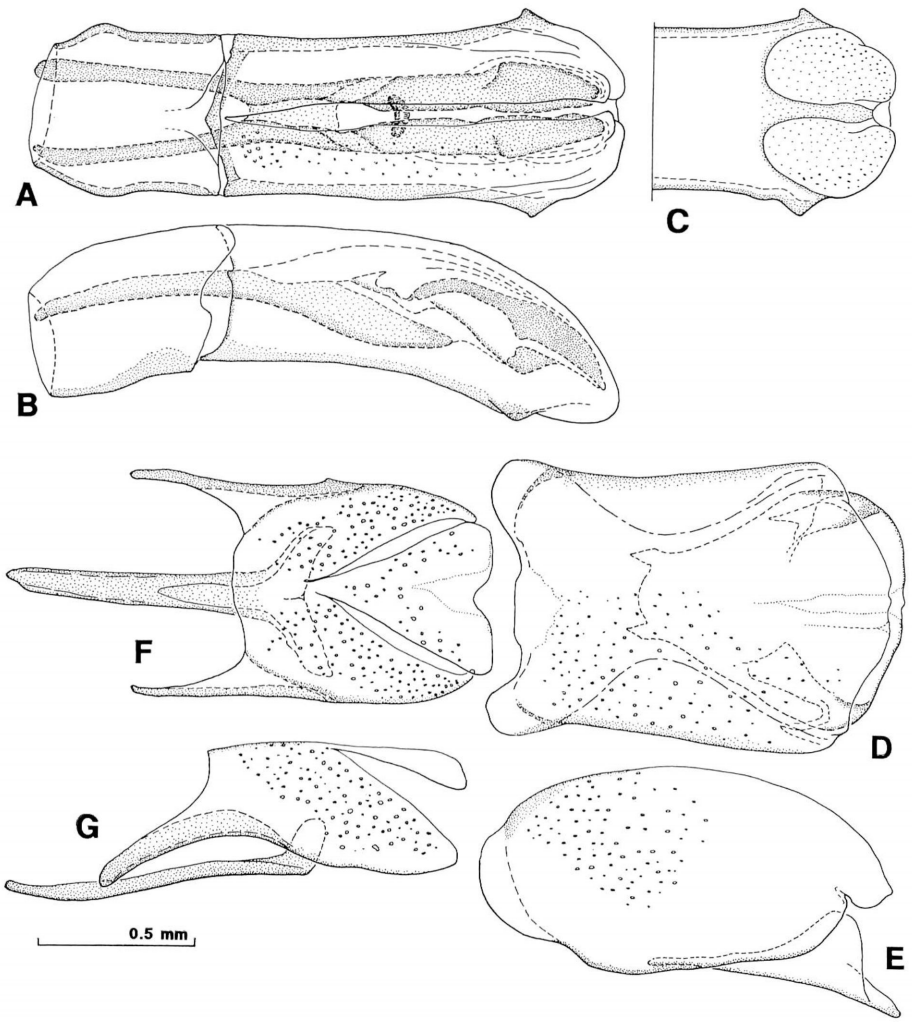


Fig. 7. *Atholus depistor* (MARSEUL). Male genitalia. A, Aedeagus, dorsal view; B, ditto, lateral view; C, caudal apex of aedeagus, ventral view; D, 8th tergite and sternum, dorsal view; E, ditto, lateral view; F, 9th and 10th tergites and 9th sternum (spicules), dorsal view; G, ditto, lateral view.

which are separated by about four times their diameter. Meso-metasternal suture complete, obtusely angulate at middle. Lateral stria of metasternum deeply impressed, carinate, obliquely and posteriorly extending, and beginning from lateral fourth of meso-metasternal suture. Post-mesocoxal stria carinate and complete, somewhat broadly distant from posterior margin of mesocoxa, the basal end united with apical end of marginal stria of mesosternum. Punctation of intercoxal disk of metasternum similar to that of mesosternum. Lateral metasternal disk densely covered with large, shallow, round and setiferous punctures, the punctures finer along the lateral stria.

Intercoxal disk of 1st abdominal sternum (Fig. 6 D) sparsely and finely punctate, the punctures separated by two to three times their diameter; 1st abdominal sternum deeply striate on each side, the stria carinate and complete.

Protibia (Fig. 6 E & F) with 5 denticles on outer lateral margin, the basal one very small and the apical two appressed together on apical angle, and with one denticle on apical margin. Profemur (Fig. 6 G) with femoral stria nearly complete and most distant from the posterior margin at middle. Mesotibia and metatibia each with 8 long and 9 to 10 short spines on outer margin.

Male genitalia as shown in Fig. 7.

Female genitalia as shown in Fig. 6 H.

Specimens examined. 19 ♂♂, 20 ♀♀ and 32 exs.

[Hokkaido] 1 ♂, Sôunkyô, Daisetsu, 28–VII–1985, M. ÔHARA leg.; 8 ♂♂, 5 ♀♀, 4 exs., Jôzankei, 20–VI, 27–VIII, 14–IX, 13–X–1985, M. ÔHARA leg.; 2 exs., Toyotaki, Sapporo, 13–X–1985, 23–VIII–1987, M. ÔHARA leg.; 2 ♀♀, Hitsujigaoka, Sapporo, 20–VIII–1985, M. ÔHARA leg.; 1 ♂, Iwanai, 9 & 10–VII–1990, M. ÔHARA leg.; 1 ex., Ômori-hama, Hakodate, 15–VIII–1952, K. HOMMA leg. (EIHU). <Okushiri Is.>

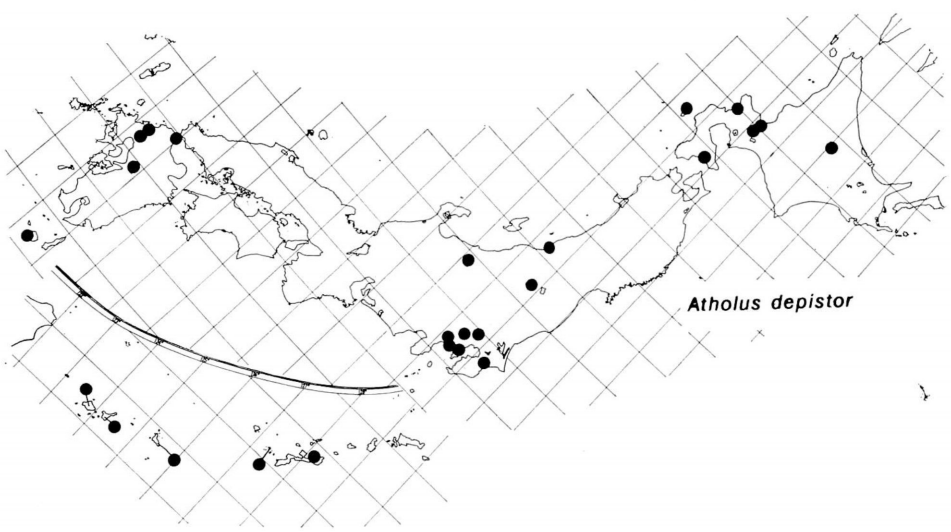


Fig. 8. Collection sites of *Atholus depistor* (MARSEUL).

1 ♀, 28–VI–1956, K. UMEYA leg. (EIHU).

[Honshu] <Fukushima-ken> 1 ex., Wakamatsu, 16–VIII–1948, K. NAGAYAMA leg. (NSMT). <Chiba-ken> 1 ex., Ôami, 22–VI–1984, M. ÔHARA leg. <Saitama-ken> 1 ex., Adachi, Arakawa, 31–V–1970, M. ISHIDA leg. <Tokyo-to> 1 ex., Fuchû, 11–VI–1968, M. ISHIDA leg. <Kanagawa-ken> 2 ♂♂, 2 ♀♀, 4 exs., Akuwa-chô,

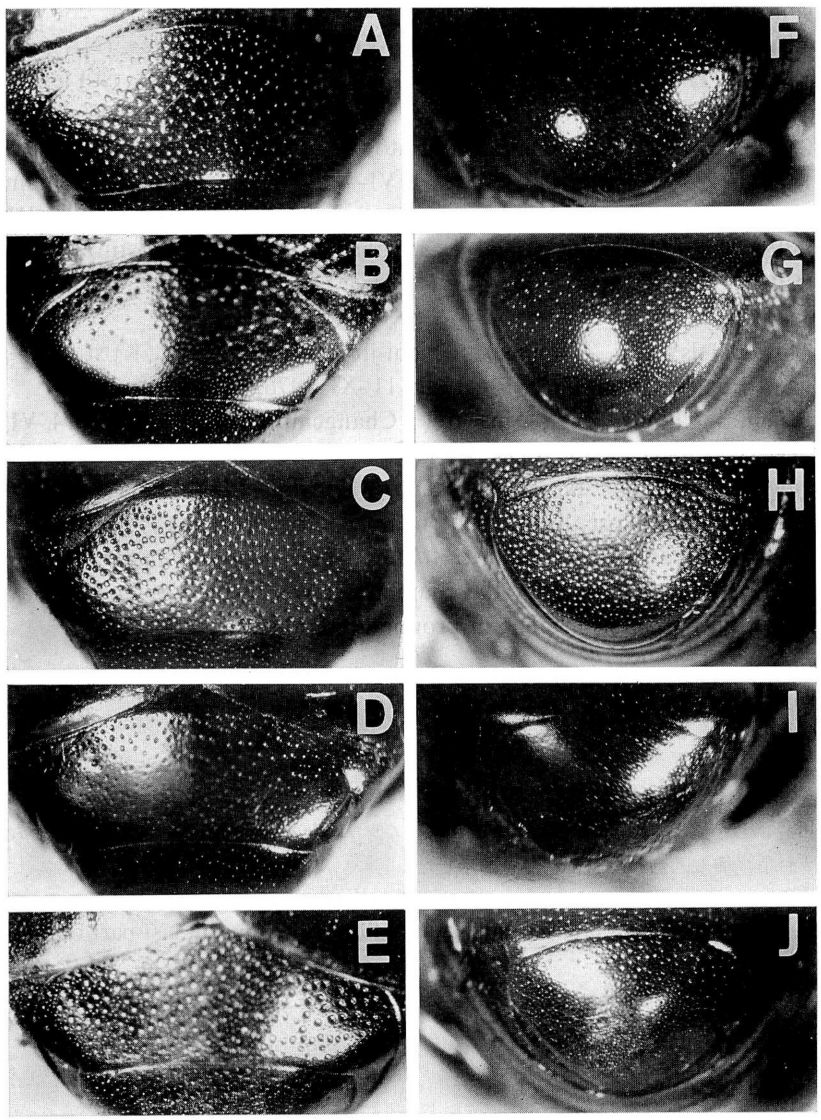


Fig. 9. Propygidia (A–E) and pygidia (F–J). A, F, *Atholus bimaculatus* (LINNAEUS). B, G, *A. coelestis* (MARSEUL). C, H, *A. depistor* (MARSEUL). D, I, *A. duodecimstriatus quatuordecimstriatus* (GYLLENHAL). E, J, *A. pirithous* (MARSEUL).

Yokohama, 3–VI–1983, K. WADA leg.; 1 ♂, Matsudayama, Tanzawa, 14–IX–1975, M. ISHIDA leg.; 1 ♂, 2 ♀♀, 2 exs., Fujisawa, 14–VI–1984, I. MAEHARA leg. <Niigata-ken> 1 ex., Senami, northern Echigo, 21–VI–1985, K. BABA leg. <Nagano-ken> 1 ♀, Nojiri, 24–VII–1930, T. ISHIDA leg. (NA); 1 ♀, ditto, 21–VIII–1943, T. NAKANE leg. (NA). <Mie-ken> 1 ♀, 1 ex., Yunoyama, 6–VIII–1973, M. TANAKA leg.

[Kyushu] <Fukuoka-ken> 1 ex., Fukuoka, 16–VI–1948, Y. ABITSU leg. (NA); 1 ex., Tashiro, 23–VI–1948, Y. MIYAKE leg. (NA); 1 ex., Mt. Asaka, 23–VIII–1946 F. TAKAHASHI leg. (NA); 1 ex., Mt. Adachi, 9–VI–1969, S. NAKAO leg. (NA). <Kumamoto-ken> 1 ♂, Haruyama, Takamori, Aso-gun, 6–VI–1986, E. MATSUI leg.

[Nansei Isls.] <Yakushima Is.> 1 ex., 2–IV–1985, M. KIUCHI leg.; 1 ♀, Kurio, 5–X–1982, M. ÔHARA leg. <Okinawa-hontô Is.> 1 ex., ÔGIMI, 18–V–1984, M. SHIMABUKURO leg. <Miyako Is.> 1 ex., 1–VI–1969, Y. KUSUI leg. <Zamami Is.> 1 ♂, 3 ♀♀, 27–VII–1987, Y. KUSUI leg. <Iriomote Is.> 2 exs., Ôtomi, 16–III–1985, K. NAKAMINE leg. <Ishigaki Is.> 1 ex., Isobe, 29–III–1984, YOSHIDA leg.; 1 ex., Kabira, 5–VI–1969, Y. KUSUI leg.; 3 ♂♂, 1 ♀, Hirakubozaki, 24–VIII–1987, H. TANAKA leg.

[Ogasawara Isls.] 1 ex., Komagari, Chichi-jima, 8–IV–1973, Y. KUSUI leg.

[Taiwan] 1 ex., Kenting Park, Pingtung, 11–XI–1976, M. KIUCHI leg.

[Continental China] 1 ex., Sinkyo (=Changchun), Manchukuo, 14–VII–2599 (=1939), H. TOKUHIRO leg. (NSMT).

Distribution (Fig. 8). Japan (Hokkaido; Honshu; Shikoku; Kyushu; Nansei Isls.; Ogasawara Isls.); Korea; southeastern China; Primorskij Kray; Siberia; Taiwan.

Remarks. This species is similar to *Atholus duodecimstriatus quatuordecimstriatus*, but is separated from the latter by the characters given in the key and by having an excavation within the anterior angle of pronotal lateral stria.

要　　約

大原昌宏：日本産ムナクボエンマムシ属の再検討，1. —— ムナクボエンマムシ属にふくまれる日本産5種の検索表を作成し，属の記載をおこなった．また，アカモンエンマムシ *Atholus bimaculatus*，スジマガリエンマムシ *A. coelestis*，ムナクボエンマムシ *A. depistor* の3種の再記載をおこない，雌雄交尾器，および種の区別に役立つ特徴を図示した．

[**Note.** The references cited in this paper will be given in the last part of the series.]

Elytra, Tokyo, **20** (2): 183–187, Nov. 15, 1992

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

Yasutoshi SHIBATA

Tsurukawa 3–8–13, Machida City, Tokyo, 195 Japan

Abstract A new staphylinid beetle of the genus *Neosclerus* hitherto unrecorded from Taiwan is described under the name of *N. atsushii*. It is easily distinguished from the known species of the genus by its large eyes, short elytra and degenerated hind wings.

The genus *Neosclerus* CAMERON is a small genus of the subfamily Paederinae, consisting of about ten known species mainly distributed in South Asia. Most species have been known from India, Assam, Nepal and Bhutan. One species, *N. nigerrimus* (KRAATZ, 1859), was described from Ceylon, and one, *N. javanus* (BERNHAUER, 1920) from Java. However, none of the species of this genus have been recorded from Taiwan. In the present paper, I am going to describe a new species collected from temperate forests of the northern and central mountainous areas in Taiwan.

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

Genus *Neosclerus* CAMERON

Neosclerus CAMERON, 1924, Trans. ent. Soc. Lond., **1924**, p. 188 (type species: *Neosclerus fortepunctatus* CAMERON, 1924). —— BLACKWELDER, 1939, Proc. U. S. natn. Mus., **87**: 120; 1952, U. S. natn. Mus. Bull., **200**: 260.

Lobochilus BERNHAUER, 1920, Arch. Naturg., (A), **84**(10): 179 (type species: *Lobochilus javanus* BERNHAUER, 1920) [junior homonym of *Lobochilus* BOULENGER, 1882]. —— CAMERON, 1931, Fn. Brit. Ind., Coleopt. Staphyl. II, p. 123. —— SCHEERPELTZ, 1933, Coleopt. Cat., (129): 1239. —— BLACKWELDER, 1939, Proc. U. S. natn. Mus., **87**: 119; 1952, U. S. natn. Mus. Bull., **200**: 225.

In the large head and very large eyes, this genus recalls of the subgenus *Raphirus* of the genus *Quedius*, or the members of the genera *Stenus* or *Dianous*.

Neosclerus can be separated from all the known genera of the subfamily Paederinae by the following combination of characters: last segment of maxillary palpus minute and subulate; labrum feebly emarginate in front, edentate; eyes very large, almost occupying the whole sides of head; antennae not geniculate; neck at least a fourth

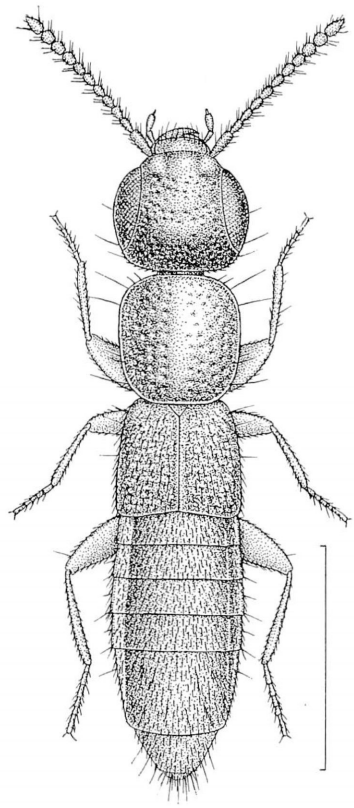


Fig. 1. *Neosclerus atsushii* sp. nov., ♂, from Lushan Wenchuan in Taiwan. Scale: 1.0 mm.

as broad as the base of head; 4th segment of tarsi simple.

Neosclerus atsushii sp. nov.

(Figs. 1–5)

Body nearly parallel-sided and somewhat depressed above. Colour reddish brown and shining, with head almost black and legs brownish yellow. Length: 3.2–3.5 mm.

Head large, a little transverse (greatest width of head / greatest length of head = 1.21), suborbicular and slightly wider than pronotum (greatest width of head / greatest width of pronotum = 1.12); eyes very large and very protruding from lateral outlines of head, almost occupying the whole sides of head, their longitudinal diameter much longer than postocular areas (longitudinal diameter of eyes / length of postocular area = 5.2), which are barely indicated; base truncate; frontal area between antennal tubercles transversely flattened and almost impunctate, bearing several conspicuous

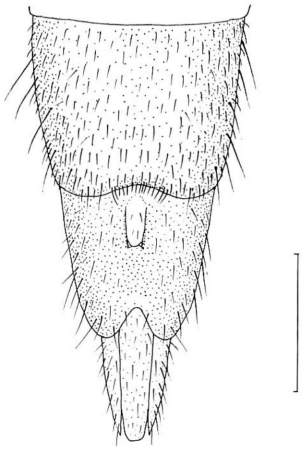


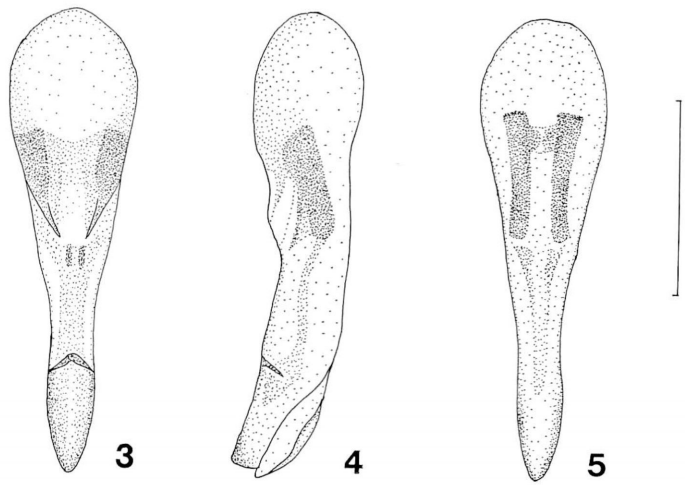
Fig. 2. Last three abdominal sternites in male of *Neosclerus atsushii* sp. nov. Scale: 0.5 mm.

setiferous punctures inside each antennal tubercle; disc closely covered with large and distinct punctures, except for a small smooth vertexal area; latero-posterior parts also with setiferous punctures which are finer and closer than those on the disc. Antennae extending a little beyond the middle of pronotum and not thickened apicad; 1st segment robust and feebly dilated apicad, 2nd 1.3 times as long as broad and constricted at base, 3rd somewhat longer than 2nd (3rd/2nd=1.25), 4th to 5th slightly longer than broad (length/width=1.2), 6th to 10th subequal in length to one another, each about as long as broad, the apicalmost nearly twice as long as 10th and 1.5 times as long as broad, subacuminate towards the tip.

Pronotum slightly longer than head (length of pronotum, measured along the midline / length of head=1.06), almost quadrate, about as long as broad (length of pronotum / greatest width of pronotum=0.97), widest behind anterior angles, obliquely narrowed to the neck from there, posteriorly slightly and straightly narrowed to rounded posterior angles; anterior angles obtuse; surface strongly, rather coarsely and moderately closely punctate, except for a comparatively broad smooth area along the median line throughout its length. Scutellum subtriangular, almost impunctate and smooth.

Elytra small, somewhat widened posteriorly, slightly wider than long (greatest width of elytra / greatest length of elytra=1.14), and a little shorter than (greatest length of elytra / length of pronotum=0.89) but as wide as pronotum (greatest width of elytra / greatest width of pronotum=0.99); lateral sides almost straight; posterior angles broadly rounded; surface roughly and somewhat rugosely punctate and finely pubescent; hind wings degenerated.

Abdomen elongate, slightly divergent towards the 4th visible segment which is the widest, 5th segment to anal end distinctly narrowed; surface moderately closely covered with extremely fine punctures, and very finely pubescent, apex and sides of



Figs. 3–5. Male genital organ of *Neosclerus atsushii* sp. nov.; ventral view (3); lateral view (4); dorsal view (5). Scale: 0.3 mm.

each tergite provided with some fine black setae; in male, 6th visible sternite deeply and subtriangularly excised at the middle of posterior margin, and provided with narrow longitudinal U-shaped carinae near the basal region; 5th visible sternite also broadly and shallowly emarginate at middle of posterior margin, the emargination being furnished with short black setae. Legs moderately long, protarsi thin in both sexes.

Male genital organ elongate and moderately sclerotized; median lobe gradually narrowed towards somewhat rounded apex, with basal part a little globular; no style nor parameres; in dorsal view, paired sclerotized structure of internal sac long and distinct.

Type series. Holotype: ♂, Lushan Wenchuan, about 1,200 m alt., Nantou Hsien, Taiwan, 28–VII–1983, Y. SHIBATA leg. Allotype: ♀, same data as for the holotype. Paratypes: 3 ♂♂, 4 ♀♀, same data as for the holotype.

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

Further specimens examined. 2 ♀♀, near Lalashan, about 1,600 m alt., on the borders between Taoyuan and Taipei Hsiens, Taiwan, 23–VII–1982, Y. SHIBATA leg.

Notes. The present new species resembles *N. fortepunctatus* CAMERON from India, Assam and Nepal in general appearance, but can be readily distinguished from the latter by the elytra being shorter than the pronotum and less strong punctures on head and pronotum. In view of its shorter elytra, this new species is similar to *N. brachypterus* (CAMERON) from India, but differs from the latter by the large eyes almost occupying the whole sides of the head, with the postocular areas barely in-

dicated.

The two female specimens taken near Lalashan are excluded from the type series, because of the different coloration of the body. They have dark brown body with black head, reddish brown antennae and reddish yellow legs. It is possible that the coloration of the Lalashan specimens shows a mature state, while that of the type series is still somewhat teneral.

All the specimens of the type series were found from heaps of humid fallen leaves accumulated at the edges of the water of a narrow mountain stream.

The specific name is given after Mr. Atsushi KAWABE, one of the best friends of mine, who kindly collaborated with me in searching for this new species at Lushan Wenchuan.

要　約

柴田泰利：台湾から未記録の *Neosclerus* 属ハネカクシの1新種．—— *Neosclerus* 属は，アリガタハネカクシ亜科の比較的小さい属で，現在までに 10 種がインド，アッサム，ネパール，ブータン，セイロン，ジャワなどから知られている．いずれも大きい頭部とその側面の大部分を占める複眼により，この亜科のほかの属のものとの識別は容易である．さらにこの特徴によって，ツヤムネハネカクシ属の *Raphirus* 亜属やメダカハネカクシ属，ヒョウタンメダカハネカクシ属のものにも外観が似ている．

今回，台湾の中部と北部の山地帯で採集した本属の標本を精査した結果，新種と認められたので，*Neosclerus atsushii* と命名記載した．種名は友人で本種の採集にご協力いただいた川辺 湛氏に献名した．*Neosclerus atsushii* は小型で，頭部側面の 4/5 を占める大きい複眼，前胸より短い上翅，退化縮小した後翅などにより，同属の既知種から容易に区別される．

References

BERNHAUER, M., 1920. Neue Staphyliniden des indo-malayischen Gebietes. XVI. *Arch. Naturg.* (A), **84**(10): 177–188.

BLACKWELDER, R. E., 1939. A generic revision of the staphylinid beetles of the tribe Paederini. *Proc. U. S. natn. Mus.*, **87**: 93–125.

——— 1952. The generic names of the beetle family Staphylinidae. *U. S. natn. Mus. Bull.*, **200**: 1–483.

CAMERON, M., 1924. New species of Staphylinidae from India. *Trans. ent. Soc. Lond.*, **1924**: 160–198.

——— 1931. Coleoptera, Staphylinidae II. *In*: *the Fauna of British India, including Ceylon and Burma*. viii+257 pp., 2 pls. Taylor & Francis, London.

——— 1943. Descriptions of new Staphylinidae (Coleoptera). *Proc. r. ent. Soc. Lond.*, (B), **12**: 32–36.

COIFFAIT, H., 1978. Ergebnisse der Bhutan-Expedition 1972 des Naturhistorischen Museum in Basel. Coleoptera: Fam. Staphylinidae Subfam. Paederinae, Euaesthetinae, Piestinae, Osoriinae et Omaliinae. *Ent. basil.*, **3**: 109–150.

SCHEERPELTZ, O., 1933. Staphylinidae VII, Supplementum I. *In* JUNK, W., & S. SCHENKLING (eds.), *Coleopterorum Catalogus*, pars 129 (pp. 989–1500). W. Junk, Berlin.

Elytra, Tokyo, **20** (2): 188, Nov. 15, 1992

Two New Records of *Philonthus* (Coleoptera, Staphylinidae) from Ishigaki-jima Island, the Ryukyu Archipelago

Yasutoshi SHIBATA

Tsurukawa 3-8-13, Machida City, Tokyo, 195 Japan

In the present short paper, I am going to report two unrecorded species of the genus *Philonthus* from the Ishigaki-jima Island, one of the Yaeyama Group of the Ryukyu Archipelago.

1. *Philonthus flavocinctus* MOTSCHULSKY

Philonthus flavocinctus MOTSCHULSKY, 1858, Bull. Soc. Natur. Moscou, **31** (2): 663 (East India, Ceylon).

Specimens examined. 4♂♂, Mt. Omoto, Ishigaki-jima Is., Okinawa Pref., the Ryukyus, 16-III-1977, W. SUZUKI leg.

Distribution. Japan (Ogasawara Isls., Ishigaki-jima Is.); Taiwan, India, Ceylon, Mauritius, Réunion, Madagascar.

This species resembles *P. discoideus* KRAATZ, but differs from it in the blackish antennae, larger head and simple paramere.

2. *Philonthus gemellus* KRAATZ

Philonthus gemellus KRAATZ, 1859, Arch. Naturg., **25** (1): 91 (Ceylon).

Specimens examined. 1♂, Ishigaki-jima Is., Okinawa Pref., the Ryukyus, X, XI-1966, K. MIZUSAWA leg.

Distribution. Japan (Ishigaki-jima Is.); Java, Malay Peninsula, India, Ceylon, Madagascar.

This species can be readily distinguished from the other Japanese members of the genus by the following combination of features: pronotum with dorsal row of five punctures; front of head provided with a deep longitudinal sulcus at middle; apical half of median lobe gradually narrowed to a pointed apex, and paramere divided into two long lobes.

I express my sincere thanks to Mr. K. MIZUSAWA and Dr. W. SUZUKI for their kind supply of the specimens.

Elytra, Tokyo, **20** (2): 189–196, Nov. 15, 1992

New Species of the Group of *Lathrobium pollens* (Coleoptera, Staphylinidae) from Western Honshu, Japan

Yasuaki WATANABE

Laboratory of Entomology, Tokyo University of Agriculture,
Tokyo, 156 Japan

Abstract Two new species belonging to the group of *Lathrobium pollens* are described under the names of *L. mayasanense* and *L. shingon*. They were found in the litter zones of two different localities. One of them was obtained on Mt. Mayasan in Hyôgo Prefecture, while the other was collected on Mt. Kôya-san in Wakayama Prefecture.

The group of *Lathrobium pollens* differs from the other members of the genus *Lathrobium* in vestigial eyes and degenerated hind wings like the group of *L. uenoi*. Nine species have hitherto been reported from Japan, including Iturup Island of the Kuriles.

Examining the group of *L. pollens* in my collection, I have found two interesting species found in the litter zones of two different localities. One of them was obtained on Mt. Mayasan in Hyôgo Prefecture and the other on Mt. Kôya-san in Wakayama Prefecture, both in western Honshu. After a careful examination, it became clear that they did not agree with the known species of the group in configuration of the secondary sexual character of abdomen and genital organ in the male. They seem to be new to science, and will be described in the present paper. The type series of the two new species to be described are deposited in the collection of the Laboratory of Entomology, Tokyo University of Agriculture.

Before going further, I wish to express my hearty thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kind support of the present study.

Lathrobium mayasanense Y. WATANABE, sp. nov.

[Japanese name: Mayasan-kobane-naga-hanekakushi]

(Figs. 1–5)

Body length: 9.0–11.4 mm (from front margin of head to anal end); 5.1–5.4 mm (from front margin of head to elytral apices).

Body elongate, parallel-sided and somewhat depressed above. Colour reddish black and moderately shining, pronotum and elytra somewhat opalescent, with mouth parts, antennae and abdomen reddish brown, legs yellowish brown.

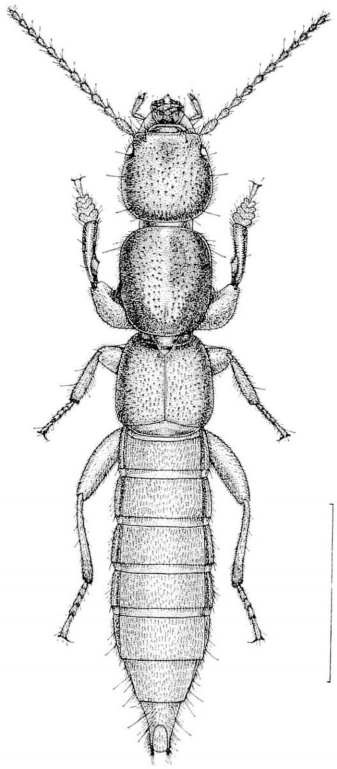


Fig. 1. *Lathrobium mayasanense* Y. WATANABE, sp. nov., ♂, from Mt. Mayasan in Hyôgo Prefecture. Scale: 3.0 mm.

Male. Head subtrapezoidal, gently convex and transverse (width/length=1.10), distinctly narrowed anteriad, with lateral sides feebly arcuate; surface sparingly covered with rather coarse setiferous punctures which become closer on latero-posterior areas than on medio-frontal area, ground sculpture obscure; eyes small and flat, the longitudinal diameter of each eye about one-fourth as long as postocular part. Antennae relatively slender, extending to the middle of pronotum and not thickened apicad, with two proximal segments polished, the remainings becoming gradually opaque towards the apicalmost segment, 1st robust and dilated apicad, nearly three times as long as broad, 2nd to 7th equal in width to one another, 2nd constricted at the base, longer than broad (length/width=1.60) but much shorter (2nd/1st=0.40) and narrower (2nd/1st=0.71) than 1st, 3rd elongate and somewhat dilated apicad, twice as long as broad and distinctly longer than 2nd (3rd/2nd=1.25), 4th dilated apicad like 3rd, more than 1.5 times as long as broad but clearly shorter than 3rd (4th/3rd=0.80), 5th to 7th equal in both length and width to one another, each about 1.4 times as long as broad but slightly shorter than 4th (5th/4th=0.88), 7th to 10th more or less moniliform, 8th longer than broad (length/width=1.44), slightly shorter (8th/7th=0.93)

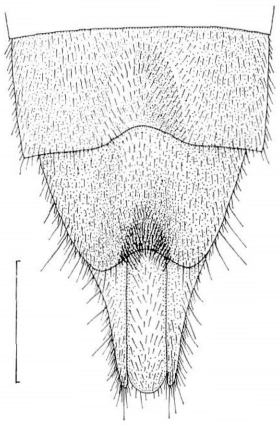
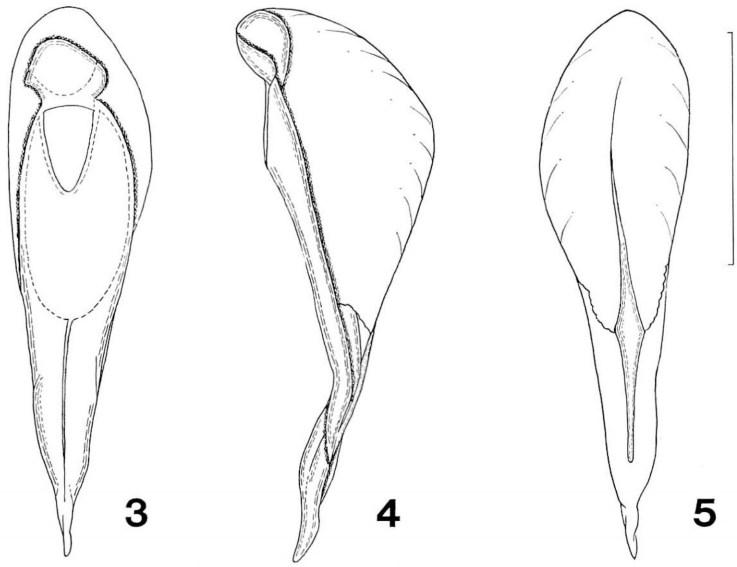


Fig. 2. Last three abdominal sternites in male of *Lathrobium mayasanense* Y. WATANABE, sp. nov. Scale: 1.0 mm.

and narrower (8th/7th=0.90) than 7th, 9th and 10th equal in both length and width to each other, each longer than broad (length/width=1.33), apicalmost fusiform, more than twice as long as broad and about 1.5 times as long as 10th, subacuminate towards the tip.

Pronotum moderately convex medially and distinctly longer than broad (length/width=1.21), as broad as or slightly narrower than head (pronotum/head=0.96), widest just behind anterior angles and apparently narrowed posteriad; lateral sides feebly arcuate as seen from dorsal side, anterior margin gently rounded, posterior margin nearly truncate, anterior angles rounded but not visible from above, posterior ones obtuse; surface rather sparingly covered with much coarser punctures than those on head except for a narrow smooth longitudinal area along the median line. Scutellum subtriangular, bearing a few superficial setiferous punctures on the surface. Elytra somewhat dilated posteriad and subdepressed above, slightly transverse (width/length=1.06), as broad as but distinctly shorter than pronotum (elytra/pronotum=0.78); lateral sides gently arcuate, posterior margin emarginate at the middle, posterior angles obliquely truncated; surface more closely and more roughly punctured than on pronotum, and covered with fine brownish pubescence. Hind wings each degenerated to a minute lobe. Legs relatively short; profemur considerably thickened, but abruptly constricted and excavated in apical fourth on the inner face, so that the ventral side of the excavation forms a subtriangular projection; protibia dilated apicad, hollowed in basal half on the inner face and armed with five comb-like transverse rows of yellowish setae within the hollow; meso- and metatibiae simple; 1st to 4th protarsal segments strongly widened, meso- and metatarsi thin.

Abdomen elongate, somewhat broader than elytra (abdomen/elytra=1.13), widest at the fourth visible segment, then gradually narrowed anteriad and more strongly so posteriad, basal five tergites each shallowly and transversely depressed



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

along the base; surface of each tergite moderately closely, superficially punctured and covered with fine brownish pubescence; preapical sternite semicircularly excised at the middle of posterior margin and shallowly longitudinally depressed in front of the excision, surface of the depression provided with short black setae in apical third; 5th visible sternite more shallowly and more broadly excised than preapical sternite at the middle of posterior margin and subtriangularly depressed before the excision, the depression being deeper than that on preapical sternite and covered with fine dark setae on the surface except for glabrous apical area.

Genital organ well sclerotized with the exception of dorsal side of median lobe, elongate, somewhat asymmetrical, and slightly curved to the right side. Median lobe broader but shorter than fused paramere, provided with a well sclerotized plate on the dorsal side, the plate being widest before the middle and much more narrowed basad than apicad. Fused paramere widest near basal fourth and more strongly tapered apicad than basad as seen from the ventral side; ventral surface provided with a pair of fine longitudinal keels in apical half along the median line, but the keels become obscure in apical part.

Female. Similar to male in facies, though the 1st to 4th protarsal segments are less dilated, and the last visible abdominal sternite is produced posteriad at the median part of posterior margin and gently rounded at the apex.

Type series. Holotype: ♂, allotype: ♀, Mt. Mayasan, Hyôgo Pref., Honshu, Japan, 16–IX–1980, Y. WATANABE leg. Paratypes: 2 ♂♂, 1 ♀, same data as for the

holotype; 1 ♂, 1 ♀, same locality and collector as for the holotype, 16–X–1988.

Distribution. Japan (western Honshu).

Notes. This new species is similar to *L. pollens* SHARP in general appearance, but can be distinguished from it by configuration of the secondary sexual character of abdomen and genital organ in the male. It is also allied to *L. densum* BERNHAUER in the broad head, but differs from it in the following points: body larger and robuster, elytra as broad as and more than a half as long as pronotum.

Lathrobium shingon Y. WATANABE, sp. nov.

[Japanese name: Kôya-kobane-naga-hanekakushi]

(Figs. 6–9)

Body length: 7.4–8.6 mm (from front margin of head to anal end); 3.6–4.0 mm (from front margin of head to elytral apices).

The present new species may be placed near *L. sanukiense* Y. WATANABE from the northern part of Shikoku in view of the complicated structure of its male genital organ, but differs from it in the narrow head, configuration of the secondary sexual character of abdomen and genital organ in the male.

Body elongate, parallel-sided and subdepressed above. Colour reddish brown to brownish black and moderately shining, pronotum and elytra opalescent, abdomen feebly iridescent, with mouth parts and legs yellowish brown, antennae and abdomen reddish brown.

Male. Head subquadrate, somewhat depressed above, a little broader than long (width/length=1.18), widest near the middle and gently narrowed both anteriad and posteriad, with lateral sides feebly arcuate; frontal area between antennal tubercles transversely flattened and glabrous, bearing a setiferous puncture inside each antennal tubercle; surface sparingly, coarsely and setiferously punctured, except for impunctate vertexal area, the punctures becoming closer on latero-posterior areas than those on disc; eyes small and flat, the longitudinal diameter about one-third as long as post-ocular part. Antennae elongate, extending a little beyond the middle of pronotum and not thickened apicad, two proximal segments polished and the remainings more or less opaque, 1st segment robust and strongly dilated apicad, more than twice as long as broad, 2nd distinctly longer than broad (length/width=1.46), but much shorter (2nd/1st=0.47) and apparently narrower (2nd/1st=0.69) than 1st, 3rd elongate and somewhat dilated apicad, evidently longer than broad (length/width=1.70) and a little longer than 2nd (3rd/2nd=1.21), 4th to 7th equal in both length and width to one another, each distinctly longer than broad (length/width=1.40) and somewhat shorter than 3rd (each of 4th to 7th/3rd=0.82), 8th to 10th equal in both length and width to one another, each a little longer than broad (length/width=1.20) and slightly shorter than 7th (each of 8th to 10th/7th=0.86), apicalmost clearly longer than broad (length/width=1.80) and 1.5 times as long as 10th, subacuminate towards the tip.

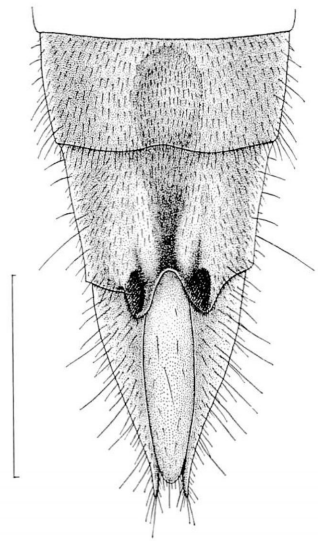
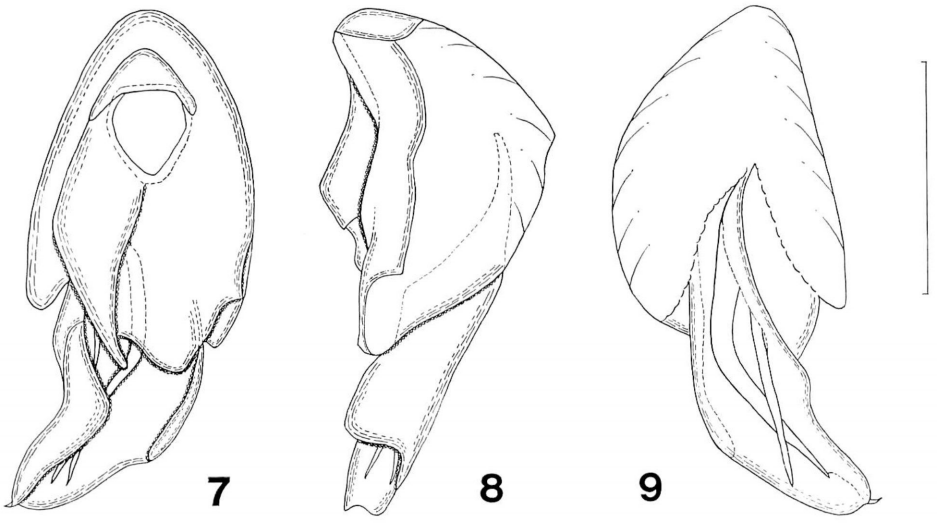


Fig. 6. Last three abdominal sternites in male of *Lathrobium shingon* Y. WATANABE, sp. nov. Scale: 1.0 mm.

Pronotum gently convex, nearly parallel-sided in anterior three-fourths but distinctly narrowed in posterior fourth, a little longer than broad (length/width=1.18) and slightly broader than head (pronotum/head=1.08), with lateral sides almost straight in anterior three-fourths except near anterior angles but feebly arcuate in posterior fourth; anterior margin gently rounded, posterior margin subtruncate; anterior angles obtuse and not visible from above, posterior ones rounded; surface sparingly, coarsely and setiferously punctured with the exception of a narrow smooth longitudinal area along the median line, which is hardly channeled in posterior half. Scutellum subtriangular, with a few rather coarse setiferous punctures. Elytra nearly oblong, slightly dilated posteriad and somewhat transverse (width/length=1.10), almost as broad as but apparently shorter (elytra/pronotum=0.77) than pronotum; lateral sides feebly arcuate, posterior margin emarginate at the middle, posterior angles obliquely truncated; surface rather densely and somewhat coarsely punctured, and covered with fine brownish pubescence, the punctures being larger and rougher than those on pronotum. Hind wings each degenerated to a minute lobe. Legs relatively short; profemur remarkably thickened, though abruptly constricted in apical fourth; protibia dilated towards the apex, hollowed in basal half on the inner face and provided with five comb-like transverse rows of yellowish setae within the hollow; meso- and metatibiae not modified; 1st to 4th protarsal segments strongly widened, meso- and metatarsi thin.

Abdomen elongate, parallel-sided in basal five visible segments and abruptly narrowed from 6th visible segment to anal end, basal four tergites each shallowly and transversely depressed along the base, surface of each tergite moderately closely,



Figs. 7–9. Male genital organ of *Lathrobium shingon* Y. WATANABE, sp. nov.; ventral view (7), lateral view (8), and dorsal view (9). Scale: 1.0 mm.

superficially punctured and finely pubescent; preapical sternite subtriangularly excised at the middle of posterior margin and longitudinally depressed along the median line before the excision, each side of the excision forming a prominent part which is distinctly depressed at the middle, surface of the depression closely beset with short rigid blackish setae; preceding sternite broadly and shallowly emarginate at the middle of posterior margin, provided with a horseshoe-shaped depression in front of the emargination, surface of the depression more closely pubescent than on other parts.

Genital organ well sclerotized except for the dorsal side of median lobe which is shorter than fused paramere. Fused paramere considerably asymmetrical and partitioned into two parts by a strong longitudinal carina as seen from the ventral side, right part abruptly narrowed in apical half towards the apex which is blunt, left part much broader than the right and broadly rounded at the apex; dorsal plate relatively broad and curved to the left side, widest near the middle and gradually narrowed both basad and apicad.

Female. Similar to the male in general appearance, though the 1st to 4th protarsal segments are not so strongly widened and the last visible abdominal sternite is produced posteriad at the median part of posterior margin and feebly arcuate at the apex.

Type series. Holotype: ♂, allotype: ♀, Mt. Kôya-san, Wakayama Pref., Honshu, Japan, 11–XI–1971, Y. WATANABE leg. Paratypes: 5 ♂♂, 10 ♀♀, same data as for the holotype.

Distribution. Japan (western Honshu).

要　約

渡辺泰明：本州西部地域から採集されたコバネナガハネカクシ種群に含まれる2新種．―― コバネナガハネカクシ種群は，オオコバネナガハネカクシ種群と同様，複眼が縮小し，後翅が退化している点で，ほかのナガハネカクシ属の種から容易に区別することができる．この種群に含められる種として，現在まで日本から9種が報告されているが，それらはいずれも落葉下や腐植土壌中から発見されている．わたしは日本各地から得られたこの種群について検討を進めていたところ，近畿地方から採集された2種が新種と判定されたので，下記のとおり命名記載した．

Lathrobium mayasanense Y. WATANABE　マヤサンコバネナガハネカクシ

本種は，兵庫県摩耶山の林床に堆積した腐植土壌中から採集されたもので，体長および外部形態はコバネナガハネカクシに類似している．しかし，この種群の雄腹部腹板に表われる第二次性徴および交尾器の形状が，コバネナガハネカクシのものとは明らかに異なっている．また本種は，頭部の幅広い点で，*L. densum* BERNHAUER に似ているが，体がより大きく強壮で，上翅の幅は前胸背板と同じだが，長さが前胸背板の 1/2 以上である点で区別することができる．

Lathrobium shingon Y. WATANABE　コウヤコバネナガハネカクシ

本種は真言宗ゆかりの高野山で，前種同様，林床の腐植土壌中から採集されたものである．複雑化した雄交尾器の形状から *L. sanukiense* Y. WATANABE に近縁の種であろうと推定されるが，頭部の幅が狭く，雄腹部腹板に表われる第二次性徴や交尾器の形状が異なっている点で区別することができる．

References

ADACHI, T., 1955. Systematic study on the subfamily Paederinae of Staphylinidae of Japan (Eleventh contribution to the knowledge of Staphylinidae of Japan). *J. Toyo Univ.*, (7): 303–328.

―― 1957. The staphylinid fauna of Japan. *Ibid.*, (11): 166–250.

BERNHAUER, M., 1936. Neuheiten der palaearktischen Staphylinidenfauna II. *Pubb. Mus. ent. Pietro Rossi*, **14**: 303–325.

―― & K. SCHUBERT, 1912. Staphylinidae III. *In* JUNK, W., & S. SCHENKLING (eds.), *Coleopterorum Catalogus*, pars 40 (pp. 191–288). W. Junk, Berlin.

SCHEERPELTZ, O., 1933. Staphylinidae VII (Suppl. I). *Ibid.*, pars 129 (pp. 989–1500). W. Junk, Berlin.

SHARP, D., 1889. The Staphylinidae of Japan. *Annls. Mag. nat. Hist.*, (6), **3**: 249–267 [part 6].

SHIBATA, Y., 1976. Provisional check list of the family Staphylinidae of Japan I (Insecta: Coleoptera). *Annual Bull. Nichidai Sanko*, (19): 71–212. (In Japanese.)

WATANABE, Y., 1984. The brachypterous staphylinid beetles from Tôhoku District, northeast Japan, with descriptions of four new species. *Mem. natn. Sci. Mus., Tokyo*, (17): 131–144.

―― 1986. Three new brachypterous *Lathrobium* (Coleoptera, Staphylinidae) from Japan. *Kontyû, Tokyo*, **54**: 688–696.

―― 1991. New species of the group of *Lathrobium pollens* (Coleoptera, Staphylinidae) from Shikoku, Japan. *J. speleol. Soc. Japan*, **16**: 29–37.

―― & 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, **20** (2): 197–201, Nov. 15, 1992

New Lowland *Sciodrepoides* (Coleoptera, Cholevidae) from the Kwantô Plains, Central Japan

Masaaki NISHIKAWA

27–1(115), Higashi-kashiwagaya 1, Ebina, 243–04 Japan

Abstract A new species of the cholevid genus *Sciodrepoides* is described under the name of *S. pluvialis* sp. nov. It is allied to *S. tsukamotoi* NAKANE and *S. dubius* Y. HAYASHI, but can be distinguished from them mainly by the shape of antennal segments and configuration of male genitalia.

Half a dozen species belonging to the genus *Sciodrepoides* have been described and recorded from Japan. They are *Sciodrepoides alpestris* JEANNEL, *S. dubius* Y. HAYASHI, *S. fumatus* (SPENCE), *S. hidakai* (JEANNEL), *S. tsukamotoi* NAKANE and *S. watsoni* (SPENCE). Recently, Messrs. T. ABE and Y. HIRANO offered me some cholevid beetles belonging to this genus which were found in lowland habitats. At first, I carelessly recognized two different species (cf. ABE & SASAI, 1986). After a further examination, however, I came to the conclusion that they must belong to only one new species.

In the following lines, I am going to describe the new species under the name of *Sciodrepoides pluvialis* sp. nov. It is allied to *S. tsukamotoi* NAKANE and *S. dubius* Y. HAYASHI. The main series of the new species was captured during "Faunal Investigation of Insects in Ishidoshuku of Kitamoto-shi" made by Saitama Entomologists' Association in 1985. Ishidoshuku is situated in the northwestern area of the Ômiya Heights between the Tone-gawa and the Ara-kawa Rivers in the Kwantô Plains. An additional specimen was found in a filled ground on Tokyo Bay by Mr. A. IZUMI. The abbreviations used herein are already explained in my previous paper.

I wish to express my deep gratitude to Mr. Masatoshi TAKAKUWA of Kanagawa Prefectural Museum, Yokohama, for his kindness in critically reading the original manuscript of this paper. Hearty thanks are also due to Ms. Atsuko SASAI and Messrs. Terutsune ABE, Atsuo IZUMI and Yukihiko HIRANO for their kindness in supplying with valuable materials.

Sciodrepoides pluvialis M. NISHIKAWA, sp. nov.

(Figs. 1–5)

Sciodrepoides sp. (1) & (2): ABE & SASAI, 1986, p. 699.

Male. Length 3.10–3.30 mm (from apical margin of clypeus to apices of elytra), width 1.43–1.48 mm. Body elliptical, shiny black or blackish brown, with yellowish

brown adpressed pubescence; elytra with opalescent luster; front margin of head, occipital carina, base of pronotum, apices of elytra, tibiae, and meso- and metatarsi reddish brown; mouth parts and segments I–IV of protarsus clear reddish brown; antenna with segments I and II clear reddish brown, III to basal half of last segment reddish brown, apical half of last segment paler; ventral surface blackish brown; abdomen with apical margin of each sternite reddish brown.

Head gently convex, wider than long (ca. 8: 5), widest at the level of occipital carina; disc coarsely punctured, sometimes lineolate; front margin almost straight; eyes moderately convex; ridge present from antennal socket to top of eye. Antennae rather robust, hardly reaching the pronotal base; segment I oval, III distinctly shorter than I, IV wider than long though as long as wide in one male, IV–V and VII subquadrate, VI and VIII–X transverse, VI 1.5–1.8× as wide as long, VII 3.0–3.5× as long as VIII, IX and X slightly wider than VII but similar in shape, XI 1.7–2.0× as long as X. Segmental measurements (length followed by width) in the holotype as follows: I, 0.125, 0.075; II, 0.1, 0.05; III, 0.1, 0.075; IV, 0.05, 0.075; V, 0.05, 0.075; VI, 0.044, 0.075; VII, 0.0875, 0.1; VIII, 0.025, 0.0875; IX, 0.075, 0.125; X, 0.075, 0.1125; XI, 0.1375, 0.1.

Pronotum transverse, trapezoidal, gently convex, widest before hind angles, PW/HW 1.67–1.71 (M 1.69), PW/PL 1.67–1.90 (M 1.78); front margin almost straight, front angles rounded, sides gently arched, hind angles obtuse though distinct, basal margin slightly sinuate near hind angles; disc with ruguloso-strigate punctuations. Scutellum triangular.

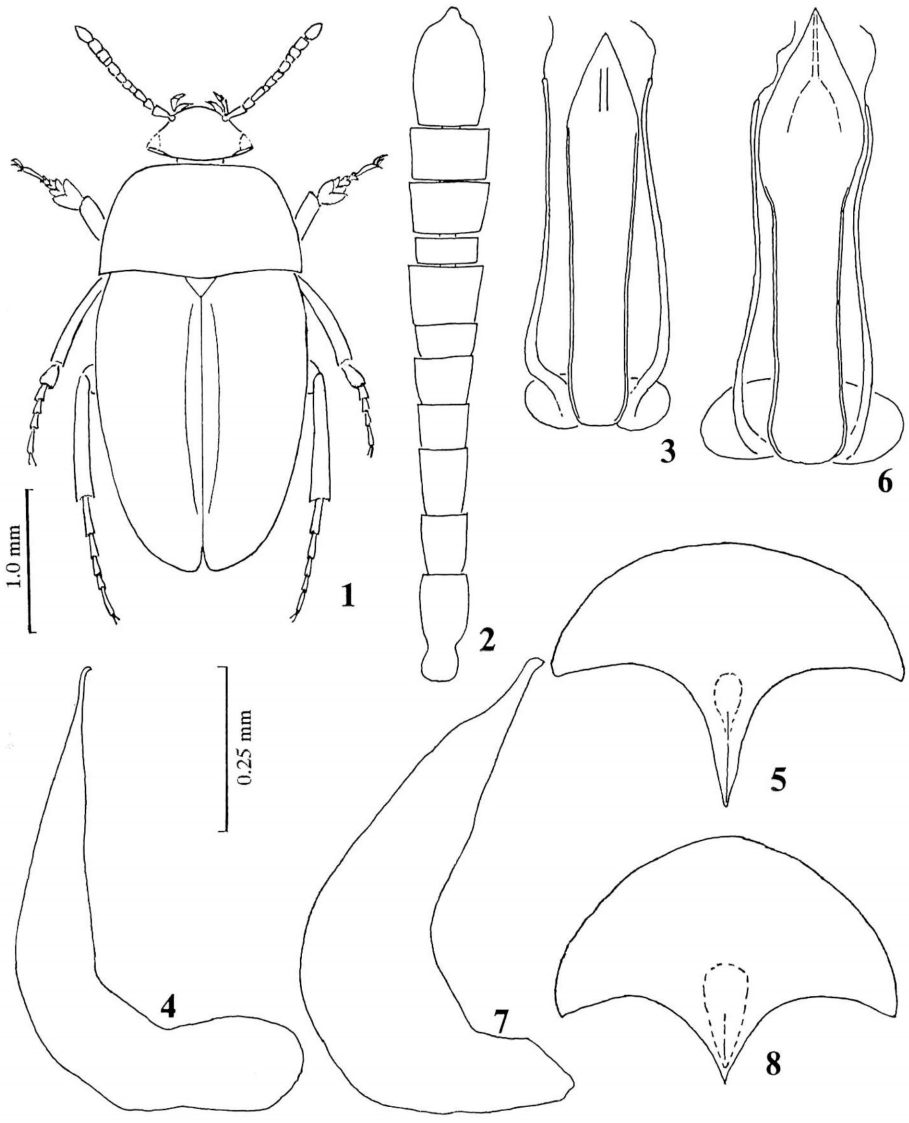
Elytra gently convex, widest at basal 1/4, EW/PW 1.02–1.08 (M 1.06), EL/PL 2.45–2.63 (M 2.56), EL/EW 1.36–1.37 (M 1.37); sides becoming narrower apically, apices separately rounded; epipleuron ending at apical 1/5; disc with ruguloso-strigate punctuations in basal half, apical half coarsely punctured; sutural stria shallowly impressed, slightly curved in middle. Hind wings full.

Ventral surface clothed with coarse punctuations though sometimes linearly impressed; abdomen asperate-punctate.

Legs with protibia dilated at inner side though subparalell in apical half; protarsus with segment I as wide as the apex of protibia, I–III strongly dilated though IV is normal, outer claw large, C-shaped, inner claw simple, distinctly narrower than the outer one; segment I of mesotarsus distinctly thicker than II–V; metafemur shallowly depressed in ventral preapical portion.

Aedeagus symmetrical, narrow, hardly dilated in preapical portion, with pointed apex which is projected backwards; sides distinctly ridged from base to near apical 1/5. Parameres thick, reaching apical 1/9 of aedeagus, each with a long apical hair; basal piece thick.

Female. Length 2.80–3.08 mm (measured as in male), width 1.48–1.50 mm. Similar in general appearance to male. Segmental measurements of antenna (length followed by width) in the allotype as follows: I, 0.15, 0.075; II, 0.1, 0.0625; III, 0.0875, 0.075; IV, 0.05, 0.0875; V, 0.05, 0.0875; VI, 0.05, 0.0875; VII, 0.075, 0.1125; VIII,



Figs. 1–8. *Sciodrepoides* spp. —— 1–5, *Sciodrepoides pluvialis* M. NISHIKAWA, sp. nov., from Ishidoshuku, Saitama Pref.; 6–8, *S. tsukamotoi* NAKANE from S. Kwantô, C. Honshu; 1, outline of body, ♂; 2, antenna, ♂; 3, 6, male genitalia in dorsal view; 4, 7, same in lateral view; 5, 8, abdominal sternite VI, ♀. (Scales: 1 mm for Fig. 1 and 0.25 mm for Figs. 2–8.)

0.025, 0.1; IX, 0.075, 0.125; X, 0.075, 0.125; XI, 0.15, 0.1125. Pronotum widest at hind angles; PW/HW 1.74–1.79 (M 1.77), PW/PL 1.73–1.80 (M 1.77), EW/PW 1.08–1.09 (M 1.09), EL/PL 2.56–2.80 (M 2.68), EL/EW 1.37–1.42 (M 1.40). Abdomen punctate as in male; apical margin of sternite V without emargination; VI roundly

and shallowly dented in medio-basal portion, stretched towards apex, the basal triangular projection long and narrow, when fully pulled out. Inner side of protibia, protarsus and segment I of mesotarsus not dilated, claws simple.

Type series. Holotype: ♂, Ishidoshuku, Kitamoto City, Saitama Pref., Honshu, Japan, 27–VI–1985, T. ABE & A. SASAI leg. Allotype: ♀, same locality as the holotype, 18–XI–1985, T. ABE & A. SASAI leg. Paratypes: 14 ♂♂, 8 ♀♀, same locality as the holotype, 17–VI–1985, 27–VI–1985, 19–X–1985, 31–X–1985, 7–XI–1985, 9–XI–1985, 18–XI–1985, T. ABE & A. SASAI leg.

Additional specimen examined. 1 ♀, Ôi-futô, Ôta, Tokyo, 1–V–1983, A. IZUMI leg.

The holotype and the allotype will be preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo. The paratypes and the Ôi-futô specimen are deposited in my collection.

Notes. The present new species is similar to *Sciodrepoides tsukamotoi* NAKANE (1956, p. 160, pl. 1, figs. 8–12) and *S. dubius* Y. HAYASHI (1969, pp. 3–4, figs. 15–17) in general appearance, but can be distinguished from the latter two by the following points: body black to blackish brown; antenna with segment III distinctly shorter than I, IV wider than long, VI 1.5–1.8× as wide as long (Fig. 2); aedeagus symmetrical, narrow, and hardly dilated in preapical portion; each paramere with a long apical hair (Figs. 3–4); in female, abdominal sternite VI roundly and shallowly dented in medio-basal portion, the basal triangular projection long and narrow (Fig. 5). In *tsukamotoi*: about basal half of elytra reddish brown; antennal segment III almost as long as I, VI 2× as wide as long; aedeagus (Figs. 6–7) more or less asymmetrical, thick, and distinctly dilated in preapical portion; each paramere sometimes with two apical hairs (cf. NISHIKAWA, 1984); in female, abdominal sternite VI roundly and deeply dented in medio-basal portion, the basal triangular projection short (Fig. 8). In *dubius*: antennal segment IV distinctly longer than wide; aedeagus different in shape (according to HAYASHI (1969) and HISAMATSU and HAYASHI (1985)).

The Ôi-futô specimen is slightly different from topotypical females in the body size (length 2.50 mm, width 1.35 mm) and in the ratios of body parts which are as follows: PW/HW 1.72, PW/PL 1.72, EW/PW 1.08, EL/PL 2.45, EL/EW 1.31.

The present new species and *S. tsukamotoi* lack the apical emargination of abdominal sternite V of female. This character is peculiar among the congeners.

要　　約

西川正明：関東平野産のコチビシデムシ属の1新種. —— 1985年に埼玉昆虫談話会が主宰した，北本市石戸宿の昆虫調査の際に得られたコチビシデムシ属の1種を新種と認め，カントウコチビシデムシ *Sciodrepoides pluvialis* sp. nov. と命名した．本種は，本州，四国，九州に産するキョウトコチビシデムシ *S. tsukamotoi*，および奄美大島，五島列島に産するハヤシコチビシデムシ *S. dubius* によく似ているが，おもに触角と雄交尾器の形状により区別できる．なお，本種とキョウトコチビシデムシの雌第5腹板の後縁中央は湾入しないが，この形質は本属のうちでは特異なものである．

References

ABE, T., & A. SASAI, 1986. The beetles in Ishidoshuku, Kitamoto-shi. *Yosegaki, Urawa*, (48): 691–713. (In Japanese.)

HAYASHI, Y., 1969. Catopidae from Amami-Ohshima Is., Japan (Col.). *Ent. Rev. Japan*, **22**: 1–6.

HISAMATSU, S., & Y. HAYASHI, 1985. Catopidae. *In* UÉNO, S.-I., Y. KUROSAWA & M. SATÔ (eds.), *The Coleoptera of Japan in Color*, **2**: 241–245. Hoikusha, Osaka. (In Japanese.)

JEANNEL, R., 1936. Monographie des Catopidae (Insectes Coléoptères). *Mém. Mus. Hist. nat., Paris*, (n. s.), **1**: 1–433.

NAKANE, T., 1956. New or little-known Coleoptera from Japan and its adjacent regions. XIII. *Scient. Rept. Saikyo Univ.*, (Nat. Sci. & Liv. Sci.), **2** (A): 159–174.

NISHIKAWA, M., 1983. Family Catopidae. *Check-list of Coleoptera of Japan*, (23): 1–6. Coleopterists' Association of Japan, Tokyo.

——— 1984. *Sciodrepoides tsukamotoi* and its male genitalia. *Coleopterists' News, Tokyo*, (65): 8. (In Japanese.)

SZYMCZAKOWSKI, W., 1964. Analyse systématique et zoogéographique des Catopidae (Coleoptera) de la Région Orientale. *Acta zool. cracov.*, **9**: 55–289.

Elytra, Tokyo, **20** (2): 201, Nov. 15, 1992

New Records of Cholevid Beetles from Sado-ga-shima Island off the Japan Sea Coast of Honshu

Masaaki NISHIKAWA

27-1(115), Higashi-kashiwagaya 1, Ebina, 243-04 Japan

In the present short report, I am going to record three species of cholevid beetles from Sado-ga-shima Island off Niigata Prefecture, Central Japan. As the cholevid fauna of the island has not been known up to the present, the following species are new to the fauna of the island. They were collected by carrion-baited traps set from April 30 to May 26, 1990 at a point 200 m in altitude on Mt. Donden-san.

1. *Micronemadus pusillimus* (KRAATZ), 1 ♂.
2. *Prionochaeta harmandi harmandi* PORTEVIN, 1 ♂.
3. *Mesocatops japonicus* (JEANNEL), 1 ♂, 1 ♀.

Elytra, Tokyo, **20** (2): 202, Nov. 15, 1992

Two Noticeable Records of *Catops* (Coleoptera, Cholevidae) from Kyushu, Southwest Japan

Masaaki NISHIKAWA

27-1(115), Higashi-kashiwagaya 1, Ebina, 243-04 Japan

1. New Record of *Catops miensis* NAKANE from Kyushu

The Taiwanese subspecies, *Catops miensis formosensis* Y. HAYASHI, was recently described. However, no record is known of the nominotypical subspecies from Kyushu which is situated between Honshu and Shikoku, and Taiwan.

Catops miensis miensis NAKANE

Catops miensis NAKANE, 1956, Scient. Rept. Saikyo Univ., **2**(A), p. 159, pl. 1, figs. 4–7 (Hirakura, Ise).
Other references are omitted.

Specimen examined. 1♂, Kamikoba, Shimabara-shi, Nagasaki Pref., NW. Kyushu, 24–IV–1978, S. IMASAKA leg.

Distribution. Japan (Honshu, Shikoku, Kyushu!).

Notes. The Kamikoba specimen has lighter body and a weaker tubercle on each profemur as compared with specimens from central Honshu.

2. Record of *Catops nipponensis* JEANNEL from Epigean Habitat

HISAMATSU and HAYASHI (1985) stated that the present species is a cave-dwelling cholevid beetle, though it has been rarely found in epigean habitats.

Catops nipponensis JEANNEL

Catops nipponensis JEANNEL, 1936, Mém. Mus. Hist. nat., Paris, (n.s.), **1**, pp. 373–374, 406, figs. 956, 971–972 (Nagasaki, Kyushu).
Other references are omitted.

Epigean specimen examined. 1♂, Kuroki, Ohmura-shi, Nagasaki Pref., NW. Kyushu, 18–V–1982, S. IMASAKA leg.

References

HAYASHI, Y., 1988. Notes on Catopidae from Taiwan (1). *Ent. Rev. Japan*, **43**: 107–114.

HISAMATSU, S., & Y. HAYASHI, 1985. Catopidae. *In* UÉNO, S.-I., Y. KUROSAWA & M. SATÔ (eds.), *The Coleoptera of Japan in Color*, **2**: 241–245. Hoikusha, Osaka. (In Japanese.)

JEANNEL, R., 1936. Monographie des Catopidae (Insectes Coléoptères). *Mém. Mus. Hist. nat., Paris*, (n.s.), **1**: 1–433.

NAKANE, T., 1956. New or little-known Coleoptera from Japan and its adjacent regions. XIII. *Scient. Rept. Saikyo Univ.*, (Nat. Sci. & Liv. Sci.), **2**(A): 159–174.

Elytra, Tokyo, **20** (2): 203–206, Nov. 15, 1992

A New Species of *Aceraius* (Coleoptera, Passalidae) from the Malay Peninsula

Masahiro KON, Kunio ARAYA

Department of Zoology, Kyoto University,
Sakyo, Kyoto, 606–01 Japan

and

Yutaka JOHKI

Showa Women's Junior College, Setagaya, Tokyo, 154 Japan

Abstract *Aceraius ashidai* sp. nov. is described from the Malay Peninsula. This species can be distinguished from the other congeneric members by having parietal ridges swelling upward in the distal portion.

The genus *Aceraius* consists of 17 known species from the Oriental Region (HINCKS & DIBB, 1935, 1958; KON & JOHKI, 1989 a, b, 1992). Of these, 11 species are known to occur in the Malay Peninsula (HINCKS & DIBB, 1935, 1958).

We had an opportunity to examine some passalid beetles from the Cameron Highlands, Malay Peninsula, by courtesy of Mr. H. ASHIDA and, among them, found an *Aceraius* species differing from any other congeneric members in several external characters. Later, we found two additional specimens of this species from Taiping, Malay Peninsula, among the specimens labelled "*Aceraius perakensis* KUWERT" in the collection of the Museum für Naturkunde der Humboldt-Universität zu Berlin (these specimens are distinct from the lectotype of *A. perakensis*; see *Notes* for comparison). In this paper, we are going to describe a new species on the basis of these specimens.

In the following description, we adopt the terminology of GRAVELY (1914) and describe both sexes together because no sexual dimorphism is evident. The abbreviations used herein are the same as those explained in our previous paper (KON & JOHKI, 1992).

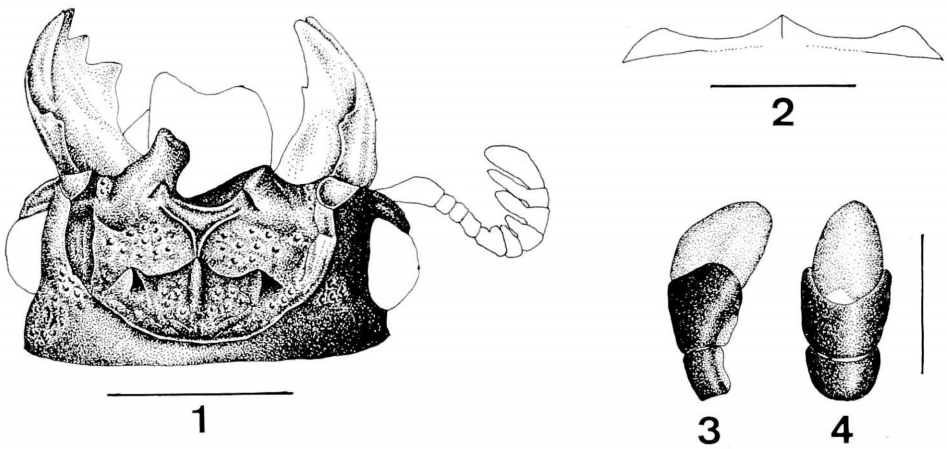
Before going further, we express our hearty thanks to H. ASHIDA for making the materials available, H. J. HANNEMANN, M. UHLIG and J. SCHULZE, the Museum für Naturkunde der Humboldt-Universität zu Berlin, for giving us the opportunity to examine the specimens, S. BOUCHER and J. J. MENIER, the Muséum national d'Histoire naturelle, Paris, for loaning the lectotype of *A. perakensis*, and T. HIKIDA, Kyoto University, for critically reading an early version of the manuscript.

Aceraius ashidai sp. nov.

(Figs. 1–4)

Length from anterior margin of head to apices of elytra 38.0–42.5 mm (n=7). Body black, polished; BT/EW 0.75–0.77 (n=7).

Antenna with 6 short and stout lamellae. Labrum with setiferous hair-bearing punctures, angles rounded, anterior margin concave, left angle much more prominent than the right one, left lateral margin almost straight, right one slightly convex. Upper tooth of left mandible much higher than the right one, either with or without small denticle on anterior margin; lowest terminal tooth of right mandible obsolete, represented by a very small denticle; upper and lower portions of anterior lower tooth of right mandible represented by small denticles; anterior lower tooth of left mandible much broader than left lowest terminal tooth, bifid dorso-ventrally at apex. Anterior angles of head not prominent forward. Left outer tubercle larger than the right one, obliquely truncated at distal end, outer angle pointed forward and slightly upward, outer margin slightly convex at base; right outer tubercle triangular, outer angle pointed, inner angle either obtuse or absent; LOTW/LOTL 0.53–0.70 (n=7); ROTL/LOTL 0.67–0.79 (n=7). Inner tubercle distinct, pointed forward and slightly upward; DIT/DAS 0.28–0.34 (n=7). Anterior margin of head between outer tubercles connected with inner margin of right outer tubercle almost in straight line. Ridge between inner tubercles distinct, concave, accompanying a shallow groove posteriorly; frontal ridge with a distinct groove anteriorly, not curved outward in distal portion; supraorbital ridge connected with supraoccipital ridge; parietal ridge swelling upward in distal portion. Areas between frontal and parietal ridges, behind parietal ridge and behind eye with setiferous hair-bearing punctures; frontal area impunctate, hairless.



Figs. 1–4. *Aceraius ashidai* sp. nov.; 1, head (scale: 5 mm), setae are omitted from this figure; 2, parietal ridge, frontal view (scale: 2 mm); 3–4, male genitalia (scale: 2 mm), lateral view (3), ventral view (4).

Mentum without anterior depression, slightly convex at central portion in anterior margin.

Pronotum polished, impunctate except in lateral scar and near anterior and lateral margin. Mesosternum polished with scar having indistinct margin; mesothoracic episternum polished and impunctate in posterior portion, with large punctures in anterior and dorsal portions. Ridge separating intermediate and lateral areas of metasternum distinct, impunctate and hairless in posterior portion, punctured and hairy in anterior portion; lateral area and anterior portion of intermediate area densely punctured and hairy; posterior portion of intermediate area hairless, either with or without irregular dents, posterior margin punctured and hairy; central area impunctate and hairless.

Tenth rib of elytra densely punctured and hairy in anterior half, impunctate and hairless in posterior half; ninth rib densely punctured and hairy in anterior half, more sparsely in posterior half; eighth rib impunctate and hairless; seventh rib very sparsely punctured along whole length.

Second abdominal sternum with a few punctures; third to sixth abdominal sterna impunctate.

Upper and lateral margin of distal end of fifth tarsus rounded in all legs.

Type series. Holotype: 1 ♂, Tanah Rata, 1,300 m in altitude, Cameron Highlands, Malay Peninsula, 16–III–1992, H. ASHIDA leg. Paratypes: 1 ♂, 1 ♀, same data as for the holotype; 1 ♂, 1 ♀, Brinchang, 1,500 m in altitude, Cameron Highlands, Malay Peninsula, 17–III–1992, H. ASHIDA leg.; 2 exs., "Malacca, Taiping 1300–1500 m, Baranin V., Maltsabu Y. G."/"*Aceraius perakensis* KUWERT"/"Zool. Mus. Berlin". The holotype and 2 paratypes (1 ♂ and 1 ♀ from Tanah Rata) are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, one paratype (1 ♂ from Brinchang) in the collection of the Muséum national d'Histoire naturelle, Paris, one paratype (1 ♀ from Brinchang) in the collection of the Instituto de Ecologia, México, and 2 paratypes (2 exs. from Taiping) in the collection of the Museum für Naturkunde der Humboldt-Universität zu Berlin.

Notes. This species is distinct from *Aceraius perakensis* KUWERT in the following characters (see also KON & JOHKI, 1992): body larger (38.0–42.7 mm), thicker (BT/EW 0.75–0.77); antennal lamellae short and stout; lowest terminal and anterior lower teeth of right mandible represented by small denticles; ridge between inner tubercles concave; parietal ridge swelling upward in distal portion; mentum without anterior depression; ninth rib of elytra densely punctured and hairy in anterior half, more sparsely in posterior half.

A bisexual pair founds a colony digging a gallery into tough logs (ASHIDA, personal communication).

要　　約

近　雅博・荒谷邦雄・常喜　豊: マレー半島から得られたオオクロツヤムシ属の 1 新種. —— マレ

一半島からオオクロツヤムシ属の1新種を記載し，*Aceraius ashidai* sp. nov. と命名した．この新種は，終端部の隆起する parietal ridge をもつことによって，同属の他種から容易に識別できる．

References

HINCKS, W. D., & J. R. DIBB, 1935. Passalidae. *In* JUNK, W., & S. SCHENKLING (eds.), *Coleopterorum Catalogus*, pars 142: 1–118. W. JUNK, Berlin.

——— & ——— 1958. Passalidae. *In* HINCKS, W. D. (ed.), *Coleopterorum Catalogus Supplementa*, pars 142: 1–32. W. JUNK, Berlin.

KON, M., & Y. JOHKI, 1989 a. Re-evaluation of the status of *Aceraius kuwerti* (Coleoptera, Passalidae) from Borneo. *Jpn. J. Ent.*, **57**: 91–95.

——— & ——— 1989 b. A new species of *Aceraius* (Coleoptera, Passalidae) from Mt. Kinabalu, Sabah, Borneo. *Ibid.*, **57**: 533–535.

——— & ——— 1992. Redescription of *Aceraius perakensis* KUWERT, 1898 (Coleoptera, Passalidae), with re-evaluation of the status of *A. laevimargo* ZANG, 1905. *Elytra, Tokyo*, **20**: 57–60.

Elytra, Tokyo, **20** (2): 206, Nov. 15, 1992

A New Record of *Aesalus timidus* (Coleoptera, Lucanidae) from the Malay Peninsula

Kunio ARAYA

Department of Zoology, Kyoto University, Sakyo, Kyoto, 606–01 Japan

and

Teruo OCHI

343–10, Ebisukakiuchi, Shinden, Kawanishi City, Hyôgo, 666–01 Japan

Seven species of the genus *Aesalus* have been known from the Old World (KUROSAWA, 1985). Of these seven, *A. timidus* was described by KRIKKEN (1975) from Sumatra Island. We collected and identified one specimen of *A. timidus* from the Malay Peninsula. Its collecting data are as follows: 1 ex., Maxwell's Hill, Malay Peninsula, 1–IV–1979, T. OCHI leg.

Distribution. Sumatra, Malay Peninsula (new record).

We wish to thank Dr. M. H. HUFFMAN for his assistance in preparing the manuscript.

References

KRIKKEN, J., 1975. *Aesalus timidus* sp. nov., a remarkable addition to the Indonesian stag-beetle fauna (Coleoptera, Lucanidae). *Ent. Ber., Amst.*, **35**: 49–51.

KUROSAWA, Y., 1985. A new lucanid beetle of the genus *Aesalus* FABRICIUS (Coleoptera, Lucanidae) from the Himalayas. *Bull. natn. Sci. Mus., Tokyo*, (A), **11**: 49–51.

Elytra, Tokyo, **20** (2): 207–216, Nov. 15, 1992

Passalid Beetles (Coleoptera, Passalidae) Collected from Sabah, Borneo, with Special Reference to their Colony Composition and Habitats[1)]

Masahiro KON

Department of Zoology, Kyoto University, Sakyo,
Kyoto, 606–01 Japan

and

Yutaka JOHKI

Showa Women's Junior College, Taishido, Setagaya,
Tokyo, 154 Japan

Abstract Nineteen species of passalid beetles are recorded from Sabah, Borneo. The colony composition and habitats are also reported for some species.

The Passalidae are a pan-tropical family of the Coleoptera and often cited in the entomological literature as being subsocial insects (WHEELER, 1923; GRAY, 1946; WILSON, 1971; R. W. & J. R. MATTHEWS, 1978; EICKWORT, 1981; HALFFTER, 1982; REYES-CASTILLO & HALFFTER, 1983). However, relatively little is known about the Oriental species (GRAVELY, 1914; KON & JOHKI, 1987; KON & ARAYA, 1991, 1992). We had an opportunity to collect some passalid beetles during the Kyoto University Expeditions to Sabah, Borneo, between July and October, 1985 and between July and September, 1987. We herein record them and report the colony composition and habitats for some species.

Collections were made in Kundasang near Mt. Kinabalu, Ranau, Tambunan, Keningau, Sepilok near Sandakan and Brumas near Tawau (Fig. 1). When two or more conspecific individuals (regardless of their developmental stages) were found within the same gallery system excavated into a log or within a small depression on the ground under a log, we regarded such a group of individuals as a colony.

Subfamily Aulacocyclinae

Comacupes cylindraceus (PERTY)

Passalus cylindraceus PERTY, 1831, Obs. nonnullae Coleopt. Ind. orient., p. 36.

1) This work is supported in part by Grants-in-aid for Field Research of the Monbusho International Scientific Research Program, Japan (Nos. 60041037, 61043033, 62041049, 63043037).

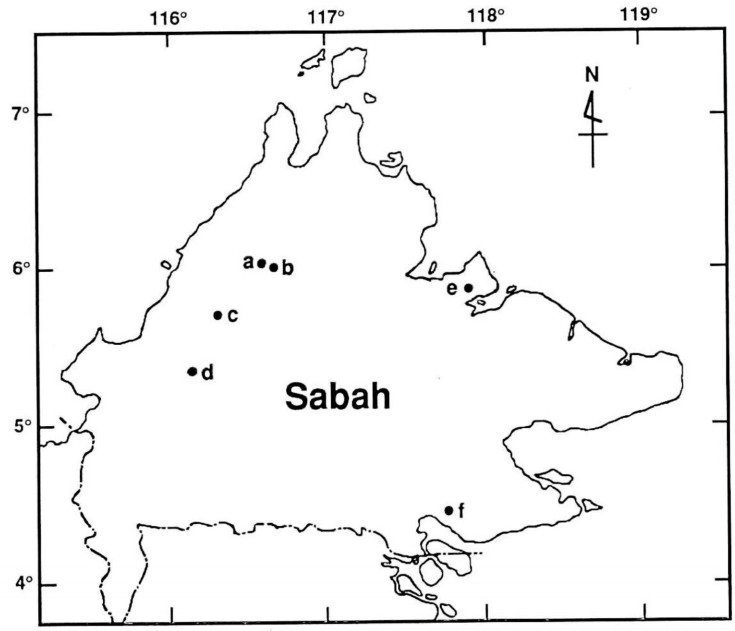


Fig. 1. A sketch map of Sabah, showing the localities at which collections were made. a, Kundasang; b, Ranau; c, Tambunan; d, Keningau; e, Sepilok; f, Brumas.

One adult was collected from a decayed stump in the plantation in Brumas.

Specimen examined. 1 ♂, Brumas, 25–VIII–1985.

Distribution. Malay Peninsula, Sumatra, Java, Borneo.

Comacupes stoliczkae GRAVELY

Comacupes stoliczkae GRAVELY, 1914, Mem. Ind. Mus., **3**, p. 206.

Two colonies consisting of a bisexual pair were collected from the plantation in Brumas (Table 1). They were living in the gallery excavated into a decayed stump.

Specimens examined. 2 ♂♂, 2 ♀♀, Brumas, 24–VIII–1985.

Distribution. Malay Peninsula, Sumatra, Java, Borneo.

Taeniocerus bicanthatus (PERCHERON)

Passalus bicanthatus PERCHERON, 1841, Mag. Zool., **11**, p. 41.

Nineteen colonies were collected from the plantation in Brumas. Eighteen of these consisted of either a bisexual pair or a pair and larvae and one consisted of a female and larvae (Table 1). As reported by KON and JOHKI (1987), they were living in the interface between logs and the ground, not tunnelling into the logs. In addition, two single adults were collected from the same kind of microhabitat and one on the trail in Brumas.

Specimens examined. 1 ♀, Brumas, 21–VIII–1985; 1 ♂, 1 ♀, ditto, 25–VIII–1985; 5 ♂♂, 6 ♀♀, ditto, 26–VIII–1985; 6 ♂♂, 6 ♀♀, ditto, 27–VIII–1985; 2 ♂♂, 3 ♀♀, ditto, 22–VII–1987; 1 ♂, 1 ♀, ditto, 24–VII–1987; 3 ♂♂, 3 ♀♀, ditto, 26–VII–1987.

Distribution. Malay Peninsula, Sumatra, Borneo.

Subfamily Passalinae

Macrolinus latipennis (PERCHERON)

Passalus latipennis PERCHERON, 1841, Mag. Zool., **11**, p. 8.

One colony consisting of a bisexual pair was collected from a decayed log in Sepilok (Table 1). Two adults were collected at light in Kundasang and one in Sepilok.

Specimens examined. 1 ♀, Kundasang, 19–VII–1987; 1 ♂, ditto, 12–VIII–1987; 1 ♂, 1 ♀, Sepilok, 13–VIII–1985; 1 ♀, ditto, 5–VIII–1987.

Distribution. Myanmar, Malay Peninsula, Sumatra, Borneo, Philippines, Moluccas.

Ophrygonius singapurae GRAVELY

Ophrygonius singapurae GRAVELY, 1914, Mem. Ind. Mus., **3**, p. 26.

One adult was collected on the trail in Sepilok.

Specimen examined. 1 ♀, Sepilok, 8–VIII–1985.

Distribution. Laos, Malay Peninsula, Borneo.

Ophrygonius wallacei (KUWERT)

Heterochilus wallacei KUWERT, 1898, Nov. zool., **5**, p. 334.

One adult was collected at light in Sepilok.

Specimen examined. 1 ♀, Sepilok, 2–VIII–1987.

Distribution. Malay Peninsula, Sumatra, Borneo.

Aceraius borneanus KAUP

Aceraius borneanus KAUP, 1871, Berl. ent. Z., **15** (suppl), p. 52.

Thirteen colonies were collected from the forest in Sepilok. Ten of these consisted of either a bisexual pair of black beetles or a pair and larvae, one consisted of a black female and a larva and two consisted of ten or more adults including red (teneral) beetles, pupae and larvae (Table 1). They were living in the gallery excavated into logs on the forest floor. One adult was collected at light in Sepilok.

Specimens examined. 1 ♀, Sepilok, 10–VIII–1985; 1 ♀, ditto, 17–VIII–1985;

10 ♂♂, 12 ♀♀, ditto, 18–VIII–1985; 9 ♂♂, 10 ♀♀, ditto, 21–VII–1987; 2 ♂♂, 2 ♀♀, ditto, 10–VIII–1987.

Distribution. Malay Peninsula, Sumatra, Java, Borneo.

Aceraius kuwerti ZANG

Aceraius kuwerti ZANG, 1903, Insekten-Borse., **20**, p. 339.

This species was previously synonymized with *A. tricornis* (GRAVELY, 1918), but the validity of *A. kuwerti* was recently confirmed (KON & JOHKI, 1989).

Four colonies were collected from the forest in Ranau. Three of these consisted of either a bisexual pair or a pair and eggs and one consisted of one black and two red (teneral) adults and three pupae (Table 1). They were living in the gallery excavated into tough logs on the forest floor. The galleries of the former three colonies which appeared to be in the early stages were simple and short (50 cm or less), whereas that of the latter mature colony including teneral adults and pupae was branched and longer (2 m or more). In addition, one adult was collected at light in Kundasang and one adult on the trail in Ranau

Specimens examined. 1 ♀, Kundasang, 31–VII–1985; 4 ♂♂, 5 ♀♀, Ranau, 13–VIII–1987; 1 ♂, ditto, 5–IX–1987.

Distribution. Borneo.

Aceraius laevicollis (ILLIGER)

Passalus laevicollis ILLIGER in WIEDEMANN, 1800, Archiv Zool., **1**, p. 103.

This species is one of the commonest passalid beetles in Sabah. Four colonies were collected from the plantation in Brumas, one from the cultivated open area in Kundasang and ten from the forest in Keningau. Thirteen of these consisted of either a bisexual pair or a pair and larvae and two consisted of a female and larvae (Table 1). They were living in the gallery excavated into tough logs. The gallery was filled with a lot of tritulated wood. In addition, several black adults were collected at light in Kundasang, Brumas and Sepilok and two single red (teneral) adults from decayed logs in Brumas.

Specimens examined. 1 ♀, Kundasang, 31–VII–1985; 1 ♂, 1 ♀, ditto, 18–VII–1987; 1 ♀, ditto, 12–VIII–1987; 1 ♂, Brumas, 18–VIII–1985; 1 ♀, ditto, 21–VIII–1985; 1 ♂, 1 ♀, ditto, 23–VIII–1985; 1 ♂, ditto, 24–VIII–1985; 1 ♂, 1 ♀, ditto, 25–VIII–1985; 1 ex., ditto, 3–IX–1985; 1 ex., ditto, 20–IX–1985; 3 exs., ditto, 2–X–1985; 6 exs., ditto, 17–X–1985; 1 ♂, 1 ♀, ditto, 22–VII–1987; 1 ♂, 1 ♀, ditto, 24–VII–1987; 1 ex., ditto, 25–VII–1987; 2 exs., ditto, 27–VII–1987; 1 ex., Sepilok, 5–VIII–1985; 1 ex., ditto, 29–VII–1987; 2 exs., ditto, 8–VIII–1987; 4 ♂♂, 5 ♀♀, Keningau, 15–VIII–1987; 1 ♂, 1 ♀, ditto, 16–VIII–1987; 4 ♂♂, 4 ♀♀, ditto, 17–VIII–1987.

Distribution. Malay Peninsula, Sumatra, Java, Borneo, Philippines, ?Sulawesi.

Aceraius laevimargo ZANG

Aceraeus laevimargo ZANG, 1905, Dt. ent. Z., **1905**, p. 244.

This species had long been regarded as being conspecific with *A. perakensis* KUWERT, but recently re-evaluated to be a distinct species (KON & JOHKI, 1992).

One adult was collected at light in Kundasang.

Specimen examined. 1 ♀, Kundasang, 31–VII–1985.

Distribution. Borneo.

Aceraius moeschleri KUWERT

Acerajus möschleri KUWERT, 1891, Dt. ent. Z., **1891**, p. 163.

Two adults were collected at light in Kundasang.

Specimens examined. 1 ♂, Kundasang, 18–VII–1987; 1 ♀, ditto, 19–VII–1987.

Distribution. Malay Peninsula, Sumatra, Java, Borneo.

Aceraius pilifer (PERCHERON)

Passalus pilifer PERCHERON, 1835, Monogr. Passal., p. 23.

One adult was collected on the trail in Kundasang.

Specimen examined. 1 ♀, Kundasang, 12–VIII–1987.

Distribution. Sumatra, Java, Borneo.

Aceraius tricornis ZANG

Aceraius tricornis ZANG, 1903, Insekten-Borse., **20**, p. 339.

Two adults were collected at light in Kundasang.

Specimens examined. 2 ♀♀, Kundasang, 18–VII–1987.

Distribution. Borneo.

Pelopides monticulosus (SMITH)

Passalus monticulosus SMITH, 1852, Nomencl. Coleopt. Ins. Coll. Brit. Mus., **6**, p. 6.

Two colonies were collected from the plantation in Brumas and one colony from the forest in Tambunan. One colony from Brumas consisted of seven adults (two black and five red beetles) and the other consisted of seven larvae alone without adults. The colony from Tambunan consisted of a bisexual pair and two larvae (Table 1). They were living in the gallery excavated into a heavily decayed log. In addition, four adults were collected at light and one from decayed log in the plantation in Brumas, and one from decayed log in Tambunan.

Specimens examined. 1 ex., Brumas, 18–VIII–1985; 1 ex., ditto, 24–VIII–1985; 1 ex., ditto, 2–X–1985; 1 ex., ditto, 25–VII–1987; 3 ♂♂, 4 ♀♀, ditto, 27–VII–1987;

1 ex., ditto, 28–VII–1987; 2 ♂♂, 1 ♀, Tambunan, 15–VIII–1987.

Distribution. Thailand, Malay Peninsula, Sumatra, Borneo.

Pelopides symmetricus (ZANG)

Parapelopides symmetricus ZANG, 1904, Zool. Anz., **27**, p. 695.

One colony consisting of a bisexual pair and five larvae was collected from the forest in Kundasang (Table 1). They were living in wood detritus within a heavily decayed log on the forest floor.

Specimens examined. 1 ♂, 1 ♀, Kundasang, 12–VIII–1987.

Distribution. Borneo.

Leptaulax bicolor (FABRICIUS)

Passalus bicolor FABRICIUS, 1801, Syst. Eleuth., **2**, p. 256.

One colony was collected from the plantation in Brumas, one from the open area in Ranau, four from the open area in Kundasang and two from forest-side in Tambunan. In two of these colonies, a bisexual pair of black (mature) adults was found, but in the other six, no black adult male was found (on the contrary, one of them consisted of two black females alone; Table 1). This species was living in the gallery excavated shallowly into sap wood of logs. In addition some adults were collected at light in Brumas and Kundasang.

Specimens examined. 1 ex., Brumas, 18–VIII–1985; 2 ♀♀, ditto, 25–VIII–1985; 1 ex., ditto, 23–IX–1985; 4 exs., Kundasang, 18–VII–1987; 2 exs., ditto, 19–VII–1987; 1 ♂, 5 ♀♀, ditto, 14–VIII–1987; 1 ♀, Ranau, 13–VIII–1987; 4 ♂♂, 7 ♀♀, Tambunan, 15–VIII–1987.

Distribution. India, Sri Lanka, E. Himalayas, Myanmar, Thailand, Vietnam, Cambodia, Formosa, Malay Peninsula, Sumatra, Java, Borneo, Philippines, Sulawesi, Moluccas, New Guinea, Australia.

Leptaulax cyclotaenius KUWERT

Leptaulax cyclotaenius KUWERT, 1891, Dt. ent. Z., **1891**, p. 188.

Several colonies were found in the forest in Sepilok. They were living gregariously under the bark of logs on the forest floor. The colonies consisted of several black adults, red (teneral) adults, pupae, various-sized larvae and eggs, although the exact data concerning colony composition were not available.

Specimens examined. 3 exs., Sepilok, 4–VIII–1985; 2 exs., ditto, 14–VIII–1985; 14 exs., ditto, 17–VIII–1985; 1 ex., ditto, 21–VII–1987.

Distribution. E. Himalayas, Myanmar, Thailand, Vietnam, Cambodia, Malay Peninsula, Sumatra, Borneo, Sulawesi.

Leptaulax dentatus (FABRICIUS)

Passalus dentatus FABRICIUS, 1792, Ent. Syst., 1 (2), p. 241.

One adult was collected at light in Sepilok.

Specimen examined. 1 ex., Sepilok, 15–IX–1987.

Distribution. India, E. Himalayas, Myanmar, Thailand, Vietnam, Cambodia, China, Formosa, Malay Peninsula, Sumatra, Java, Borneo, Philippines, Sulawesi, Lesser Sundas, Moluccas, New Guinea, Australia.

Leptaulax planus (ILLIGER)

Passalus planus ILLIGER in WIEDEMANN, 1800, Archiv Zool., 1, p. 104.

One colony consisting of a bisexual pair was collected from the plantation in Brumas (Table 1). They were living under the bark of a large tough log. Seventy-eight adults were collected at light in Sepilok and Brumas.

Specimens examined. 2 exs., Sepilok, 3–VIII–1985; 1 ex., ditto, 7–VIII–1985; 2 exs., ditto, 15–VIII–1985; 1 ex., ditto, 18–VIII–1985; 1 ♂, 1 ♀, Brumas, 23–VIII–1985; 68 exs., ditto, 23–IX–1985; 1 ex., ditto, 24–IX–1985; 1 ex., ditto, 25–IX–1985; 1 ex., ditto, 26–IX–1985; 1 ex., ditto, 17–X–1985.

Distribution. Myanmar, Thailand, Malay Peninsula, Sumatra, Java, Borneo, Sulawesi.

Discussion

REYES-CASTILLO and HALFFTER (1983) schematically described the pattern of passalid colony development as follows: 1) A bisexual pair founds a colony digging the gallery into the log. 2) The founding pair, larvae and eggs were found in the gallery. 3) The founding pair, pupae and larvae were found. 4) The founding pair and imago-offspring were found.

The colony compositions of the Bornean passalid beetles observed in the present study appear to agree well with some stage in the above-mentioned schema. However, the founding pair was not always found in all the colonies (Table 1). The colonies lacking a black (mature) male were observed in several species; *Taeniocerus bicanthatus* (1/19), *Aceraius borneanus* (1/13), *A. kuwerti* (1/4), *A. laevicollis* (2/15) and *Pelopides monticulosus* (2/3; one colony consisted of larvae alone without adults). In *Leptaulax bicolor*, colonies with a black (mature) male were rather rare (2/8). Thus, males may be inclined to desert the partner and young earlier than females.

Acknowledgments

We express our special gratitude to K. M. MASTAN and M. MUNANG, the Forest Department of Sabah, who kindly supported our research. We also thank T. MORI,

Table 1. Colony compositions of passalid beetles collected in Sabah. Abbreviations for collection localities as follows: BMS, Brumas; KDN, Kundasang; KNG, Keningau; RNU, Ranau; SPK, Sepilok; TBN, Tambunan.

Locality	Date	Adults (black)		Adults (red)		Pupae	Larvae			Eggs
		Male	Female	Male	Female		3rd instar	2nd instar	1st instar	
Subfamily Aulacocyclinae										
Comacupes stoliczkae										
1. BMS	24 Aug. 1985	1	1	0	0	0	0	0	0	0
2. BMS	24 Aug. 1985	1	1	0	0	0	0	0	0	0
Taeniocerus bicanthatus										
1. BMS	25 Aug. 1985	1	1	0	0	0	0	0	0	0
2. BMS	26 Aug. 1985	1	1	0	0	0	0	0	0	0
3. BMS	26 Aug. 1985	1	1	0	0	0	0	0	1	0
4. BMS	26 Aug. 1985	1	1	0	0	0	0	0	1	0
5. BMS	26 Aug. 1985	1	1	0	0	0	0	0	2	0
6. BMS	26 Aug. 1985	0	1	0	0	0	0	1	1	0
7. BMS	26 Aug. 1985	1	1	0	0	0	2	1	3	0
8. BMS	27 Aug. 1985	1	1	0	0	0	0	0	0	0
9. BMS	27 Aug. 1985	1	1	0	0	0	0	0	0	0
10. BMS	27 Aug. 1985	1	1	0	0	0	0	0	0	0
11. BMS	27 Aug. 1985	1	1	0	0	0	0	0	1	0
12. BMS	27 Aug. 1985	1	1	0	0	0	0	0	2	0
13. BMS	27 Aug. 1985	1	1	0	0	0	0	6	4	0
14. BMS	22 Jul. 1987	1	1	0	0	0	0	0	0	0
15. BMS	22 Jul. 1987	1	1	0	0	0	7	2	0	0
16. BMS	24 Jul. 1987	1	1	0	0	0	0	1	0	0
17. BMS	26 Jul. 1987	1	1	0	0	0	0	0	0	0
18. BMS	26 Jul. 1987	1	1	0	0	0	0	1	4	0
19. BMS	26 Jul. 1987	1	1	0	0	1	3	1	0	0
Subfamily Passalinae										
Macrolinus latipennis										
1. SPK	13 Aug. 1985	1	1	0	0	0	0	0	0	0
Aceraius borneanus										
1. SPK	17 Aug. 1985	0	1	0	0	0	1	0	0	0
2. SPK	18 Aug. 1985	1	1	0	0	0	0	0	0	0
3. SPK	18 Aug. 1985	1	1	0	0	0	0	0	0	0
4. SPK	18 Aug. 1985	1	1	0	0	0	0	0	0	0
5. SPK	18 Aug. 1985	1	1	0	0	0	0	0	0	0
6. SPK	18 Aug. 1985	1	1	0	0	0	0	0	2	0
7. SPK	18 Aug. 1984	1	1	0	0	0	0	0	2	0
8. SPK	18 Aug. 1985	1	2	3	4	1	3	3	1	0
9. SPK	21 Jul. 1987	1	1	0	0	0	0	0	0	0
10. SPK	21 Jul. 1987	1	1	0	0	0	0	0	0	0
11. SPK	21 Jul. 1987	2	3	5	5	2	2	3	1	0
12. SPK	10 Aug. 1987	1	1	0	0	0	0	1	0	0
13. SPK	10 Aug. 1987	1	1	0	0	0	4	2	0	0

Table 1. Continued

Locality	Date	Adults (black)		Adults (red)		Pupae	Larvae			Eggs
		Male	Female	Male	Female		3rd instar	2nd instar	1st instar	
Aceraius laevicollis										
1. BMS	23 Aug. 1985	1	1	0	0	0	1	0	0	0
2. BMS	25 Aug. 1985	1	1	0	0	0	0	0	0	0
3. BMS	22 Jul. 1987	1	1	0	0	0	0	0	0	0
4. BMS	24 Jul. 1987	1	1	0	0	0	0	1	0	0
5. KDN	12 Aug. 1987	0	1	0	0	0	5	0	0	0
6. KNG	15 Aug. 1987	1	1	0	0	0	0	0	0	0
7. KNG	15 Aug. 1987	1	1	0	0	0	0	1	0	0
8. KNG	15 Aug. 1987	1	1	0	0	0	0	2	0	0
9. KNG	15 Aug. 1987	1	1	0	0	0	0	2	2	0
10. KNG	15 Aug. 1987	0	1	0	0	0	2	2	0	0
11. KNG	16 Aug. 1987	1	1	0	0	0	1	0	0	0
12. KNG	17 Aug. 1987	1	1	0	0	0	0	0	4	4
13. KNG	17 Aug. 1987	1	1	0	0	0	0	1	5	0
14. KNG	17 Aug. 1987	1	1	0	0	0	7	0	0	0
15. KNG	17 Aug. 1987	1	1	0	0	0	7	0	0	0
Aceraius kuwerti										
1. RNU	13 Aug. 1987	1	1	0	0	0	0	0	0	0
2. RNU	13 Aug. 1987	1	1	0	0	0	0	0	0	0
3. RNU	13 Aug. 1987	1	1	0	0	0	0	0	0	4
4. RNU	13 Aug. 1987	0	1	1	1	3	0	0	0	0
Pelopides monticulosus										
1. BMS	27 Jul. 1987	0	2	3	2	0	0	0	0	0
2. BMS	27 Jul. 1987	0	0	0	0	0	7	0	0	0
3. TBN	15 Aug. 1987	1	1	0	0	0	2	0	0	0
Pelopides symmetricus										
1. KDN	12 Aug. 1987	1	1	0	0	0	5	0	0	0
Leptaulax bicolor										
1. BMS	25 Aug. 1985	0	1	0	1	0	1	0	0	0
2. RNU	13 Aug. 1987	0	1	0	0	0	0	1	0	2
3. KDN	14 Aug. 1987	1	1	0	0	0	0	0	0	0
4. KDN	14 Aug. 1987	0	2	0	0	0	0	0	0	0
5. KDN	14 Aug. 1987	0	1	0	0	0	1	4	0	0
6. KDN	14 Aug. 1987	0	1	0	0	1	3	0	0	0
7. TBN	15 Aug. 1987	0	1	3	4	1	4	3	9	2
8. TBN	15 Aug. 1987	1	1	0	1	2	2	1	2	0
Leptaulax planus										
1. BMS	23 Aug. 1985	1	1	0	0	0	0	0	0	0

the Forest Department of Sabah, A. UEDA, Universiti Kebansaan Malaysia, and K. ARAYA, Kyoto University, for their invaluable advice and help for our work. Thanks are also due to our colleagues: M. ISHII, T. HIKIDA, M. MATSUI, K. SAKURAI, H. FUJII, K. ABE, H. OTA, H. HOSOMA, K. OTSUKA, A. FAUSIA and S. FURUKAWA for warm companionship and assistance during the survey. Lastly, we express our special thanks to Prof. T. HIDAKA, Kyoto University, for giving us the opportunity of performing the present research.

要　約

近　雅博・常喜　豊: ボルネオ，サバ州のクロツヤムシ，そのコロニー構成と生息場所について．——ボルネオ，サバ州から 19 種のクロツヤムシを記録した．いくつかの種について，そのコロニー構成と生息場所もあわせて報告した．

References

EICKWORT, G. C., 1981. Presocial insects. *In* HERMANN, H. R. (ed.), *Social Insects*, **2**,: 199–280. Academic Press.

GRAY, I. E., 1946. Observations on the life history of the horned passalus. *Am. Midl. Natural.*, **33**: 728–746.

GRAVELY, F. H., 1914. An account of the Oriental Passalidae. *Mem. Ind. Mus.*, **3**: 177–353.

——— 1918. A contribution towards the revision of the Passalidae of the world. *Ibid.*, **7**: 1–144.

HALFFTER, G., 1982. Evolved relations between reproductive and subsocial behaviors in Coleoptera. *In* BREED, M. D., C. D. MICHENNER & H. D. EVANS (eds.), *The Biology of Social Insects*, 164–170. Westview Press, Boulder, Colorado.

KON, M., & K. ARAYA, 1991. On a colony of the Bornean passalid beetle, *Leptaulax bicolor* (Coleoptera, Passalidae), collected from a fallen bamboo. *Jpn. J. Ent.*, **59**: 467–468.

——— & ——— 1992. On the microhabitat of the Bornean passalid beetle, *Taeniocerus platypus* (Coleoptera, Passalidae). *Elytra, Tokyo*, **20**: 129–130.

——— & Y. JOHKI, 1987. A new type of microhabitat, the interface between the log and the ground, observed in the passalid beetles of Borneo *Taeniocerus bicanthatus* (Coleoptera: Passalidae). *J. Ethol.*, **5**: 197–198.

——— & ——— 1989. Re-evaluation of the status of *Aceraius kuwerti* (Coleoptera, Passalidae) from Borneo. *Jpn. J. Ent.*, **57**: 91–95.

——— & ——— 1992. Redescription of *Aceraius perakensis* KUWERT, 1898 (Coleoptera, Passalidae), with re-evaluation of the status of *A. laevimargo* ZANG, 1905. *Elytra, Tokyo*, **20**: 57–60.

MATTHEWS, R. W., & J. R. MATTHEWS, 1978. Insect Behavior. John Wiley & Sons, New York.

REYES-CASTILLO, P., & G. HALFFTER, 1983. La structure sociale chez les Passalidae. *Bull. Soc. ent. France*, **88**: 619–635.

WHEELER, W. M., 1923. Social Life among the Insects. Harcourt, Brace & Co'., New York.

WILSON, E. O., 1971. The Insect Sociaties. Harvard Univ. Press.

Elytra, *Tokyo*, **20** (2): 217–222, Nov. 15, 1992

甲虫類の染色体研究

X. チビクワガタ属 (*Figulus*) 3 種の雄性生殖細胞染色体

阿部 東・工藤貢次・市川敏之・斎藤和夫

Chromosome Studies of Beetles

X. Male Germ-line Chromosomes of Three Species of *Figulus* (Coleoptera, Lucanidae, Figulinae)

Azuma ABE

Hirosaki High School,
Hirosaki, 036 Japan,

Kohji KUDOH

Shibata Girls' High School,
Hirosaki, 036 Japan,

Toshiyuki ICHIKAWA

Ôji-honchô 2-1-17,
Kita-ku, Tokyo, 114 Japan

and

Kazuo SAITOH

Department of Biology,
Hirosaki University,
Hirosaki, 036 Japan

Abstract Male germ-line chromosomes are examined in *Figulus binodulus* WATERHOUSE, 1873, *F. boninensis* NAKANE et Y. KUROSAWA, 1953, and *F. punctatus* WATERHOUSE, 1873, of the family Lucanidae. The diploid number of chromosomes is 20 in *F. binodulus* and *F. boninensis*, while 26 in *F. punctatus*. In the former two species, the sex-bivalent is indistinguishable in the first division, suggesting a similar shape of X and Y. The sex-bivalent of *F. punctatus* assumes a parachute shape. Thus, the meioformula, 9+XY, is proposed for the former two species and 12+Xy_p for *F. punctatus*. From these chromosomal features, it is concluded that *F. binodulus* and *F. boninensis* are related and that they are cytotaxonomically distinct from *F. punctatus*.

はじめに

これまで著者ら (阿部ほか, 1969; KUDOH *et al.*, 1970; ABE *et al.*, 1976, 1992) は, 日本のクワガタムシ科 (Lucanidae) の 7 属 (*Ceruchus*, *Aesalus*, *Platycerus*, *Lucanus*, *Prismognathus*, *Prosopocoilus* および *Dorcus*) 10 分類単位の染色体を調べ, とくに染色体数と性染色体の対合様式に注意を払ってきた. この報告では, これまで調べられていないチビクワガタ属 (*Figulus*) の 3 種, チビクワガタ (*Figulus binodulus* WATERHOUSE, 1873), オガサワラチビクワガタ (*F. boninensis* NAKANE et Y. KUROSAWA, 1953) およびマメクワガタ (*F. punctatus* WATERHOUSE, 1873) の雄性生殖細胞染色体の観察結果をのべる. また, これら 3 種はたがいに外部形態が似ているので, 所検

の範囲内でこれらの細胞分類学的相互関係にも言及する.

材料および方法

使用材料はすべて成虫雄である. これらの精巣を乳酸酢酸オルセイン液 (1%) によって押しつぶし処理後, 位相差装置 (対物レンズ: Olympus PLL) を使用して染色体を観察した.

材料の産地, 染色体調査の結果をまとめて表示した (Table 1).

なお, 第1分裂の2価染色体は, 必要に応じて大きさ (長さ) の順に番号を付して記述した. 本文中の和名および学名は, おもに岡島・山口 (1988) に従った.

Table 1. Chromosome survey with testis-squashes in three species of *Figulus* (Lucanidae, Figulinae).

Species	Locality	No. of males used for chromosome counting	No. of complements examined in:			Chromosome no. ($2n$)*	Meio-formula
			Spermatogonial mitosis	First division	Second division		
F. binodulus	Nara-shi	6	1	26	18	20	9+XY
	Hachijô-jima	3	3	64	2		
F. boninensis	Chichi-jima	3	18	52	18	20	9+XY
F. punctatus	Mikura-jima	5	4	16	8	26	$12+Xy_p$

* Variation in the chromosome number was not observed.

観　　察

3種とも, 精原細胞の染色体数は確められたが, 染色体の重なりや, 接近のない核板はみられなかった.

i) **チビクワガタ** (*Figulus binodulus*)

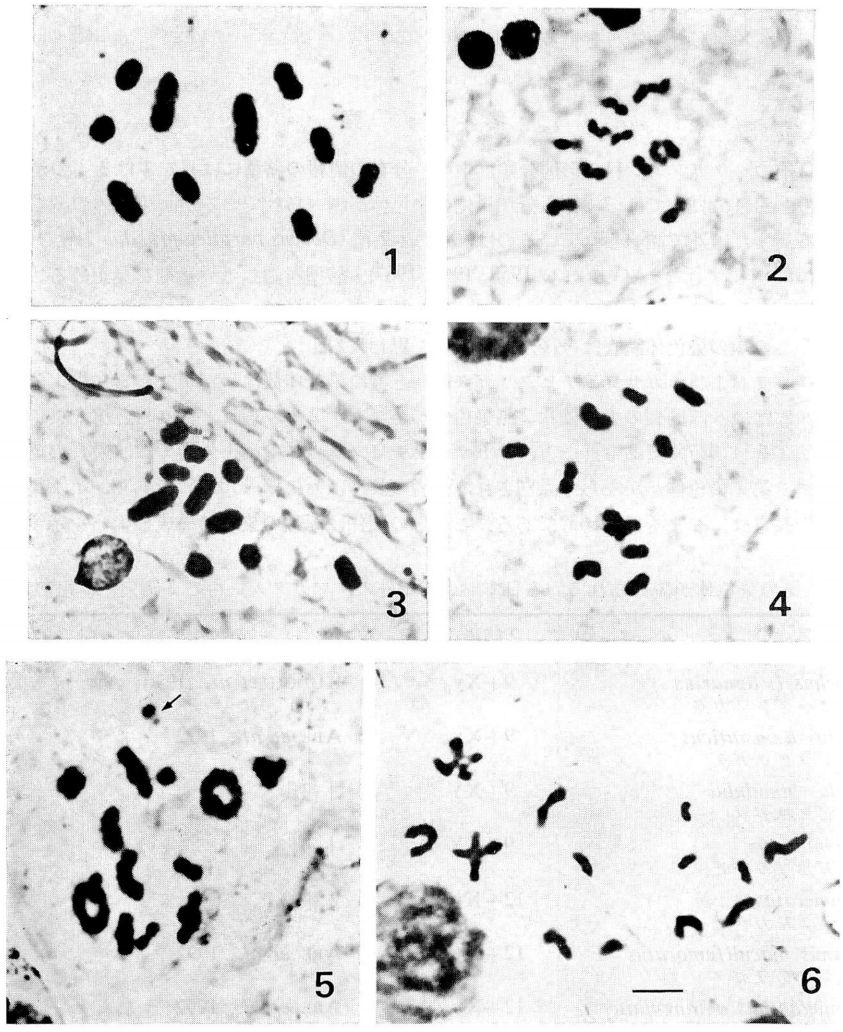
染色体数は $2n$, 20; n, 10 である. 染色体数に変異はみられない. 精原細胞は, その染色体数から推して性染色体を2本もつものと思われる.

第1分裂では, ほぼ同長 (同大) の棒状2価染色体がかならず2本みられる. これらは大型で, 他の染色体から容易に区別される. これらに次ぐ第3染色体は, これらのおよそ 75% の長さである. 対合した性染色体は識別できない (Fig. 1). 第2分裂では, やはり大きさによって識別できる2染色体がみられる. これらは, 第1分裂でみられた大型染色体と考えられる. 第2分裂では染色体の2腕性がはっきりみられる (Fig. 2). 産地による染色体数および形態の違いはみられない.

ii) **オガサワラチビクワガタ** (*F. boninensis*)

染色体数は前種と同じく $2n$, 20; n, 10 である. 染色体数に変異はみられない. この種も, 精原細胞は2本の性染色体を含むと考えられる.

第1分裂では第1染色体と第2染色体の2本がかならず識別され, ともに棒状の2価染色体である. 第2染色体長は第1染色体のおよそ 75%, 第3染色体長は第1染色体のおよそ 63% である. 対合した性染色体は識別されない (Fig. 3). 第2分裂でも, 第1および第2染色体と思われる2本が識別される. 染色体の2腕性がよくわかる.



Figs. 1–6. Male germ-line chromosomes of *Figulus*. —— 1 & 2. *F. binodulus*; 1, first division (*n*, 10); 2, second division (*n*, 10). —— 3 & 4. *F. boninensis*; 3, first division (*n*, 10); 4, second division (*n*, 10). —— 5 & 6. *F. punctatus*; 5, first division (*n*, 13), arrow indicates Xy_p; 6, second division (*n*, 13), X-class.
All are from orcein-squashes of testes. Scale bar represents ca. 5 μm.

また所検の範囲では，下記のマメクワガタでみられたような環状2価染色体はチビクワガタおよびオガサワラチビクワガタにはみられていない．

iii) **マメクワガタ** (*F. punctatus*)

染色体数は，上の2種と異なって 2*n*, 26; *n*, 13 である．染色体数に変異はみられない．精原細胞は，やはり2本の性染色体を含むと思われる．

第1分裂では，2個の大型環状2価染色体が顕著である (Fig. 5)．また，性染色体の対合は明らか

にパラシュート型 (Yy_p) である (Fig. 5; ↑ 印). 第2分裂でも大型の染色体が2個みられ，これらは両腕が開裂してX字形であることが多い (Fig. 6).

考　　察

現在，日本のクワガタムシ科の形態分類，生態，分布の情報の蓄積には目をみはるものがある．しかし既述のとおり，日本では 7 属 13 分類単位の染色体が調べられているが，染色体の調査はまだ不十分である．また国外で調べられているのは，わずか2種 (*Dorcus parallelopipedus* および *Sinodendron rugosum*) にすぎない (Virkki, 1959, 1966, 1967). 核型を調べる最適期を見定めることの難しさが，この類の染色体の検索が進んでいない一因となっている．しかし，最近の生活史の知見の増加によって，この類の染色体調査は今後，進むものと思われる．

チビクワガタおよびオガサワラチビクワガタは，ともに染色体数は n, 10 である．第1分裂ではチビクワガタには，ほぼ同長の大型棒状2価染色体がかならず2本みられ，これらと第3染色体の長さの比は，およそ 1:0.75 である．一方，オガサワラチビクワガタの第1分裂では，最長の第1染色体とそれに次ぐ第2染色体がかならず識別され，両者の長さはおよそ 1:0.75 であり，第1染色体と第3染色体の長さは，およそ 1:0.63 である．これらの関係は両種の染色体構成の違いを示すものであ

表 2. 雄の染色体が調べられている日本および国外のクワガタムシ科の2価染色体組のまとめ.

	2価染色体組	文　　献
Ceruchus l. lignarius ツヤハダクワガタ	$9+Xy_p$	Kudoh *et al.*, 1970; Abe *et al.*, 1992
Aesalus a. asiaticus マダラクワガタ	$9+Xy_p$	Abe *et al.*, 1992
Figulus binodulus チビクワガタ	9+XY	本報告
F. boninensis オガサワラチビクワガタ	9+XY	本報告
F. punctatus マメクワガタ	$12+Xy_p$	本報告
Lucanus maculifemoratus ミヤマクワガタ	$12+Xy_p$	Abe *et al.*, 1992
Prismognathus a. angulatus オニクワガタ	$12+Xy_p$	Abe *et al.*, 1992
Prosopocoilus hachijoensis ハチジョウノコギリクワガタ	$9+Xy_p$	Abe *et al.*, 1976
P. inclinatus ノコギリクワガタ	$9+Xy_p$	Abe *et al.*, 1976
Dorcus rubrofemoratus アカアシクワガタ	$4+Xy_r$	阿部ほか, 1969; Abe *et al.*, 1976
D. striatipennis スジクワガタ	$6+Xy_p$	Abe *et al.*, 1976
D. rectus コクワガタ	$8+Xy_r$	Abe *et al.*, 1976
*D. parallelopipedus**	8+neo-XY	Virkki, 1959
*Sinodendron rugosum**	$8+Xy_p$	Virkki, 1966, 1967

* 学名は，原著どおりである.

ろう．また，両種の精原細胞の染色体数 (*2n*) は偶数であるから，性染色体が 2 本含まれていることは疑いないが，第 1 分裂では対合した性染色体は識別されていない．このことは，性染色体（X および Y）に一見して区別できるほどの形態的分化がなくて，たがいに似ていることを示している．とはいえ，これら 2 種の性染色体の形態，対合様式の最終確認には，さらに多くの中期像の精査が必要であり，とくに分染法による解析を必須とすることはいうまでもない．詳しい所見がえられるまで，これら 2 種の対合した性染色体をＸＹとしておくのが妥当であると判断される．したがって，これら 2 種の第 1 分裂の 2 価染色体組は，*n*, 10=9+XY と示されることになる．(Table 1). なお，両種の細胞分類学的関係の解析には，常染色体の分染像の比較も当然必要である．

マメクワガタは上の 2 種より染色体数が多い．また，この種も染色体数から推して，精原細胞は性染色体を 2 本含むことがわかる．事実，第 1 分裂では大きさが明らかに異なるＸとｙが容易に識別され，対合様式はパラシュート型 (Xy_p) である．その 2 価染色体組は，*n*, 13=12+Xy_p で示される (Table 1).

このように，調べられた 3 種は，染色体構成が明らかに異なるチビクワガタ，オガサワラチビクワガタとマメクワガタとの 2 群に大別されることがわかった．今後，ダイトウマメクワガタ (*Figulus daitoensis* Fujita et Ichikawa, 1986) の染色体の検討が望まれる．

次に，雄の染色体が調べられている日本および国外のクワガタムシ科の 2 価染色体組を表 2 にまとめて示してみる．これからわかるように，チビクワガタ，オガサワラチビクワガタと同じく，*n*, 10 のものでは対合した性染色体はすべてパラシュート型 (Xy_p) であり，またその他のものでも XY が報告されている例はない．チビクワガタおよびオガサワラチビクワガタは，やはり注目される種だといえよう．

謝　辞

材料の入手にお力ぞえくださった今西　修氏にお礼を申し上げる．

要　約

チビクワガタ (*Figulus binodulus*), オガサワラチビクワガタ (*F. boninensis*) およびマメクワガタ (*F. punctatus*) 成虫雄の，生殖細胞染色体を調べた．チビクワガタ，オガサワラチビクワガタは，それぞれ染色体数 *2n*, 20; *n*, 10 で，2 価染色体組は 9+XY である．しかしマメクワガタでは，*2n*, 26; *n*, 13 で，12+Xy_p であった．

文　献

阿部　東，工藤貢次，近藤　格，斎藤和夫，1969．クワガタムシ科 5 種の染色体．昆蟲，**37**: 179–186.

Abe, A., K. Kudoh & K. Saitoh, 1976. Chromosome studies of beetles. VIII. A revised and supplemental chromosome study in the genera *Prosopocoilus*, *Nipponodorcus* and *Macrodorcas* of the Lucanidae. *Sci. Rept. Hirosaki Univ.*, **23**: 50–56.

———, ———, T. Ichikawa & K. Saitoh, 1992. Chromosome studies of beetles. IX. Some karyological aspects of five taxa of stag beetles (Lucanidae). *Ibid.*, **39**: 31–36.

Kudoh, K., A. Abe, I. Kondoh, N. Satoh & K. Saitoh, 1970. Some cytological aspects of three species of beetles. *Kontyû, Tokyo*, **38**: 232–238.

岡島秀治，山口 進，1988．クワガタムシ．207 pp．保育社，大阪．
VIRKKI, N., 1959. Neo-XY mechanism in two scarabaeoid beetles, *Phanaeus vindex* MacL. (Scarabaeidae) and *Dorcus parallelopipedus* L. (Lucanidae). *Hereditas*, **45**: 481–499.
—— 1966. Observations on the spermatogenesis of some scarabaeoid beetles. *J. Agric., Univ. Puerto Rico*, **50**: 338–341.
—— 1967. Chromosome relationships in some North American scarabaeoid beetles, with special reference to *Pleocoma* and *Trox*. *Can. J. Genet. Cytol.*, **9**: 107–125.

Elytra, Tokyo, **20** (2): 222, Nov. 15, 1992

ルリクワガタ雄の体細胞染色体

阿 部 東・工 藤 貢 次・斎 藤 和 夫

ABE, A., K. KUDOH & K. SAITOH: Male Somatic Chromosomes of *Platycerus delicatulus delicatulus* LEWIS, 1883 (Coleoptera, Lucanidae)

ルリクワガタ雌の体細胞の染色体数は，$2n$, 20 で，X 染色体が 1 対含まれていると考えられた (ABE *et al.*, 1992).* 引き続き，青森県平賀町産の 1 雄蛹の脳を，上記の雌と同じ処理をして，9 核板で体細胞染色体を観察した．これらのすべてで $2n$, 20 の染色体数が確認され，また，X染色体とY染色体が区別された．Xは明らかにYより大きい．Fig. 1 に，核型と，分析した中期像を示す．

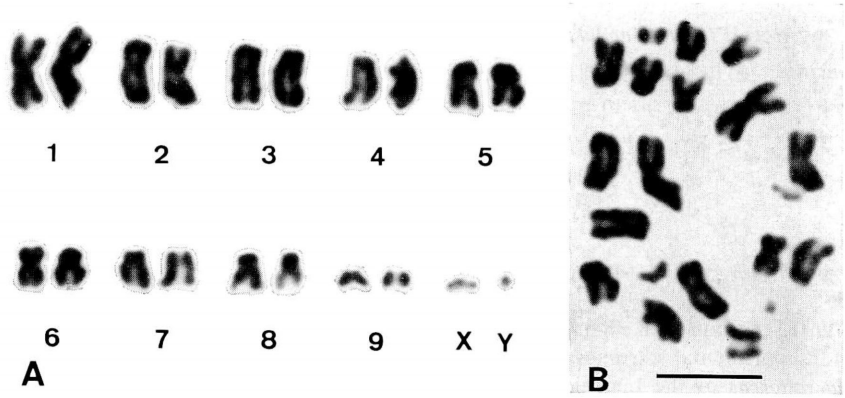


Fig. 1. Karyotype (A) and analyzed complement (B) from a brain cell of *Platycerus delicatulus delicatulus* male pupa ($2n$, 20). Scale bar represents ca. 5 μm.

* ABE, A., K. KUDOH, T. ICHIKAWA & K. SAITOH, 1992, Sci. Rept. Hirosaki Univ., **39**: 31–36.

Elytra, Tokyo, **20** (2): 223–226, Nov. 15, 1992

New or Little-known Elateridae (Coleoptera) from Japan, XXVI

Hitoo ÔHIRA

Kitsuneyama 6–4, Maigi-chô, Okazaki, 444–35 Japan

Abstract Two new species of elaterid beetles, *Fleutiauxellus kurotai* sp. nov. (subfamily Negastriinae) from Shikoku and *Scutellathous ozakii* sp. nov. (subfamily Athoinae) from Honshu are described.

In the present report, I am going to describe two new species of elaterid beetles from Japan. The holotype of each species described in this report is preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Before going further, I wish to express my gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reading the munuscript and giving me useful suggestions, and to Messrs. Yuuji KUROTA of Tokushima and Toshihiro OZAKI of Hirosaki for their kindness in offering the specimens used in this report.

Fleutiauxellus kurotai sp. nov.

(Fig. 1)

Male. Length 3.5 mm, width about 1.5 mm. Body oblong-ovate, with sides nearly parallel, moderately convex above; surface shining, black except for blackish brown antennae (basal 2 or 3 segments more or less yellowish brown); legs clear brown; vestiture fulvous, decumbent on head and pronotum.

Head gently convex, with a shallow median longitudinal furrow between eyes, flattened at the subvertical portion between antennae; surface coarsely punctate and seemingly micro-scabrous; clypeal margin U-shaped, well ridged and transversely truncate at middle. Antenna elongate, extending beyond posterior angle of pronotum at least by 2 apical segments; basal segment robust and subovate, 2nd small and subcylindrical, 3rd subtriangular and a little longer than 2nd, 4th elongate, about 1.3 times as long as 3rd, 3rd to 10th segments weakly serrate.

Pronotum subquadrate, widest at base, with sides weakly sinuate just before posterior angles, rounded at middle, thence gradually convergent towards anterior angles; disc dome-like, coarsely and micro-scabrously punctate, bearing a shallow smooth longitudinal line at middle; posterior angles projecting postero-laterad, each with a distinct carina above, which extends anteriorly along lateral margin to alomst

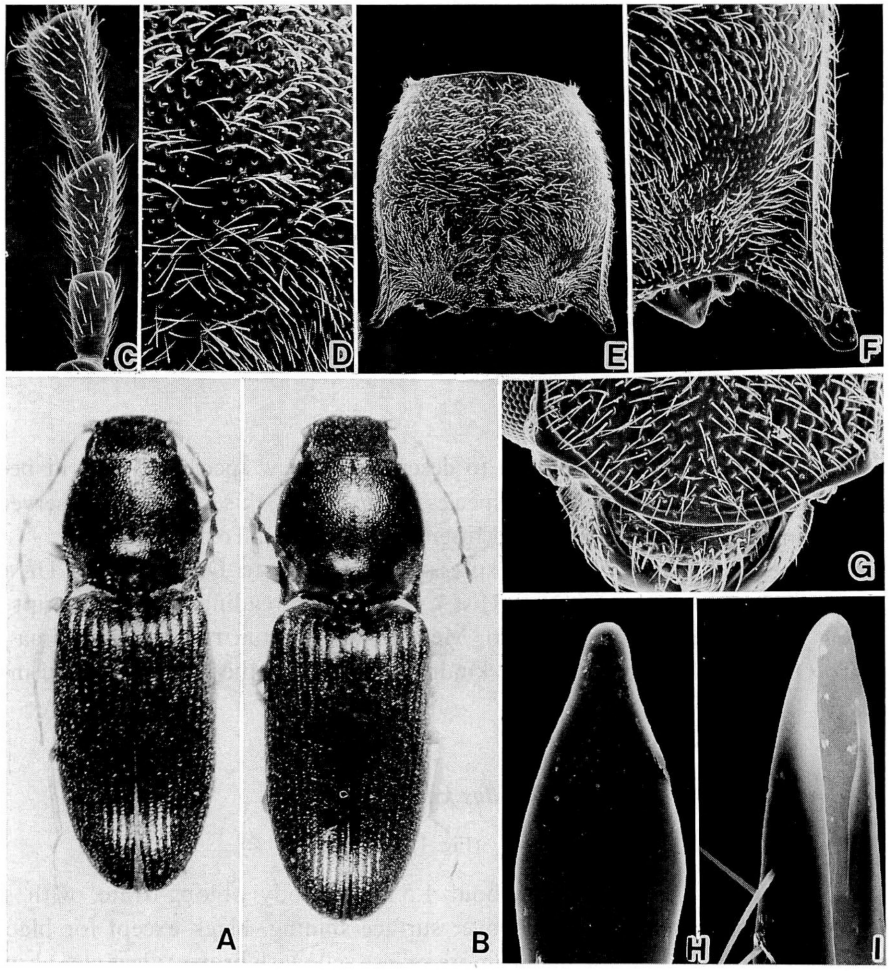


Fig. 1. *Fleutiauxellus kurotai* sp. nov. —— A, Holotype (male); B, paratype (female); C, 2nd to 4th segments of male antenna; D, some punctures and median longitudinal smooth line on the disc of pronotum; E, pronotum, dorsal aspect; F, a portion of right posterior angle of pronotum, dorsal aspect; G, clypeal margin, dorsal aspect; H, apical portion of median lobe of aedeagus, dorsal aspect; I, same, lateral lobe.

one-fourth the pronotal length. Scutellum lingulate, flattened, punctulate and pubescent.

Elytra about 1.9 times as long as their basal width, with sides almost parallel in basal two-thirds, thence rounded and gradually convergent towards apices which are normally pointed; striae well defined, deeply punctate; intervals feebly elevated, minutely punctate and weakly rugose. Legs and claws simple.

Aedeagus as illustrated; median lobe clearly tapered towards apex which is obtusely pointed, with lateral lobes each subparallel-sided and gradually narrowed

towards obtusely pointed apex.

Female. Very similar to male, but the antennae are shorter, barely reaching posterior angles of pronotum, with 3rd segment elongate, subcylindrical and clearly longer than 2nd.

Holotype. ♂, Kanmon (関門)～Tsuchigoya (土小屋) (alt. 1,300 m), Ehime Pref., 14–VII–1985, Y. KUROTA leg. Paratypes: 25 exs., same data as for the holotype.

Distribution. Shikoku, Japan.

This new species somewhat resembles *Fleutiauxellus tutus* (LEWIS, 1894) from Honshu, but can be distinguished from the latter by robuster body, slenderer antennae, longer carina on each posterior angle of pronotum, and differently shaped aedeagus.

Scutellathous ozakii sp. nov.

(Fig. 2)

Female. Length 15 mm, width about 3.5 mm. Body robust, almost parallel-sided and moderately convex above; surface very shining, blackish brown except for brownish posterior angles of pronotum, outer margins of elytra and sides of abdominal segments; antennae blackish brown; legs dark brown except for tarsi more or less lighter; vestiture fine, not conspicuous.

Head broadly and triangularly impressed between eyes; surface coarsely and dense-

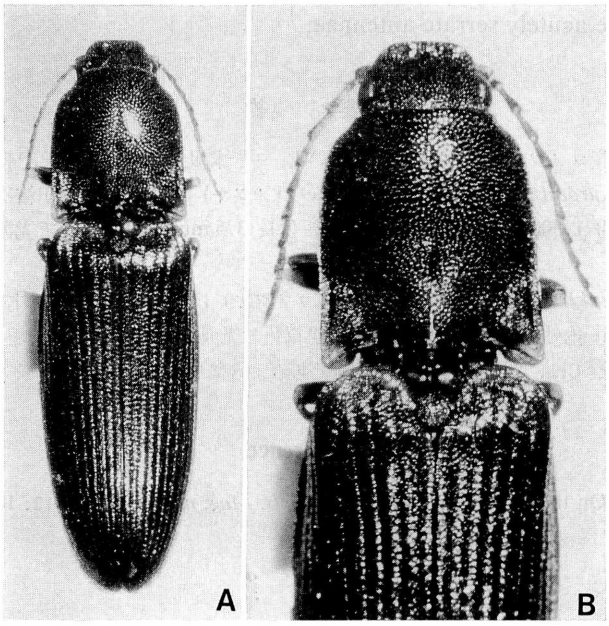


Fig. 2. *Scutellathous ozakii* sp. nov. —— A, Holotype (female); B, same, head, pronotum and basal area of elytra (enlarged).

ly punctate; clypeal margin rounded, well developed and weakly slanting downwards at middle. Antenna short, not reaching posterior angle of pronotum, basal segment robust and subovate; 2nd small and subglobular, 3rd to 10th segments rather acutely serrate; apical one elongate and clearly acuminate.

Pronotum quadrate, widest at base, with sides weakly sinuate before posterior angles, nearly straight at middle, thence clearly rounded and convergent towards anterior angles; disc moderately convex, bearing a shallow median longitudinal furrow which extends from base to anterior margin; surface densely and coarsely punctate, each puncture seemingly umbilical; posterior angles short and rather obtuse, each with a shallow carina above along lateral margin. Scutellum subovate, densely punctulate.

Elytra about 2.5 times as long as its basal width, with sides almost parallel in basal two-thirds, thence rounded and gradually convergent towards apices which are obtusely truncated; striae well defined, regularly and deeply punctate; intervals gently elevated, irregularly and transversely rugose. Legs slender, with 2nd and 3rd segments of tarsi weakly lobed beneath.

Male. Unknown.

Holotype: ♀, Mt. Iwakisan (岩木山), Aomori Pref., 9–VII–1986, T. OZAKI leg.

Distribution. Honshu, Japan.

This new species is somewhat similar to *Scutellathous comes* (LEWIS, 1894) from Honshu, Japan, but can be distinguished from the latter by the robuster body, and shorter and more acutely serrate antennae.

要　　約

大平仁夫：日本産コメツキムシ科の新種，XXVI. —— 本報告では2新種を記載した．

Fleutiauxellus kurotai ÔHIRA（シコクミズギワコメツキ）は，徳島の黒田裕次氏が，愛媛県の関門～土小屋（標高約 1,300 m）の河原で採集した，体長 3.5 mm 内外の黒色で光沢をもち，肢が黄色をした種である．

Scutellathous ozakii ÔHIRA（イワキツヤハダコメツキ）は，青森県の岩木山で尾崎俊寛氏が採集した，体長 13 mm 内外の雌個体である．体は黒褐色で光沢を有し，体毛はほとんど生じていない．一般形態からの推察では，きわめて古い型の種であるように思われる．

Reference

LEWIS, G., 1894. On the Elateridae of Japan. *Annls. Mag. nat. Hist.*, (6), **13**: 182–201.

Elytra, Tokyo, **20** (2): 227–230, Nov. 15, 1992

Two New Species of the Genus *Scymnus* KUGELANN (Coleoptera, Coccinellidae)

V. KUZNETSOV

Institute of Biology and Pedology, Far East Branch of the Russian Academy of Sciences, Vladivostok, 690022 Russia

and

REN Shunxiang

South China Agricultural University, Guangzhou, 510642 China

Abstract Description of *Scymnus* (*Scymnus*) *amphiparpicus* sp. n. from Ethiopia and *S.* (*S.*) *gonatoides* sp. n. from Yemen are given. They are readily recognized on peculiarities of the lateral lobes of the tegmen.

The present paper gives descriptions of two new species of the genus *Scymnus* KUGELANN of the tribe Scymnini. The type specimens are deposited in the Institute of Biology and Pedology, Far East Branch of the Russian Academy of Sciences (FEA), Vladivostok.

1. *Scymnus* (*Scymnus*) *amphiparpicus* KUZNETSOV et REN, sp. nov.

(Fig. 1)

Body length 2.03 mm, width 1.49 mm.

Form oval in outline, moderately convex; dorsal pubescence yellowish white. Head blackish brown. Pronotum dark brown with narrow anterior and anterolateral margins reddish brown. Scutellum black. Elytron black with a yellowish-red oval spot. Venter dark brown except for prosternum reddish brown. Legs reddish brown.

Punctation on head fine, separated by 0.5–1.0 times the diameter; punctures on pronotum like those on head; punctures on elytron coarse, sparse and irregular, separated by 1.0–1.5 times the diameter. Prosternum with intercoxal carinae extending to anterior margin, distinctly convergent anteriad, length about 2.5 times width at base. Postcoxal line incomplete, extending to about 5/6 length of 1st abdominal sternite, recurved about 1/3 length of base; area surrounded by postcoxal line with regular punctures, narrowly smooth along postcoxal line.

Male genitalia as shown in Fig. 1 D–G. Sipho stout, with long inner process and stout outer process of siphonal capsule, and with a hook-like appendix at the inside

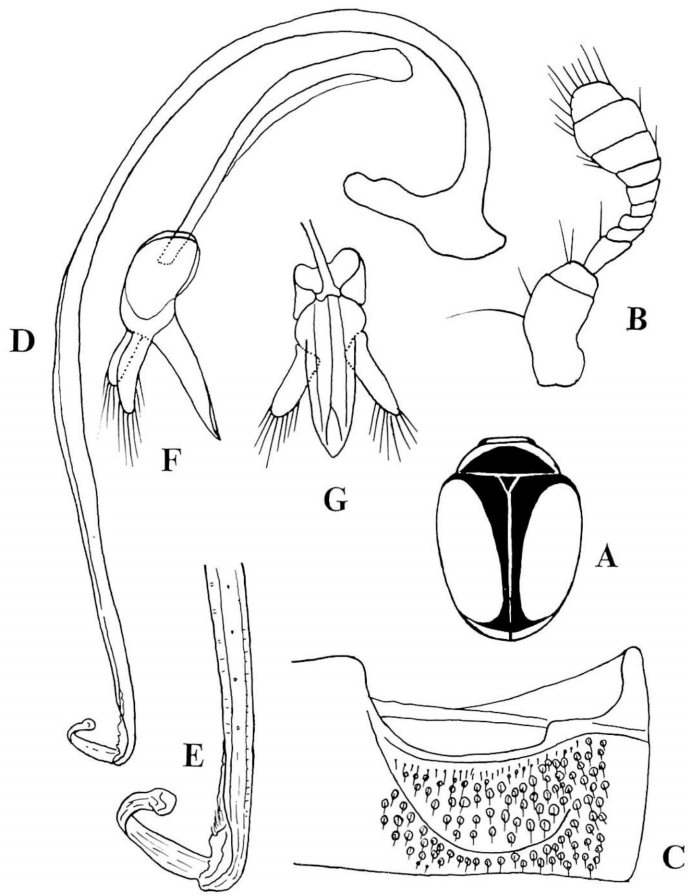


Fig. 1. *Scymnus* (*Scymnus*) *amphiparpicus* sp. nov.; A, outline of body; B, antenna; C, first abdominal segment; D, sipho; E, apex of sipho; F, tegmen, lateral aspect; G, tegmen, ventral aspect.

of siphonal subapex and a thread-like appendix at the outside. Tegmen stout, with lateral lobes distinctly longer than median piece.

Holotype: male, Ethiopia, Addis-Ababa, 11–XI–1986, L. MEDVEDEV leg. (FEA).

Remarks. This species is similar to *Scymnus* (*Scymnus*) *frontalis* (FABRICIUS), but is easily distinguished from the latter by its small size and lateral lobes of the tegmen distinctly longer than the median piece.

2. ***Scymnus* (*Scymnus*) *gonatoides*** KUZNETSOV et REN, sp. nov.

(Fig. 2)

Body length 1.97–2.13 mm, width 1.43–1.52 mm.

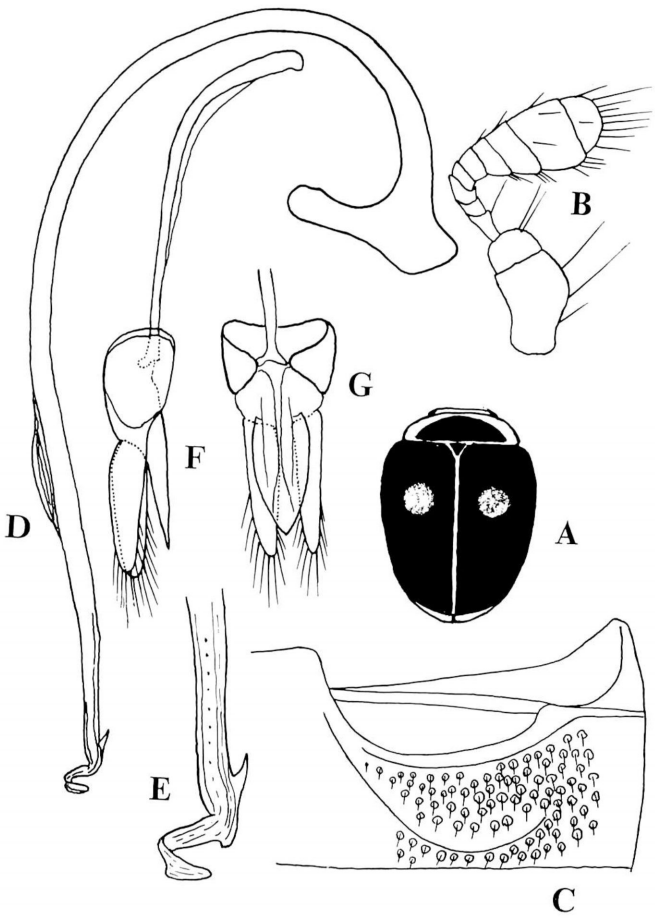


Fig. 2. *Scymnus* (*Scymnus*) *gonatoides* sp. nov.; A, outline of body; B, antenna; C, first abdominal segment; D, sipho; E, apex of sipho; F, tegmen, lateral aspect; G, tegmen, ventral aspect.

Form oval in outline, moderately convex; dorsal pubescence yellowish white. Head blackish brown except for antennae and mouthparts yellowish brown. Pronotum dark brown with anterior and anterolateral margins narrowly reddish brown. Scutellum black. Elytron reddish brown with a black, acutely triangular sutural spot extending from basal margin to apex, apex narrowly yellow. Venter dark brown except for prosternum reddish brown. Legs reddish brown.

Punctation on head fine, separated by 0.5–1.0 times the diameter; punctures on pronotum like those on head; punctures on elytron coarse, separated by 1.0–1.5 times the diameter. Prosternum with intercoxal carinae extending to anterior margin, distinctly convergent anteriad, length about 1.5 times width at base. Postcoxal line incomplete, extending to about 5/6 length of 1st abdominal sternite, recurved about

1/2 length of base; area surrounded by postcoxal line with regular punctures.

Male genitalia as shown in Fig. 2 D–G. Sipho stout, with long inner process and stout outer process of siphonal capsule, and with a long hook-like appendix at siphonal apex. Tegmen stout, with lateral lobes distinctly shorter than median piece.

Holotype: male, Yemen, Taizz, 14–XI–1975, L. SAHAROVA leg. (FEA). Allotype: female, same data as for the holotype (FEA).

Remarks. This species is similar to *Scymnus* (*Scymnus*) *folchinii* CANEPARI in the sipho of male genitalia, but it is easily distinguished from the latter by body coloration and lateral lobes of the tegmen distinctly shorter than the median piece.

Acknowledgement

Above all, the authors wish to express their deepest thanks to Prof. PANG Xiongfei of South China Agricultural University for his kind guidance and constant encouragement throughout the course of this work.

要　　約

V. KUZNETSOV • REN Shunxiang: ヒメテントウ属の 2 新種.——ヒメテントウ属ヒメテントウ亜属の 2 新種を，エチオピアとイェーメンからそれぞれ記載し，これらに *Scymnus* (*Scymnus*) *amphiparpicus* KUZNETSOV et REN および *S.* (*S.*) *gonatoides* KUZNETSOV et REN という新名を与えた．いずれも雄交尾器の特徴によって容易に識別できる．

References

CANEPARI, C., 1979. Due nuove species di Scymnini Palearctici: *Nephus* (*Sidis*) *armeniacus* e *Scymnus* (*Pullus*) *folchinii* (Col. Cocc.). *Doriana*, **5**: 1–5.

FÜRSCH, H., 1966. Die *Scymnus*-Arten Westafrikas (Col. Cocc.). *Ent. Arb. Mus. Frey, Tutzing*, **17**: 135–192.

——— 1987. Übersicht über die Genera und Subgenera der Scymnini mit besonderer Berücksichtigung der Westpalaearktis (Ins. Col. Cocc.). *Ent. Abh. Mus. Tierkd.*, **51**(4): 57–74.

HOANG, D. N., 1982. Coccinellidae of Vietnam (Ins. Col.). Part 1. 211 pp. Hanoi. (In Vietnamese, with brief English descriptions of new species.)

KAMIYA, H., 1961. A revision of the tribe Scymnini from Japan and Loochoos (Col. Cocc.). *J. Fac. Agric. Kyushu Univ.*, **11**: 275–332.

——— 1965. Tribe Scymnini (Col. Cocc.) from Formosa collected by Prof. T. SHIRÔZU. *Spec. Bull. Lep. Soc. Japan*, (1): 75–82.

KUZNETSOV, V., & Sh. REN, 1991. Scymnini from Vietnam. *Coccinella*, **3**(2): 7–25.

PANG, X., & R. GORDON, 1986. The Scymnini (Col. Cocc.) of China. *Coleopt. Bull.*, **40**: 157–199.

——— & T. PU, 1990. Descriptions of four new species of Scymnini (Coccinellidae) from Guangxi (Col.: Cocc.). *Acta ent. sin.*, **33**: 336–341.

YU, G. 1990. Taxonomical studies of *Scymnus* KUGEL. of China (Coleoptera: Coccinellidae). 97 pp. South China Agricultural University, Guangzhou.

Elytra, Tokyo, **20** (2): 231–233, Nov. 15, 1992

A New Species of the Genus *Cryptogonus* MULSANT (Coleoptera, Coccinellidae) from the Seychelle Islands

V. KUZNETSOV

Institute of Biology and Pedology, Far East Branch of the Russian Academy of Sciences, Vladivostok, 690022 Russia

and

PANG Hong

Guangdong Entomological Institute, Guangzhou, 510260 China

Abstract Description of *Cryptogonus oncotrichus* sp. nov. from the Seychelle Islands is given.

This paper gives description of a new species of the genus *Cryptogonus* MULSANT of the tribe Aspidimerini. The holotype is deposited in the Institute of Biology and Pedology, Far East Branch of the Russian Academy of Sciences, Vladivostok.

Genus *Cryptogonus* MULSANT, 1850

Body small to medium-sized, oval to subrounded, moderately convex to rather subhemispherical, punctate and pubescent on both the dorsal and ventral surfaces. Prosternum obtriangular, flat, with a pair of carinae which are subparallel in the basal halves, either subparallel, wider or narrower in the apical half, and always meeting each other in an arch a little before or at anterior margin.

Cryptogonus oncotrichus KUZNETSOV et PANG Hong, sp. nov.

(Fig. 1)

Length: 2.9 mm; width: 2.4 mm.

Form short oval in outline, convex, dorsal pubescence grey. Head yellow; pronotum black with yellowish anterior angles; scutellum black; elytron black with two yellowish spots on median line; venter dark brown and legs reddish brown. Prosternum with two intercoxal carinae extending to 4/5 length and connected together at anterior margin. Male genitalia as in Fig. 1 B–E. Median lobe shorter than parameres, sipho with two upwardly directed hooks on the stalk near apex, and with pubescence under hooks.

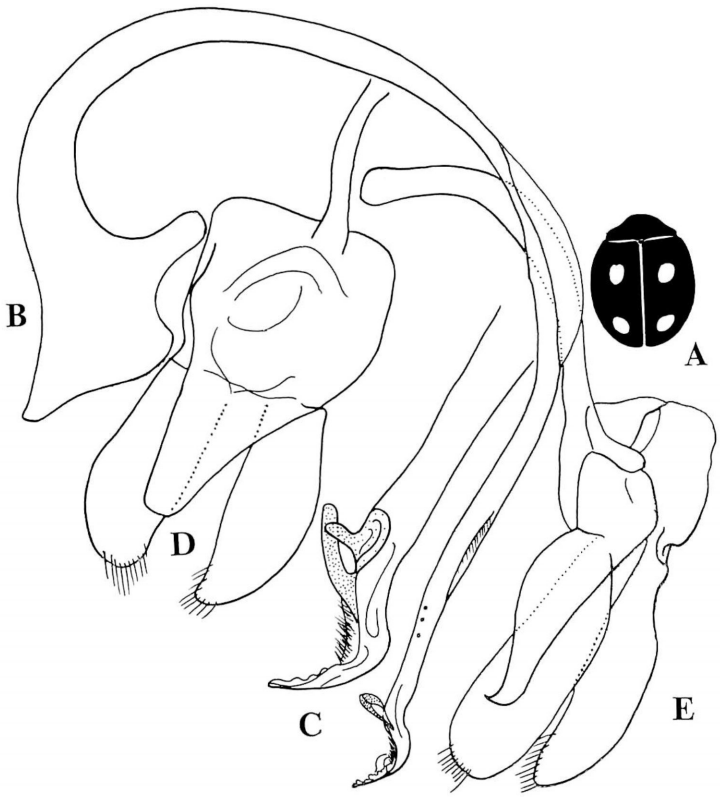


Fig. 1. *Cryptogonus oncotrichus* sp. nov.; A, outline of body; B, sipho; C, apex of sipho; D, tegmen, ventral aspect; E, tegmen, lateral aspect.

Holotype: male, Seychelle Isls., Island Round near Island Praslen, 28–II–1984, N. KURSENKO leg.

Remarks. This new species is similar to *Cryptogonus quadriguttatus* (WEISE), but is easily distinguished from the latter by the wider lateral lobes of the tegmen and the shorter median lobe. It has the sipho with two upwardly directed hooks on the stalk near the apex, while no such hooks are found in *C. quadriguttatus*.

Acknowledgement

First of all, the authors wish to express their deepest thanks to Prof. PANG Xiong-fei of South China Agricultural University for his kind guidance and constant encouragement throughout the course of this work.

要　　約

V. KUZNETSOV • PANG Hong: セイシェル諸島産フタモンクロテントウ属の1新種. —— マルヒメテントウ族フタモンクロテントウ属の1新種をセイシェル諸島から記載し，これに *Cryptogonus oncotrichus* KUZNETSOV et PANG という新名を与えた.

References

BIELAWSKY, R., 1972. Die Marienkäfer (Coleoptera: Coccinellidae) aus Nepal. *Fragm. fn. Akad. Zool. Pal. Warszawa*, **18**: 283–312.

CAO, C. Y., & N. N. XIAO, 1984. New species of Coccinellidae from Yunnan, China. *Entomotaxonomia*, **5**: 109–132.

CANEPARI, C., 1985. Su alcuni Coccinellidae dell'India e Nepal settentrionale del Museo di Storia Naturale di Ginevra (Coleoptera, Coccinellidae). *Rev. suisse Zool.*, **93**: 21–36.

GHORPADE, D., 1924. Description of a new *Cryptogonus* MULSANT from Bangalore, southern India (Coleoptera: Coccinellidae). *Orient. Ins.*, **8**: 55–60.

HOANG, D. N., 1982. Coccinellidae of Vietnam (Insecta, Coleoptera). Part 1. 211 pp. Hanoi. (In Vietnamese with brief English descriptions of new species.)

—— 1985. On the study of Coccinellidae of Teinguen Plateau from South Vietnam. *Insects of Vietnam, Moscow*, 30–49. (In Russian.)

KAPUR, A. P., 1947. A revision of the tribe Aspidimerini WEISE (Coleoptera: Coccinellidae). *Trans. r. ent. Soc., Lond.*, **99**: 77–128.

PANG, X. F., & J. L. MAO, 1979. Fauna of Economic Insects of China (Coleoptera: Coccinellidae). II. 170 pp. Beijing.

SASAJI, H., 1968. A revision of the Formosan Coccinellidae (II). Tribe Stethorini, Aspidimerini and Chilocorini (Coleoptera). *Etizenia, Fukui*, (32): 1–24.

—— 1971. Coccinellidae (Insecta: Coleoptera). *In*: *Fauna Japonica*. 346 pp. Tokyo.

Elytra, *Tokyo*, **20** (2): 234, Nov. 15, 1992

新 刊 紹 介

Advances in Coleopterology. Ed. by M. ZUNINO, X. BELLÉS & M. BLAS. 323 pp. 1992 [1991]. European Association of Coleopterology, Barcelona [& Torino].

この本を開いてまず驚かされるのは，甲虫学の横のひろがりが大きくなったことである．「甲虫学の進歩」という標題が示すように，編者は，甲虫類を材料とする学問のできるだけ多くの分野から，最新の研究を集めようとしたようにみえる．それだけに，収録された記事にはかなりの精粗があって，同一の水準に並んでいるとはとてもいいがたいが，著者数が多いのでやむをえなかったのだろう．

本書の骨格になっているのは，1989年の9月に，スペインのバルセロナで開催された，国際甲虫学会議での講演であるが，単に講演要旨をまとめたものではなく，標題の目的に沿う演題を選んで，印刷できるような形に原稿を書き直している．36人の研究者（共著者を含む）による20篇の論文は，分類，形態，系統，進化，生物地理などを主題とするもののほかに，細胞遺伝学，生態学，行動学などの分野に関するものも含み，また，化石種に基づく論説も2篇，掲載されている．

開巻劈頭にCROWSONが登場し，ソテツ類と密接な関係をもつ甲虫類の概観と，それらが受粉に果たす役割，さらに中生代の甲虫類とソテツ類との関係について論議を展開する．つづいて，NIKRITINとPONOMARENKOによるソ連の化石甲虫類の記述があるが，この概説はあまりにもかんたんで，同じ著者によるロシア語の原典に通暁していないと理解しにくい．そのあとに，生殖器の研究に基づく系統解析の論文が2篇つづくが，どちらも雌の内部生殖器や産卵管の形態を詳しく検討している点が注目される．

形態分類の論文が2篇つづいたあと，染色体の研究が3篇ならぶ．10番目の論文は，S. B. PECKによる，ガラパゴス諸島をモデルにした，熱帯大洋島の甲虫相に関するものだが，このあたりから論文の配列が不規則になり，形態，進化，生物地理，生態，行動などを主題とする報告が，やや順序不同に並べられている．ただし全体としては，生態，行動を最後におこうとされたものだろう．この部分でとくに目をひくのは，A. G. KIREJTSHUKによる，化石甲虫の生活型の進化からみた，甲虫類の高次分類に関する考察で，とくに新しい資料に基づくものではないけれども，ロシアの学者の意見が要領よくまとめられていて，一読するに値する．ことに，ゾウムシ下目がハムシ上科の姉妹群ではなく，カブトムシ亜目のうちではひじょうに古く分岐した一群で，ヒラタムシ下目に並列されるべきものだとする見解は，ことの当否はとにかく，化石甲虫学者に共通の推論として注目されるべきだろう．

最後に，本の体裁についてちょっと触れておこう．B5変形判仮綴じで表紙をビニール・コーティングした装丁は，内容に比べてややお粗末だが，本文の印刷は美しく，写真や線画もきれいに出ている．問題なのは出版地と発行年の表示で，扉や各論文最初の柱では出版地がバルセロナになっているが，表紙にはトリノと大きく印刷されている．また，発行日付は，1992年1月31日印刷完了と明記されているにもかかわらず，表紙や柱では1991年になっていて，将来の混乱を招きそうである．引用に際して注意が必要だろう．

（上野俊一）

Elytra, Tokyo, **20** (2): 235–240, Nov. 15, 1992

Pidonia (*Omphalodera*) *warusawadakensis* OHBAYASHI (Coleoptera, Cerambycidae, Lepturinae), a Distinct Species

Tôru SHIMOMURA

1–17, Ohi 3-chome, Shinagawa-ku, Tokyo, 140 Japan

Abstract *Pidonia* (*Omphalodera*) *warusawadakensis* OHBAYASHI, 1959, stat. nov., is recognized as a distinct species. A key is given for the three species of *Pidonia* (*Omphalodera*) from Japan, and their distribution from Mt. Kitadake and Mt. Senjôdake, central Honshu, is reported.

Pidonia (*Omphalodera*) *testacea warusawadakensis* OHBAYASHI, 1959, was treated by HAYASHI (1969) as a form of *P.* (*O.*) *puziloi testacea*. Later, it was considered to be a subspecies of *P.* (*O.*) *testacea* by KUSAMA (1972, 1975) and an aberrant form or a form of *P.* (*O.*) *testacea* by NAKANE (1974) and KUBOKI (1979, 1984). SAITO (1992) suggested that *warusawadakensis* could possibly be a distinct species, though he treated it as a subspecies of *P.* (*O.*) *testacea*. In my view, *P.* (*O.*) *warusawadakensis* is a species distinct from *P.* (*O.*) *testacea* because of morphological differences in the male genitalia and differences in the length of the antennae. The two species are sympatric at high altitudes of the Akaishi Mountain Range. I am going to list characters distinguishing *P.* (*O.*) *warusawadakensis* from *P.* (*O.*) *testacea* and to provide a key to the three species of *Pidonia* (*Omphalodera*) from Japan.

Pidonia* (*Omphalodera*) *warusawadakensis OHBAYASHI, 1959, stat. nov.

(Figs. 1–2, 5–6, 11 & 13)

Pidonia testacea MATSUSHITA subsp. *warusawadakensis* OHBAYASHI, 1959, Ent. Rev. Japan, **10**: 1.

Omphalodera testacea subsp. *warusawadakensis*: OHBAYASHI, 1963, Iconogr. Ins. Japon. Col. nat. ed., **2**: 273, pl. 137, figs. 2c, ♂, 2d, ♀.

Pidonia (*Omphalodera*) *puziloi testacea* f. *warusawadakensis*: HAYASHI, 1969, Bull. Osaka Jonan Women's Jr. Coll., **4**: 94–95.

Pidonia (*Omphalodera*) *testacea* subsp. *warusawadakensis*: KUSAMA, 1972, List Jpn. Cerambycidae w. Ecol. & Distr., p. 23. —— KUSAMA, 1975, Nat. Hist. Upper Stream Reg. Ooi Riv., Japan, pp. 105–106, 116. —— SAITO, 1992, Illustr. Guide Identif. Longicorn Beetles Japan, pp. 108, 111, 210, 441.

Pidonia (*Omphalodera*) *testacea* ab. *warusawadakensis*: NAKANE, 1974, Nat. & Ins., Tokyo, **9**(13): 7.

Pidonia (*Omphalodera*) *testacea*: KUBOKI, 1979 (*warusawadakensis* as a form of *testacea*), Kontyû, Tokyo, **47**: 253–255. —— KUBOKI, 1984, Longicorn-beetles Japan Col., Tokyo, p. 200, pl. 13, 96 d, ♂.

This species is very similar to *P.* (*O.*) *testacea* (MATSUSHITA, 1933), but *P.* (*O.*)

warusawadakensis can be distinguished by the following characters: antennae with the apex of the 11th segment reaching basal two-thirds of elytra in males and slightly surpassing the middle of elytra in females; 8th abdominal tergite in males slightly narrowed towards the apex and the apical margin nearly transverse with a slight emargination at the middle (Figs. 5 & 6); in the male genitalia, the median lobe more distinctly narrowed towards the apex (Fig. 13); lateral lobes of parameres shorter, each lateral lobe somewhat angulate on the inner apical margin (Fig. 11). Length: ♂, 5.0–7.0 mm; ♀, 5.0–7.3 mm (measured from tips of mandibles to elytral apices).

Type locality. Mt. Warusawadake, Shizuoka Pref., Japan.

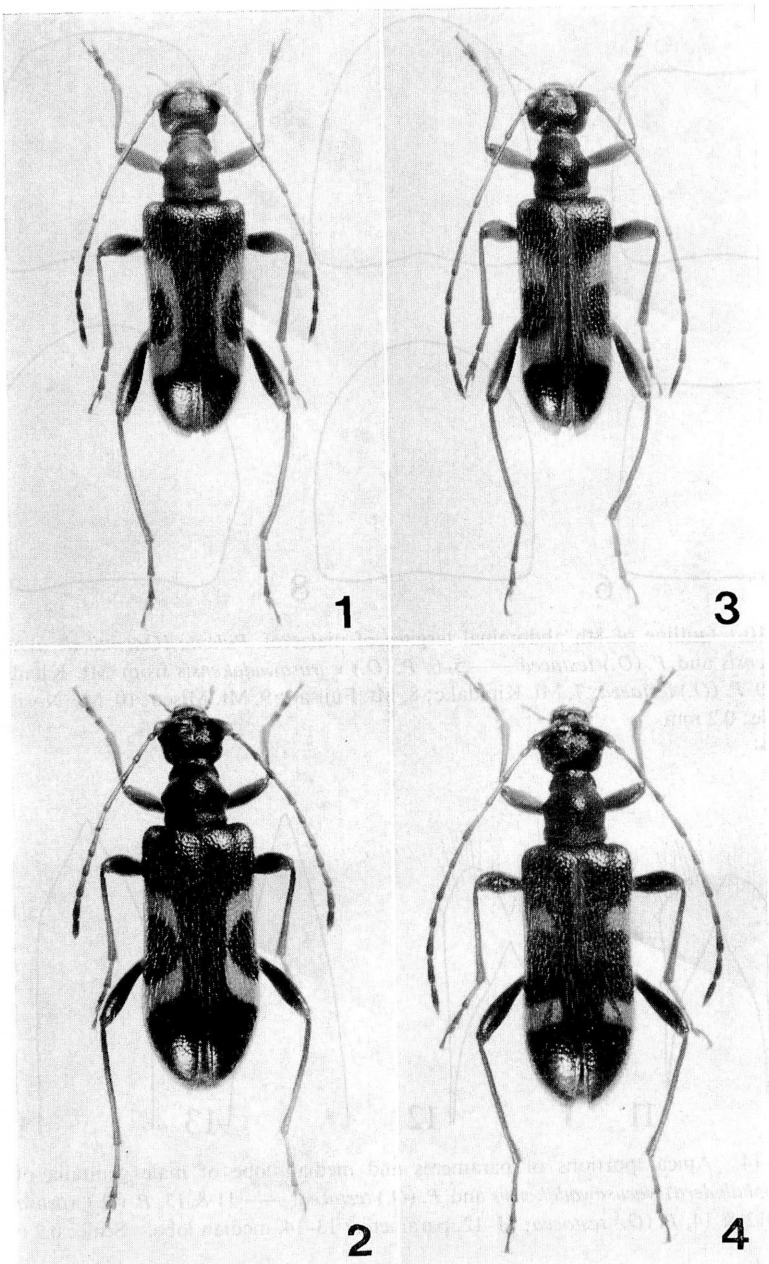
Distribution. The Akaishi Mountain Range, central Honshu.

Specimens examined. 157 exs. (108 ♂♂, 49 ♀♀): 1 ♂ (holotype), 1 ♀ (allotype), Mt. Warusawadake, Shizuoka Pref., 7–VIII–1954, K. KUSAMA leg. (N. OHBAYASHI collection); 15 ♂♂, 12 ♀♀, Mt. Kitadake, Shirane-oike (ca. 2,300 m in alt.), Yamanashi Pref., 6 & 7–VIII–1986, T. SHIMOMURA leg.; 71 ♂♂, 28 ♀♀, Mt. Kitadake, Shirane-oike (2,200–2,250 m in alt.), Yamanashi Pref., 5–VIII–1989, T. SHIMOMURA leg.; 20 ♂♂, 8 ♀♀, Mt. Senjôdake, nr. Umanose (2,550–2,700 m in alt.), Nagano Pref., 9–VIII–1988, T. SHIMOMURA leg.; 1 ♂, Sanpuku-tôge (ca. 2,600 m in alt.), on the borders between Nagano and Shizuoka Prefectures, 10 & 11–VII–1979, T. SHIMOMURA leg. (in T. SHIMOMURA coll.).

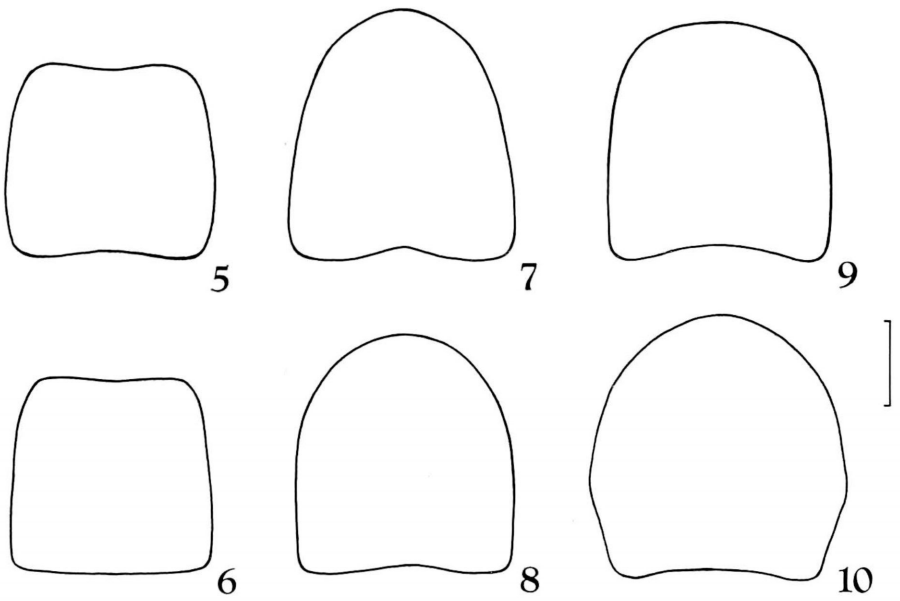
Notes. The typical form of this species has two pairs of arcuate, whitish yellow markings combined near the suture on the elytra, and the elytral suture is black in females. The head and prothorax are reddish brown in males. These characteristics may be of use for distinguishing this species from *P.* (*O.*) *testacea* of the Akaishi Mountain Range, but there occur intermediate forms in elytral markings and coloration of the head and prothorax. I have examined specimens of *P.* (*O.*) *testacea* with elytral markings similar to those of this species, from Mt. Misen, ca. 1,900 m in alt., Nara Prefecture and from other localities. It is difficult to distinguish this species from *P.* (*O.*) *testacea* only by using elytral markings and coloration.

Key to the Species of *Pidonia* (*Omphalodera*) from Japan

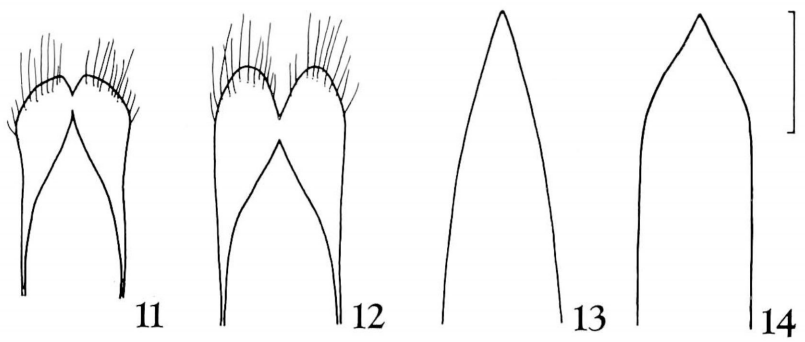
1. Vertex relatively flat and gradually impressed towards neck; elytral surface finely punctured and sparsely clothed with long pubescence ..... *P. puziloi.*
— Vertex relatively convex and abruptly impressed at neck; elytral surface coarsely punctured and densely clothed with short pubescence ..... 2.
2. Antennae with apex of 11th segment reaching basal five-sixths of elytra in males or surpassing basal three-fifths of elytra in females; apical margin of 8th abdominal tergite in males rounded (Figs. 7–10); male genitalia with lateral lobes of parameres longer and apical margin of each lateral lobe rounded (Fig. 12) ..... *P. testacea.*
— Antennae with apex of 11th segment reaching basal two-thirds of elytra in males or slightly surpassing the middle of elytra in females; apical margin of 8th



Figs. 1–4. *Pidonia* (*Omphalodera*) *warusawadakensis* and *P.* (*O.*) *testacea* from Mt. Kitadake, Shirane-oike, Yamanashi Pref. —— 1–2. *P.* (*O.*) *warusawadakensis*; 1, male; 2, female. —— 3–4. *P.* (*O.*) *testacea*; 3, male; 4, female.



Figs. 5–10. Outline of 8th abdominal tergites of males of *Pidonia* (*Omphalodera*) *warusawadakensis* and *P.* (*O.*) *testacea* —— 5–6. *P.* (*O.*) *warusawadakensis* from Mt. Kitadake. —— 7–10. *P.* (*O.*) *testacea*; 7, Mt. Kitadake; 8, Mt. Fujisan; 9, Mt. Misen; 10, Mt. Norikuradake. Scale: 0.2 mm.



Figs. 11–14. Apical portions of parameres and median lobe of male genitalia of *Pidonia* (*Omphalodera*) *warusawadakensis* and *P.* (*O.*) *testacea*. —— 11 & 13, *P.* (*O.*) *warusawadakensis*; 12 & 14, *P.* (*O.*) *testacea*; 11–12, parameres; 13–14, median lobe. Scale: 0.2 mm.

abdominal tergite in males nearly transverse with a slight emargination at middle (Figs. 5 & 6); male genitalia with lateral lobes of parameres shorter and each lateral lobe somewhat angulate on inner apical margin (Fig. 11)..... ..... *P. warusawadakensis*.

Observations on the Vertical Distribution of the Three *Omphalodera* on Mt. Kitadake and Mt. Senjôdake of the Akaishi Mountain Range

The specimens examined of *P.* (*O.*) *warusawadakensis* from Mt. Kitadake, Yamanashi Prefecture, were collected on flowers of *Rodgersia podophylla* A. GRAY (Saxifragaceae) in the coniferous forests near Shirane-oike (2,200–2,300 m in alt.). *P.* (*O.*) *warusawadakensis* is sympatric with *P.* (*O.*) *testacea* in this area. On August 9, 1988, I collected only *P.* (*O.*) *warusawadakensis* between 2,550 and 2,700 m on Mt. Senjôdake about 7 km northwest of Mt. Kitadake across the Norogawa River. On August 5, 1989, I collected *P.* (*O.*) *testacea* [1 ♂] and *P.* (*O.*) *puziloi* [4 ♂♂] on the same flowers of the Umbelliferae at Hirogawara (about 1,600 m in alt.) at the base of Mt. Kitadake. According to KUSAMA (1975), *warusawadakensis* occurs only on the Akaishi Mountain Range (=the Southern Japanese Alps) at an elevation of 2,400 m and higher places. According to KUBOKI (1979), *testacea* is distributed on Mt. Senjôdake (=Mt. Senjôgatake) from 1,500 to 2,400 m in altitude and *warusawadakensis* occurs from 2,000 to 3,000 m. The vertical distribution of these three species on Mt. Kitadake and Mt. Senjôdake is as follows: *P.* (*O.*) *puziloi* is distributed at about 1,600 m or lower places, *P.* (*O.*) *testacea* occurs from about 1,500 to 2,400 m, and *P.* (*O.*) *warusawadakensis* is found at about 2,000 m and higher places. *P.* (*O.*) *puziloi* is sympatric with *P.* (*O.*) *testacea* at about 1,500–1,600 m in altitude, and *P.* (*O.*) *testacea* is sympatric with *P.* (*O.*) *warusawadakensis* at about 2,000 to 2,400 m in altitude.

Acknowledgements

I wish to express my sincere gratitude to Dr. J. A. CHEMSAK (College of Natural Resources, Department of Entomological Sciences, University of California) for his kindness in the review of the manuscript and his advice; to Mr. S. SAITO (Japan Wildlife Research Center, Tokyo) for his kindness in offering useful comments. Many thanks are due to Messrs. N. KOBAYASHI (Kawasaki) and M. HASEGAWA (Toyohashi Museum of Natural History, Aichi), and Ms. A. SAITO (Department of Animal Sciences, Natural History Museum and Institute, Chiba) for their generosity in giving me the specimens of *P.* (*O.*) *testacea* from several localities for comparison with *P.* (*O.*) *warusawadakensis*, and to Dr. N. OHBAYASHI (Kanagawa Horticultural Experiment Station, Miura) for giving me the privilege to examine the type specimens of *P.* (*O.*) *warusawadakensis*.

要　　約

下村　徹：ワルサワダケフタオビヒメハナカミキリは独立種．—— *Pidonia* (*Omphalodera*) *testacea warusawadakensis* OHBAYASHI, 1959 の分類学的扱いについて，KUSAMA (1972, 1975) はその扱いを支持し，NAKANE (1974) は *testacea* の ab. として，KUBOKI (1979, 1984) は *testacea* の form として，取り扱ってきた．SAITO (1992) は *testacea* の亜種として扱ったが，独立種の可能性

が強いと述べた．*P.* (*O.*) *warusawadakensis*（ワルサワダケフタオビヒメハナカミキリ）は雄交尾器，触角の長さなどの形態的特徴によって，*P.* (*O.*) *testacea*（ニセフタオビヒメハナカミキリ）とは識別ができ，赤石山脈（南アルプス）北部の亜高山帯，標高約 2,000～2,400 m で両者が同所的に分布しているので独立種とみなした．日本産 *Pidonia* (*Omphalodera*) の 3 種の検索表を付し，赤石山脈北部の北岳と仙丈岳でのこれら 3 種の垂直分布について報告した．

References

HAYASHI, M., 1969. A monographic study of the lepturine genus *Pidonia* MULSANT (1863) with special reference to the ecological distribution and phylogenetical relation (Coleoptera: Cerambycidae) part 2. *Bull. Osaka Jonan Women's Jr. Coll.*, **4**: 69–111.

KUBOKI, M., 1979. A taxonomic revision of the *puziloi*-group of *Pidonia* (Coleoptera: Cerambycidae) in Japan. *Kontyû, Tokyo*, **47**: 249–257.

——— 1984. Lepturinae (Genus *Pidonia*). *In* Jpn. Soc. Coleopterol. (ed.), *The Longicorn-Beetles of Japan in Color*, 173–200, pls. 9–14. Kodansha, Tokyo. (In Japanese.)

KUSAMA, K., 1972. A list of Japanese Cerambycidae with ecology and distribution. 160 pp. [Keihin-Konchu-Dokokai ed., 1973, New Ins. Coll. **3**, Tokyo]. (In Japanese.)

——— 1975. Cerambycid-beetles in the basin of the Ooi River. *A Natural History of the Upper Stream Region of the Ooi River, Japan*, 102–133. Shizuoka Nature Conservation Association. (In Japanese, with English title and abstract.)

NAKANE, T., 1974. The beetles of Japan (new series) 14. Cerambycidae 9. *Nat. & Ins., Tokyo*, **9**(13): 4–7. (In Japanese.)

OHBAYASHI, K., 1959. New Cerambycidae from Japan (5). *Ent. Rev. Japan, Osaka*, **10**: 1–3.

SAITO, S., 1992. Genus *Pidonia*. *In* OHBAYASHI, N., *et al.*, (ed.), *An Illustrated Guide to Identification of Longicorn Beetles of Japan*, 100–115, 205–212, 431–445. Tokai University Press, Tokyo. (In Japanese.)

Elytra, Tokyo, **20** (2): 241–247, Nov. 15, 1992

Three New Species of *Mecotropis* (Coleoptera, Anthribidae) from Vietnam and Indonesia

Toshio SENOH

Department of Biology, Chuo University High School,
Koganei, Tokyo, 184 Japan

Abstract Three new species of the anthribid genus *Mecotropis* are described from Vietnam and Indonesia under the names of *M. kumei* (from N. Vietnam), *M. itohi* (from N. Vietnam) and *M. sulawesinus* (from C. Sulawesi). They can be recognized at first sight on characteristic maculations on both the dorsal and ventral sides.

The genus *Mecotropis* LACORDAIRE comprises forty-two species of anthribid beetles mainly distributed in Southeast Asia, including four species, *vietnamensis*, *nishimurai*, *approximatus* and *brevior*, recently described by me.

Recently, through the courtesy of Messrs. K. KUME and K. SAKAI, I was given again an opportunity to examine three strange species of *Mecotropis* collected from northern Vietnam and the Island of Sulawesi. After a careful examination, it became apparent that these species had not been described theretofore. They will be named in the present paper.

Before going further, I wish to express my sincere gratitude to Professor Y. WATANABE of the Laboratory of Entomology, Tokyo University of Agriculture, and Professor K. MORIMOTO of the Entomological Laboratory, Kyushu University, for their constant guidance and encouragement. I am much indebted to Dr. S.-I. UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his constant guidance and for reading the original manuscript of the present paper, and to Messrs. K. KUME, M. ITOH and K. SAKAI for their kindness in providing me with the specimens used in this study.

Mecotropis kumei SENOH, sp. nov.

(Fig. 1)

Length: 29 mm (from apical margin of rostrum to apex of pygidium). Relatively slender species.

Female. Colour entirely black. Pubescence dense, mud yellow and black; antennae with no ring; black hairs of elytra forming many small round patches, two of which at the centre are relatively large. Pygidium with two oblong yellowish patches on basal three-fourths; underside mainly covered with yellowish hairs.

Head slender, extending forwards, and with a deep longitudinal sulcus from be-

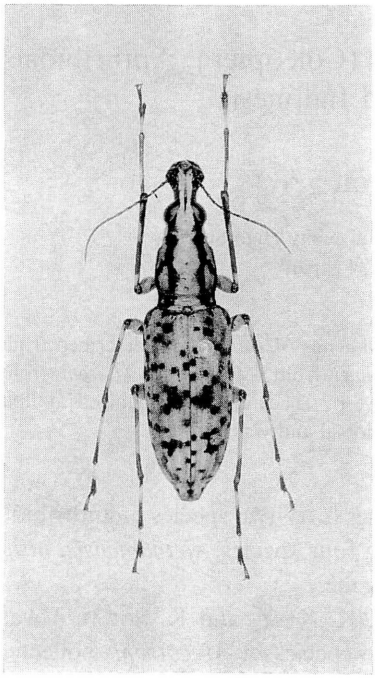


Fig. 1. *Mecotropis kumei* SENOH, sp. nov., ♀, from northern Vietnam.

tween eyes to basal parts of antennae; eyes relatively large, hemispherical, and relatively approximate to each other; rostrum slender, thick, parallel-sided in basal half, gradually widened in apical half, widest at the bases of mandibles, strongly emarginate at the middle of anterior margin, and rugged on lateral sides; maximum width of rostrum about 4.0 times as wide as the shortest distance between eyes. Antennae short, barely reaching the basal margin of pronotum, proportions in length from 1st to 11th about 18: 10: 23: 20: 18: 18: 19: 18: 30: 27: 42, subapical parts of 1st to 8th somewhat swollen.

Pronotum slender, about 1.1 times as long as wide, widest at basal two-fifths; anterior margin somewhat emarginate; dorsal transverse carina weakly arcuate, and roundly connected with each lateral carina, the latter declivous in basal two-fifths and horizontally extending to the subapical part of side margin; carinula short, not reaching dorsal transverse carina. Scutellum rectangular. Elytra relatively long and thick, about 2.0 times as long as wide, parallel-sided in basal three-fourths, then narrowed posteriorly; strial punctures very small, distance between them a little narrower than the widths of intervals; intervals flat; subbasal swellings weak. Pygidium linguiform, extending backwards, nearly as long as wide, bending downwards in apical third; lateral margins gradually convergent towards broadly rounded apex; disc slightly swollen.

Prosternum with a deep transverse sulcus in front of coxal cavities; mesosternal process relatively slender; metasternum with a deep transverse sulcus in front of coxal

cavities; 1st to 3rd visible sternites conjointly almost horizontal in side view, 4th and 5th conjointly somewhat slanting. Legs long and thin; anterior femur a little shorter than the median which is nearly as long as the posterior; anterior tibia a little longer than the posterior which is longer than the median; anterior tarsus longer than the median which is distinctly longer than the posterior.

Male. Unknown.

Holotype ♀, Mt. Tamdao (about 1,300 m alt.), N. Vietnam, 10–VI–1991, Masao ITOH leg. The holotype is deposited in the collecion of the National Science Museum (Nat. Hist.), Tokyo.

Distribution. Northern Vietnam.

Notes. In general appearance, this species resembles *Mecotropis similis* JORDAN, 1898, described from Mt. Kawi, Java, but can be distinguished from the latter by the distinct markings of pronotum, distinct small patches of elytra, and so on. The specific name is given in honour of Mr. K. KUME who provided me with the valuable specimen.

Mecotropis itohi SENOH, sp. nov.

(Fig. 2)

Length: 25 mm (from apical margin of rostrum to apices of elytra). Relatively robust species.

Female. Colour entirely black. Pubescence dense, pale yellow and black; antennae with pale yellowish hairs in 7th, 8th and basal part of 9th segments; pronotum with a black oblong patch at the centre; elytra with four black irregular patches in basal half; pygidium with pale yellowish hairs except for black marginal parts; underside mainly covered with pale yellowish hairs.

Head robust, and with a deep longitudinal sulcus from vertex to basal parts of antennae: eyes not so large, rounded, relatively estranged from each other; rostrum robust, gradually narrowed towards basal parts of antennae, then gradually widened anteriorly, widest at the bases of mandibles, strongly emarginate at the middle of anterior margin, and with three deep longitudinal sulci from anterior margin of eye to basal part of antenna on each side; maximum width of rostrum about 2.1 times as wide as the shortest distance between eyes. Antennae short, extending barely beyond the basal margin of elytra, proportions in length from 1st to 11th about 24: 13: 23: 26: 29: 26: 30: 25: 25: 21: 30.

Pronotum robust, convex above, about 1.1 times as wide as long, widest at about basal two-fifths; disc depressed behind the middle; dorsal transverse carina broadly rounded, and roundly connected with each lateral carina, the latter declivous, extending to the subapical part of side margin; carinula distinct, not reaching dorsal transverse carina. Scutellum small and rounded. Elytra oval, convex above, about 1.6 times as long as wide, parallel-sided in basal four-fifths, then narrowed posteriorly; strial punctures very small, distance between them narrower than the widths of intervals;

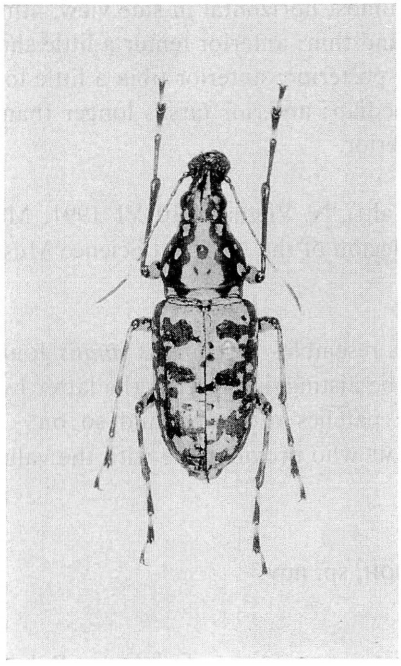


Fig. 2. *Mecotropis itohi* SENOH, sp. nov., ♀, from northern Vietnam.

intervals flat; subbasal swellings obscure. Pygidium subtriangular, extending backwards, about 1.3 times as wide as long, and narrowed towards broadly rounded apex, with lateral margins not reflexed.

Prosternum with a deep transverse sulcus in front of coxal cavities; mesosternal process linguiform, parallel-sided; metasternum with neither sulcus nor fossa; 1st to 5th visible sternites, viewed from side, conjointly almost horizontal. Legs moderately long and thin; anterior femur shorter than the median which is a little shorter than the posterior; anterior tibia longer than the median which is nearly as long as the posterior; anterior tarsus nearly as long as the median which is longer than the posterior.

Male. Unknown.

Holotype ♀, Mt. Tamdao (about 1,300 m alt.), N. Vietnam, 3～10–VII–1990, Masao ITOH leg. The holotype is deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Distribution. Northern Vietnam.

Notes. This species resembles *Mecotropis caelestis* JORDAN, 1898, described from the Island of Samar, the Philippines, but can be easily distinguished from the latter by the colour and the mode of patches on the upperside. The specific name is given in honour of Mr. Masao ITOH who collected this new species at the top of Mt. Tamdao.

Mecotropis sulawesinus SENOH, sp. nov.

(Fig. 3)

Length: 16–18 mm (from apical margin of rostrum to apex of pygidium). Relatively slender species.

Male. Colour entirely black. Pubescence dense, white, mud yellow and black; head with a white stripe from occiput to basal parts of antennae; antennae with no ring; pronotum with five stripes, mud yellow ones on both sides, white one in middle, and broad brown ones in submedian parts; scutellum with white hairs; elytra with three stripes, mud yellow broad ones on both sides and white one in middle, with several irregular black patches; pygidium with white hairs except on a broad median stripe; underside covered with white hairs; legs mainly covered with white hairs.

Head slender, extending forwards, parallel-sided in occipital parts, and with a deep median longitudinal sulcus from vertex to basal parts of antennae; eyes moderately large, moderately convex above, emarginate in anterior margin, and strongly approximate to each other; rostrum relatively slender, thick, gradually widened in apical half, widest at the bases of mandibles, strongly emarginate at the middle of anterior margin, and with a deep longitudinal sulcus extending from lower margin of eye towards mentum on each side; maximum width of rostrum about 5.0 times as wide as the shortest distance between eyes. Antennae long, about 2.3 times as long as the length of body, scape thick, proportions in length from 1st to 11th about 15: 8: 58: 62: 56: 73: 71: 74: 50: 13: 31, apical segment somewhat curved and pointed.

Pronotum slender, about 1.2 times as long as wide, widest at about middle; dorsal transverse carina arcuate, closest to posterior margin at the middle, and roundly connected with each lateral carina, the latter horizontally extending to the subapical part of side margin; carinula short, not reaching dorsal transverse carina. Scutellum rectangular. Elytra slender, about 1.8 times as long as wide, parallel-sided in basal halves, then gradually narrowed posteriad, basal margin almost straight; strial punctures very small, distance between them nearly as wide as the widths of intervals; intervals flat; subbasal swellings weak. Pygidium subtrapezoidal, extending backwards, about 1.3 times as wide as long, all margins reflexed, lateral ones gradually convergent towards truncated apex.

Prosternum without sulcus; viewed from side, venter weakly arcuate from 1st to 4th visible sternites, 5th somewhat slanting. Legs long and thin; anterior femur shorter than the median which is nearly as long as the posterior; anterior tibia longer than the median which is longer than the posterior; anterior tarsus evidently longer than the median which is evidently longer than the posterior.

Female. Antennae short, extending barely beyond the basal margins of elytra, proportions in length from 1st to 11th about 14: 7: 19: 18: 20: 20: 20: 18: 19: 15: 25.

Type series. Holotype: ♂, Palolo, C. Sulawesi, Indonesia, IX–1991. Paratype: ♀, same data as for the holotype. The type series is deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

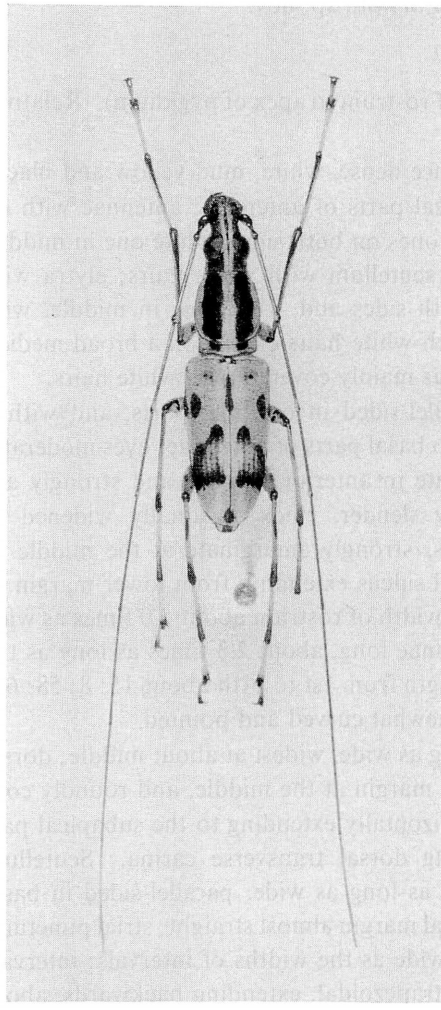


Fig. 3. *Mecotropis sulawesinus* SENOH, sp. nov., ♂, from central Sulawesi.

Distribution. Indonesia (central Sulawesi).

Note. This species can be discriminated from the known species of *Mecotropis* by the peculiar markings of upperside.

要　　約

妹尾俊男: ベトナムおよびインドネシアから発見された *Mecotropis* 属（ヒゲナガゾウムシ科）の3新種. —— 筆者は最近，東京都の粂久仁雄，酒井　香の両氏のご好意により，多数のベトナムおよびインドネシア産のヒゲナガゾウムシ類の恵与を受けた．そのなかに，*Mecotropis* 属に含まれる3新種を発見したので，ベトナム北部から得られた2種に対して *Mecotropis kumei* SENOH および *M. itohi* SENOH，またスラウェシ島中部からのものに *M. sulawesinus* SENOH と命名し，記載した．

References

JORDAN, K., 1895. Zur Kenntnis der Anthribidae, IV. *Stett. ent. Ztg.*, **56**: 369–401.
——— 1904. Some new Oriental Anthribidae. *Novit. zool.*, **11**: 230–237.
——— 1911. New Anthribidae. *Ibid.*, **18**: 92–116.
——— 1913. The Oriental Anthribidae of the VAN DE POLL collection. *Ibid.*, **20**: 257–277.
——— 1916. Anthribidae collected by Monsieur I. VITALIS DE SALVAZA in French Indo-China. *Ibid.*, **23**: 359–363.
——— 1923. Les Anthribides de l'Indochine. *Fn. ent. Indochine, Saigon*, **6**: 71–113 (and *Opusc. Inst. sci. Indochine*, (1): 1–41).
——— 1928. Anthribidae from the Malay Peninsula. *Novit. zool.*, **34**: 95–104.
SENOH, T., 1991. The anthribid beetles of the genus *Mecotropis* (Coleoptera, Anthribidae) from North Vietnam. *Elytra, Tokyo*, **19**: 1–4.
——— 1991. Three new species of *Mecotropis* (Coleoptera, Anthribidae) from Southeast Asia. *Ibid.*, **19**: 151–157.
WOLFRUM, P., 1929. Anthribidae. *In* JUNK, W., & S. SCHENKLING (eds.), *Coleopterorum Catalogus*, pars 102 (pp. 3–145). W. Junk, Berlin.
——— 1953. Anthribidae. *In* HINCKS, W. D. (ed.), *Coleopterorum Catalogus Supplementa*, pars 102 (pp. 3–63). W. Junk, 's-Gravenhage.

Elytra, Tokyo, **20** (2): 247–249, Nov. 15, 1992

On Several Anthribids (Coleoptera, Anthribidae) from Vietnam

Toshio SENOH

Department of Biology, Chuo University High School,
Koganei, Tokyo, 184 Japan

In May of this year, Messrs. Toshitsugu ENDO and Masatoshi NISHIMURA made a collecting trip to South Vietnam and collected many insects in three provinces, Lam Dong, Khanh Hoa and Binh Dinh. In July, Mr. NISHIMURA again made a collecting trip to two provinces different from those of the previous trip. One is the Province of Ha Son Binh, and the other is the Province of Son La, both in North Vietnam.

The collection made contained several anthribids, which were submitted to me for taxonomic study through the courtesy of Messrs. ENDO and NISHIMURA. After a careful examination, it became apparent that five of them were identified with *Sintor floridus* JORDAN, *Xylinada nodicornis* (WEBER), *Litocerus khasianus* JORDAN, *L. thaus* JORDAN and *Aphaulimia rufescens* (JORDAN), which have not been recorded from Vietnam up to the present.

The list of Anthribidae from Vietnam which I published in Coleopterists' News, Tokyo, 1991, pp. 1–4, includes 102 species, which were mostly described by JORDAN. Two species were added to the anthribid fauna of Vietnam as new to science just recently, and five species are further added by this report. Thus, 109 species of anthribids are now known from Vietnam.

Before going further, I wish to express my sincere gratitude to Messrs. T. ENDO and M. NISHIMURA for their kindness in providing me with the valuable specimens used in this study.

Subfamily Choraginae

Apolectini

Apolecta sp.

1♂, Bao Loc, Lam Dong Prov., 19-V-1992, ENDO leg.

This species resembles *Apolecta enganensis* JORDAN described from the Island of Engano, Indonesia.

Araecerini

Xanthoderopygus sp.

1♂, 1♀, Bao Loc, Lam Dong Prov., 19~21-V-1992, NISHIMURA leg.

Subfamily Anthribinae

Platystomini

Phloeobius latifrons JORDAN, 1923

1♂, Mai Chau, Ha Son Binh Prov., 7~10-VII-1992, NISHIMURA leg. (at light).

Phloeotragini

Phloeopemon acuticornis continentalis JORDAN, 1923

1♂, 3♀♀, Bao Loc, Lam Dong Prov., 19~21-V-1992, NISHIMURA leg.

Xenocerini

Xenocerus simplex JORDAN, 1894

1♀, Mai Chau, Ha Son Binh Prov., 7~10-VII-1992, NISHIMURA leg.

Xylinadini

Xylinada nodicornis (WEBER, 1801)

1♂, 1♀, Bao Loc, Lam Dong Prov., 19~21-V-1992, NISHIMURA leg.

This species, previously known from Perak, Sumatra and Java, is newly recorded from Vietnam.

Xylinada sp.

1♀, Mai Chau, Ha Son Binh Prov., 7~10-VII-1992, NISHIMURA leg.

Sintorini

Sintor floridus JORDAN, 1931

1♀, Bao Loc, Lam Dong Prov., 19~21-V-1992, NISHIMURA leg.

This species was originally described from Java on the basis of one pair. It has not been recorded from Vietnam, so that this is the first one.

Acorynini

Litocerus khasianus JORDAN, 1903

1♂, 2♀♀, Bao Loc, Lam Dong Prov., 19~21-V-1992, NISHIMURA leg.

The number of small whitish patches on the elytra is larger than in the specimens from the type locality (Assam). This is newly recorded from Vietnam.

Litocerus thaus JORDAN, 1923

1♀, Bao Loc, Lam Dong Prov., 19~21-V-1992, NISHIMURA leg.

This species was originally described from Laos, and has not been recorded from Vietnam.

Litocerus sp.

1♀, Bao Loc, Lam Dong Prov., 19~21-V-1992, NISHIMURA leg.

This species resembles *L. figuratus* PASCOE, 1859, distributed to Sumatra, Java and Borneo.

Cedus sp.

2♂♂, 1♀, Bao Loc, Lam Dong Prov., 19~21-V-1992, NISHIMURA leg.; 1♂, Bao Loc, 29-V-1992, ENDO leg.

Acorynus sp.

1♀, Mai Chau, Ha Son Binh Prov., 7~10-VII-1992, NISHIMURA leg.

Zygaenodini

Nerthomma aplotum JORDAN, 1912

1♂, 2♀♀, Mai Chau, Ha Son Binh Prov., 7~10-VII-1992, NISHIMURA leg.

Corrhecerini

Aphaulimia rufescens (JORDAN, 1894)

1♂, Bao Loc, Lam Dong Prov., 19~21-V-1992, NISHIMURA leg.

This species was originally described from Perak, and has not been recorded from Vietnam.

Elytra, Tokyo, **20** (2): 250, Nov. 15, 1992

A Record of the Female of *Notorhabdium immaculatum* (Coleoptera, Cerambycidae, Lepturinae)

Tôru SHIMOMURA

1-17, Ohi 3-chome, Shinagawa-ku, Tokyo, 140 Japan

Notorhabdium immaculatum OHBAYASHI et SHIMOMURA, 1986, was described as a new genus and species on a male specimen from Mt. Jasar, Cameron Highlands, the Malay Peninsula. After that, I have examined a female of this species through the courtesy of Mr. K. SAKAI. The antenna of this female specimen is distinctly shorter than that of the male; the apex of the 11th segment is slightly surpassing the elytral apex. However, almost all the other characteristics are similar to those of the male. Length of body: 13.5 mm.

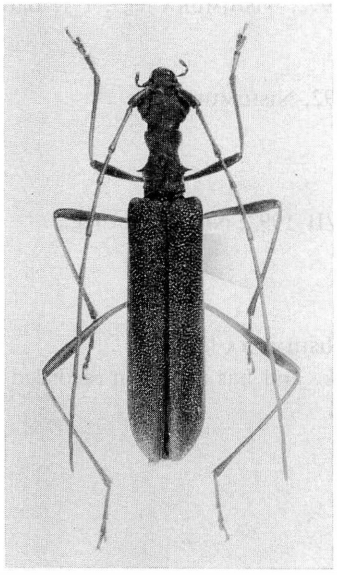


Fig. 1. *Notorhabdium immaculatum*, ♀.

Specimen examined. 1♀, Cameron Highlands, Pahang, Malaysia, no date in 1986, native collector leg. (preserved in the collection of T. SHIMOMURA).

I wish to express my deep gratitude to Mr. Kaoru SAKAI (Tokyo) for his kindness in giving me the specimen and for his cooperation, and to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reading the original manuscript of this short report.

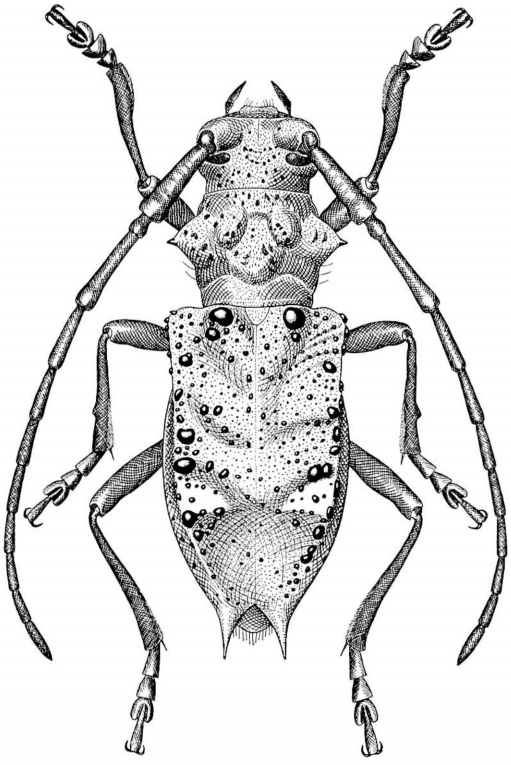
Reference

OHBAYASHI, N., & T. SHIMOMURA, 1986. Two new lepturine beetles of the tribe Xylosteini (Coleoptera, Cerambycidae) from the Darjeeling District and the Malay Peninsula. *Ent. Pap. pres. Kurosawa, Tokyo*, 282-290.

ISSN 0387−5733

ELYTRA

Volume 20 1992



日本鞘翅学会

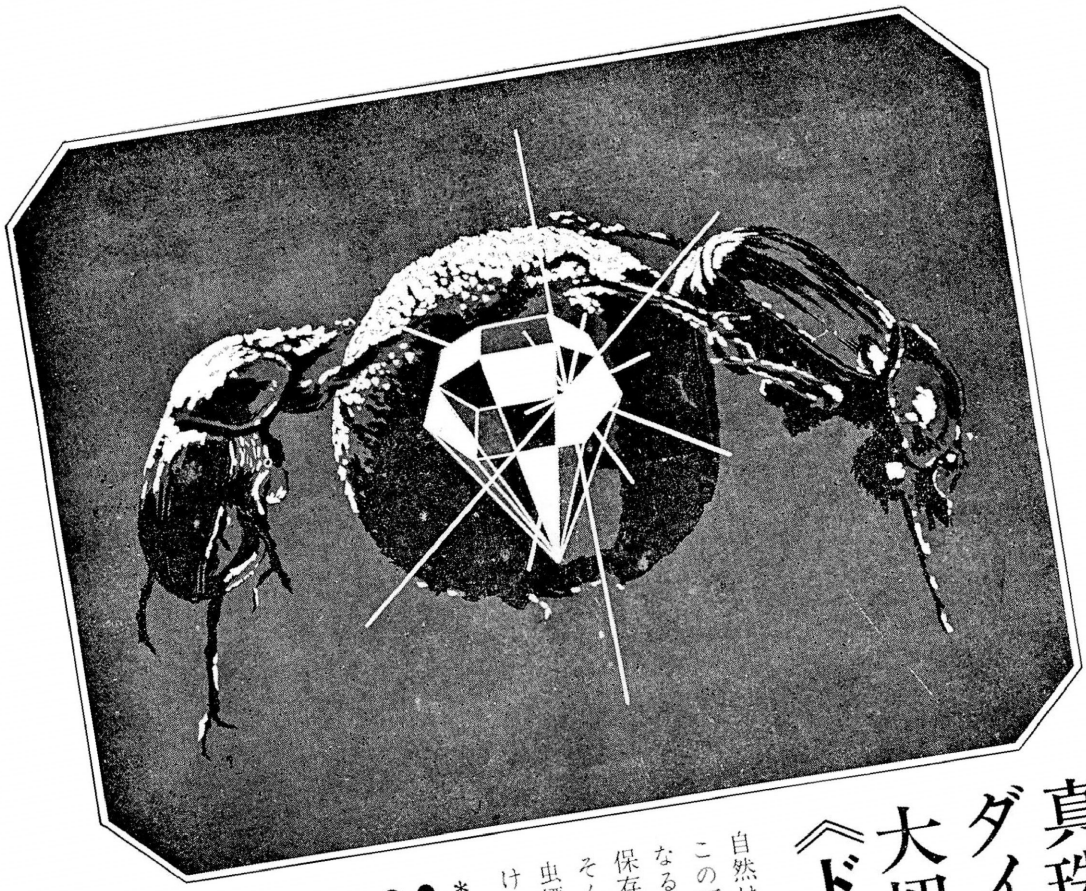
THE JAPANESE SOCIETY OF COLEOPTEROLOGY
TOKYO

Dates of Issue:

Vol. 20, No. 1	May 15, 1992
Vol. 20, No. 2	November 15, 1992

CONTENTS　目　　次

Short Papers 短 報



真珠より美しく
ダイヤより価値がある
大切な標本を永久に守る
《ドイツ型標本箱》

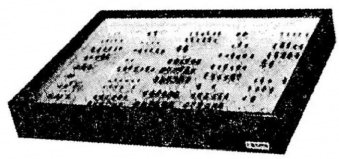
自然はますます大切なものとなってきました。この不思議な世界を解明する貴重な手掛りとなる昆虫標本は、価値あるものとして永久に保存したいものです。そんな願いをこめて、タツミ製作所では、昆虫標本の保存に最適なドイツ型標本箱をお届けします。

＊すばらしい特長

- ●くるいのこない良質な木材を使用
- ●湿気や乾燥にも強い独特の構造
- ●パラゾールにも変化せず、標本がより美しく見え
- ●パラゾールにも変化せず
- ●高級ニス塗装の丈夫で美しい仕上げ

※標本箱のほか、展翅板など昆虫標本作成に必要な器材もあります。
昆虫器材カタログ、昆虫関係輸入図書・委託図書リストもあり。

〒113 東京都文京区湯島二丁目二一二五 ☎〇三(八一一)四五四七(ヨイシナ)
郵便振替 東京一一三四七九
㈲タツミ製作所



大型
5,000円（送料別）

中型
4,500円（送料別）

この価格は昭和59年9月現在のものです

Elytra 投稿規定

1. 個人の会員は甲虫類およびそれに関連する報文を「Elytra」に投稿することができる．報文が共著のばあい，著者の1人は会員であることを必要とする．

2. 報文は和文または欧文のいずれでもよい．報文の長さは刷り上がり 10 ページ以内とし，超過ページの印刷経費は著者負担とする．

3. 原稿（本文，図，表および表紙）はコピー1部をそえて編集幹事に書留で郵送する．

4. 著者校正は原則として初校のみとする．校正での変更や追加は認めない

5. 別刷は 50 部単位で作成し，50 部（表紙なし）を学会負担（送料等別）とする．

6. 下記の原稿作成上の注意が守られていない場合には，原稿を受けつけないことがある．

原稿作成上の注意

1. 和文原稿は 20×20 字づめ A4判横書き原稿用紙，または 800 字づめのワープロを用いる．句読点には．，：；・を用いる．欧文原稿の用語には英語，独語，仏語のいずれを使用してもよい．欧文原稿の用紙には国際判またはA4判を用い，左側に 3 cm 以上の余白をあけ，タイプライターなどで清書する．行間はダブル・スペースとし，表題や見出しを含めていかなる場合も大文字だけでは打たない．なお，原稿の第1ページには，少なくとも上部に 1/4 以上の余白をあける．

2. 報文原稿は，表題，著者名，所属機関とその所在地，または住所（和文原稿の場合はこれらの欧文表記を加える），刷り上がり 15 行以内の英文の著者抄録 (Abstract)，本文，和文要約，文献の順に配列する．動・植物の属およびそれ以下の学名には下線をひく．また，人名には二重の下線をひく．文献は著者名のアルファベット順に並べて下記の形式で記す．

FLEUTIAUX, E., 1942. Entomological results from the Swedish Expedition to Burma and British India. Coleoptera: Elateridae, recueillis par René MALAISE. *Ark. Zool.*, **33A** (18): 1–24.

黒沢良彦 (KUROSAWA, Y.), 1978. 伊豆諸島特産種ミクラミヤマクワガタの系統と分布. 科博専報, (11): 141–153.

——— & H. KOBAYASHI, 1975. A new may-beetle of the genus *Fruhstorferia* KOLBE from Formosa. *Bull. natn. Sci. Mus., Tokyo*, (A), 1: 213–215.

THOMSON, M. J., 1860. Essai d'une classification de la famille des Cérambycides et matériaux pour servir à une monographie de cette famille. XVI+396 pp., 3 pls. Soc. ent. France, Paris.

(雑誌の号数は括弧でくくって表示するが，巻が通しページである場合には号数を引用しない.)

3. 報文中の採集データは次のように略記されたい．

(例) 3♂♂, 1♀, Mt. Gassan, Yamagata Pref., 5-V-1980, Y. WATANABE leg.

4. 原稿には原稿用紙と同質の表紙をつけ，これに表題，ランニング・タイトル（簡略化した論文表題，欧文 50 字以内，和文 20 字以内），著者名，連絡先を記し，赤字で原稿枚数，図表の枚数，別刷部数（表紙つき，表紙なしの別を明記），その他連絡事項があれば記入する．

5. 図はすべて挿図 [text-figure] として扱い，図版 [plate] にはしない．線画は耐水性黒色インクで鮮明に描き，そのまま印刷できるようにする．印刷された図の拡大（縮小）率を示したい場合には，図中にスケールを入れる．原図には薄紙のカバーをかけ，これに著者名，図の番号，上になる方向を示す．もし，原図版上に取扱い指定文字を入れる場合にはかならず青鉛筆を用いる．原図の返送が必要な場合はカバーにその旨を記入する．原図の大きさは，台紙を含めてB4判 (36×25.5 cm) 以内とされたい．

6. 図の説明および表はそれぞれ別紙に書き原稿末につける．原稿本文の左余白に図および表のだいたいの挿入位置を鉛筆で示す．

7. 原稿の送付先は下記宛てとする．

〒169 東京都新宿区百人町 3-23-1
国立科学博物館分館動物研究部昆虫第一研究室気付
編集幹事 新 里 達 也

ELYTRA Vol. 20, No. 2 CONTENTS
