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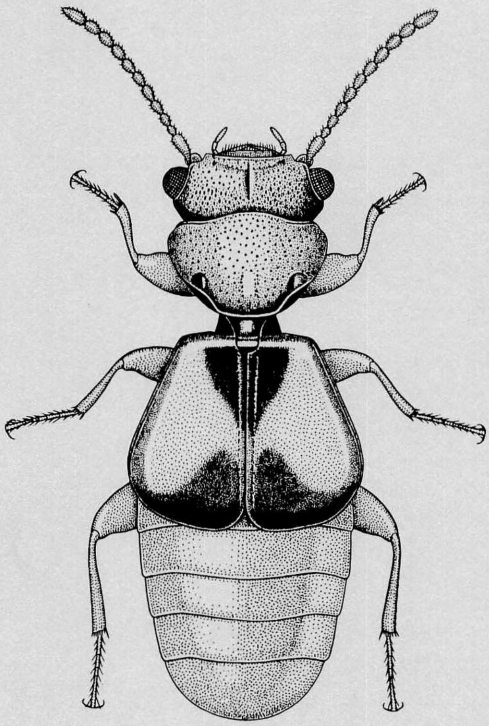

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ELYTRA

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The Japanese Society of Coleopterology

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Elytra, Tokyo, **19** (1): 1–4, May 15, 1991

The Anthribid Beetles of the Genus *Mecotropis* (Coleoptera, Anthribidae) from North Vietnam

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Abstract Three Vietnamese species of the anthribid genus *Mecotropis* collected by Shinji NAGAI are reported. One of them is identified with *M. cylindricus* JORDAN, 1904, originally described from Tonkin, and another is with *M. vitalis* (JORDAN, 1916), originally described from Cambodia and not recorded from N. Vietnam. The other proved to be new to science, and is described under the name of *M. vietnamensis*, which resembles *M. icanus* JORDAN, 1911, known from Malakka.

The genus *Mecotropis* LACORDAIRE comprises thirty-eight species of anthribid beetles known up to the present, which are mainly distributed in Southeast Asia. Two of them, *Mecotropis cylindricus* JORDAN, 1904, and *Mecotropis vitticollis tonkinianus* JORDAN, 1916, have hitherto been known from North Vietnam.

In July to August, 1990, Mr. Shinji NAGAI of Tokyo visited North Vietnam for collecting insects. Some anthribids collected on that occasion were submitted to me for taxonomic study, all collected at the top of Mt. Tamdao (about 1,300 m alt.) lying about 40 km northwest of Hanoi. Three species of the genus *Mecotropis* were included in the collection, and after a careful examination, one of them was identified with *M. cylindricus* JORDAN, 1904, originally described on a single male from the Mauson Mts., Tonkin, another was with *M. vitalis* JORDAN, 1916, originally described from Samber in Cambodia and not recorded from North Vietnam, and the other was found to be new to science. They will be reported 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 kindly reading the original manuscript of the present paper, and to Mr. S. NAGAI of Tokyo, for his kindness in providing me with the valuable specimens.

Mecotropis cylindricus JORDAN

Mecotropis cylindricus JORDAN, 1904, Novit. zool., **11**: 230; 1916, ibid., **23**: 360; 1923, Faune ent. Indochine, Saigon, **6**: 74.

Specimen examined. 1 ♀, Mt. Tamdao (about 1,300 m alt.), N. Vietnam, 12–

VII ~2–VIII–1990, Shinji NAGAI leg.

Distribution. N. Vietnam, Laos.

Note. This species was originally described from a single male taken on the Mauson Mts., Tonkin. After that, it was recorded from Luang Prabang, Mt. Mekong, Vien Vai, and Muong Sen, all in Laos.

Mecotropis vitalis (JORDAN)

Mecocerus [err.] *vitalis* JORDAN, 1916, Novit. zool., **23**: 360.
Mecotropis Vitalisi [sic]: JORDAN, 1923, Faune ent. Indochine, Saigon, **6**: 74–75.

Specimen examined. 1 ♂, Mt. Tamdao (about 1,300 m alt.), N. Vietnam, 12–VII ~2–VIII–1990, Shinji NAGAI leg.

Distribution. N. Vietnam, Cambodia.

Notes. This species was originally described on the basis of a single female, collected by VITALIS at Sambor in Cambodia. It has not been recorded from North Vietnam, and this is the first record from there.

JORDAN made two mistakes. In the original description, he named this species "*Mecocerus vitalis* spec. nov.", though he used "*Mecotropis vitalis*" in the comparative note with related species (p. 360, fig. 3). When he recorded the specimen again in "Les Anthribides de l'Indochine", he used "*Mecotropis Vitalisi*" four times (pp. 74–75).

Mecotropis vietnamensis SENOH, sp. nov.

(Fig. 1)

Length: 20.0 mm (from apical margin of rostrum to apex of pygidium).

Female. Body thick, about 3.3 times as long as wide, including rostrum and pygidium. Colour entirely black. Pubescence dense, whitish and blackish; blackish hairs of elytra forming an inverse V-shaped patch at the basal part, a V-shaped one at the middle, a transverse one behind the middle, and a pair of round ones at the sides of the base. Antennae with 8th and apical half of 7th segments covered with whitish hairs.

Head thick, and with a deep longitudinal sulcus between eyes to basal parts of antennae; eyes relatively large, hemispherical, strongly convex above, and moderately approximate to each other; rostrum thick, relatively short, widest at the middle, and strongly emarginate at the middle of anterior margin, and with a pair of deep triangular fossae in front of the basal parts of antennae; maximum width of rostrum about 2.7 times as wide as the shortest distance between eyes. Antennae short, just reaching the base of elytra, proportions in length from 1st to 11th about 26: 18: 30: 30: 30: 27: 30: 25: 39: 33: 41, apical three segments somewhat compressed.

Pronotum somewhat barrel-shaped, convex above, about 1.1 times as wide as long, widest at the middle; disc longitudinally depressed and strongly swollen at the

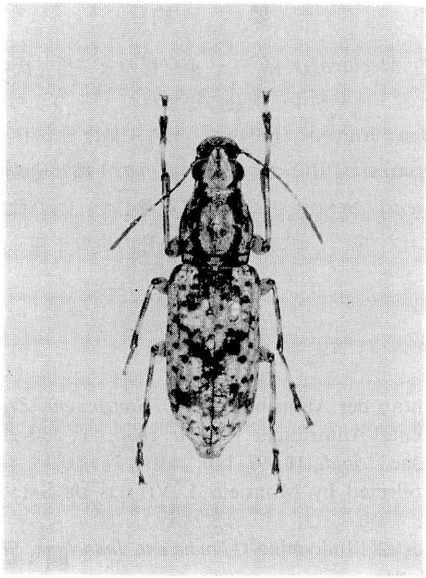

Fig. 1. *Mecotropis vietnamensis* SENOH, sp. nov., ♀, from N. Vietnam.

centre; dorsal transverse carina weakly trisinuate, and roundly connected with each lateral carina, the latter horizontally extending to the subapical part of side margin; carinula distinct. Scutellum nearly hemispherical. Elytra oblong and thick, about 2.0 times as long as wide, parallel-sided in basal seven-tenths, then narrowed posteriorly; strial punctures small, becoming smaller and shallower from base towards subapical part, their diameter being distinctly smaller than the widths of intervals. Pygidium linguiform, extending backwards, nearly as long as wide; lateral margins reflexed, gradually convergent towards broadly rounded apex; hairs sparse in apical third.

Prosternum with a deep transverse sulcus in front of coxal cavities; mesosternal process linguiform; metasternum with a deep triangular fossa in front of intercoxal part; 1st to 5th visible sternites, viewed from side, conjointly almost horizontal. Legs long and thin, and sparsely covered with fine deep punctures except for tarsi; anterior, median and posterior femora subequal in length to one another, anterior one thick; anterior tibia a little longer than the median which is nearly as long as the posterior; anterior tarsus shorter than the posterior which is shorter than the median.

Male. Unknown.

Holotype ♀, Mt. Tamdao (about 1,300 m alt.), N. Vietnam, 12–VII ~ 2–VIII–1990, Shinji NAGAI leg. The holotype is deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Distribution. N. Vietnam.

Notes. In general appearance, this species somewhat resembles *Mecotropis icanus* JORDAN, 1911, known from Malakka, but can be distinguished from the latter by the differently formed elytral markings and strongly convex eyes.

要　約

妹尾俊男：北ベトナム産の *Mecotropis* 属.―― 東京都の永井信二氏のご好意により，北ベトナム産の *Mecotropis* 属に含まれる3種を検する機会に恵まれた．そのうちの1種はすでにトンキンから記載されている *M. cylindricus* JORDAN, 1904 で，もう1種はカンボジアから記載され北ベトナムからは未記録の *M. vitalis* (JORDAN, 1916) であった．残りの1種は比較検討の結果，新種と認められたので，*Mecotropis vietnamensis* SENOH と命名して記載した．この種は，マラッカから記載された *M. icanus* JORDAN, 1911 に比較的よく似ているが，上翅の斑紋や強く張り出した複眼などの差異により容易に識別することができる．

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ヤツボシハナカミキリとツマグロハナカミキリ (2)

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Studies on the *Leptura arcuata* Species-group (2) (Coleoptera, Cerambycidae)

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Abstract Taxonomic relationship and geographical variation of *Leptura mimica* BATES from Sakhalin, the Southern Kurile Islands and Japan and of *Leptura arcuata tsumagurohana* OHBAYASHI (in an old sense) from Japan are discussed. *Leptura arcuata tsumagurohana* OHBAYASHI is regarded as a synonym of *Leptura modicenotata* PIC, and three species of the *L. arcuta* group, *L. modicenotata* PIC, *L. mimica* BATES and *L. arcuata* PANZER, are recognized. They are discriminated by the following characteristics:

1. Elytra usually provided with eight black markings covered with black pubescence, the second one not rounded and almost reaching suture; hind tibiae strongly curved at about apical 2/5 and not apically dilated in male; parameres of male genitalia narrowly and weakly twisted; spermathecal duct of female genitalia long and thin; basal part of spermatheca slender.... *Leptura arcuata* PANZER (from Europe, Mongolia, Siberia, Sakhalin, N. China and Korean Peninsula).
— Elytra provided with eight distinct black markings or without any marking; hind tibiae curved at about apical 2/5 and becoming broader towards apices in male; parameres of male genitalia widely spatulate and strongly twisted; spermathecal

duct of female genitalia short and thick, as long as or a little longer than spermatheca; basal part of spermatheca roundly projected.....2.

2. Elytra provided with eight distinct black or brown markings covered with black pubescence but occasionally with well developed black markings which are contiguous to each other in the specimens from Oki Is.; inner sides of parameres angulate and touching at bases, forming rather an obtuse angle (70–90°) ..... *Leptura mimica* BATES (from Hokkaido, Honshu, Oki Is., Rishiri Is. and S. Kurile Is.).

— Elytra provided with indistinct black markings covered with black or golden pubescence or without marking; inner sides of parameres rounded and touching at bases, forming rather a sharp angle (40–50°); body color in northern populations darker than in southern ones (excluding those of the lowland of southern Kyushu).....*Leptura modicenotata* PIC (from Hokkaido, Honshu, Shikoku, Kyushu, Sado Is., Awaji-shima Is., Tanega-shima Is. and Yaku-shima Is.).

はじめに

前報では，日本産（サハリン，南千島を含む）ヤツボシハナカミキリ *Leptura mimica* BATES を，大陸産タイリクヤツボシハナカミキリ（和名新称）*L. arcuata* PANZER とは別の種であると報告したが，今回は，いわゆるツマグロハナカミキリ *L. tsumagurohana* OHBAYASHI とされているものの上翅の斑紋，軟毛の色の変異を地理的に調べ，ヤツボシハナカミキリ *L. mimica* BATES との区別点を明らかにし，分類学的に整理した．

検視標本および研究方法

検視標本は，表 1 に示したように，ツマグロハナカミキリが北は北海道から南は屋久島までの雄 315 頭，雌 331 頭，ヤツボシハナカミキリが北は北海道から南は和歌山県までの雄 96 頭，雌 67 頭である．

ヤツボシハナカミキリとツマグロハナカミキリの区別は，前報で述べたように，上翅の 8 つの黒紋が明瞭で，黒紋ないしは黒紋の褪色した褐色紋の位置に黒色軟毛を有するものをヤツボシハナカミキリ（図 1 B, 3 P, 4 P）とし，それ以外のものをツマグロハナカミキリ（図 1 A, 3 A–O, 4 A–O）として取り扱った．まず，ヤツボシハナカミキリとツマグロハナカミキリの区別をより明確にするために，雄交尾器の形状を比較した．上翅の黒紋は，黒色部と金色軟毛の組合せにより形成され，上翅の黒紋に多くの変異が見られるため，その変異の傾向をみる目的で，地域ごとに上翅の黒色部と黒，金色軟毛の被毛状態とその占有度について調べた．

結果と考察

雄交尾器

ヤツボシハナカミキリとツマグロハナカミキリとでは，雌雄交尾器ともによく似ているが，雄交尾器の側片（parameres）に形態的差異がみられた．図 2 に雄交尾器の包片（tegmen）と側片の形状を示したが，ヤツボシハナカミキリでは側片基部内側がやや角ばり，接している部分の角度が大きくて 70–90°（図 2 B），ツマグロハナカミキリでは側片基部内側が丸まり，接している部分の角度は小さくて 40–50°（図 2 A）であることがわかる．

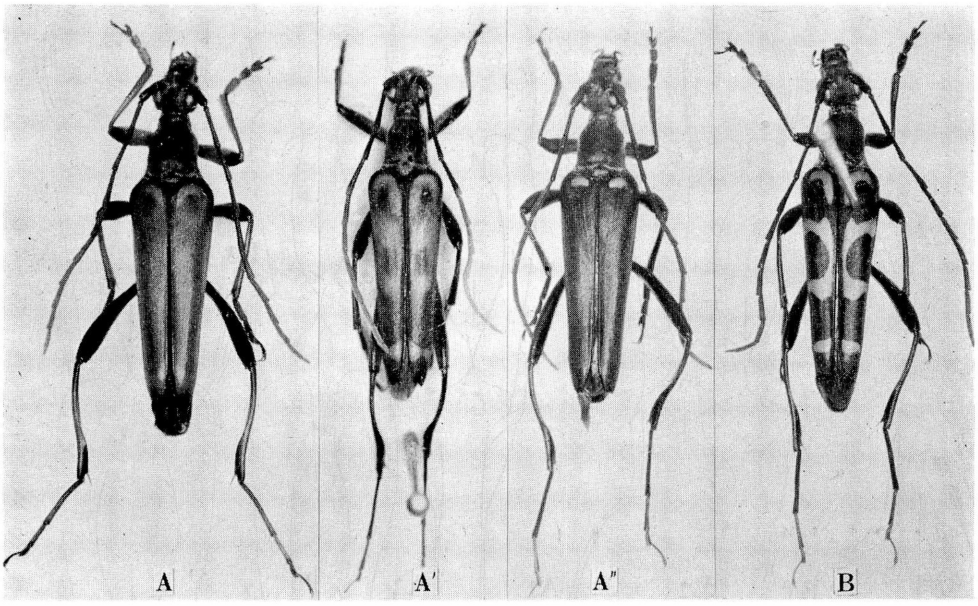


図 1. ツマグロハナカミキリとヤツボシハナカミキリの雄.

Fig. 1. Males of *Leptura modicenotata* PIC (=*Leptura arcuata tsumagurohana* OHBAYASHI) (A, A′, A″) and *L. mimica* BATES (B) from: A, Tanega-shima Is.; A′, Gifu Pref.; A″, Gunma Pref.; B, Fukushima Pref.

表 1. ツマグロハナカミキリとヤツボシハナカミキリの検視標本個体数.

Table 1. Number of examined specimens of *Leptura modicenotata* PIC (=*Leptura arcuata tsumagurohana* OHBAYASHI) and *L. mimica* BATES.

	L. modice-notata		*L. mimica*			*L. modice-notata*		*L. mimica*	
Locality	♂	♀	♂	♀	Locality	♂	♀	♂	♀
Hokkaido	3	0	43	27	Wakayama Pref.			0	3
Rishiri Is.			0	1	Fukui Pref.	1	9	0	1
Aomori Pref.	3	4	5	3	Kyoto Pref.	1	1		
Iwate Pref.	10	4			Awaji-shima Is.	5	4		
Yamagata Pref.	0	3			Shimane Pref.	1	3		
Niigata Pref.	3	3			Okayama Pref.	2	4		
Sado Is.	2	0			Kôchi Pref.	2	7		
Fukushima Pref.	10	28	2	5	Tokushima Pref.	1	1		
Tochigi Pref.	10	11			Ehime Pref.	4	17		
Gunma Pref.	19	26	2	2	Fukuoka Pref.	0	1		
Yamanashi Pref.	33	27	2	0	Saga Pref.	0	1		
Nagano Pref.	124	55	29	14	Ôita Pref.	4	3		
Gifu Pref.	30	36	1	0	Kumamoto Pref.	4	5		
Ishikawa Pref.			2	1	Kagoshima Pref.	5	6		
Tokyo Pref.	6	26			Tanega-shima Is.	2	1		
Kanagawa Pref.	3	10			Yaku-shima Is.	22	22		
Shizuoka Pref.	3	3			Oki Is.			10	10
Aichi Pref.	2	6							
Mie Pref.	0	4			Total	315	331	96	67

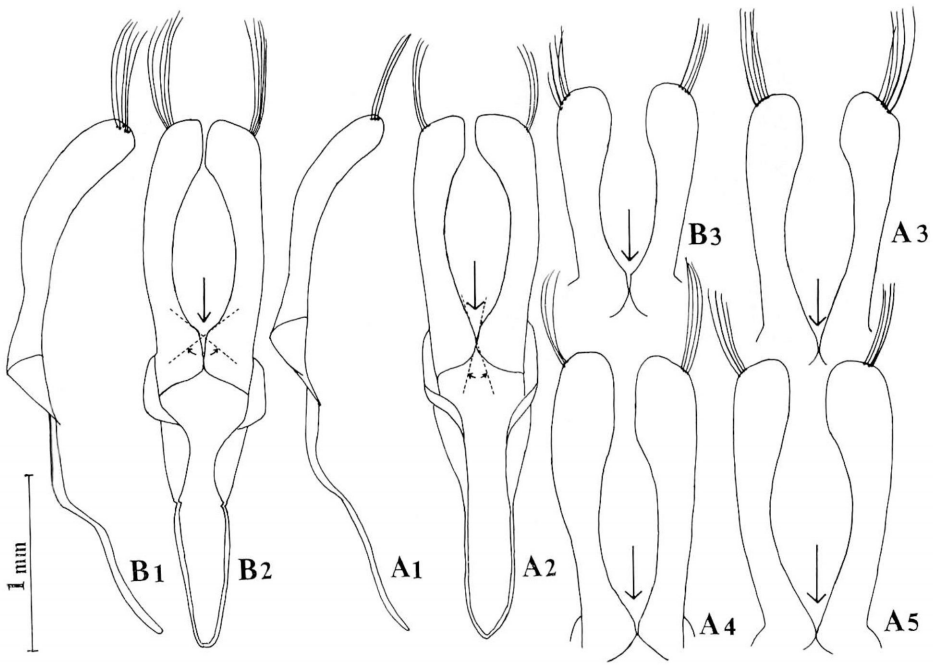


図 2. ツマグロハナカミキリとヤツボシハナカミキリの雄交尾器側片と包片.

Fig. 2. Parameres and tegmen of male genitalia of *Leptura modicenotata* PIC (=*Leptura arcuata tsumagurohana* OHBAYASHI) (A) and *L. mimica* BATES (B) from: A1–A2, Nagano Pref.; A3, Gunma Pref.; A4, Yaku-shima Is.; A5, Ôita Pref.; B1–B2, Hokkaido; B3, Aomori Pref.; A1, B1: lateral view; A 2–5, B 2–5: ventral view.

上翅の黒色部と黒，金色軟毛の被毛状態ならびにその占有度

北海道から屋久島までの各地域のツマグロハナカミキリを図 3 A–O に示したが，同じ個体の上翅の黒，金色軟毛の被毛状態を示したのが図 4 A–O である．この図から判断して，種子島および鹿児島産のものでは，上翅の黒色部とは関係なく金色軟毛におおわれている部分の多いことがわかった．また屋久島および高地帯や寒冷地の個体では，上翅の黒色部が少なくても黒色軟毛におおわれている部分の多いこともわかった．

このような傾向をさらに明確にするために，屋久島，九州低地（鹿児島県），九州高地（熊本，大分県），四国低地，四国高地，中国地方低地（岡山県），中国地方高地（島根県），東京都，長野，山梨，群馬，福島，青森の各県と北海道（日高山系）などの材料を用いて，上翅の半分以上が黒色部となっているもの（黒っぽく見えるもの）と上翅の半分以上が褐色になっているもの（明るく見えるもの）の比率を図 5 に示した．さらに，上翅の半分以上が黒色軟毛でおおわれているものと，上翅の半分以上が金色軟毛でおおわれているものとの比率を図 6 に示した．その結果をまとめると次のようになる：上翅の黒色部と黒色軟毛の生ずる位置はかならずしも一致しない；全体的に山地，寒冷地にいくほど黒色部，黒色軟毛の多い個体がふえる；九州南部低地（鹿児島県）では黒色部の大きい個体が多い．このように，ツマグロハナカミキリは，九州南部低地のものを除くと，山地やより寒冷地にい

くほど黒化が進むことが理解できる．九州南部低地（鹿児島県）の個体の上翅の黒色部のひろがり方を見ると，図 7 A-E に示したように，基部より先端部へ向かって黒色部のひろがっていく傾向があり，他の地域では，図 7 A′-E′ に示したように，先端部より基部へとひろがっていく傾向がある．つまり鹿児島県のものは，他地域産とは逆の変異性を示すことがわかる．しかし，種子島の個体は，屋久島と鹿児島低地との中間的なものであり，鹿児島低地のものを明確に区別することはできない．

以上のように変化の多いツマグロハナカミキリも，ある一定の方向性をもった変異を示し，ヤツボシハナカミキリとは雄交尾器においても区別がつくので，ツマグロハナカミキリとヤツボシハナカミキリは近縁の別種として扱うのが妥当であろう．

ツマグロハナカミキリの学名としては *Leptura arcuata tsumagurohana* OHBAYASHI が現在使用されているので，タイリクヤツボシハナカミキリ *L. arcuata* PANZER の亜種ということになってしまう．しかし，日本産ヤツボシハナカミキリは，上翅の斑紋以外ではツマグロハナカミキリに酷似しているので，タイリクヤツボシハナカミキリよりツマグロハナカミキリに近縁であろうと推定される．つまり，これまでツマグロハナカミキリと称されてきた種は，先に述べたように日本産ヤツボシハナカミキリ *L. mimica* BATES とは異なった種であり，もちろんタイリクヤツボシハナカミキリ *L. arcuata* PANZER の種内変異（亜種）とも考えられない．それで，いわゆるツマグロハナカミキリの学名は，*L. tsumagurohana* OHBAYASHI を種に充当させて用いるのが順当な処置だろうといちおうは考えられる．しかし，このように変異が多く，型名の多く与えられている種群では，1961 年以前に記載された亜種以下のランクを種または亜種へ昇格させるのが国際動物命名規約でも適格になる．そこで，それらの型名を年次を追って整理し，適格な名称を模索する必要が生じてくるのである．

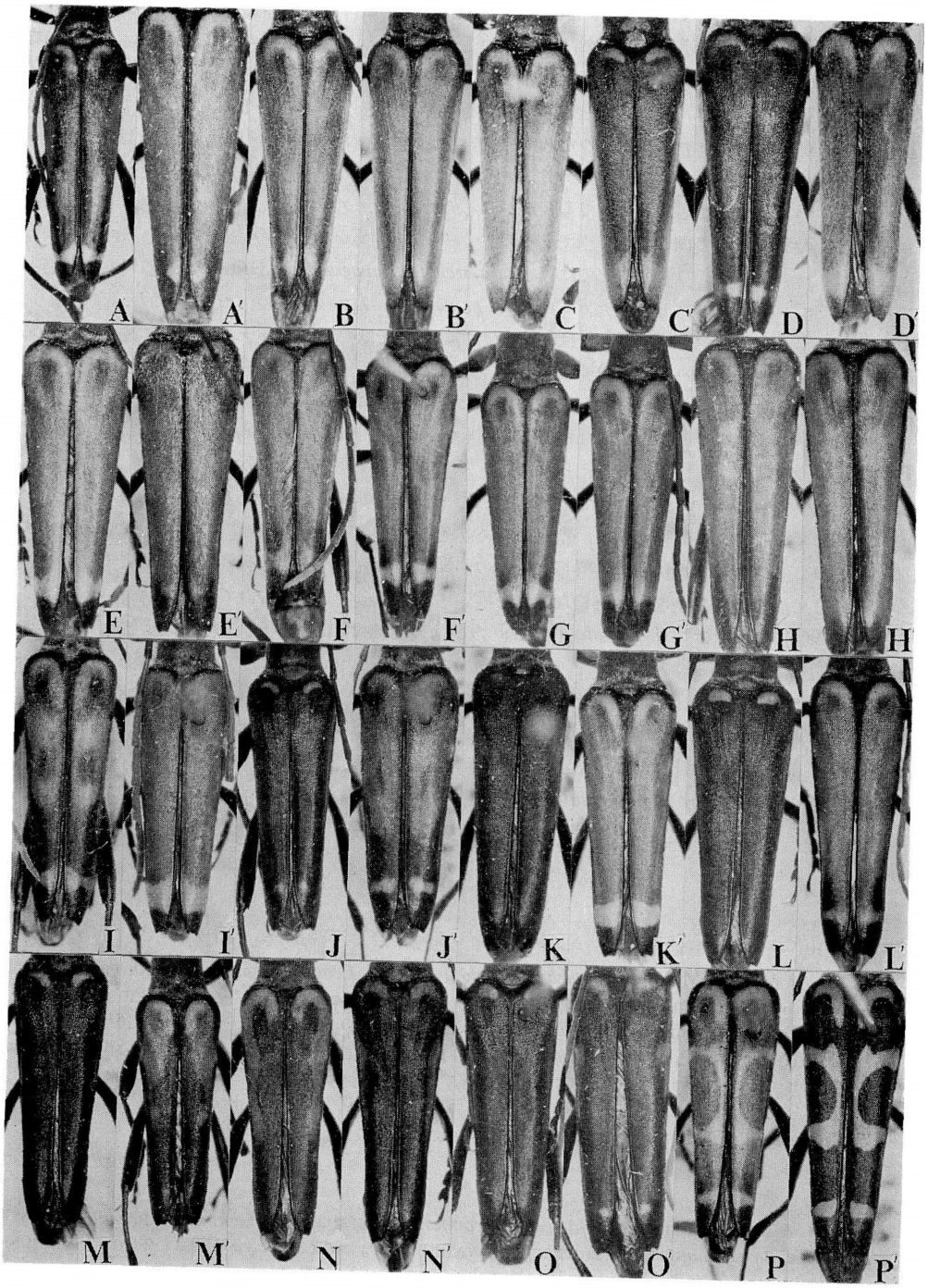
大林 (1963) によれば，*L. arcuata* PANZER の型は全部で 26 に分けられる（図 8）が，このうち 17–21 は明らかにヤツボシハナカミキリ *L. mimica* BATES であり，1–16 と 22–26 の型がツマグロハナカミキリに相当する．これら多数の型のうちで，後者と判定され，しかももっとも古く記載されたものは，22 の m. *modicenotata* である．これは，*Leptura tenuicornis* MOTSCHULSKY の 1 型として PIC (1901) により記載されたもので，この名称が有効名である．したがって，ツマグロハナカミキリの学名としては，*Leptura modicenotata* PIC を使用すべきだということになる．そこで，これまでツマグロハナカミキリの学名として使用されてきた型などの学名を整理すると次のようになる．

図 3 (10 ページ)．各地産ツマグロハナカミキリとヤツボシハナカミキリの雄．

Fig. 3 (on p. 10). Males of *Leptura modicenotata* PIC (=*Leptura arcuata tsumagurohana* OHBAYASHI) (A–O) and *L. mimica* BATES (P) from various localities.——A, A′: Yaku-shima Is.; B, B′: Tanegashima Is.; C, C′: Kagoshima Pref.; D, D′: Ôita Pref.; E: Ehime Pref.; E′: Tokushima Pref.; F: Okayama Pref.; F′: Shimane Pref.; G, G′: Awaji-shima Is.; H, H′: Kanagawa Pref.; I, I′: Gifu Pref.; J, J′: Nagano Pref.; K, K′: Yamanashi Pref.; L, L′: Gunma Pref.; M: Niigata Pref.; M′: Sado Is.; N, N′: Iwate Pref.; O, O′: Hokkaido (Hidaka); P: Nagano Pref.; P′: Aomori Pref.

図 4 (11 ページ)．各地産ツマグロハナカミキリとヤツボシハナカミキリの雄上翅の黒色あるいは金色軟毛．

Fig. 4 (on p. 11). Black or golden elytral pubescence in males of *Leptura modicenotata* PIC (=*Leptura arcuata tsumagurohana* OHBAYASHI) (A–O) and *L. mimica* BATES (P) from various localities.——A–P: Same specimens as shown in Fig. 3. Black portion: black pubescence; white portion: golden pubescence.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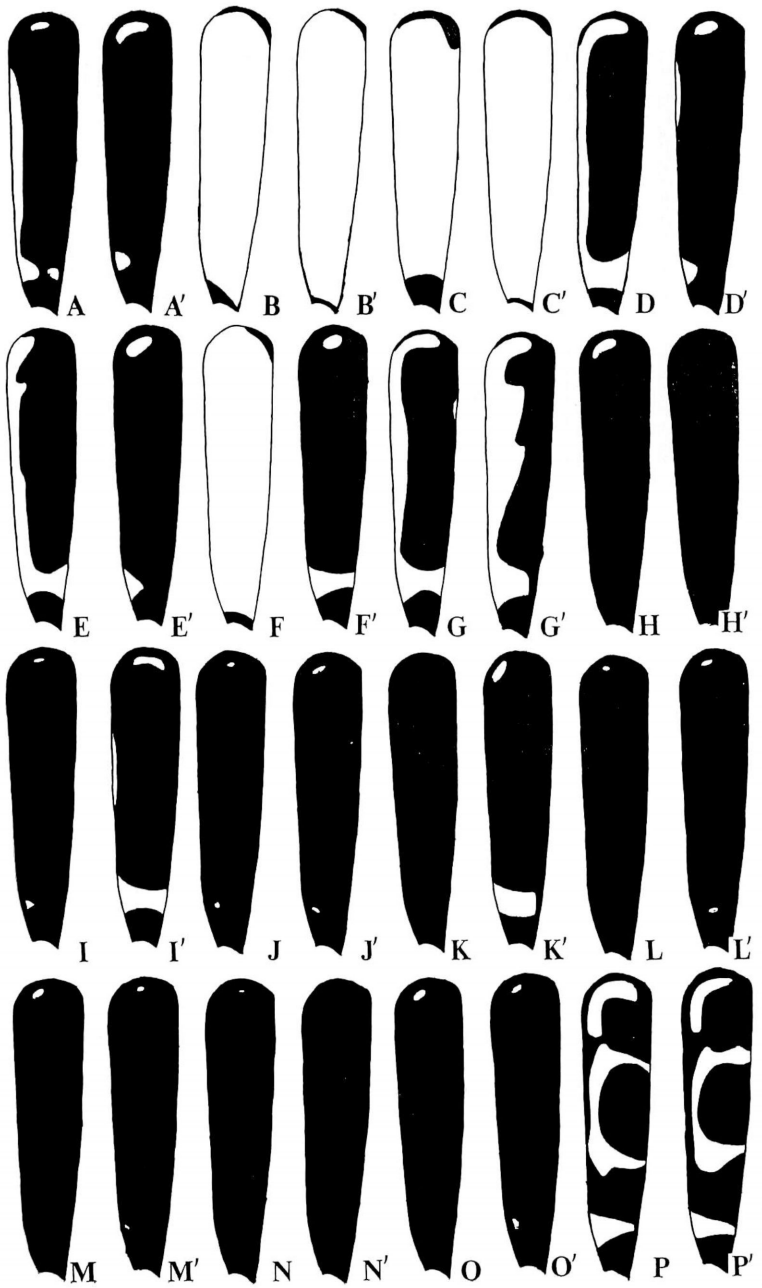
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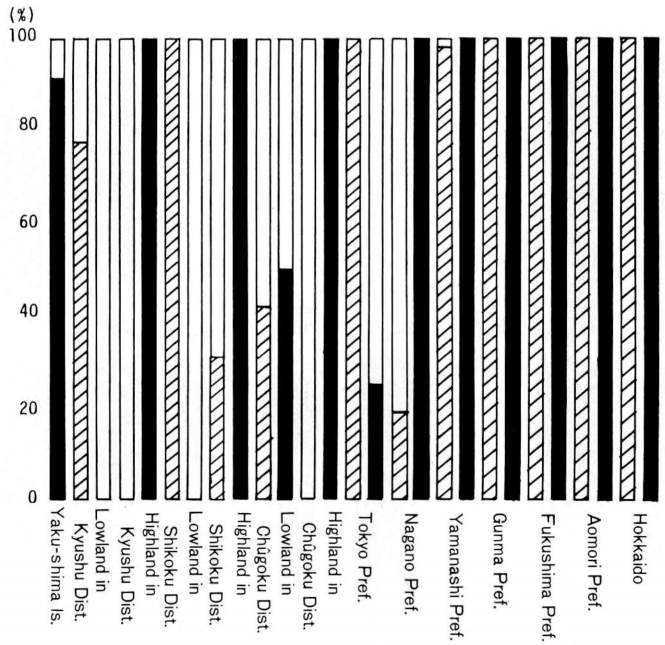

図 5. 各地産ツマグロハナカミキリの上翅色彩変異.

Fig. 5. Color variation of the elytral disc in *Leptura modicenotata* PIC (=*Leptura arcuata tsumagurohana* OHBAYASHI) from various localities. Dark portion (■ male; ▨ female) indicates percentage of the specimens examined, in which the elytral color is dominated by black (>50%), white portion (□) shows those dominated by brown.

Leptura modicenotata PIC, stat. nov.

Leptura (*Strangalia*) *tenuicornis*, var. *modicenotata* PIC, 1901, Bull. Mus. Hist. nat., Paris, **7**: 61.
Leptura (*Strangalia*) *tenuicornis*, var. *infernalis* PIC, 1901, op. cit., **7**: 61.
Leptura tenuicornis: BATES (nec MOTSCHULSKY), 1873, Annls. Mag. nat. Hist., (4), **12**: 194 (in part).
Strangalia tenuicornis, var. *tokioensis* PIC, 1915, Longicornia, **9** (2): 11.
Strangalia kinhokuana MATSUSHITA, 1932, Zool. Mag., Tokyo, **44**: 191.
Strangalia (s. str.) *arcuata*, ab. *mimica*: MATSUSHITA, 1933, J. Fac. Agr. Hokkaido imp. Univ., **34**: 212.
Strangalia (s. str.) *arcuata*: TAMANUKI, 1942, Fauna Nipponica, Tokyo, **10** (8–15): 177 (in part).
Strangalia (s. str.) *arcuata tenuicornis*: TAMANUKI, 1942, op. cit., 180.
Leptura (s. str.) *arcuata*: GRESSITT, 1951, Longicornia, **2**: 97 (in part).
Leptura (*Leptura*) *arcuata tenuicornis*, ab. *satsumensis* HAYASHI, 1953, Ent. Rev. Japan, **6**: 41.
Leptura (s. str.) *arcuata*, f. *tenuicornis*: HAYASHI, 1955, Col. Illustr. Ins. Japan, Coleopt., Cerambyc., 32, pl. 32, fig. 81.
Leptura (s. str.) *arcuata*, f. *satsumensis*: HAYASHI, 1955, op. cit., 32.
Leptura arcuata tsumagurohana OHBAYASHI, 1955, Ent. Rev. Japan, **6**: 61 [*syn. nov.*].
Leptura arcuata mimica, f. *infernalis*, f. *modicenotata*, ab. *tokioensis*, ab. *kinhokuana*: FUJIMURA, 1957, Shin Konchû, Tokyo, **10**(3): 13–15.
Leptura arcuata tsumagurohana, ab. *satsumensis*: FUJIMURA, 1957, Shin Konchû, Tokyo, **10**(3): 15.

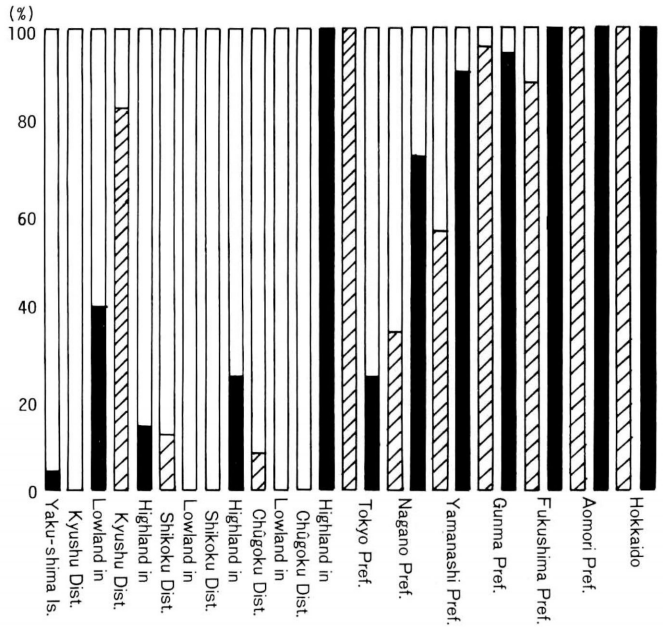

図 6. 各地産ツマグロハナカミキリの上翅軟毛の色彩変異.

Fig. 6. Color variation of elytral pubescence in *Leptura modicenotata* PIC (=*Leptura arcuata tsumagurohana* OHBAYASHI) from various localities. Dark portion (■ male; ▨ female) indicates percentage of the specimens examined, in which color of the elytral pubescence is dominated by black (>50%), white portion (□) shows those dominated by golden.

Leptura arcuata tsumagurohana, m. *edo*, m. *tosa*, m. *ise* OHBAYASHI, 1957, Ent. Rev. Japan, **8**: 13.
Leptura arcuata tsumagurohana, m. *kii*, m. *hiuga* OHBAYASHI, 1958, Ent. Rev. Japan, **9**: 10.
Leptura arcuata mimica, m. *hida*, m. *mitsuko*, m. *shigakogen*, m. *hirayu*, m. *hokua*, m. *kamikochi*, m. *pseudokinhokuana*, m. *yatsugatake*, m. *hishimon*, m. *miyama* OHBAYASHI, 1958, Ent. Rev. Japan, **9**: 10.
Leptura arcuata tsumagurohana, m. *satsumensis*: OHBAYASHI, 1963, Icon. Ins. Japon. Col. nat. ed., Tokyo, **2**: 281.
Leptura arcuata mimica, m. *modicenotata*, m. *infernalis*: OHBAYASHI, 1963, op. cit., 281.

分布: 北海道 (日高山系), 本州, 四国, 九州, 佐渡ヶ島, 淡路島, 種子島, 屋久島.

分布

ツマグロハナカミキリとヤツボシハナカミキリは, その形態的特徴からみてひじょうに近縁であり, タイリクヤツボシハナカミキリとの関係からみると, それらの祖先型からツマグロハナカミキリが分化したと考えるのが自然であろう. その分化がいつ起こったかは, まだ資料不足で推定することができないが, 分化は日本列島を舞台に展開されたと想定できよう. まず, 分布拡大に関与したと考えられる要素は, 第四紀を通じての氷期における陸橋と海流による流木であろう.

3 種の種間関係から考えて, 上翅斑紋変異のいちじるしいツマグロハナカミキリが, もっとも古く

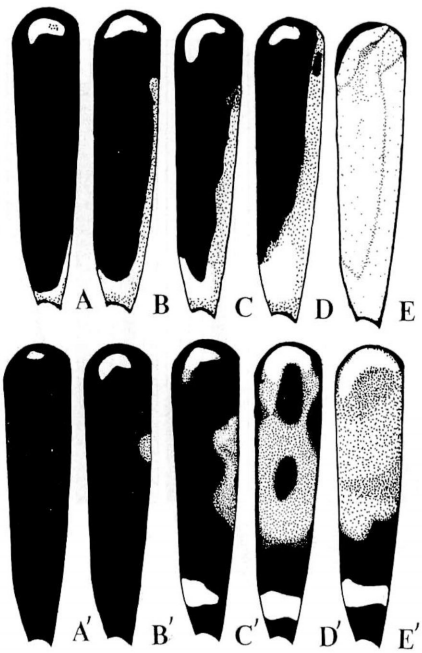

図 7. 各地産ツマグロハナカミキリの上翅斑紋変異.

Fig. 7. Variation of elytral markings in *Leptura modicenotata* Pic (=*Leptura arcuata tsumagurohana* Ohbayashi) from various localities.——A–E: Kagoshima Pref.; A′–E′: Honshu. Black portions: black markings.

日本列島へ侵入した．それはおそらく，ウルム氷期より前の氷期に陸橋を通って渡来したものであるにちがいない．それが北方（サハリン，北海道）を経由したのか，南西方（朝鮮半島，対馬）あるいはさらにその内側（本州の中国，北陸地方）を経由したのかは定かでない（いずれにしても，対馬にこの種が分布していないのは，ひとつの問題でもある）．そして，ツマグロハナカミキリが，おそらく北海道をも含む日本列島全域へ分布を拡大，繁栄したのではないだろうか．

さらに時代を下って，ウルム氷期を通じて北方から逃避したタイリクヤツボシハナカミキリが，ヤツボシハナカミキリへと分化しつつ本州へ達したと推定したい．先住者であるツマグロハナカミキリが，さらに南へ逃避したと推定されるウルム氷期の気象条件を考えると，気温が現在より 10–12°C も低く，日高山系での雪線が 1,600 m，森林限界が北緯 41–42 度付近であり，現在の襟裳岬付近の海岸線はハイマツを主体とする寒地性植生であったと推定される．したがって，ヤツボシハナカミキリ群が北海道に生息できる条件ではなかったようにも考えられる．そして後氷期を通じて，気候の温暖化とともに，より北方適応のヤツボシハナカミキリが，まだ残っていた最後の陸橋を通ってまず北海道へ侵入したが，さらに南下したツマグロハナカミキリが本州北部に達したころには，すでに津軽海峡が成立していたので，北海道へは進出できなかった．

いっぽう，本州に残存したヤツボハナカミキリは，山地帯へ追い上げられ，全体として現在のような分布型が形成されることになったのではないだろうか．さて，ツマグロハナカミキリの分布で興味がもたれる点のひとつに，北海道での分布が日高山系に限られていることがある（図 9）．北海道の

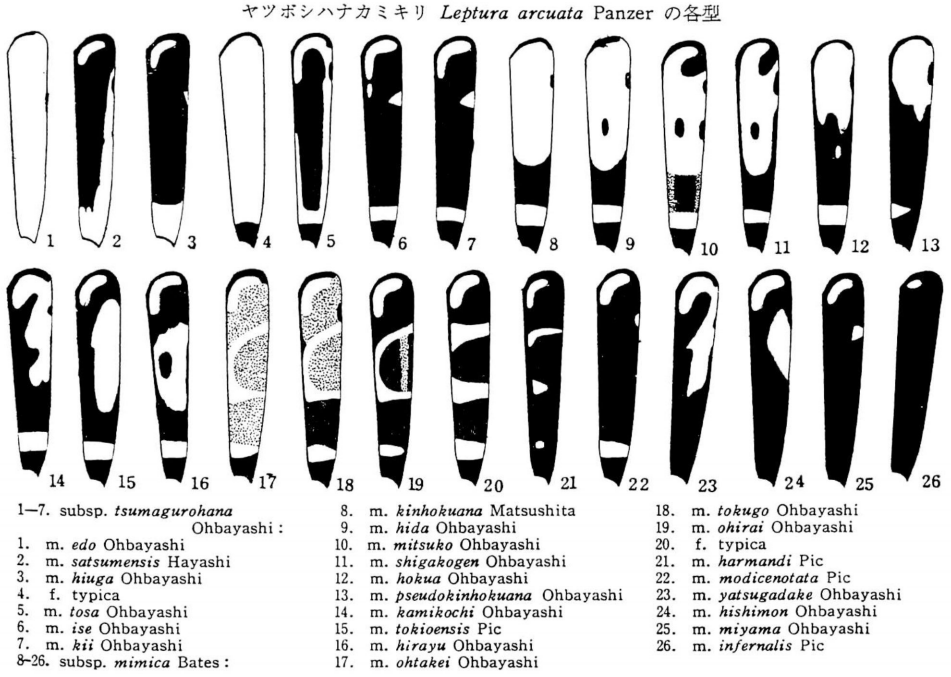

図 8. ツマグロハナカミキリのいろいろな型 (大林, 1963).

Fig. 8. Various morphs of *Leptura modicenotata* Pic (=*Leptura arcuata tsumagurohana* Ohbayashi) and *L. mimica* Bates, after Ohbayashi (1963).

個体は，体の黒化が進んだ関東北部や東北地方に分布している型と同じで，とくに変わってはいない．つまりその分布拡大を，比較的近い地質時代に求めざるをえない．

このような，ツマグロハナカミキリと同じような分布型を示す甲虫群として，東北地方北部のイワキナガチビゴミムシ *Trechiama oreas* (H. W. Bates) に近縁の 5 種が，北海道の日高，夕張地方に限って分布する例を，Uéno (1971) が報告している．そして，イワキナガチビゴミムシの祖先型が海を渡って進出したと想定されている．そのことをあわせて考察すると，ツマグロハナカミキリが日高山系以外に分布を拡大していないことと，形態的に東北地方の型と同じであるという事実は，今日われわれのみるような分布が，比較的最近の地質時代，津軽海峡成立後の気候の温暖化した時代に，洪水の影響を受けた海流によって運ばれた流木で，東北地方から日高地方にこの種が分布を拡大した結果であることを推定させる．

追記　前報で，タイリクヤツボシハナカミキリの分布域は大陸のみであると報告したが，サハリン産の標本が国立科学博物館に保管されていたので追加報告する．データは下記のとおりである．

4 ♂ 1 ♀, 知取, サハリン, 6-VII-1933, 岩倉 真採集.

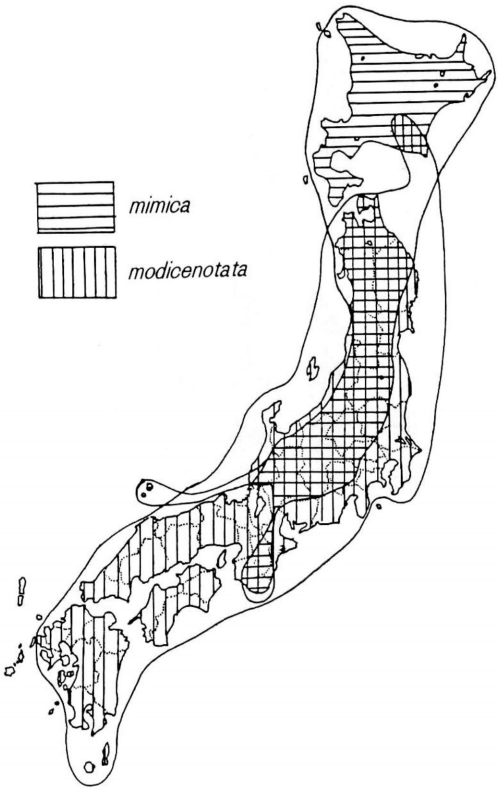

図 9. ツマグロハナカミキリとヤツボシハナカミキリの日本における分布.

Fig. 9. Map showing the distribution in Japan of *Leptura modicenotata* PIC (=*Leptura arcuata tsumagurohana* OHBAYASHI) and *L. mimica* BATES.

ま と め

これまでのいわゆるヤツボシハナカミキリ *Leptura arcuata* PANZER は，旧北区に広く分布し，1 種 2 亜種に分けられていた．前報では日本産の *L. mimica* が別種であると認め，独立種の扱いにした．今回の報告では，その斑紋変異の多様さゆえに，分類学的取扱いに混乱をきたしていたもうひとつの亜種 subsp. *tsumagurohana* を *L. modicenotata* PIC の同物異名とし，独立種の扱いにした．この結果，これまで 1 種とされてきたヤツボシハナカミキリは 3 種となったわけである．なお，この 3 種は，次の検索表で識別できる．

1. 上翅は黒い軟毛におおわれた 8 個の黒紋をつねにもち，2 番目の黒紋は左右接することが多く，半円形になることは少ない；雄の後肢脛節は先端より 2/5 付近で強く曲がり，先端部までほぼ同じ幅である；雄交尾器の側片は細長いヘラ状で，先端部にいくにしたがいよじれるように曲がるが，湾曲がそれほど強くはない；雌交尾器の受精嚢管は細くて長く，受精嚢は基部が張りださない．分布：ヨーロッパ，モンゴリア，サハリン，中国（東北部，陝西，河北，山東），朝鮮半島…… タイリクヤツボシハナカミキリ *Leptura arcuata* PANZER.

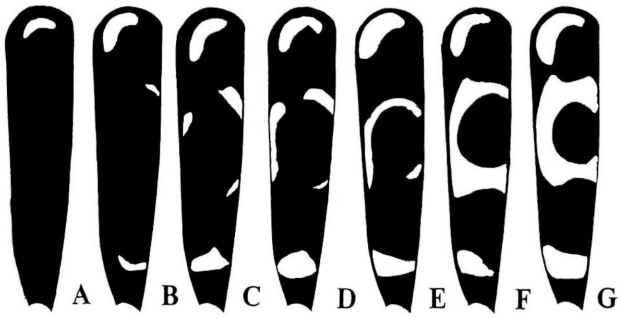

図 10. 隠岐産ヤツボシハナカミキリの上翅斑紋変異.
Fig. 10. Variation of elytral markings in *Leptura mimica* BATES from Oki Is.

— 上翅は 8 個のはっきりした斑紋をもつか，あるいは斑紋をもたない；雄の後肢脛節は先端より 2/5 付近で曲がり，先端部へいくにしたがい幅が広くなる；雄交尾器の側片は幅広いヘラ状であり，先端部へいくにしたがいよじれるように強く曲がる；雌交尾器の受精嚢管は太くて短く，受精嚢と同じ長さかやや長い程度，受精嚢は基部が張りだして丸みをおびる……2.

2. 上翅は黒い軟毛でおおわれた明瞭な 8 個の黒ないし褐色紋をつねにもつが，隠岐島産のものだけは黒色部がひろがり，全体が黒いものまで見られる (図 10)；雄交尾器の側片基部内側は角ばり，接している部分の角度は大きくて 70–90° である．分布：北海道，本州，隠岐島，利尻島，サハリン，南千島…… ヤツボシハナカミキリ *Leptura mimica* BATES.

— 上翅は黒ないし金色軟毛でおおわれた明瞭な黒紋をもつ個体から，それらをもたない個体までの変異があり，全体が黒くなる個体もある；雄交尾器の側片基部内側はやや丸くなり，接している部分の角度は小さくて 40–50° である．分布：北海道 (日高地方)，本州，四国，九州，佐渡ケ島，淡路島，種子島，屋久島……ツマグロハナカミキリ *Leptura modicenotata* PIC.

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Elytra, Tokyo, **19** (1): 18, May 15, 1991

The Staphylinid Beetles from Minamidaitô-jima Island, the Ryukyus

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In the previous record (WATANABE, 1990, p. 214), eight species of staphylinid beetles were recorded from Kitadaitô-jima Island, the Ryukyus. In the present report, six staphylinid species are recorded from Minamidaitô-jima Island, which is situated to the south of Kitadaitô-jima Island. All the specimens were collected on July 1st, 1971, by Mr. Yukihiko IZUMI. I thank him for his kindness in giving me the specimens.

1. *Carpelimus sharpianus* (CAMERON), 1 ♂, 4 ♀♀.
2. *Carpelimus vagus* (SHARP), 1 ♂, 1 ♀.
3. *Oxytelus incisus* MOTSCHULSKY, 2 ♂♂, 1 ♀.
4. *Lithocharis nigriceps* KRAATZ, 1 ♂.
5. *Philonthus aeneipennis* BOHEMAN, 4 ♂♂, 8 ♀♀.
6. *Aleochara puberula* KLUG, 7 ♂♂, 7 ♀♀.

Elytra, Tokyo, **19** (1): 19–20, May 15, 1991

Increased Adult Body Length with Delayed Emergence Date in *Necydalis formosana* (Cerambycidae)

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Abstract *Necydalis formosana* KANO (Cerambycidae, Lepturinae), mainly infesting the basal part of *Symplocos coreana* (Symplocaceae) dead trunk, showed a tendency of increased adult body length with succeeding dates of the first year's adult emergence.

Necydalis formosana KANO is a lepturine cerambycid species mainly infesting *Symplocos coreana* (Symplocaceae) (KOJIMA & HAYASHI, 1969). The host part most preferred by the species is basal part of dead trunk (Gô, 1972, 1977).

On 18 April 1982, dead trunks of *S. coreana* were cut and collected on Mt. Wasamata, the Ômine Mts., Nara Prefecture, Japan. The wood, as kept in an air-conditioned room in Kyoto, yielded adults of 3 cerambycid species, *Ohbayashia nigromarginata* HAYASHI, *Pyrrhona laeticolor* BATES and *N. formosana*.

Meanwhile, the author noticed a tendency of increased adult body length of *N. formosana* with succeeding dates of adult emergence from 16 to 24 May 1982.

The wood, kept in the air-conditioned room, later yielded adults of the same species for 3 years (1983–1985), which probably involved the same population as that of 1982 and their progeny.

Figure 1 shows the relationship between the emergence dates of adult beetles for 4 years (abscissa) and adult body lengths (ordinate). A definite positive correlation ($r=0.83$) between the succeeding emergence dates and the body lengths is seen in 1982. The correlation disappears in later emergence from 1983 on, probably due to disturbance of natural life cycle by indoor rearing.

In the family Cerambycidae, some species exhibit considerable variation in adult body length, and others exhibit uniformity. Dates of adult emergence also vary in some species, and not in others. Why and how such variation takes place has not been elucidated as yet. In the present species, emergence within one brood appears rather synchronized in the natural condition, and small variation of emergence dates among individuals might reflect variation of time required for physiological preparation for the emergence of new adult beetles, which are considerably variable in body length.

Another interpretation of the present data is that in this species a certain ecological advantage to smaller individuals is expected with earlier emergence date.

Further ecological studies are needed for elucidating the present issue not only

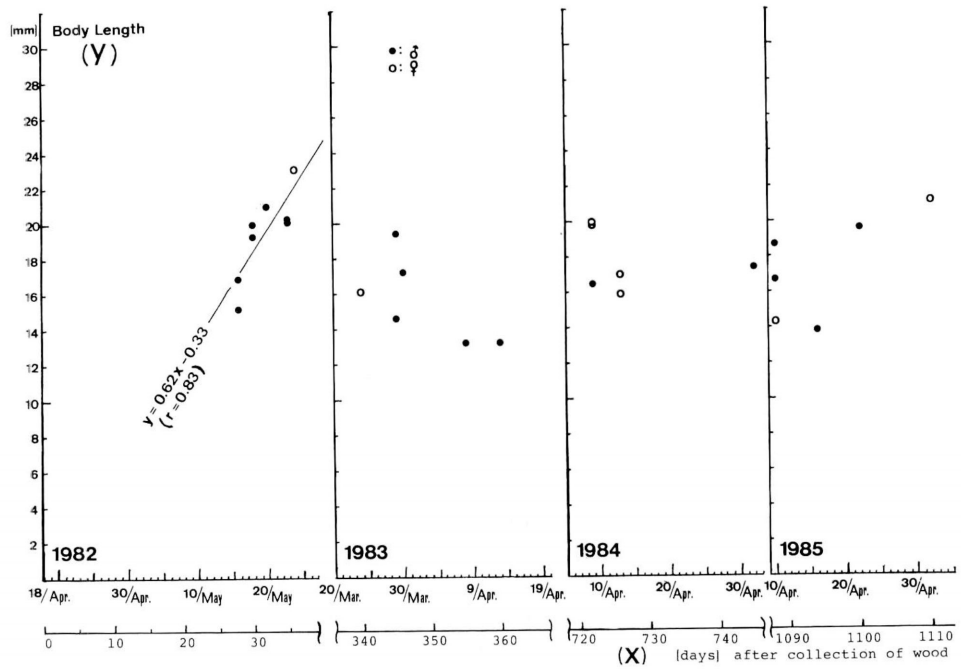

Fig. 1. Relationship between the emergence dates of adult beetles of *Necydalis formosana* KANO from *Symplocos coreana* wood for 4 years (abscissa) and their adult body lengths (ordinate).

for this species, but also for the Cerambycidae as a whole.

要　　約

岩田隆太郎：トガリバホソコバネカミキリの成虫羽化脱出日による体長の増加傾向について.——タンナサワフタギの枯幹下部をおもに食するトガリバホソコバネカミキリ *Necydalis formosana* KANO は，成虫の羽化脱出1年目において，羽化脱出日が遅くなるに従い，成虫の体長が増加する傾向を示した.

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Elytra, Tokyo, **19** (1): 21–23, May 15, 1991

Description of the Larva of *Donacia clavareaui* (Coleoptera, Chrysomelidae)

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Abstract The larva of *Donacia clavareaui* JACOBSON is described and illustrated. Some biological notes are also given.

Donacia clavareaui JACOBSON, 1906

(Figs. 1–14)

Last instar larva. Body about 10.5 mm in length, milky white, more or less shiny, dorso-ventrally arcuate, fleshy, covered entirely with fine pubescence; head and thoracic legs very small; 8th abdominal segment equipped with a pair of hook-shaped spiracles on dorsum; 9th abdominal segment extremely small and indistinct.

Head capsule about 0.75 mm in breadth, widest near the middle in dorsal view, more than twice the posterior width; dorso-posterior margin moderately acruate forwards; anterior portion of frons strongly porrect, its anterior margin deeply emarginate; dorsal surface with 6 or 7 pairs of setae at the sides; frons with 5 pairs of setae; frontal suture V-shaped though indistinct; endocarina absent; ocelli with 5 pigmented spots on each side. Antennal articulating membrane well elavated. Antenna 3-segmented, the 1st much larger than the other segments, transverse, with a transverse series of several sensillae in the middle, the 2nd as long as wide, furnished with 2 minute sensillae and a sensory appendage on the apical disc, sensory appendage conical, scarcely projecting beyond the 3rd segment, which is about as long as or a little longer than the 2nd, subtruncated apically, and bears a sensory seta near the apex. Labrum less than twice as wide as long; anterior margin nearly straight; dorsum with 2 rows of setae, of which the anterior row consists of 4 short setae and the posterior of 4 long setae and 2 sensillae. Epipharynx with 2 rows of short setae at the central part near the anterior margin and with a pair of long setae at the lateral parts. Mandibles nearly triangular, and pointed at the apices, each with a subapical tooth on dorsal cutting edge, which are blunt, especially in the right mandible; molar part reddish brown, bearing a seta and a few sensillae on the dorsal surface. Maxillae more or less slender, widely separated from each other by a well developed labium; cardo with a short seta; stipes subquadrate, slightly smaller than cardo, bearing 2 long setae; palpifer larger than 3rd segment of palpus, with 2 long setae and a sensilla; palpus with 3 segments which decrease in length towards the apex, the 1st with 2 sensillae, the 2nd with 2 setae and a sensilla, and the 3rd with a few sensory papillae at the apex;

mala with an elongate spine and a stout seta, the former being a little shorter than the latter, both reaching or extending beyond the apex of palpus. Labium with 6 unisetiferous sensillae and 6 sensillae in the anterior part and 2 long setae at the base; palpi widely separated from each other, 1-segmented, each furnished with 9 minute papillae around the sensory papilla.

Prothoracic segment about 1.5 times as wide as long in dorsal view; tergum with a U-shaped shield, which is scattered with a number of sclerotized patches. Legs similar to one another; tibia nearly equal in length to tarsus.

Abdominal segments except for the 8th and 9th clearly divided into 3 parts (tergum, pleurum and sternum) by 2 longitudinal grooves; tergum with 2 transverse tubercles; pleurum with a single tubercle; sternum with 2 longitudinal tubercles. All the tubercles suffused with setae except in the spiracular area.

Host. *Scirpus fluviatilis* (TORR.)

Specimens examined. 10 exs., Mitanda, Katsuta, Ibaraki-ken, 3–IX–1988, Y. NARITA leg.

Notes. The larvae of *Donacia clavareaui* feed on the roots and storon stems of *Scirpus fluviatilis*. Imagines in their pupal cocoons and larvae of various stages are found at any time of the year, but the imagines appear only during the months of May, June and July. In the last instar larva and the prepupa, ocelli disappear rather frequently.

Acknowledgment

I wish to express my sincere gratitude to Dr. N. HAYASHI for his continuous guidance and encouragement in the course of this study. Many thanks are due to Professor Y. KOMIYA for his kind aid and valuable suggestions.

要　　約

成田行弘：フトネクイハムシの幼虫.——ウキヤガラを食草とするフトネクイハムシ *Donacia clavareaui* JACOBSON の終令幼虫を記載し，その生態に言及した．あらゆる齢の幼虫や，羽化したまま繭の中にとどまっている成虫は一年を通じて見られるが，食草の葉上に成虫が出現するのは5月から7月までに限られる．

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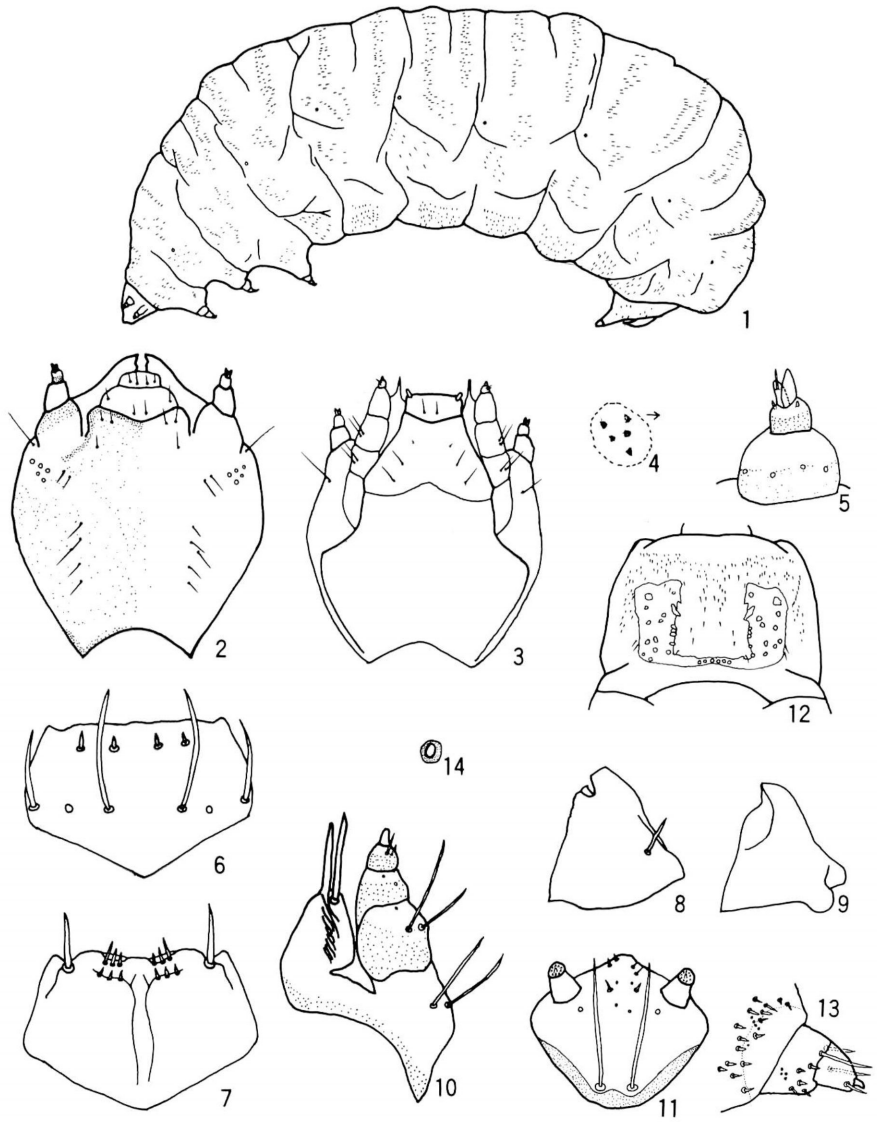

Figs. 1–14. Last instar larva of *Donacia clavareaui*. — 1, Larva, lateral view; 2, head, dorsal view; 3, same, ventral view; 4, right ocelli; 5, right antenna, ventral view; 6, labrum, dorsal view; 7, epipharynx, ventral view; 8, right mandible, dorsal view; 9, left mandible, ventral view; 10, left maxilla, ventral view; 11, labium, ventral view; 12, prothorax, dorsal view; 13, left mesothoracic leg, lateral view; 14, spiracle (of mesothoracic segment).

Elytra, *Tokyo*, **19** (1): 24, May 15, 1991

Records of Some Coleoptera from the Island of Kurima-jima, the Ryukyus

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Through the courtesy of Mr. Hiroshi MAKIHARA, I had an opportunity to examine some Coleoptera collected on the Island of Kurima-jima lying just to the southwest of the Island of Miyako-jima, the Ryukyus. All the specimens were collected by him on July 7, 1977. Only 1 species of the Scarabaeidae, 9 of the Tenebrionidae, 2 of the Cerambycidae and 2 of the Chrysomelidae have hitherto been recorded from the island.

Carabidae	*Calleida splendidula* (FABRICIUS, 1801) 2 exs.
Scarabaeidae	*Anomala albopilosa sakishimana* NOMURA, 1964 3 exs. *Protaetia pryeri nitidicosta* YAHATA, 1941 8 exs. *Cosmiomorpha similis miyakoana* NOMURA, 1964 3 exs.
Chelonariidae	*Chelonarium ohbayashii* (M. SATÔ, 1964) 1 ex.
Lampyridae	*Curtos costipennis* (GORHAM, 1880) 1 ex.
Languriidae	*Caenolanguria insularis* MIWA et CHÛJÔ, 1937 1 ex.
Coccinellidae	*Epilachna boisduvali* MULSANT, 1850 1 ex.
Alleculidae	*Allecula simiola* LEWIS, 1895 1 ex.
Salpingidae	*Elacatis atrithorax* (PIC, 1929) 1 ex.
Curculionidae	*Episomus mori* KÔNO, 1928 7 exs.

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Elytra, Tokyo, **19** (1): 25–29, May 15, 1991

Two New Tenebrionid Species (Coleoptera, Tenebrionidae) from Japan

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Abstract Two new tenebrionid beetles are described under the names of *Platydema sawadai* sp. nov. (tribe Diaperini), and *Brachyidium iwojimae* sp. nov. (tribe Opatrini). The former was captured on Ishigakijima Is., Ryukyu Islands, Southwest Japan, and the latter was on Iwojima Is., Volcano Islands, at the northern part of Micronesia.

In this paper, two new species of tenebrionid beetles, *Platydema sawadai* sp. nov. (tribe Diaperini), and *Brachyidium iwojimae* sp. nov. (tribe Opatrini), will be described from Japan.

The author wishes to express his sincere gratitude to Dr. Ottó MERKL, Természettudományi Múzeum, Budapest, for loaning materials of related species including a paratype of *Caedius palauensis* KULZER preserved in the Múzeum, and also to Mr. Hiroshi SAWADA, Tokyo, for providing with specimens to be described.

The holotypes of the new species are deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Platydema sawadai sp. nov.

(Fig. 1)

Yellowish brown, with basal half of pronotum except for lateral and basal margins, postero-lateral portions of elytra except for lateral and apical portions obviously darker; dorsal surface rather strongly shining, ventral one dully so. Oblong-oval and strongly convex above.

Male. Head semicircular, distinctly depressed in an X-shape in middle, minutely punctate, armed with a pair of subconical horns close to eyes, which are leant forwards; clypeus transversely oblong and convex above, densely punctate, with apex moderately arcuate; genae oblique, with outer margin feebly produced; eyes large, somewhat transversely reniform; diatone about 0.8 times transverse diameter of an eye; mentum subcordate with base briefly truncate, convex in middle and distinctly depressed in lateral portions; gula triangular and bordered by fine impressions; terminal segment of maxillary palpus fairly large though gently thickened towards apex, which is obliquely truncate. Antennae subclavate, reaching base of elytra, ratio of the length of each segment from basal to apical as follows: 0.7, 0.2, 0.45, 0.55, 0.5, 0.4, 0.45, 0.4, 0.4, 0.4, 0.7.

Pronotum subtrapezoidal, about twice as wide as long, widest at base and gradually narrowed towards apex; apex nearly straight, finely bordered; base bisinuous, with a short oblique impression on each side; sides steeply declined to lateral margins, which are more distinctly bordered than apex; front angles obtuse, each with rounded corner; hind angles subrectangular; disc rather strongly, transversely convex, minutely punctate, the punctures a little sparser than those in lateral portions. Scutellum short linguiform, sparsely scattered with microscopic punctures.

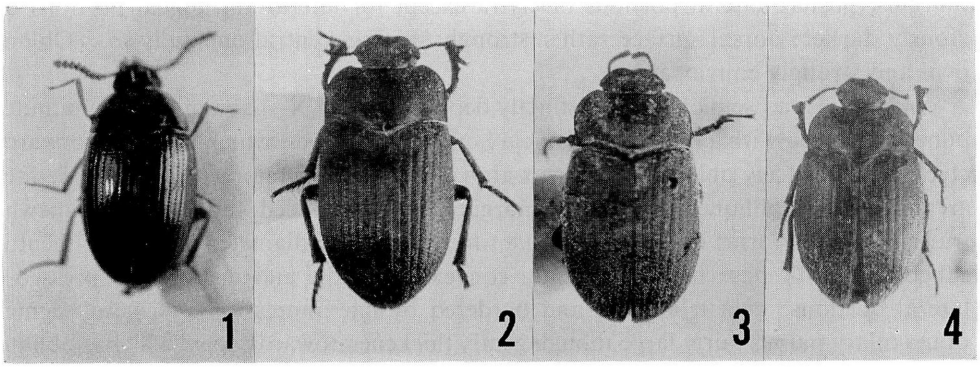
Elytra about 1.3 times as long as wide, 3 times length and 1.2 times width of pronotum, widest a little before the middle, gradually narrowed towards bases and apices; dorsum strongly convex, thickest a little before the middle; disc punctato-striate, the punctures in striae fairly clear, distance between them about 1–2 times their own diameter; intervals gently convex on the disc, fairly convex at the side, with rows of fine punctures, which are much smaller than those on pronotum; sides steeply declined to lateral margins, which are distinctly bordered and feebly explanate laterad, hence easily visible from above.

Prosternum rather short and ridged medially, apical margin widely emarginate, rimmed in medial half, with prosternal process subfusiform and projected to rear; mesosternum very short, deeply excavated posteriorly, with posterior edge of the excavation finely ridged; metasternum medium-sized, shallowly wrinkled and scattered with punctures, which become coarser and sparser in lateral portions, with a clear median impression in posterior half.

Abdomen alutaceous and scattered with punctures, which become larger and coarser in lateral parts and minute in the apical.

Legs simple in shape and medium-sized; ratio of the lengths of pro-, meso- and metatarsomeres from basal to apical: 0.35, 0.25, 0.25, 0.25, 0.8; 0.6, 0.3, 0.25, 0.2, 0.75; 0.95, 0.45, 0.3, 0.95, respectively.

Male genitalia somewhat elongated fusiform.



Figs. 1–4. —— 1. *Platydema sawadai* sp. nov., ♂, holotype. —— 2. *Brachyidium iwojimae* sp. nov., ♂, holotype. —— 3. *B. rectangulum* (GEBIEN), ♂, —— 4. *B. palauense* (KULZER), ♂, paratype.

Female. Head with neither horns nor depressions; dorsal surface more distinctly punctate.

Body length: ca. 4 mm.

Type series. Holotype. ♂, Mt. Banna, Ishigakijima Is., Ryukyu Islands, Japan, 29–X–1990, K. SAWADA leg. Paratypes. 9 exs., same data as for the holotype.

Notes. This new species may be easily distinguished from other species described from neighbouring areas in East Asia by the male head armed with two symmetrically formed horns and the pronotal and elytral coloration.

Brachyidium iwojimae sp. nov.

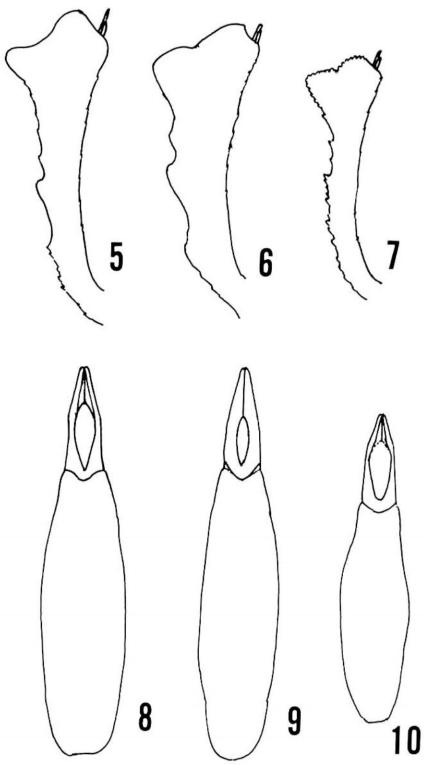
(Figs. 2, 5, 8)

Brownish black, with mouth parts, gula, claws, etc., more or less lighter in colour; each surface gently clothed with very short pale yellowish hairs, dorsal surface feebly sericeously shining, ventral one gently shining. Oblong-oval, moderately convex above.

Male. Head somewhat transverse hexagonal, gently declined to apex, weakly rugoso-punctate and asperate; apical margin of clypeus indented at the middle, rounded on each side; outer margin of gena obliquely arcuate; eyes rather small when seen from above; interocular space wide and about 6 times transverse diameter of an eye, with a rounded ridge partially overlying each eye. Mentum subpentagonal and coarsely asperate, with apex roundly pointed; gula triangular and feebly alutaceous, with a short impression in anterior portion on each side; terminal segment of maxillary palpus rather short and securiform. Antennae reaching the middle of pronotum; ratio of the length of each segment from basal to apical as follows: 0.7, 0.22, 0.7, 0.3, 0.3, 0.3, 0.35, 0.35, 0.35, 0.3, 0.27.

Pronotum about twice as wide as long, widest at base though almost subparallel-sided in basal half, then roundly narrowed towards apex; apex gently and widely emarginate, finely rimmed in each lateral 1/3; base widely bisinuate, finely impressed along margin, the impression interrupted in medial 1/5; sides gradually declined to lateral margins, which are more distinctly rimmed than apex; front angles obtuse, hind ones a little acute and pointed postero-laterad; disc transversely and gently convex and more or less micro-shagreened, closely though weakly rugoso-punctate, the rugosity mostly forming short longitudinal ridges, with a faint impression at base on each side. Scutellum semicircular and smooth, though mostly hidden beneath the pronotum or its fringing hairs.

Elytra a little more than 1.3 times as long as wide, about 2.8 times length and 1.1 times width of pronotum, widest at the middle though the basal half is almost subparallel, roundly narrowed in apical half; dorsum moderately convex, often faintly depressed behind scutellum, thickest a little before the middle; disc feebly micro-shagreened, weakly punctato-striate though the punctures are often indistinct; intervals feebly convex with sutural intervals mostly ridge-like, granulate and micro-



Figs. 5–10. —— 5–7. Male protibiae in ventral view; 5, *B. iwojimae* sp. nov.; 6, *B. rectangulum* (GEBIEN); 7, *B. palauense* (KULZER). —— 8–10. Male genitalia in dorsal view; 8, *B. iwojimae* sp. nov.; 9, *B. rectangulum* (GEBIEN); 10, *B. palauense* (KULZER).

scopically haired, the hairs being scale-like on the disc but becoming longer in lateral portions; sides rather steeply declined to lateral margins, which envelop the hind body and are finely rimmed, the rims being microscopically serrate and fringed with hairs.

Prosternum coarsely asperate, apical margin barely bordered, with prosternal process fairly large and obtusely produced posteriad; mesosternum extremely short, with a triangular excavation at posterior margin; metasternum medium-sized, coarsely punctate and shortly haired, with a median line in posterior 1/3. Abdomen asperate, clothed with short bent hairs.

Protibia gently curved inwards, rather distinctly widened to apex, which is subtruncate, outer margin with a large tooth in middle, and also with a few small ones in basal 2/5 (see Fig. 5); ratio of the length of pro-, meso- and metatarsomeres from basal to apical: 0.4, 0.25, 0.26, 0.28, 1.2; 0.7, 0.32, 0.36, 0.34, 1.22; 1.27, 0.55, 0.38, 1.28.

Male genitalia subfusiform, with lateral lobes weakly prolonged.

Female. Protibia wider than in male though less distinctly curved.

Body length. 7.5–8.5 mm.

Type series. Holotype. ♂, Iwojima Is., Volcano Islands, Japan, 30–IX–1990,

K. MASUMOTO leg. Paratypes. 116 exs., same data as for the holotype; 5 exs., Iwojima Is., 17–X–1989, K. MASUMOTO leg.

Notes. This new species resembles *Brachyidium rectangulum* (GEBIEN), originally described from the Philippines, but can be distinguished from the latter by the dorsal surface more distinctly asperate and more densely clothed with fine hairs, the pronotum with more remarkably angulate front angles; the elytra less clearly punctato-striate, and the differently shaped protibiae and genitalia in the male. From *B. palauense* (KULZER), whose locality is not far from Iwojima Is., the new species can be easily discriminated by the larger and subparallel-sided body, the dorsal surface more distinctly granulate and haired, and differently shaped protibiae and genitalia in the male.

要　　約

益本仁雄：日本産ゴミムシダマシの2新種．――八重山列島石垣島で沢田和宏氏により採集された，小型で眼間に1対の短角のあるキノコゴミムシダマシを新種と認め，*Platydema sawadai* sp. nov. として記載した．また，火山列島硫黄島で著者が採集したニセマルチビゴミムシダマシは，フィリピンに産する *Brachyidium rectangulum* (GEBIEN) に近似するが，表面構造や前胸背板，前脛節，♂交尾器などの形状で区別できること，さらに地域的にみて近いパラオ島から記載された *Caedius palauensis* KULZER＝*Brachyidium palauense* (KULZER) とは一見して分けられることから，*Brachyidium iwojimae* sp. nov. として新種記載した．

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Elytra, *Tokyo*, **19** (1): 30, May 15, 1991

On Several Anthribids (Coleoptera, Anthribidae) from Nepal

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Early in the summer of 1981, Dr. Wataru SUZUKI made a long collecting trip to Nepal and collected three specimens of anthribid beetles in the Kathmandu Valley, central Nepal. They were submitted to me for taxonomic study. After a careful examination, it became clear that the collection contained two known and one unidentifiable species.

I wish to thank Dr. Wataru SUZUKI of Tokyo, who always provided with anthribid specimens for my study, and Professor K. MORIMOTO for giving me the privilege of examining many photographs of anthribid type specimens preserved in foreign museums.

Merarius quadrituberculatus (HOPE, 1831)

1 ex., Godavari (1,580–2,000 m alt.), Kathmandu Valley, C. Nepal, 1～6–VI–1981, W. SUZUKI leg.

According to WOLFRUM (1953), *Merarius glabriceps* JORDAN, 1911, described from Kurseong in Sikkim, is a junior synonym of this species. Through the courtesy of Professor K. MORIMOTO, I was able to see a photograph of the type specimen of *M. glabriceps* JORDAN, taken by himself at the British Museum (Nat. Hist.), London. This species is newly recorded from Nepal.

Distribution. Assam, Sikkim, Nepal.

Tropideres scitus instructus FRIESER, 1983

1 ex., Godavari (1,580–2,000 m alt.), Kathmandu Valley, C. Nepal, 1～6–VI–1981, W. SUZUKI leg.

Tropideres scitus JORDAN, 1933, was described from Burma. The subspecies *instructus* was recently described by FRIESER from E. Nepal based on 13 ♂♂, 8 ♀♀ specimens.

Gibber sp.

1 ex., Godavari (1,580–2,000 m alt.), Kathmandu Valley, C. Nepal, 1～6–VI–1981, W. SUZUKI leg.

Elytra, Tokyo, **19** (1): 31–34, May 15, 1991

A New *Camariomorpha* (Coleoptera, Tenebrionidae) from North Borneo

Kiyoshi ANDO

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Abstract A new species of the genus *Camariomorpha* (Coleoptera, Tenebrionidae, Cnodalonini) is described from North Borneo under the name of *C. miyatakei*. It can be recognized on peculiarities of the pronotum and elytra.

Camariomorpha miyatakei sp. nov.

(Figs. 1–4)

Elongate, moderately convex above; dorsal surface and legs coppery brown to reddish brown (except for apical portions of femora bearing metallic blue) and more or less sericeous, with slight brassy lustre; ventral surface reddish brown; antennae with 7 basal segments light reddish brown and 4 remainings fuscous.

Head trapezoidal, flattened; clypeus depressed, a little lower than genae and frons, gently bent downwards at each apico-lateral portion, obviously emarginate at apex, moderately and rather closely punctate, and distinctly separated from genae and frons by an arcuate clypeal suture, of which each end reaches slightly behind apical third of lateral margin of clypeus; genae slightly convex, closely and minutely punctate, with outer margin strongly narrowed to apical third of lateral margin of clypeus though distinctly sigmoidal in middle; frons entirely flat, closely and moderately punctate, space between eyes nearly 1.5 times width of an eye; eyes strongly convex above and produced laterad, with deep ocular sulci; antenna slender, clearly extending beyond base of pronotum, 1st to 7th segments feebly thickened towards each extremity, 1st segment robust, 2nd shortest and cupulate, 3rd lengthened and a little longer than each of 4th to 7th, 8th widest, 8th to 10th elongate, distinctly dilated to each apex and nearly equal in length, 11th strongly elongate and subparallel-sided, nearly 3 times as long as wide. Terminal segment of maxillary palpus weakly securiform; mentum subhexagonal, not margined, moderately raised antero-medially, weakly depressed before each side of base, minutely punctate; submentum nearly smooth; gula convex, gular suture deeply impressed.

Pronotum entirely trapezoidal, moderately convex, gently declined towards apex and sides, semicircularly depressed before the middle of base, finely and transversely impressed medially, coarsely and rather closely punctate, the punctures a little sparser than on frons, intermixed with rugosities along sides; apical margin nearly straight, margined on each side; base moderately bisinuous, finely margined in each lateral fourth; front angles rectangular and strongly reflexed; hind angles

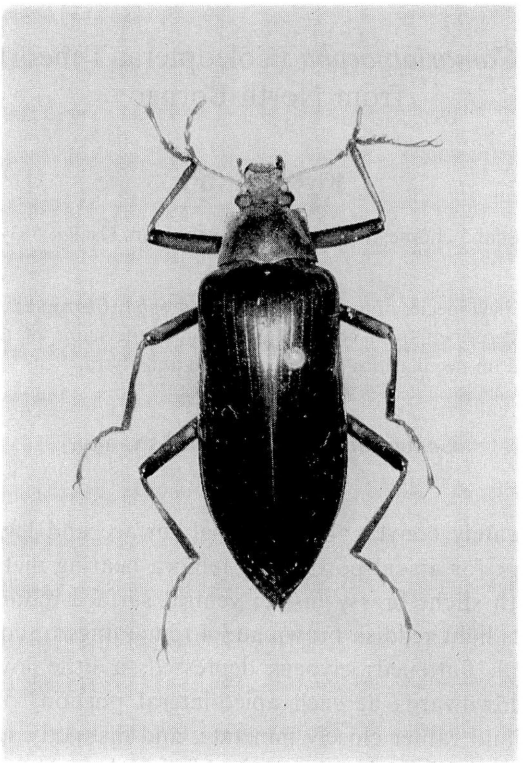
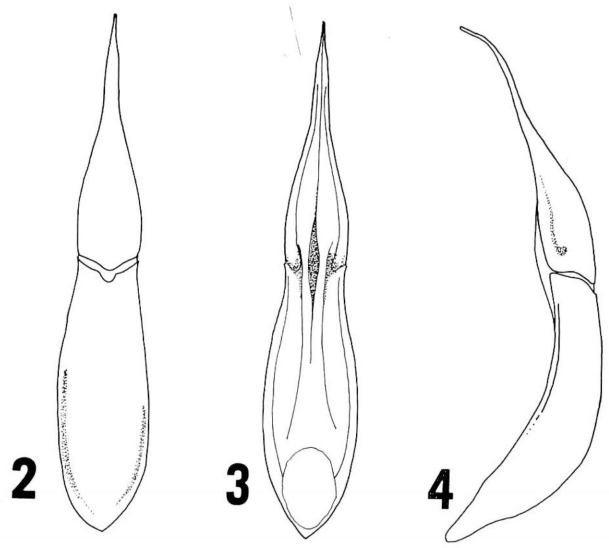


Fig. 1. *Camariomorpha miyatakei* sp. nov. ♂ (paratype).

slightly acute; lateral margins linearly narrowed towards apex though feebly emarginate in middle, finely margined. Scutellum linguiform, slightly convex and minutely punctate.

Elytra elongate-scutiform, gradually widened backwards, widest at apical third; lateral margins narrowly margined; dorsum distinctly ascendant in basal portion, thickest basally, thence gradually declined to apices, which are conspicuously spiculate; humeral callus distinctly bulgy; disc finely punctato-striate, the punctures minute and rather close except those on scutellary strioles, gradually becoming much more minute and sparse towards apex; intervals nearly flat, microscopically punctate and finely, transversely rugulose; epipleuron flat and alutaceous, reaching apical spicule, transversely and closely rugulose.

Prosternum short, moderately convex, prosternal process strongly raised and widened between procoxae, tapering sharply backwards and pointed at tip; mesosternum rugose with a median longitudinal carina, strongly ridged in a V-form, the ridge being smooth, sparsely clothed with short pubescence; metasternum glabrous, minutely punctate laterally, transversely and strongly rugose before transverse suture, roundly depressed in middle, with median process ascendant forwards and touching



Figs. 2–4. Male genitalia of *Camariomorpha miyatakei* sp. nov.; 2, dorsal view; 3, ventral view; 4, left lateral view.

mesosternal ridge; abdomen more or less alutaceous, minutely and closely punctate, convex medially and slightly depressed in lateral portions, 1st segment with a fusiform costa medially, anal segment triangular and depressed, slightly emarginate in apical three-fourths at sides, apex gently emarginate. Male genitalia as shown in Figs. 2–4.

Legs long and slender; femora minutely punctate, meddle and hind femora somewhat clavate apicad; tibiae weakly dilated towards apex, nearly flattened in both upper and under sides, fore tibia covered with short pubescence along inner side of apical half, middle one strongly widened inwards in apical half; tarsi elongate, fore tarsus slightly dilated, a little shorter than fore tibia, each claw segment with a ligulate mucro at the apex beneath, claw segment of fore tarsus a little shorter than 4 basal segments together, ratio of the length of hind tarsal segments from basal to apical as follows: 15: 9: 8: 20.

Female unknown.

Length: 29–30 mm; width: 10.0–10.5 mm.

Holotype: ♂, Head-Quarters, Mt. Kinabalu, Sabah, North Borneo, 31–VII–1968, NAGAO leg. Paratype: 1 ♂, Keningau, Sabah, North Borneo, 10～20–X–1988, M. ITOH leg.

The holotype is deposited in the collection of the Osaka Museum of Natural History. The paratype is preserved in the private collection of mine.

Notes. This new species closely resembles *Neocamaria tibialis* KULZER and *Camariomorpha oharai* MASUMOTO, but is distinguishable from the latters by the front angles of pronotum distinctly reflexed, the elytral intervals not covex, and so on.

Acknowledgments

I wish to express my sincere gratitude to Mr. Yorio MIYATAKE, Osaka Museum of Natural History, for permitting me to examine several unknown tenebrionid beetles deposited in the collection of the Museum, and to Mr. Kimio MASUMOTO, Laboratory of Entomology, Tokyo University of Agriculture, for his constant guidance and kind offer of valuable specimen.

要　　約

安藤清志: 北ボルネオ産 *Camariomorpha* 属の1新種. —— 北ボルネオ山地帯で採集された *Camariomorpha* 属の甲虫を検した結果，前胸背板および上翅の形態から他種と明らかに区別することができたので，新種と認めて *Camariomorpha miyatakei* ANDO と命名記載した.

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Elytra, Tokyo, **19** (1): 35–38, May 15, 1991

A New Species of the Cantharid Genus *Athemus* (Coleoptera, Cantharidae) from Okinawa Island, Southwest Japan

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Abstract A new cantharid species belonging to the subgenus *Andrathemus* WITTMER of the genus *Athemus* LEWIS is described and illustrated from Okinawa Island of the Ryukyus, Southwest Japan.

Up to this time, two species of the genus *Athemus* have been known from Okinawa Island, the Ryukyus, Japan. One of them is *A.* (*Athemus*) *okinawanus* ISHIDA, and the other is *A.* (*Andrathemus*) *kunigamiensis* ISHIDA.

Recently, I had an opportunity to examine a strange *Athemus* species of the subgenus *Andrathemus* from this island. After a careful examination, it became clear that this species did not agree with any of the known members of the subgenus *Andrathemus*. It must be new to science, and will be described herein.

I wish to express my hearty thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his critical reading of the original manuscript, and to Professor Masataka SATÔ of Nagoya Women's University, Mr. Katsuyoshi ISHIDA of Meijo University, Professor Yasuaki WATANABE and Dr. Shûji OKAJIMA of Tokyo University of Agriculture, for their kind advice on the present study, and to Mr. Teruhisa UENO of the University of the Ryukyus and Mr. Takayuki AKABANE of Tokyo University of Agriculture for their kind support of specimens.

Athemus (*Andrathemus*) *teruhisai* OKUSHIMA, sp. nov.

[Japanese name: Yanbaru-futairo-joukai]

(Figs. 1–4)

Male. Head and elytra black with faint and dull metallic luster; eyes, antennae, apices of mandibles, tips of maxillary and labial palpi, and tarsi dark brown; clypeus, both sides of frons, and claws yellowish brown; prothorax, scutellum, meso- and metasterna, abdominal sternites and legs except for tarsi pale orange. Body closely covered with fine yellow pubescence, though the pubescence is sparser on pronotum and is intermingled with yellowish brown bristles on elytra; apical margin of clypeus and lateral margins of pronotum fringed with yellowish brown bristles.

Head slightly shorter than width; disc almost flattened and weakly depressed in lateral areas before eyes; apical margin of clypeus arcuate with its center faintly in-

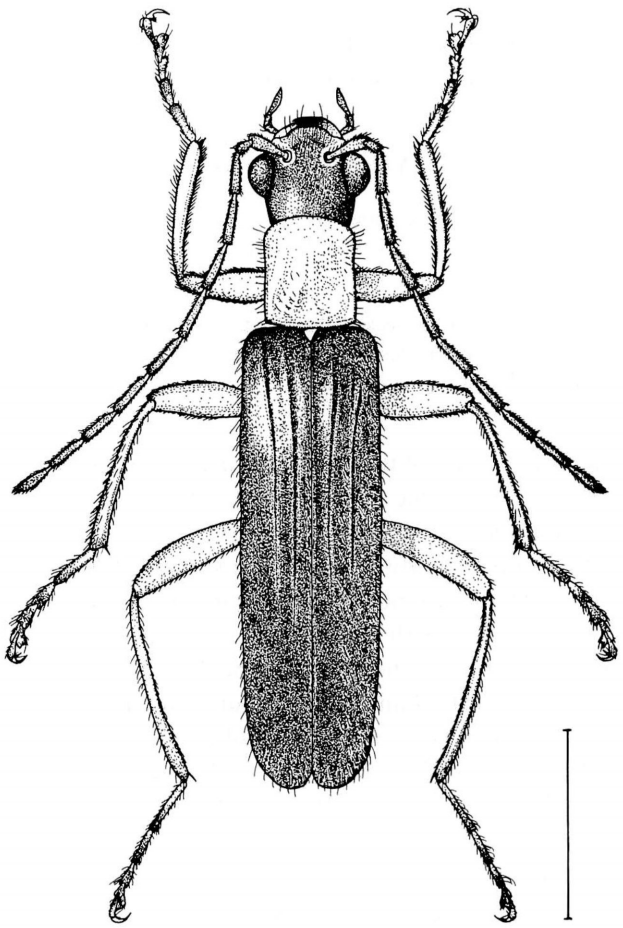
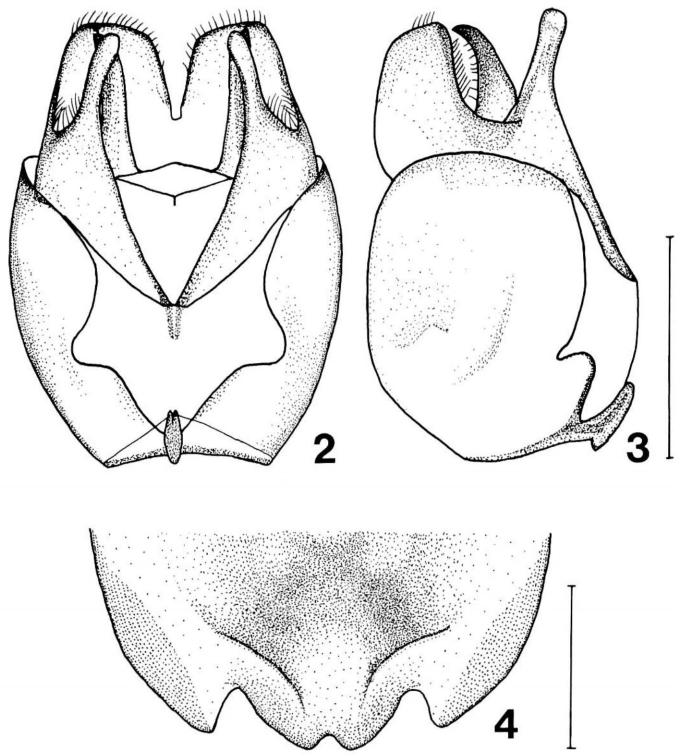


Fig. 1. *Athemus* (*Andrathemus*) *teruhisai* OKUSHIMA, sp. nov., ♂, from Okinawa Is. of the Ryukyus. (Scale: 2.0 mm.)

dented; eyes large, globular and strongly projected; antennae attaining to the middle of elytra, 1st segment clavate, 2nd short, 3rd to 11th subcylindrical, relative lengths of antennal segments as follows: 19 : 10 : 18 : 22.5 : 23 : 22 : 23 : 21 : 20.5 : 18 : 21.

Pronotum subquadrate, 0.77 times (in the holotype; range 0.73–0.81) as wide as head, 1.20 (1.15–1.23) times as long as wide; anterior margin weakly arcuate; posterior margin subtruncated; lateral margins feebly sinuate; anterior angles rounded; posterior angles obtuse; disc swollen, especially so in the posterior area; antero-lateral areas hollowed; medio-longitudinal furrow distinct in posterior half and indistinct in anterior half; a groove along the posterior margin distinct. Scutellum triangular with rounded apex. Apex of prosternal process truncated. Mesosternum slightly convex along the median line. Relative lengths of hind tarsal segments as follows:



Figs. 2–4. *Athemus* (*Andrathemus*) *teruhisai* OKUSHIMA, sp. nov.; 2–3, male genitalia (2, ventral view; 3, lateral view); 4, 8th abdominal sternite in female. (Scale: 0.5 mm.)

72: 41: 35: 34: 33.

Elytra conjointly 1.47 (1.39–1.49) times as wide as pronotum, 3.29 (3.19–3.40) times as long as wide, the sides slightly convergent posteriad; disc distinctly, closely and rugosely punctate, each elytron provided with two vague costae.

Male genitalia. Apex of dorsal plate of each lateral lobe subtruncated; ventral process of each lateral lobe clavate; apex of each lateral process of median lobe somewhat pointed; apices of dorsal plates of lateral lobes, apices of ventral processes of lateral lobes and apices of lateral processes of median lobe all almost level (Figs. 2–3).

Length of body: 8.95 mm (in the holotype; range 8.20–8.95); length of right hind tibia: 2.70 (2.45–2.80) mm.

Female. Body somewhat longer and wider than in the male. Antennae a little shorter than in the male. Pronotum 0.88–1.00 times as wide as head, 1.00–1.10 times as long as wide. Elytra conjointly 1.37–1.51 times as wide as pronotum, 2.92–3.12 times as long as wide. Eighth abdominal sternum with a deep notch on each side and a shallow notch at the center of terminal margin; disc provided with two

costae posteriorly approaching to each other and extending to near the center of terminal margin (Fig. 4).

Length of body: 8.58–9.38 mm; length of right hind tibia: 2.25–2.70 mm.

Type series. Holotype: ♂, Yona, Okinawa Is., Ryukyus, 2–V–1990, T. UENO leg. Allotype: ♀, same locality as for the holotype, 27–IV–1989, Y. OKUSHIMA leg. Paratypes: 1 ♂, 2 ♀♀, same data as for the holotype; 1 ♂, 2 ♀♀, Kijoka, Okinawa Is., Ryukyus, 5–IV–1988, T. UENO leg.; 1 ♂, same locality as for the holotype, 14–V–1988, T. UENO leg.; 1 ♂, same locality as for the holotype, 11–V–1990, T. AKABANE leg.; 1 ♂, same locality as for the holotype, 28–IV–1989, Y. OKUSHIMA leg.; 1 ♀, Aha, Okinawa Is., Ryukyus, 29–IV–1989, Y. OKUSHIMA leg.

The holotype and allotype will be preserved in the collection of the Laboratory of Entomology, Tokyo University of Agriculture. The paratypes are distributed to the collections of the National Science Museum (Nat. Hist.), Tokyo, Biological Laboratory, Nagoya Women's University, and mine.

Distribution. Okinawa Is. (the Ryukyus, Southwest Japan).

Remarks. This new species is closely related to *Athemus* (*Andrathemus*) *chosokeiensis* PIC (1937) from Taiwan, but can easily be distinguished from the latter by the blackish coloration of head and elytra, and by slightly different configuration of the dorsal plate of the male genitalia.

In the coloration, this new species is somewhat similar to the members of the genus *Athemellus* WITTMER, but differs from them in the presence of a small basal tooth on each outer claw of the fore and middle tarsi.

要　約

奥島雄一：沖縄産ジョウカイボン属の1新種. —— 沖縄本島で採集されたジョウカイボン科の新種を，ヤンバルフタイロジョウカイ *Athemus* (*Andrathemus*) *teruhisai* と命名して記載した．本種は，台湾から記載された *A.* (*A.*) *chosokeiensis* PIC に近縁であるが，黒色の頭部と上翅，および雄交尾器の形態の違いによって区別できる．

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Elytra, *Tokyo*, **19** (1): 39–43, May 15, 1991

ジュウジミズギワコメツキの形態について

大　平　仁　夫

Notes on the Morphological Structure of *Fleutiauxellus cruciatus* (Coleoptera, Elateridae) from Japan

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Abstract　*Fleutiauxellus cruciatus* (CANDÈZE, 1873) was originally described from Japan, under the name of *Cryptohypnus cruciatus*, on the basis of only a single specimen. Some variations of elytral maculation (Fig. 1) and general structure examined by SEM-images (Fig. 2) are described for facilitating recognition of this species in the Negastriinae of Japan.

本種は，日本に分布する上翅に黄紋を有するミズギワコメツキ類のうちでは，体が大型で黄紋が目立つ美麗種のため，一般にも比較的よく知られているが，詳しい形態などについてはよくわかっていないので，ここにその概要を報告することにした．

分布・生態について

本種は，最初ただ 1 頭の標本にもとづいて，CANDÈZE (1873) により *Cryptohypnus cruciatus* と命名，記載されたが，正基準標本の詳しい産地は不明である．しかし，この論文で扱われた種は，G. LEWIS が 1869～1871 年の間に，主として九州の長崎，鹿児島や本州の神戸あたりで採集されたものであると前書きに記されている．その後，G. LEWIS (1894) の研究では，本種は末尾のリストの中に種名があるのみである．MIWA (1934) のモノグラフでは，東京の玉川河畔で得られた標本が検視されているが，付図 (pl. 3, fig. 9) は神戸産の個体である．また，KISHII (1976) が徳島県から本種として記録した種は，その後の同氏の研究で別種であることが判明している (KISHII, 1985)．このように，今までの分布の記録をみると，本種の近畿地方以西からの確実な記録はなく，原記載の個体がもし本州西部地方のものであるとしても，MIWA (1934) の神戸が唯一の確かな産地だということになる．九州には本種は分布しないと思われる．以上のことから，KISHII (1985) が新種として記載した *Migiwa* (*Migiwa*) *katamon* カタモンミズギワコメツキと本種との関係についてもさらに詳しい検討が必要だと思われるし，今まで本種として扱われてきた種が，原記載で扱われたものと同種であるかどうかについても，今後さらに調査が必要だと思われる．

本種の分布はかなり限られているようで，およそ中部地方から関東地方にかけてがその範囲に含まれると思われる．もっとも北部の記録は新潟県である (岸井・馬場，1957)．また，市橋氏が三重県で

得られた 1 雌個体が筆者の手元にあるので，西部地域は三重県あたりまでだろうと思われる．

本種は愛知県ではむしろ低地性で，豊川河畔では河原に生えているヤナギ類の葉上でよく見出される．おそらく，これに寄生するアブラムシ類の甘露などを舐食するために飛来するもので，幼虫の生息場所は河原の砂礫中である．また，矢作川河畔では，成虫を笹の葉上やノイバラの花上からも得ている．しかし，どこでも発見できるわけではなく，発生地はかなり限られているようで，他のミズギワコメツキ類が見出されても，本種がまったく生息しないところも多い．成虫の発生期は 5 月から 7 月頃である．

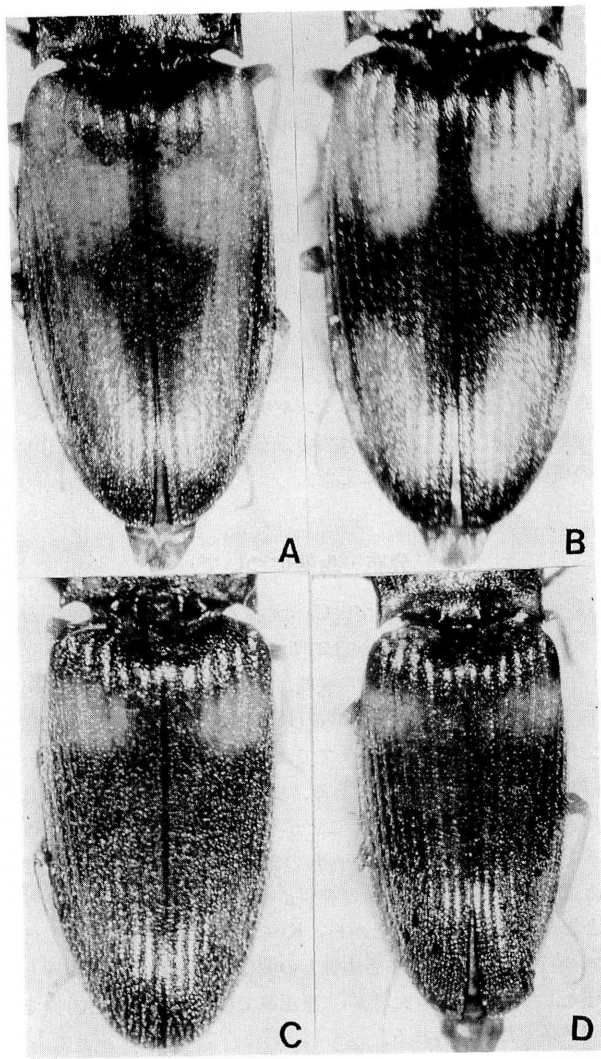

Fig. 1. Variation of elytral maculation in *Fleutiauxellus cruciatus*. A and B are females; C and D are males; all from the riverside of the Toyogawa in Aichi Prefecture, Central Japan.

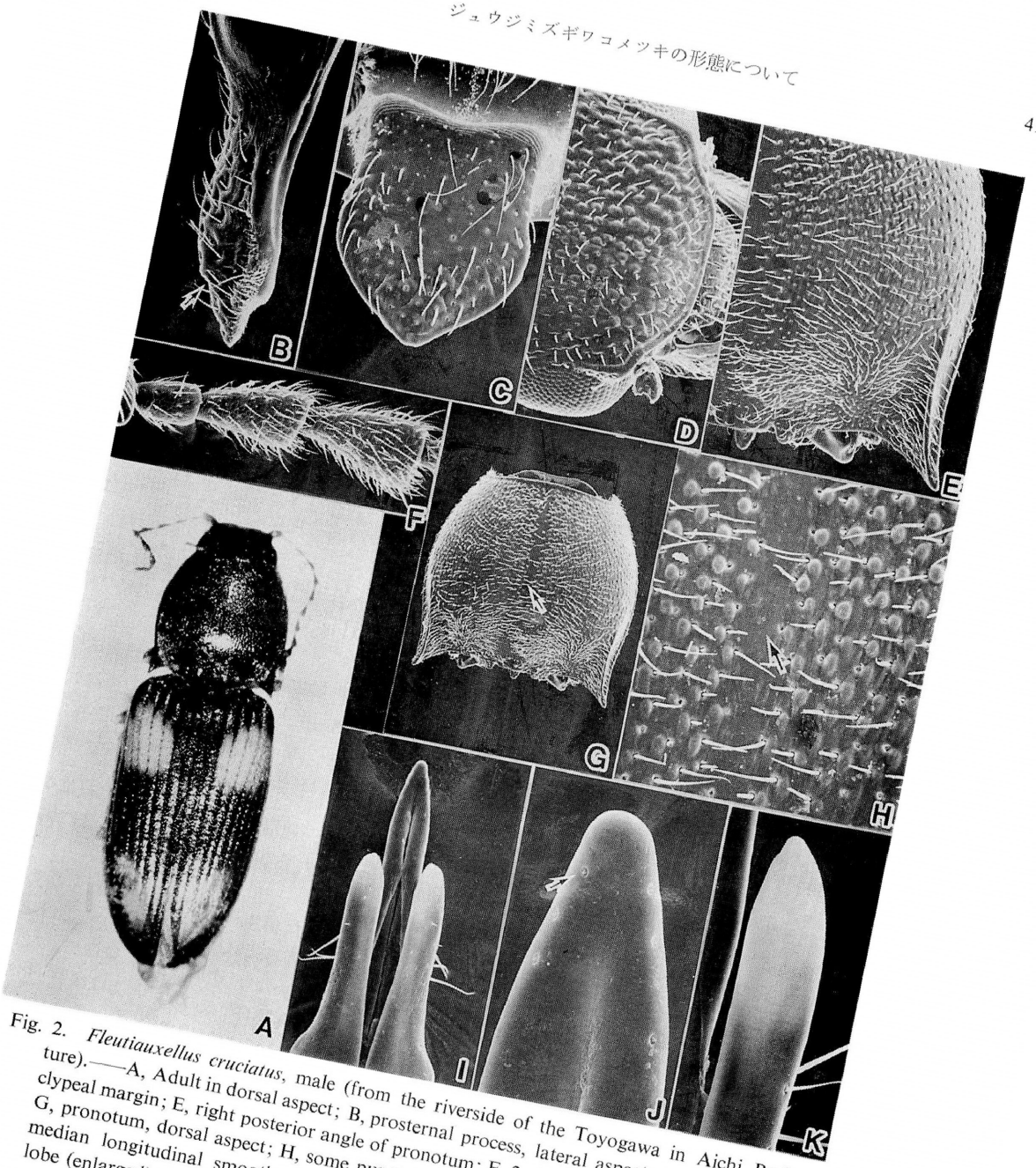

Fig. 2. *Fleutiauxellus cruciatus*, male (from the riverside of the Toyogawa in Aichi Prefecture).——A, Adult in dorsal aspect; B, prosternal process, lateral aspect; C, scutellum; D, clypeal margin; E, right posterior angle of pronotum; F, 2nd to 4th segments of left antenna; G, pronotum, dorsal aspect; H, some punctures on the disc of pronotum (arrow indicates median longitudinal smooth line) (×300); I, aedeagus, ventral aspect; J, same, median lobe (enlarged); K, same, lateral lobe (enlarged).

成虫の一般形態

雄．体長は 3.5～4 mm 内外．体は幅広くてやや扁平状，黒色で光沢を有し，全面に灰黄色毛を生ずる．触角の第 1 節の前半部，第 2 節は黄褐色～暗黄褐色 (残りの節は黒褐色)．肢の転節，腿節の末端部，脛節と付節 (第 4～5 節あたりはやや暗色) は黄褐色～淡黄褐色を呈する．上翅の紋は黄褐色で，前紋は肩角部から第 1 間室へ伸長する楕円形，翅端近くにも縦位の楕円状紋を有する (Fig. 2 A)．

頭部はこぶ状の小隆起を散布し，前頭横隆線の前縁は弱く切断状，その内側部は扁平である (Fig. 2 D)．触角は末端が前胸背板の後角よりやや長い程度，第 2 節は短小で円筒形，第 3 節は弱い三角形で，第 2 節の約 1.6～1.7 倍の長さ，第 4 節から鋸歯状を呈し，第 3 節よりやや長い程度である (Fig. 2 F)．

前胸背板は幅と長さがほぼ等しく，中央部においてもっとも幅広い (Fig. 2 G)．背面は膨隆し，正中部には平滑隆線をもつ (Fig. 2 H の ↖ 印)．隆線周辺部の表面には小点刻を散布，その外側はこぶ状に隆起し，前半部ではより顕著に発達する (Fig. 2 H)．後角は短く後外方へ突出し，背面の隆起線は側縁に沿って前方へ伸長，前胸背板の長さの 1/4 近くまで達する (Fig. 2 E)．前胸腹板突起は，前肢基節腔を越えて弱く内方へ湾曲，それより末端に伸長し，外側面は末端近くで弱くくびれる (Fig. 2 B の ↗ 印)．小盾板は舌状，末端は鈍くとがる (Fig. 2 C)．上翅の条線は明瞭に印刻され，間室は不規則な横しわ状である．

交尾器は図示 (腹面) したようで，細長く，中央突起は末端に向かって漸次細まり，末端はとがらない．また両側部に生ずる感覚点刻は，本種では比較的小型である (Fig. 2 J の ↗ 印)．側突起の両側は平行状で，末端は細まって弱くとがる (Fig. 2 K)．

雌．一般外形は雄に類似するが体はより大きく，大きいものは体長 5 mm 近くに達する．触角は短く，末端は前胸背板の後角よりやや短い，また，第 3 節は円筒状で，第 4 節とほぼ等長である．

上翅の黄紋について

本種の上翅の黄紋には特徴があり，一般に前紋は横位の楕円形で，翅端部近くにある後紋は縦位の楕円形である (Fig. 2 A)．また，雄のものより雌の斑紋の方がより大型で明瞭な場合が多く，雄では小型で暗色化の傾向がみられる(Fig. 1 A–D)．

図示 (Fig. 1) した上翅の黄紋は，豊川河畔の同一場所で得られた個体間の変異を示したもので，A～B は雌で C～D は雄である．黄紋がよく発達した個体では，前紋と後紋が連続している．しかし，このように発達した場合でも，前紋は会合線間室まで伸長していない (Fig. 1 A)．紋はやや大型であるが，一般には図示 (Fig. 1 B) した程度までである．本種の典型的な紋の現われ方は図示 (Fig. 2 A) したようで，前紋は第 2 間室あたりまで，後紋も会合線間室までは伸長しない．

黄紋が小型で暗色化する傾向は，雄に多く現われる (Fig. 1 C–D)．黒化のやや進んだものでは後紋が不明瞭に認められる (Fig. 1 C) が，黒化のより進んだものでは，後紋が完全に消失している (Fig. 1 D)．なお，上翅がまったく黒化した個体にはまだ接していない．

本種の前紋は，横位の楕円形で特徴があるので，近似種とは識別できるが，紋の形や大きさには前述のような変異があるので，同定には他の形態も比較する必要がある．

調 査 標 本

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A New Name for *Psephidonus pusillus* Y. WATANABE (Coleoptera, Staphylinidae)

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Dr. Lee H. HERMAN kindly informed me that the name *Psephidonus pusillus* Y. WATANABE, 1990, is preoccupied by *Geodromicus pusillus* COIFFAIT, 1983. According to BLACKWELDER (1952, p. 169), the genus *Geodromicus* is a junior synonym of the genus *Psephidonus*. Therefore, I herewith propose a new name for my *Psephidonus pusillus*. I am deeply thankful to Dr. Lee H. HERMAN of the Department of Entomology, American Museum of Natural History, for his kindness.

Psephidonus hermani Y. WATANABE, nom. nov.

Psephidonus pusillus Y. WATANABE, 1990, Mem. Tokyo Univ. Agr., **31**: 279 [*nec* COIFFAIT, 1983].

Elytra, Tokyo, **19** (1): 44, May 15, 1991

Records of Some Coleoptera from the Island of Tarama-jima, the Ryukyus

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In the present paper, 14 species belonging to 9 families of the Coleoptera are recorded from the Island of Tarama-jima, lying between the Islands of Miyako-jima and Ishigaki-jima, the Ryukyus. Almost all of them are newly recorded to the fauna of the island, with the exception of those indicated with an asterisk. We are indebted to Mr. Hiroshi MAKIHARA for his kind support of the material.

Copelatus andamanicus RÉGIMBART, 1899 1 ex., 28–VIII–1979, Y. KUSUI (YK).
Eretes sticticus (LINNÉ, 1767) 1 ex., 28–VIII–1979, YK.

Coelostoma stultum (WALKER, 1858) 1 ex., 27–VIII–1979, YK.
Cercyon laminatus SHARP, 1873 1 ex., 27–VIII–1979, YK; 1 ex., 2–X–1984, YK.
Cercyon quisquilius (LINNÉ, 1761) 1 ex., 28–VIII–1979, YK.

Phaeochrous emarginatus CASTELNAU, 1840* 18 exs., 27–V–1974, H. MAKIHARA (HM).

Anomala albopilosa sakishimana NOMURA, 1964* 6 exs., 28–V–1974, HM.
Oxycetonia forticula ishigakiana NOMURA, 1959 1 ex., 28–V–1974, HM.

Chrysodema manillarum THOMSON, 1879 8 exs., 27–V–1974, HM.

Carpophilus marginellus MOTSCHULSKY, 1858 1 ex., 27–V–1974, HM.

Eobia chinensis (HOPE, 1842) 1 ex., 27–V–1974, HM.
Eobia cinereipennis ishigakiana KÔNO, 1937 1 ex., 28–V–1974, HM.

Formicomus okinawanus NOMURA, 1962 1 ex., 28–V–1974, HM.

Phola octodecimguttata (FABRICIUS, 1775)* 1 ex., 28–V–1974, HM.

Elytra, *Tokyo*, **19** (1): 45–55, May 15, 1991

コメツキムシ科4種の行動観察

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Ethological Observations of Four Species of the Elateridae (Coleoptera) from Japan

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Abstract　Ethological observations were made on the larvae and pupae of *Denticollis nipponensis* ÔHIRA and *Paracalais berus* (CANDÈZE), as well as on the adults of *Ampedus japonicus* SILFVERBERG and *Anostrius daimio* (LEWIS).

1. はじめに

コメツキムシ科については，最近になってようやく，その分類体系や分布が明らかにされてきたが，種の生態はほとんど明らかにされていない．しかし，幼虫期に農作物に被害を及ぼすいわゆる「ハリガネムシ」と呼ばれている種については例外で，とくにジャガイモやサツマイモなどを害するトビイロムナボソコメツキ *Agriotes ogurae* LEWIS (富岡，1985; ほか) や，サトウキビの地下の芽などを害するオキナワカンシャクシコメツキ *Melanotus okinawensis* LEWIS (里見，1985; ほか) についてはよく知られている．コメツキムシ科の一般的な生活史は次のとおりである．

交尾を終えた雌は，種によってそれぞれ土中，腐葉土中あるいは腐朽木中に産卵する．孵化した幼虫は，ほとんどの場合その場で幼虫期を過ごす．幼虫の食性は，大平 (1962) が示唆するように，おもに捕食肉食性であるが，前述したように主として植食性のものもある．幼虫期間は短いものでも1年，長いものでは 10 年を要すると思われる．そして蛹化羽化し，地上に成虫となって出現する．成虫の食性については不明な点が多いが，木本類の花や新芽に集まる種が知られ，成虫は水中を除くほとんどの場所で見られ，さらに灯火に集まるものも知られている．成虫として短い場合には数 10 日，長い場合には1年以上も生き続けるものと思われる．

筆者は，おもに飼育観察により，本科の4種 (ニホンベニコメツキ，ウバタマコメツキ，アカアシクロコメツキ，ダイミョウコメツキ) の生態を一部解明することができたので，ここに報告する．

2. 方　　法

2.1. 採　集

幼虫の採集は，ナタで倒木や立ち枯れの木の樹皮を剝がしたり削ったりして行ない，成虫の採集は，捕虫網で花や新芽をスイーピングして行なった．幼虫の採集は，静岡県富士宮市白糸の滝周辺，山梨県韮崎市穴山，長野県松川町，東京都八王子市裏高尾町，群馬県水上町藤原日本大学演習林，神奈川県厚木市鳶尾山，神奈川県藤沢市亀井野において，成虫の採集は，東京都八王子市裏高尾町日影沢，群馬県水上町藤原宝川において行なった．

2.2. 飼　育

幼虫の飼育は，直径 90 mm，高さ 60 mm のシャーレ，または直径 30 mm，高さ 50 mm のやや透明のフィルムケースを用いた．それぞれの中には，幼虫が生活していた状態になるべく近い状態で飼育すべきであると考え，幼虫を採集した際に持ち帰った腐朽木片を，ミキサーで粉砕して入れた．その半分より下は手で強く押し固め，半分より上は軽くかぶせるように入れ，その上に幼虫を置いて飼育をはじめた．幼虫の餌には，おもに 0.1 g 程度の牛肉片を与えた．

成虫の飼育は，直径 90 mm，高さ 60 mm のシャーレおよびそれに類似した容器を用い，その中に幼虫の飼育の際に用いた腐朽木片を粉砕したものを十分に湿らせ，深さ 15 mm 程度にまで手で押し固めて入れた．さらに産卵させるために，繊維が十分残っている広葉樹の腐朽木片を入れ，飼育をはじめた．餌として，水道水で数倍に薄めたハチミツや糖などを脱脂綿にしみ込ませたものやキャベツの葉肉を与えた．

飼育は東京都世田谷区の外温より，冬期は約 10 度高く他の時期は同程度の自宅の室内で行なった．

3. 結果と考察

3.1. ニホンベニコメツキ　*Denticollis nipponensis* Ôhira

3.1.1.　幼虫の採集記録

幼虫A：1989 年 11 月 28 日，静岡県富士宮市白糸の滝周辺にて，体積の 3 分の 1 の程度が土中に埋まって横たわっていた広葉樹 (直径約 12 cm，長さ約 50 cm) の材中につくられたクワガタムシ科の幼虫の坑道にいたものを発見，採集．

幼虫B：1990 年 1 月 8 日，山梨県韮崎市穴山にて，クヌギの切り株の樹皮下より発見，採集．

幼虫C：1990 年 1 月 15 日，長野県松川町にて，直径約 20 cm，長さ約 2 m，アカマツと思われる倒木の樹皮下より発見，採集．

幼虫D：1990 年 3 月 20 日，東京都八王子市裏高尾町にて，直径約 50 cm，長さ約 1.5 m の広葉樹の倒木の樹皮下より発見，採集 (図 1)．

幼虫E：1990 年 5 月 3 日，群馬県水上町藤原日本大学演習林にて，直径約 7 cm の広葉樹の立ち枯れのカミキリムシ科の幼虫がつくったと思われる坑道の中で，前蛹に近い状態で発見，採集．

3.1.2.　飼育結果

幼虫A：1990 年 3 月 27 日に容器の底につくられた蛹室内で蛹化，1990 年 4 月 12 日に羽化，脱出．

幼虫B：1990 年 4 月 21 日に蛹室内で斃死腐敗した新成虫を確認．

幼虫C：1990 年 3 月 20 日に蛹化 (図 2)，1990 年 3 月 24 日羽化，硬化後，飼育容器外に取り出した (図 3)．

表 1.　ニホンベニコメツキの幼虫の採集記録と飼育結果.

幼 虫	採集場所	幼虫採集日	幼 虫	蛹		成 虫
幼 虫 A	静岡県富士宮市 白糸の滝周辺	1989年 11月28日	——→	1990年 3 月 27日，蛹化	——→	1990年12月12日 羽化脱出
幼 虫 B	山梨県韮崎市 穴山	1990年 1 月 8 日	——→			1990年 4 月21日，蛹室で斃死 腐敗した成虫を確認
幼 虫 C	長野県松川町	1990年 1 月15日	——→	1990年 3 月 20日，蛹化	——→	1990年 3 月24日，羽化. 硬化後，飼育容器外に取り出す
幼 虫 D	東京都八王子市 裏高尾町	1990年 3 月20日	1990年 9 月 死亡確認			
幼 虫 E	群馬県水上町藤原 日本大学演習林	1990年 5 月 3 日	——→	1990年 5 月 6 日，蛹化	1990年 5 月12日～ 19日の間に死亡	

表 2.　ウバタマコメツキの幼虫の採集記録と飼育結果.

幼 虫	採集場所	幼虫採集時の体長	幼虫採集日	幼 虫	蛹	成 虫	成虫の体長
幼 虫 A	神奈川県厚木市 鷲尾山	15.7 mm	1989年 12月12日	1990年 6 月 上旬，死亡			
幼 虫 B	神奈川県藤沢市 亀井野	42.2 mm	1990年 5 月11日	——→	1990年 7 月26日 蛹確認	1990年 8 月 2 日 成虫確認	20.5 mm
幼 虫 C	神奈川県藤沢市 亀井野	30.0 mm	1990年 5 月11日	——→	1990年 7 月26日 蛹確認	1990年 8 月 2 日 成虫確認	23.9 mm

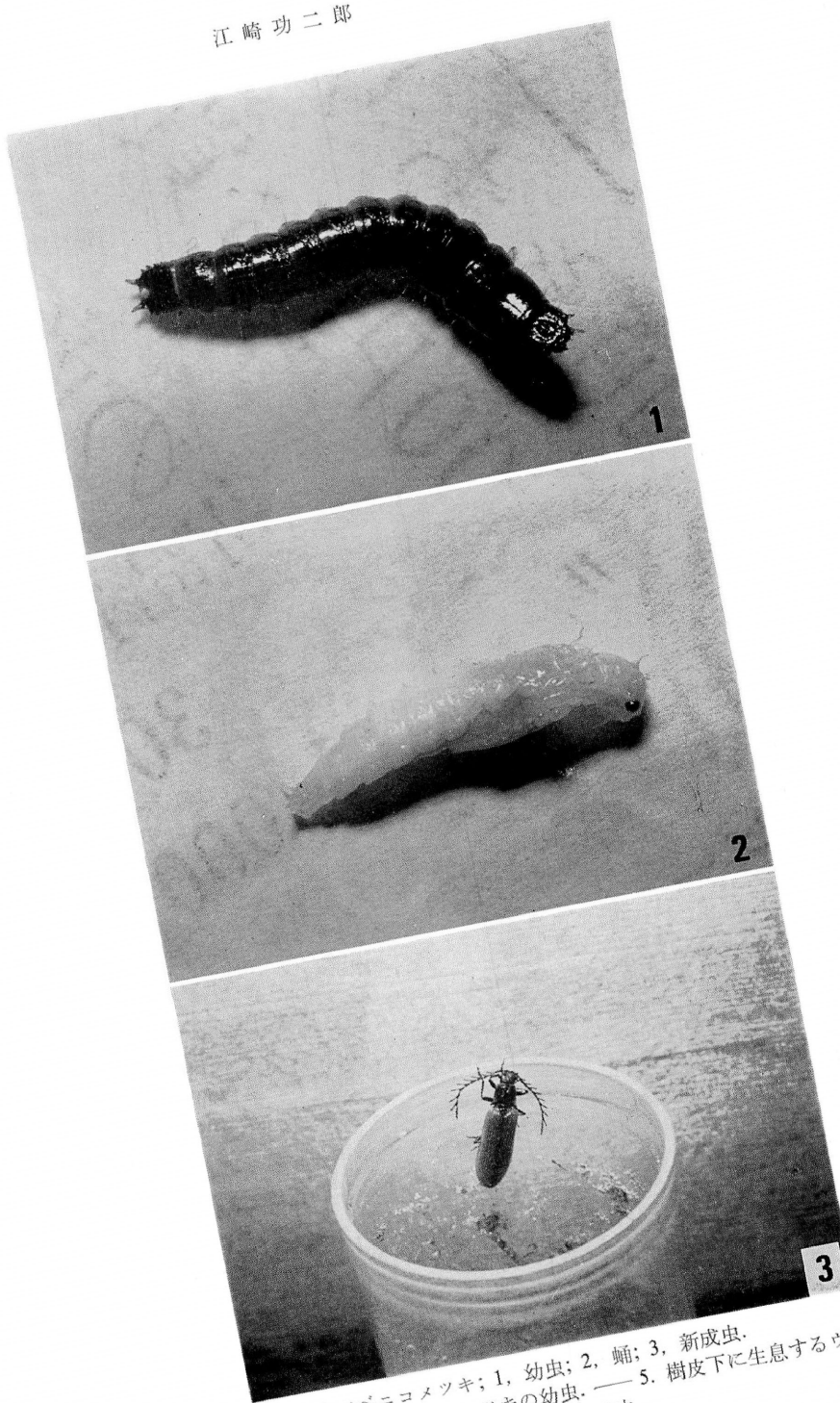
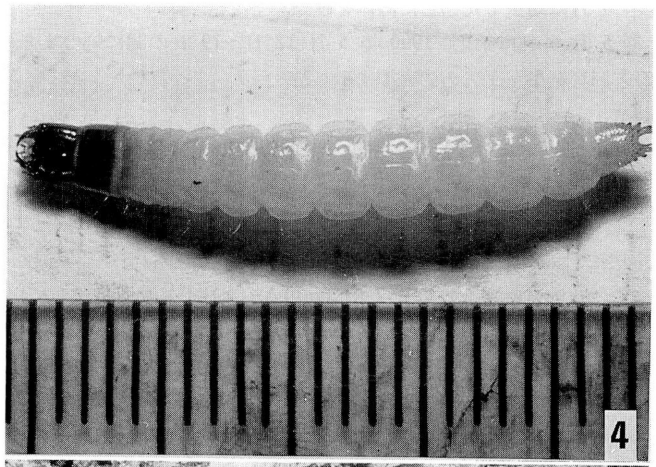


図 1–3 (p. 48). ニホンベニコメツキ; 1, 幼虫; 2, 蛹; 3, 新成虫.
図 4–6 (p. 49). —— 4. ウバタマコメツキの幼虫. —— 5. 樹皮下に生息するウバタマコメツキの終齢幼虫. —— 6. ウバタマコメツキの新成虫.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幼虫D：1990 年 9 月に幼虫で死亡した個体を確認．

幼虫E：1990 年 5 月 6 日に蛹化，1990 年 5 月 12 日～19 日の間に蛹のまま死亡．

幼虫の採集記録と飼育結果をまとめて表 1 に示した．

3.1.3. 蛹の行動

本種の蛹（図 2）は，前胸背板に 3 対のトゲ状の突起物をもち，刺激を与えると腹部を活発に振りまわし，体全体を回転させる．

3.1.4. 考 察

本属の幼虫は，大平（1968）によると「すべて朽木の樹皮下で見られ‥‥」とあるが，筆者が穿孔虫の幼虫が材中につくった坑道に潜む個体を 2 例（幼虫Aおよび E）発見採集していることから，条件によっては樹皮下以外の場所でも生活していることが明らかになった．ただ穿孔虫の幼虫がつくった坑道で発見された個体は，偶然に迷い込んだものなのか，それとも餌として穿孔虫の幼虫を利用するために追跡していたものなのかは，明確でない．

本属幼虫が主として生活している樹皮下には，他の捕食虫も多く生活しているので，捕食性である本属幼虫でさえも他の捕食虫の餌となる可能性が十分にあり，さらにその危険性が最大となるのは蛹の期間である．いかにその危険性を最小限に抑えるかが，種の存続という意味で重要になる．これは，次の 2 つの観察結果より得られた知見が関わっている．①蛹の期間は 1 例（幼虫C）しか観察できなかったが，5 日と非常に短い，つまりもっとも危険性の高い蛹の時期に敵に襲われる可能性を軽減していることを示唆するものである．②蛹に刺激を与えると前胸背板の 3 対のトゲ状の突起物をもって体を活発に回転させる．これは近づいてくる敵を撃退するための行動であることを示唆する．

3.2. ウバタマコメツキ *Paracalais berus* (CANDÈZE)

3.2.1. 幼虫の採集記録

幼虫A：1989 年 12 月 12 日，神奈川県厚木市鳶尾山にて，比較的新しいアカマツの立ち枯れの樹皮下で発見，採集．この個体以外にも同所で多数の幼虫個体を発見，採集している（図 4）．

幼虫BおよびC：1990 年 5 月 11 日，神奈川県藤沢市亀井野にて，枯死してから少なくとも 3 年経過している松の材中より発見，採集（図 5）．同時に樹皮下の蛹室に潜む新成虫を発見している（図 6）．

3.2.2. 飼育結果

幼虫A：採集時の体長 15.7 mm，1990 年 6 月上旬に死亡．

幼虫B：採集時の体長 42.2 mm，1990 年 7 月 26 日に蛹確認，1990 年 8 月 2 日に成虫確認，成虫の体長は 20.5 mm であった．

幼虫C：採集時の体長 30.0 mm，1990 年 7 月 26 日に蛹確認（図 7-8），1990 年 8 月 2 日に成虫確認，成虫の体長は 23.9 mm であった．

幼虫の採集記録と飼育結果をまとめて表 2 に示した．

3.2.3. 幼虫の行動習性

本種の幼虫はかなり獰猛であり，樹皮下以外の材中では，穿孔虫のつくった坑道を使ってかなりすばやく移動するのが観察された．ピンセットなどで刺激を与えると，大顎を開いて身がまえる．大顎は敵と戦ったり獲物を引き裂くときに使われる．捕らえた獲物は体外消化されるものと推定される．

3.2.4. 考 察

本種の幼虫は，数年かかって成虫になる．また図 5 のような大型の終齢幼虫になるためには，相当量の餌を摂取する必要がある．これは，本種の幼虫期において，相当量の穿孔虫などの幼虫を捕食していることを示唆することであり，かなりの穿孔虫などの幼虫が被害を受けていることになる．本

種はマツ類の生木以外の樹皮下におもに生息し，松枯れを引き起こす材線虫のおもな伝搬者であるマツノマダラカミキリの幼虫は，マツ類の枯木に生息している．つまり，マツノマダラカミキリの幼虫は，本種の幼虫の旺盛な食欲により，その相当数が捕食されているものと思われる．ハリガネムシとして害虫のイメージが強い本科であるが，本種は益虫としての存在意義が大きいようである．

3.3. アカアシクロコメツキ　*Ampedus japonicus* Silfverberg

3.3.1. 成虫の食性と行動

飼育に用いた10数頭の個体は，すべて日中カエデの花に集まっていたもの（1990年4月24日，東京都八王子市裏高尾町日影沢）で，餌として与えた甘汁（ハチミツや糖を水で薄めたもの）やキャベツ葉肉を活発に摂食していた．とくに多くの個体が，甘汁をなめる前にこれに触角をこすりつけているのが観察された．採集してから2週間ぐらいは活発に餌を摂食している様子が観察された．それ以降2週間以上生き続けたが，どの個体もほとんど摂食しなかった．

3.3.2. 交尾行動

摂食しなくなってから，ほとんどの個体が産卵用に入れた木片の下に留まるようになり，交尾行動が観察されるようになった（図9–10）．交尾は暗い場所で行われ，光や物音に対して敏感で観察や撮影に苦労した．交尾行動として，♂と♀が出逢ってマウントするまでの行動は観察できなかったが，交尾中の♂の行動については詳細に観察できた．交尾は，♂が♀の背に乗って行われるのではなく，♀の側方から♂がしがみつく方法で行われ（図9–10），♂は中肢でしきりに♀の上翅をさすり，触角でパタパタと前胸背板をはたき，口器で前胸背板側部をリッキングする．交尾持続時間を測定することは，この種の生態上困難であったが，最長持続時間は1分15秒であった．

3.3.3. 産卵行動

♀成虫は産卵用に入れた腐朽材上を歩きまわり，適当な産卵場所を見つけると，産卵管を出し木材の繊維方向に裂け目を入れるように数mmなぞり，気に入れば裂け目の手前端に産卵管を差し込み産卵する．卵の形は楕円球形で，その大きさは0.9 mm程度であった（図11）．

3.3.4. 考　察

本種の性成熟には，少なくとも2週間程度の餌の摂取期間が必要である．また野外で本種の交尾行動が観察されないのは，人目をひく餌の摂取期間には交尾がまったく行なわれないことと，交尾が暗い場所で行なわれていることとの2点が原因であろうと考えられる．

前述したように，甘汁に触角をこすりつけてからなめるという行動が観察されることから，味覚は触角で感じているようで，前述した交尾の際の♂の行動と合わせて，触角は一般に知られている用途以外にかなり重要な役割をもっているようである．

3.4. ダイミョウコメツキ　*Anostrius daimio* (Lewis)

3.4.1. 成虫の食性と行動

飼育に用いた10数頭の個体はすべて，日中サクラおよびカエデの花に集まっていたもの（1990年5月13日，群馬県水上町藤原宝川）で，餌として与えた甘汁やキャベツの葉肉を活発に摂食していた．飼育下において天気のよい日は，早朝，日の照り始める時刻より活動を開始し，午後2時ごろもっとも活発に活動するのが観察された．

3.4.2. 交尾行動

採集してから2日後（1990年5月15日）には，交尾行動が観察された（図12–13）．交尾は明るい所で行われ，積極的である．交尾は餌場で行われ，後食中の♀の背に♂が乗って，♀の小盾板付近をリッキングする♂の行動が観察された（図12–13）．

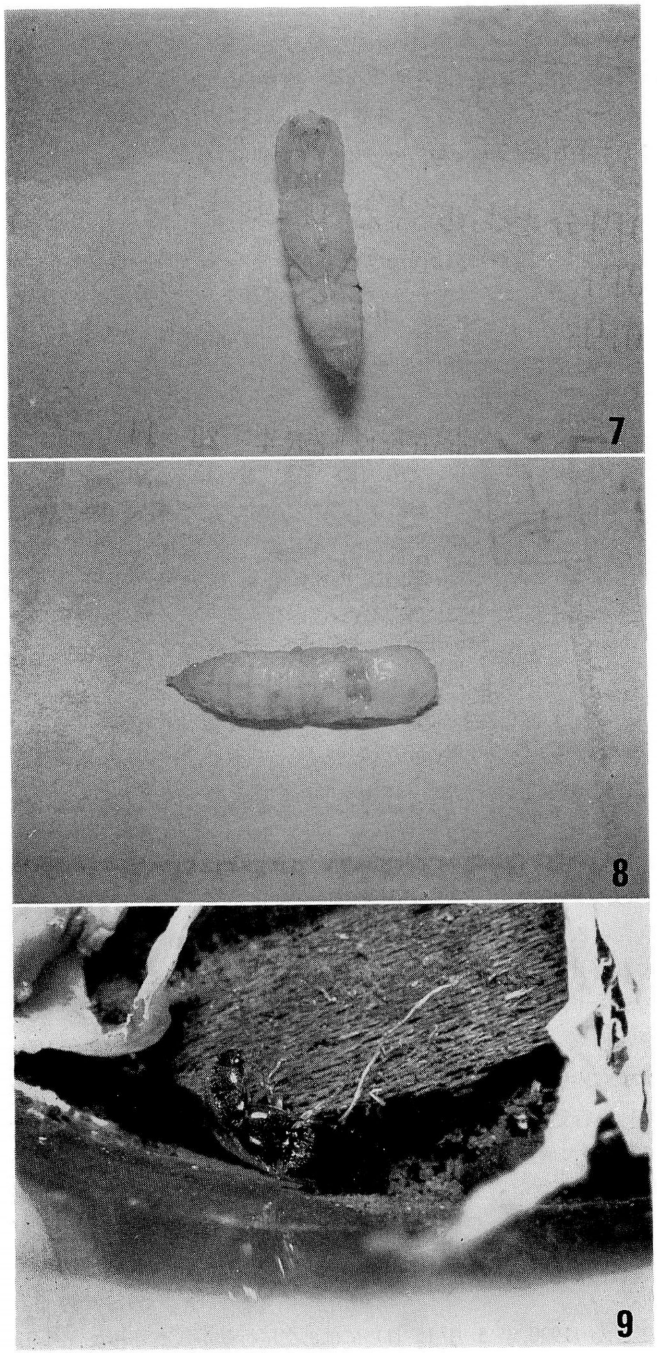

図 7–9. —— 7. ウバタマコメツキの蛹（腹面）. —— 8. ウバタマコメツキの蛹（背面）. —— 9. アカアシクロコメツキの交尾（側面）.

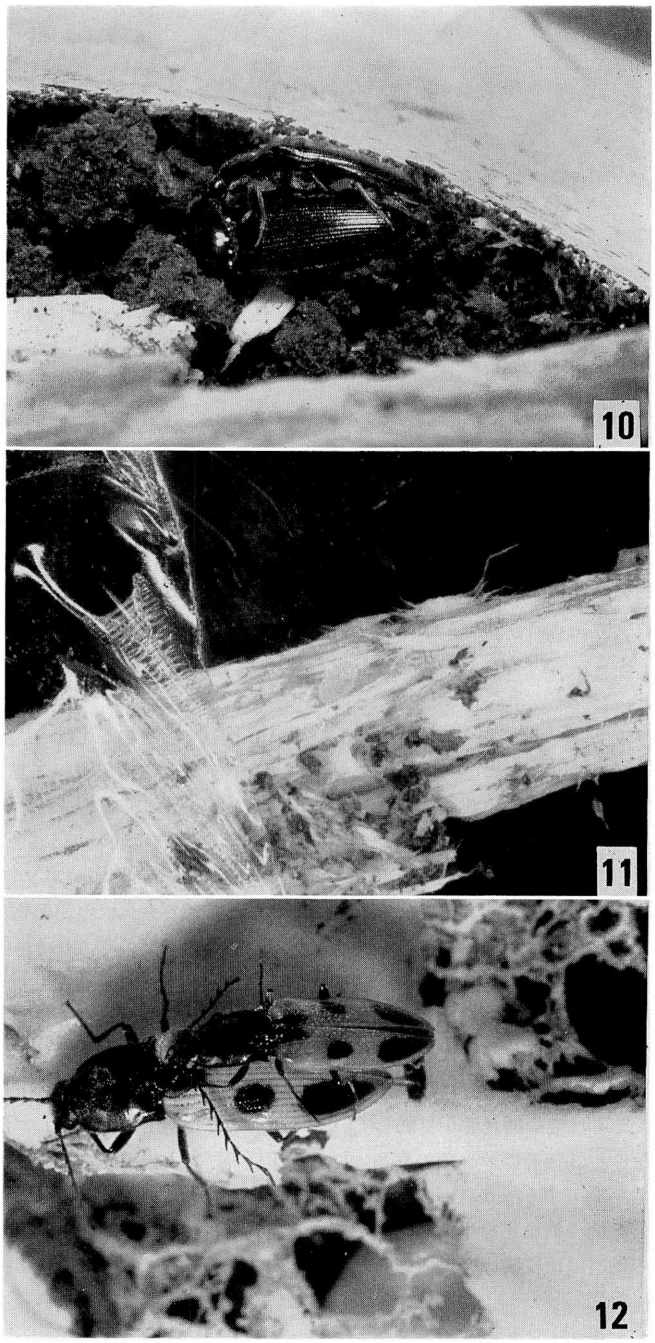

図 10–12. —— 10. アカアシクロコメツキの交尾（頭部，胸部）. —— 11. アカアシクロコメツキの卵. —— 12. ダイミョウコメツキの交尾（背面）.

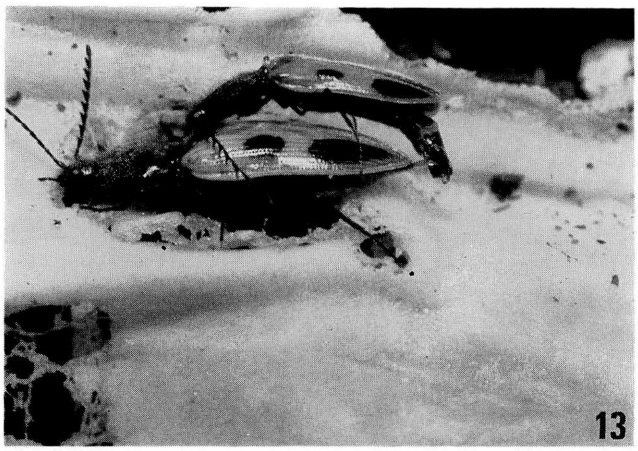

図 13. ダイミョウコメツキの交尾（側面）.

3.4.3. 考 察

本種の行動は，前述したアカアシクロコメツキとはかなり異なり，摂食行動でも交尾行動でも触角を特別に用いることはない．また，交尾が後食中の♀の背に♂が乗って行われる点は，むしろ甲虫の仲間として一般的であるように思える．おそらく野外でも日中，花上で活発に交尾が行なわれているのであろう．

3.5. 総合考察

3.5.1. ニホンベニコメツキとウバタマコメツキの幼虫期と蛹期における比較

ニホンベニコメツキの幼虫とウバタマコメツキの幼虫は，主として樹皮下に生息すること，捕食性を有することなど生態的に多くの共通点をもっている．そして，幼虫の形態からコメツキムシ科全体を3型に大別する大平 (1990) の考え方に添うと，この2種は系統的に近いことも考えられる．ただ興味があるのは，幼虫の機能および形態においてはおおむね共通するが，蛹については別で，前者は3対のトゲ状の突起物をもつ点で後者と異なる．先に考察した前者のトゲ状の突起物が防衛に役立つものとすれば，後者にはそれに相当する部位や機能がなく，防衛の必要性がないということになる．これについて次の4つのことが考えられる．①後者は前者に比べてかなり旺盛な食欲をもっている．後者が巨大な終齢幼虫になるまでに，同居する同種他個体および他種をすべて食してしまう．そうすると防衛の必要性は僅少になるということになる．②前者の蛹化する時期は春，後者は盛夏である．この時期的問題が関係しているかもしれない．たとえば，春は他の捕食者の食欲が旺盛な時期であり，盛夏は夏眠の時期である．他の捕食者が夏眠している時期に蛹の時期を一致させれば防衛の必要性はないということになる．③後者はマツ類の腐朽木のみを生活場所にし，前者は樹種をほとんど選択しない．マツ類を生活場所にする捕食者がほとんど存在しないとすれば，防衛の必要がないということになる．実際に，針葉樹の樹皮下を生活場所にしている捕食者は少ないように思える．④図6に見られるように，後者の蛹室は比較的厚い壁で守られているので，その壁の防衛効果がかなり大きいものであるとも考えられる．

3.5.2. アカアシクロコメツキとダイミョウコメツキの成虫期における比較

アカアシクロコメツキとダイミョウコメツキはともに，成虫が春にカエデの花などをさかんに訪れ，生態的地位が比較的近いが，この2種の性成熟の時期はまったく異なっている．前述したように，前

者はある期間，餌を摂食してから交尾を行ない，後者は餌の摂食と同時に行なう．このことは，前者が性成熟するためには，ある程度の期間摂食することが必要であり，後者は地上に脱出して餌場を訪れたときにはすでに性成熟しているということを示唆している．また前者では摂食時期と交尾時期とが明確に区別され，後者ではとくに区別されない．このことが生態的になにを意味するのかを知るためには，より多くの種の交尾行動を比較，観察する必要があるように思われる．

4. 謝　　辞

本稿を執筆するにあたり，いろいろとご指導を賜わった山田房男，岩田隆太郎の両恩師に，厚くお礼を申し上げる次第である．

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Elytra, *Tokyo*, **19** (1): 56, May 15, 1991

Records of Some Carabidae from the Island of Tarama-jima, the Ryukyus

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So far as we are aware, no record of the Carabidae has been made from the Island of Tarama-jima, which lies between the Islands of Miyako-jima and Ishigaki-jima of the Sakishima Group of the Ryukyus. All the following 14 species collected by Dr. Yoshihisa KUSUI are, therefore, new to the fauna of the island. We wish to thank Dr. Y. KUSUI for his kind offer of the specimens used in praparing the present paper.

Colpodes obscuritarsis CHAUDOIR, 1878 1 ex., 27-VIII-1979.
Colpodes buchanani HOPE, 1831 3 exs., 27-VIII-1979; 1 ex., 29-VIII-1979.
Harpalus azumai HABU, 1968 1 ex., 27-VIII-1979; 1 ex., 2-X-1984.
Platymetopus flavilabris (FABRICIUS, 1798) 3 exs., 27-VIII-1979.
Stenolophus quinquepustulatus (WIEDEMANN, 1823) 6 exs., 27-VIII-1979.
Diplocheila zeelandica (REDTENBACHER, 1868) 1 ex., 28-VIII-1979.
Microcosmodes flavopilosus (LAFERTÉ, 1851) 1 ex., 28-VIII-1979.
Chlaenius bimaculatus lynx CHAUDOIR, 1856 1 ex., 29-VIII-1979.
Chlaenius guttula CHAUDOIR, 1856 1 ex., 27-VIII-1979.
Chlaenius micans (FABRICIUS, 1792) 1 ex., 28-VIII-1979.
Chlaenius virgulifer CHAUDOIR, 1876 1 ex., 29-VIII-1979.
Perigona nigriceps (DEJEAN, 1831) 1 ex., 28-VIII-1979.
Hexagonia cyclops (MATSUMURA, 1910) 3 exs., 27-VIII-1979.
Drypta lineola virgata CHAUDOIR, 1850 2 exs., 28-VIII-1979.

Elytra, Tokyo, **19** (1): 57–61, May 15, 1991

Studies on the Buprestidae (Coleoptera) of Taiwan

II. A New Species of the Genus *Dicerca*

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Abstract A new species of the genus *Dicerca* is described from central Taiwan under the name of *Dicerca unokichii*. It is different from the hitherto known species of the genus *Dicerca* from East Asia in its elytral features.

Recently, I had opportunities to collect many specimens of *Dicerca* on a branch and the trunk of a *Carpinus* tree on the central mountains of Taiwan, in collaboration with Mr. Hyôji TORIGAI and Mr. Chinchi LUO. These specimens were proved to belong to a new species after a careful study. In this paper, I am going to describe it under the name of *Dicerca unokichii*.

I wish to express my sincere thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, and Mr. Masatoshi TAKAKUWA of the Kanagawa Prefectural Museum, Yokohama, for their kindness in critically reading the original manuscript and offering invaluable suggestions, to Mr, Kôyô AKIYAMA, Yokohama, for his support of my study, and to Mr. Hyôji TORIGAI, Gifu Prefecture, and Mr. Chinchi LUO, Nantou Hsien of Taiwan, for their kind offer of materials.

Dicerca unokichii sp. nov.

(Figs. 1–4)

Body robust, convex and attenuate posteriorly; head cupreous with aeneo-greenish tinge; labrum cupreous; pronotum black with cupreous tinge, lateral margins with greenish tinge; elytra black with cupreous tinge, lateral margins with aeneo-greenish tinge; ventral surface bright cupreous all over; antennae cupreous; legs cupreous, tarsi with purplish or blackish blue tinge.

Head narrower than the base of pronotum, feebly depressed from the middle part of vertex to just below the center of frons, coarsely punctate, the punctures being oblong, longitudinally confluent, each with one or more whitish hairs, the intervals among them raised and reticulate; eyes moderately converging above in frontal view; clypeal suture inconspicuous; clypeus transverse, about 2.3 times as wide as long between antennal cavities, with anterior margin trapezoidally emarginate; antennal cavities large and subtriangular with anterior and interior rims distinctly raised. Antennae short, slender, eleven-segmented, serrate from fourth to last segments;

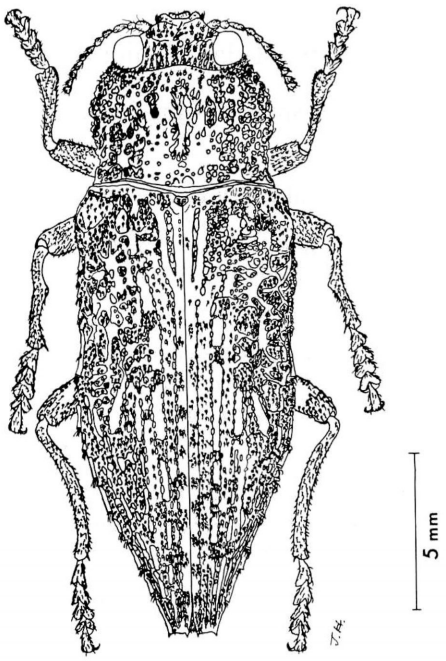

Fig. 1. *Dicerca unokichii* sp. nov., ♂ holotype; dorsal view.

first segment the stoutest, about twice as long as second which is globular; third somewhat stout, about 1.5 times as long as second; fourth subtriangular, slightly longer than third; fourth to seventh nearly equal in size and length; eighth to tenth nearly equal in length, each wider than long; last segment subglobular; sensory pores concentrated in a distinct round pit on apical inner margin of each serrate segment.

Pronotum transverse, about 1.5 times as wide as long, widest just behind the middle; lateral margins sinuate, covergent from base to posterior sixth, then gradually, arcuately divergent to the widest part and arcuately convergent again to anterior angles, which are obtusely produced in lateral view, feebly and not acutely so in dorsal view; anterior margin 0.7 times as wide as posterior margin and bisinuate, with median lobe broadly and feebly produced; posterior angles acute, feebly and transversely produced; posterior margin bisinuate with the median lobe broadly and angulately produced, feebly and angulately emarginate at two-thirds from ante-scutellar part; disc convex, shallowly depressed in posterior third on each lateral half; median line carinate, being surrounded by confluent punctures; surface irregularly punctate, the punctures being deep and confluent, each with a silver whitish short recumbent hair, becoming coarser and denser toward the lateral parts which are almost rugoso-punctate; ante-scutellar part with two transverse pits or with two deep foveoles.

Scutellum small and triangular with a depression on the median line.

Elytra about twice as long as wide, 4 times as long as pronotum, widest just

before the middle and distinctly wider than pronotum; humeri obtusely angulate; sides expanded just behind humeri, subparallel or feebly sinuate to just before the middle where they are gradually arcuate, then feebly sinuously convergent to apices, which are furcate, each with trapezoidal emargination between spines; sutural margins elevated from middle to apices; lateral margins inconspicuous in basal third, then costate to apices and serrate by punctuate depressions; humeri prominent at basal thirteenth; basal lobes feebly produced and feebly angulate at lateral two-thirds from scutellum; disc with five costae and five intercostal intervals as follows: first costa conjointed with sutural margin at basal fifth, second irregular from base to apex, third inconspicuous from base to middle, then discontinuously running to apex, fourth inconspicuous from base to middle, then forming broad costa of the length of about tenth of each elytron, the costa being oblique and directed forward to scutellum, and then inconspicuously running to apical two-seventh, fifth inconspicuous in basal fourth, then discontinuously running to apex, and ridged in apical half; first interval inconspicuous in basal part, then distinctly running to apex, second discontinuous from base to middle, then carinate to just before apex, third inconspicuous in basal half, then discontinuously running to just before apex, fourth vague throughout, fifth inconspicuous in basal half, then feebly and discontinuously running to just before apex; area from second costa to lateral margin conjointly reticulated by punctuations in basal half; surface scattered with small round punctures all over, which frequently form small markings by gathering and become coarser, denser and more rugoso-punctate toward sides, each puncture with a short semi-recumbent silver-whitish hair; punctuations between costae and intercostal intervals deep, sparse and longitudinally elliptical, without hairs.

Ventral surface rugoso-punctate, densely clothed with semi-recumbent silver-whitish hairs and shallowly and widely punctate at the sides.

Prosternum convex, rugoso-punctate, flattened at middle, with anterior margin feebly arcuately emarginate; episterna shallowly punctate; prosternal process narrowed by frontal coxae, angulate just behind frontal coxae, attenuate to apex which is rounded, flattened and longitudinally sulcate at middle, the sulcus being clothed with long hairs and confluently punctate (male) or more sparsely punctate (female). Mesosternum divided. Metasternum longitudinally grooved at the middle. Middle

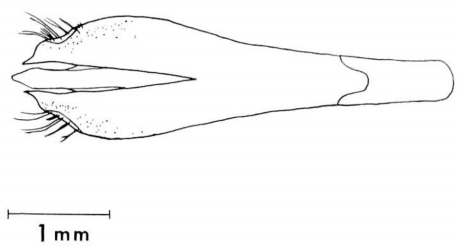

Fig. 2. Male genitalia of *Dicerca unokichii* sp. nov.; dorsal view.

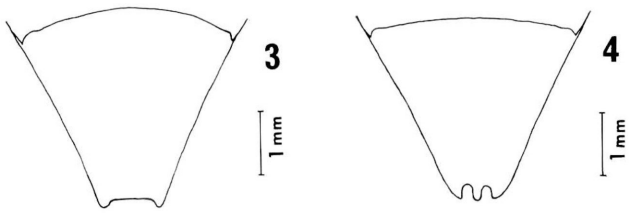

Fig. 3–4. Last visible abdominal sternite of *Dicerca unokichii* sp. nov.; 3, male; 4, female.

coxae a little more widely separated from each other than the anterior ones. Posterior coxae bisinuate at each posterior margin, arcuately emarginate upon metatrochanter.

Abdominal surface shallowly and confluently punctate, though finely and sparsely so at middle, the punctures becoming denser toward sides; last visible abdominal sternite trapezoidally emarginate (male) or narrowly and deeply emarginate in a U-shape on each side, with a median projection rounded at the tip (female).

Legs rather long and robust; protibia laterally dilated at apex; mesotibia with an obtuse inner tooth just before the middle (male) or not toothed (female), and feebly curved interiorly; metatibia curved interiorly; all tarsal segments nearly equal in length.

Length: 13.8 mm–19.0 mm (♂), 16.0 mm–19.0 mm (♀). Width: 5.0 mm–7.0 mm (♂), 5.7 mm–7.0 mm (♀).

Holotype: ♂, allotype: ♀, Kukuang (1,300 m in alt.), Taichung Hsien, 1–VIII–1989, Takaharu HATTORI leg. Paratypes: same locality as for the holotype; 1 ♂, 3–VI–1989, Chinchi LUO leg.; 1 ♂, 1 ♀, 6–VII–1989, Chinchi LUO leg.; 2 ♂♂, 6–VII–1989, J. LUO leg.; 1 ♂, 18–VIII–1989, J. LUO leg.; 1 ♂, 2–IX–1989, N. J. HAO leg.; 1 ♂, 13–IX–1989, Chinchi LUO leg.; 1 ♂, 4–IX–1989, Chinchi LUO leg.; 1 ♂, 5–IX–1989, Chinchi LUO leg.; 2 ♂♂, 9–IX–1989, Chinchi LUO leg.; 3 ♂♂, 2 ♀♀, 7–V–1990, Chinchi LUO leg.; 1 ♂, 28–V–1990, Chinchi LUO leg.; 1 ♂, 9–VI–1990, Chinchi LUO leg.; 3 ♂♂, 2 ♀♀, 18–VI–1990, Chinchi LUO leg.; 3 ♂♂, 1 ♀, 2–VII–1990, Chinchi LUO leg.; 1 ♂, 3–VII–1990, Chinchi LUO leg.; 1 ♀, 9–VII–1990, Chinchi LUO leg.; 1 ♀, 14–VII–1990, Hyôji TORIGAI leg.; 2 ♀♀, 14–VII–1990, Takaharu HATTORI leg.

The holotype and a female paratype are deposited in the National Science Museum (Nat. Hist.), Tokyo. The allotype and the other paratypes are in my collection.

Host plant. All the specimens known were taken on a dead stout branch and the decrepit trunk of a *Carpinus* tree, so that the host plant is probably that *Carpinus*.

Remarks. This new species is different from the other species of the genus *Dicerca* from East Asia in the characteristics of the fourth elytral costae directed to the scutellum and serration of elytral lateral margins.

Etymology. This new species is dedicated to Unokichi, the deceased father of Takaharu HATTORI, who always encouraged him to the study of insects but passed away in 1989.

要　約

服部宇春：台湾産タマムシ類の研究．II．フタオタマムシ属の1新種．—— 台湾中央部の台中県谷関からフタオタマムシ属の1新種を記載し，*Dicerca unokichii* と命名した．この種は，上翅の第4隆条の一部が小盾板の方向を向くことや，側縁が鋸歯状であることによって，東アジア産の既知種から区別できる．

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Elytra, Tokyo, **19** (1): 62, May 15, 1991

New Buprestid Taxa from Tropical Asia (2)

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Chrysochroa semperi osadai Y. KUROSAWA, subsp. nov.

Golden green to bluish golden green, lustrous, with elytral apices faintly tinged with golden or golden red and the ventral surface of abdomen apically tinged with golden red which becomes stronger towards the apex. Pronotal punctuation weaker on disc than in the nominotypical race of *C. semperi* E. SAUNDERS, 1874, but stronger and coarser with the intervals forming rugae at the sides. Elytral costae and punctuation weaker than in *semperi* s. str.

Length: 38.5–39.2 mm; width: 10.8–11.0 mm.

Holotype: ♀, Diwagao of San Mariano, Isabela Prov., NE. Luzon, Philippines, 24–IV–1983, S. OSADA lgt.; paratype: ♀, Sierra Madre Mts., NE. Luzon, Philippines, IV–1990, native collector lgt.

Range. Philippines (Sierra Madre Mts., NE. Luzon).

Megaloxantha nigricornis sakaii Y. KUROSAWA, subsp. nov.

Elytra strongly tinged with reddish bronzy instead of bronzy green or green in *M. nigricornis* H. DEYROLLE, 1864, s. str., of the Malay Peninsula. Elytral costae stronger and more distinct than in *nigricornis* s. str. Punctuation on the intercostate areas of elytra denser, stronger and partially confluent than in *nigricornis* s. str.

Length: 57.2–60.8 mm; width: 18.5–20.6 mm.

Holotype and a paratype: 2 ♂♂, Tarempa Island of the Anambas Islands, Indonesia, VIII–1989, native collector lgt.

Range. Indonesia (Anambas Islands).

Megaloxantha nigricornis takizawai Y. KUROSAWA, subsp. nov.

Intermediate between *sakaii* m. from the Anambas Islands and *nigricornis* s. str. from the Malay Peninsula. Body smaller than in *sakaii*, cyaneous black, but as lustrous as *nigricornis* s. str. Punctuation on the intercostate areas of elytra denser and stronger than in *nigricornis* s. str., but sparser and weaker than in *sakaii*.

Length: 54.1 mm; width: 15.2 mm.

Holotype: ♂, Tioman Island, about 50 km off Mersing to the northeast, Johore, Malay Peninsula, 13–III–1983, S. TAKIZAWA lgt.

Range. Malay Peninsula (Tioman Island).

Elytra, Tokyo, **19** (1): 63–74, May 15, 1991

Notes on the Genus *Adoretus* (Coleoptera, Scarabaeidae) from North Thailand

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Abstract Ten new species of the genus *Adoretus* LAPORTE, 1840, are described from North Thailand. Seven of them belong to the subgenus *Chaetadoretus* OHAUS, 1914, and the remainings to the subgenus *Adoretus*. The new species names given are: *A.* (*C.*) *breviunguiculatus*, *A.* (*C.*) *hirasawai*, *A.* (*C.*) *nigrofuscus*, *A.* (*C.*) *meo*, *A.* (*C.*) *aquilonis*, *A.* (*C.*) *subguttatus*, *A.* (*C.*) *matsumotoi*, *A.* (*A.*) *pachysomatus*, *A.* (*A.*) *flavomaculatus* and *A.* (*A.*) *senohi*.

In this paper, the author will describe ten new species of the scarabaeid genus *Adoretus* from North Thailand. Up to the present, only a small number of species of this genus have been described or recorded from Thailand by ARROW (1917), OHAUS (1914), FREY (1970, 1971), and others. All the holotypes designated in this study are preserved in the collection of the author.

Before going further, the author wishes to express his sincere appreciation to Messrs. H. HIRASAWA, W. SUZUKI and T. SENOH for their kindness in entrusting those valuable specimens to the author for investigation.

Adoretus (*Chaetadoretus*) *breviunguiculatus* H. KOBAYASHI, sp. nov.

(Figs. 1, 15)

Form elongate-oval, moderately convex. Color reddish brown to brown on dorsal surface, antennae, tarsi and tibiae light brown (posterior tibiae dark reddish brown), abdominal sternites blackish brown to dark reddish brown. Surface of body dull shining, densely covered with grayish recumbent hairs and intermixed with several rather long erect setae.

Clypeus semicircular, 2.7 times as broad as its length, anterior margin weakly bordered, very densely and somewhat rugosely punctate, bearing sparse erect setae in apical half; fronto-clypeal suture distinct, almost straight. Eyes rather small, their interspace being two-sevenths as broad as frons in both sexes. Labrum rather finely granulate; intermandibular process with a median longitudinal carina from apex to near basal margin, anterior angles subrectangular, anterior margin almost straight. Antennae 10-segmented, with club 1.4 times as long as footstalk in male, a little shorter than that in female.

Pronotum 2.3 times as broad as its length, coarsely and densely punctate, lateral margins curved behind the middle, anterior angles feebly produced and rectangular,

posterior ones gently rounded. Scutellum triangular, broader than its length, rather finely punctate. Elytra each with a sutural and four discal costae, 1st and 2nd costae narrow but distinct, two outer costae very fine and inconspicuous, intervals rather coarsely and densely punctate (punctures of 2nd interval somewhat fused together partially).

Pygidium gently convex in male, scarcely in female, coarsely and rugosely punctate in apical part, finely granulate in basal part, with hairs as on elytra. Abdominal sternites each rather coarsely and sparsely punctate at the middle, somewhat strigose at the base. Anterior tibia arcuate, tridentate, 1st and 2nd lateral teeth sharp, 3rd one very minute in male, rather large and blunt in female; middle and posterior tibiae each with two oblique ridges on outer side; posterior tibia somewhat dilated at the middle, longer terminal spur of posterior tibia just shorter than basal two tarsal segments in both sexes. Longer claw of anterior and middle legs cleft. Longer claw of posterior leg as long as 5th tarsal segment in male, distinctly shorter in female; shorter claw of posterior leg half the length of longer one in male, two-thirds that length in female.

Length: 9.0–10.0 mm; breadth: 4.5–5.0 mm.

Holotype: ♂, Doi Suthep, N. Thailand, 25–V–1980, T. SENOH leg. Paratypes: 1 ♂, Thaton, near Fang, N. Thailand, 8–VI–1979, W. SUZUKI leg.; 1 ♀, Fang – Chiang Dao, N. Thailand, 22～23–V–1989, K. MASUMOTO leg.

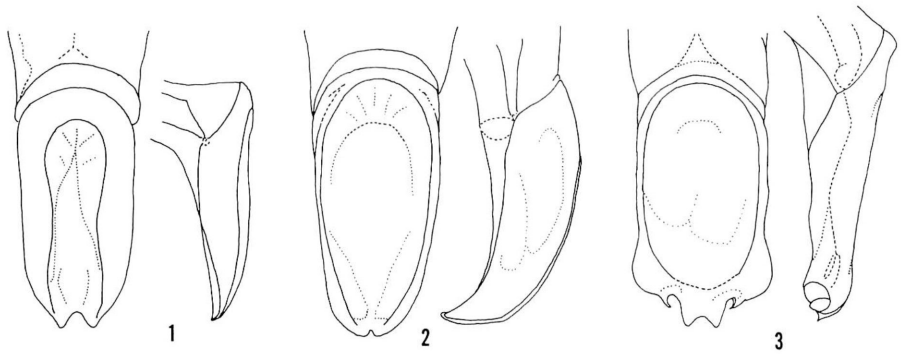
Adoretus (*Chaetadoretus*) *hirasawai* H. KOBAYASHI, sp. nov.

(Figs. 2, 11)

This species is very closely allied to the preceding but may be separated from it by the following points: Color reddish brown to brown on dorsal surface, antennae, tarsi and tibiae reddish brown or light reddish brown (middle and posterior tibiae dark reddish brown), abdominal sternites blackish brown to dark reddish brown. Eyes rether large and prominent, their interspace being three-eighths as broad as frons in both sexes. Anterior angles of intermandibular process rounded and not angulate. Anterior tibiae tridentate, 3rd lateral tooth distinct and not so minute in male. Posterior tibiae more dilated at the middle, terminal spurs evidently shorter than basal two tarsal segments in both sexes. Longer claw of posterior leg three-fourths as long as 5th tarsal segment, shorter one four-fifths as long as the longer.

Length: 9.5–11.0 mm; breadth: 5.0–6.0 mm.

Holotype: ♂, Konthanthan, near Chiangmai, N. Thailand, 1–VI–1986, H. HIRASAWA leg. Paratypes; 4 ♂♂, 1 ♀, same data as for the holotype; 6 ♀♀, Doi Pui, near Chiangmai, N. Thailand, 3–VI–1986, H. HIRASAWA leg.; 3 ♀♀, Doi Pui, near Chiangmai, N. Thailand, 29–VI–1989, H. HIRASAWA leg.; 1 ♀, Doi Pui, near Chiangmai, N. Thailand, 29–IV–1980, K. IKEDA leg.; 2 ♂♂, 2 ♀♀, near Chiangmai (1,000 m alt.), N. Thailand, 21–V–1987, H. HIRASAWA leg.; 3 ♀♀, near Chiangmai (1,200 m alt.), N. Thailand, 19–V–1987, H. HIRASAWA leg.; 2 ♂♂, 2 ♀♀, near Chiangmai



Figs. 1–3. Male genitalia of *Adoretus* (*Chaetadoretus*) spp.; left, dorsal view; right, lateral view. —— 1, *A. breviunguiculatus* sp. nov.; 2, *A. hirasawai* sp. nov.; 3, *A. nigrofuscus* sp. nov.

(1,300 m alt.), N. Thailand, 17–V–1987, H. HIRASAWA leg.

Adoretus* (*Chaetadoretus*) *nigrofuscus H. KOBAYASHI, sp. nov.

(Figs. 3, 16)

Form elongate, parallel-sided in male, oblong-oval in female, moderately convex. Color blackish brown, clypeus and head dark blackish brown, antennae reddish brown, anterior femora light reddish brown. Surface of body rather shining, densely covered with grayish recumbent hairs, which are intermixed with several rather long erect setae on elytra.

Clypeus semicircular, 2.0 times as broad as its length, anterior margin strongly reflexed and bordered, very densely, somewhat rugosely punctate; fronto-clypeal suture distinct, widely arcuate. Eyes rather large and prominent, their interspace being 2.1 times as broad as frons in male, 2.4 times in female. Labrum with small tubercles in apical half, faintly granulate in basal half; intermandibular process rather broad, expanded at apex, with a faint median longitudinal elevation near apex, anterior angles rounded, anterior margin feebly sinuate. Antennae 10-segmented, with club as long as footstalk in male, evidently shorter than that in female.

Pronotum 2.2 times as broad as its length, rather coarsely and densely punctate; anterior margin bordered, lateral margins gently curved behind the middle, anterior angles produced but not acute, posterior ones gently rounded. Scutellum triangular, broader than its length, finely and rather densely punctate. Elytra each with a sutural and four discal costae, 1st and 2nd costae distinct, outermost costa very fine and inconspicuous, intervals rather coarsely and somewhat rugosely punctate; epipleura bearing rather dense setae.

Pygidium moderately convex, finely and rather densely punctate in apical half, transversely strigose in basal half, with rather long hairs on the whole disk. Abdominal sternites coarsely and rather sparsely punctate. Anterior tibia tridentate,

lateral teeth sharp in male, somewhat larger and blunt in female; middle and posterior tibiae each with two oblique lateral ridges, of which the basal one of posterior tibia is almost vanished. Posterior tarsus stout, 5th segment as long as the 1st to 4th segments combined. Longer claw of anterior and middle legs cleft; longer claw of posterior leg somewhat shorter than 5th tarsal segment, shorter one slightly longer than half the length of longer claw.

Length: 11.5–13.0 mm; breadth: 5.0–6.5 mm.

Holotype: ♂, Ban Pang O Mai, Doi Mea Tho, N. Thailand, 28–IV–1989, H. HIRASAWA leg. Paratypes: 1 ♂, Doi Pui (1,620 m alt.), N. Thailand, 29–IV–1989, H. HIRASAWA leg.; 1 ♀, Doi Pui, N. Thailand, 3–VI–1986, H. HIRASAWA leg.; 2 ♀♀, Ban Lang Lat (1,350 m alt.), N. Thailand, 30–IV–1989, H. HIRASAWA leg.; 1 ♀, Doi Suthep, N. Thailand, 3–VI–1986, H. HIRASAWA leg.

Adoretus (*Chaetadoretus*) *meo* H. KOBAYASHI, sp. nov.

(Figs. 4, 12)

Form elongate, parallel-sided, moderately convex. Color dark reddish brown, clypeus, head and pronotum blackish brown, antennae, tarsi and tibiae light brown (middle and posterior tibiae dark reddish brown). Surface of body rather shining, densely covered with brownish recumbent hairs intermixed with several rather long erect setae, with somewhat aggregated whitish hairs on apical calli and their inner sides of elytra.

Clypeus semicircular, 2.3 times as broad as its length, anterior margin weakly bordered, very densely punctate, with a transverse row of erect hairs at the middle; fronto-clypeal suture distinct, slightly curved at the middle. Eyes rather large and prominent, their interspace being twice as broad as frons in male. Labrum rather finely granulate, with a smooth area at the middle of base; intermandibular process rather broad and short, feebly expanded at apex, with a median longitudinal carina near apex, anterior margin almost straight. Antennae 10-segmented, with club of the same length as footstalk in male.

Pronotum 2.2 times as broad as its length, coarsely and densely punctate; anterior margin broadly bordered, lateral margins curved behind the middle and finely crenate, anterior angles rectangular, posterior ones gently rounded. Scutellum triangular, broader than its length, rather finely punctate. Elytra each with a sutural and four discal costae, 1st and 2nd costae narrow but distinct, outermost costa very fine and inconspicuous, intervals rather coarsely, densely and somewhat confluently punctate; epipleura bearing sparse, rather long setae on basal two-thirds, densely fringed with brownish bristles in apical third.

Pygidium very convex, inconspicuously punctate, with tawny long hairs on the whole disk, bearing short and dense setae along basal margin. Abdomen with a continuous carina fitting to outer margins of elytra, each abdominal sternite shallowly punctate, somewhat strigose. Anterior tibia slender, with three sharp lateral teeth;

middle and posterior tibiae each with two oblique lateral ridges, of which the basal one of posterior tibia is indistinct. Longer claw of anterior and middle legs cleft; longer claw of posterior leg longer than 5th tarsal segment, shorter one half the length of longer claw in male.

Length: 11.0 mm; breadth: 5.0 mm.

Holotype: ♂, near Meo Village (1,400–1,500 m alt.), N. Thailand, 17～20–VI–1979, W. SUZUKI leg.

Adoretus (*Chaetadoretus*) *aquilonis* H. KOBAYASHI, sp. nov.

(Figs. 5, 13)

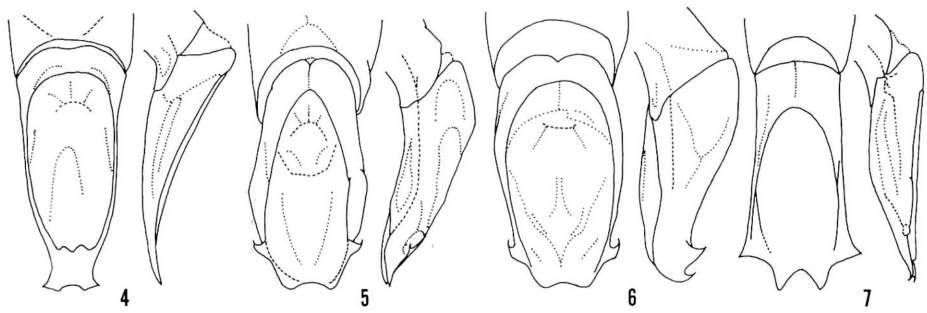
Form elongate, parallel-sided, feebly convex. Color reddish brown to yellowish brown, clypeus dark reddish brown or reddish brown, head blackish brown, abdomen blackish brown or reddish brown, antennae, femora and tibiae light brown, tarsi reddish brown to dark reddish brown. Surface of body shining, densely covered with grayish recumbent hairs intermixed with several rather long erect setae, with somewhat aggregated whitish hairs on apical calli of elytra.

Clypeus semicircular, 2.3 times as broad as its length, anterior margin reflexed and weakly bordered, very densely and somewhat rugosely punctate, feebly depressed behind anterior margin; fronto-clypeal suture distinct, almost straight. Eyes very large and prominent, their interspace being twice as broad as frons in male, three times as broad as that in female. Labrum finely granulate; intermandibular process rather broad and short, parallel-sided, with a median longitudinal depression near apex, anterior angles angularly curved, anterior margin feebly sinuate, lateral margins tuberculate. Antennae 10-segmented, with club somewhat shorter than footstalk in male, of the same length as the 2nd to 7th segments combined in female.

Pronotum 2.4 times as broad as its length, coarsely and rather sparsely punctate; anterior margin bordered, lateral margins curved behind middle and finely crenate, anterior angles feebly produced, almost rectangular, posterior ones gently rounded. Scutellum triangular, broader than its length, faintly punctate. Elytra each with a sutural and four discal costae, 1st and 2nd costae distinct, outermost costa very fine and inconspicuous, intervals rather coarsely and densely punctate; epipleura bearing sparse setae.

Pygidium moderately convex, finely and transversely strigose, with rather long tawny hairs on the whole disk. Abdomen with continuous carinae fitting to outer margins of elytra, each abdominal sternite coarsely and rather sparsely punctate. Anterior tibia slender, with three sharp lateral teeth; middle and posterior tibiae each with two oblique lateral ridges, of which the basal one of posterior tibia is indistinct. Longer claw of anterior and middle legs cleft; longer claw of posterior leg shorter than 5th tarsal segment, shorter one three-fifths the length of longer claw in both sexes.

Length: 9.5–10.0 mm; breadth: 4.0–5.0 mm.



Figs. 4–7. Male genitalia of *Adoretus* (*Chaetadoretus*) spp.; left, dorsal view; right, lateral view. —— 4, *A. meo* sp. nov.; 5, *A. aquilonis* sp. nov.; 6, *A. subguttatus* sp. nov.; 7, *A. matsumotoi* sp. nov.

Holotype: ♂, near Meo Village (1,400–1,500 m alt.), N. Thailand, 28～31–V–1979, W. SUZUKI leg. Paratypes: 1 ♂, same locality as for the holotype, 17～20–V–1979, W. SUZUKI leg.; 1 ♂, same locality as for the holotype, 2～4–VI–1979, W. SUZUKI leg.; 1 ♂, same locality as for the holotype, 17～20–VI–1979, W. SUZUKI leg.; 1 ♀, same locality as for the holotype, 21～23–V–1979, W. SUZUKI leg.; 1 ♀, Pupin — Meo Village, N. Thailand, 26–VI–1983, T. SENOH leg.; 1 ♂, 1 ♀, Meo Village, near Chiangmai, N. Thailand, 5–V–1980, K. IKEDA leg.; 1 ♂, Doi Pui, near Chiangmai, N. Thailand, 29–IV–1980, K. IKEDA leg.; 2 ♂♂, Doi Pui, near Chiangmai, N. Thailand, 3–VI–1986, H. HIRASAWA leg.; 1 ♂, near Chiangmai (1,300 m alt.), N. Thailand, 17–V–1987, H. HIRASAWA leg.; 4 ♂♂, Doi Pui (1,620 m alt.), N. Thailand, 29–IV–1989, H. HIRASAWA leg.

Adoretus (*Chaetadoretus*) *subguttatus* H. KOBAYASHI, sp. nov.

(Figs. 6, 14)

This species is very closely allied to the preceding but may be separated from it by the following points: Color reddish brown to dark brown, clypeus and head dark reddish brown or blackish brown, abdomen blackish brown or dark reddish brown, antennae, femora and tibiae dark reddish brown, tarsi reddish brown. Surface of body dull shining, more densely covered with grayish recumbent hairs intermixed with several rather long erect setae, with a few somewhat aggregated whitish hairs on apical calli of elytra and near their apices. Clypeus semicircular, very densely punctate. Eyes rather large and prominent, their interspace being 2.7 times as broad as frons in both sexes. Intermandibular process rather broad and short, expanded at apex, without median longitudinal depression near apex, anterior corners acute, anterior margin straight. Pronotum coarsely and rather densely punctate, lateral margins almost smooth and not finely crenate.

Length: 9.5–10.0 mm; breadth: 4.0–5.0 mm.

Holotype: 1 ♂, near Meo Village (1,400–1,500 m alt.), N. Thailand, 17～20–V–1979, W. SUZUKI leg. Paratypes: 1 ♀, same locality as for the holotype, 13～16–VI–1989, W. SUZUKI leg.; 1 ♂, Doi Suthep, N. Thailand, 25–V–1980, T. SENOH leg.; 1 ♀, Doi Suthep, N. Thailand, 14–V–1980, T. SENOH leg.; 1 ♂, Pupin — Meo Village, N. Thailand, 26–VI–1983, T. SENOH leg.; 1 ♂, Ban Lang Lat (1,350 m alt.), N. Thailand, 30–IV–1989, H. HIRASAWA leg.

Adoretus (*Chaetadoretus*) *matsumotoi* H. KOBAYASHI, sp. nov.

(Figs. 7, 17)

Form elongate, parallel-sided, moderately convex. Color reddish brown, clypeus and head blackish brown, pronotum dark reddish brown, antennae yellowish brown. Surface of body rather shining, densely covered with grayish recumbent hairs which are intermixed with several rather long erect setae on elytra.

Clypeus semicircular, 2.3 times as broad as its length, anterior margin reflexed and weakly bordered, coarsely and densely punctate; fronto-clypeal suture distinct, almost straight. Eyes rather large and prominent, their interspace being 2.5 times as broad as frons in male. Labrum rather coarsely granulate; intermandibular process rather broad, expanded at apex, with a median longitudinal elevation near apex, anterior angles angularly curved, anterior margin feebly sinuate, lateral margins tuberculate. Antennae 10-segmented, with club of the same length as footstalk in male.

Pronotum 2.3 times as broad as its length, densely punctate; anterior margin bordered, lateral margins gently curved at middle and finely crenate, anterior angles rectangular, posterior ones gently rounded. Scutellum triangular, broader than its length, finely punctate. Elytra each with a sutural and four discal costae, 1st and 2nd costae distinct, outermost costa very fine and inconspicuous, intervals rather coarsely and densely punctate; epipleura bearing rather dense setae.

Pygidium moderately convex, finely and rather densely punctate, with rather long hairs on the whole disk. Abdomen with a continuous carina fitting to outer margins of elytra, each abdominal sternite coarsely and rather sparsely punctate. Anterior tibia with three sharp lateral teeth; middle and posterior tibiae each with two oblique lateral ridges, of which the basal one of posterior tibia is indistinct. Fifth tarsal segment of posterior tarsus stout, as long as the 1st to 4th segments combined. Longer claw of anterior and middle legs cleft; longer claw of posterior leg as long as 5th tarsal segment, shorter one somewhat longer than half the length of longer claw.

Length: 12.0 mm; breadth: 5.5 mm.

Holotype: ♂, Hot Spring, N. Thailand, 25–III–1980, K. MATSUMOTO leg.

Adoretus (*Adoretus*) *pachysomatus* H. KOBAYASHI, sp. nov.

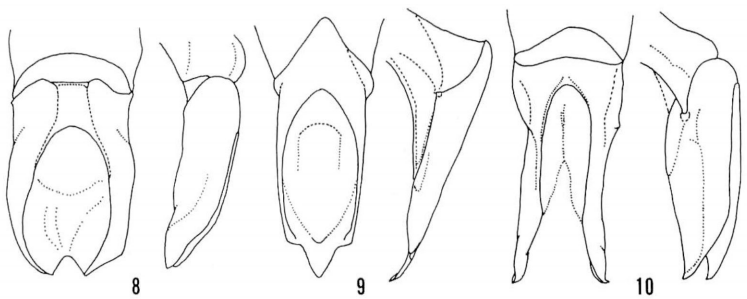
(Figs. 8, 18)

Form elongate oval, rather convex. Color yellowish brown, clypeus and head dark reddish brown to blackish brown, ventral surface sometimes dark-colored. Surface of body rather shining, uniformly covered with light-colored recumbent hairs and without intermixed erect setae on elytra.

Clypeus semicircular, 2.5 times as broad as its length, anterior margin strongly reflexed, densely and rugosely punctate; fronto-clypeal suture distinct, gently arcuate. Eyes rather small, their interspace being 2.9 times as broad as frons in both sexes. Labrum very coarsely punctate; intermandibular process moderate, expanded at apex, with a median longitudinal carina from apex to near base, anterior angles rounded, anterior margin sinuate. Antennae 10-segmented, with club of the same length as footstalk in male, a little shorter than that in female.

Pronotum 2.1 times as broad as its length, coarsely and rather densely punctate, with the broadest point near base; anterior margin bordered; lateral margins gently convergent to front, anterior angles produced, posterior ones gently rounded. Scutellum triangular, broader than its length, finely punctate. Elytra each with a sutural and four discal costae, 1st and 2nd costae broad and distinct, outermost costa very fine and inconspicuous; intervals with rather coarse, dense and somewhat confluent punctures; epipleura bearing rather dense setae.

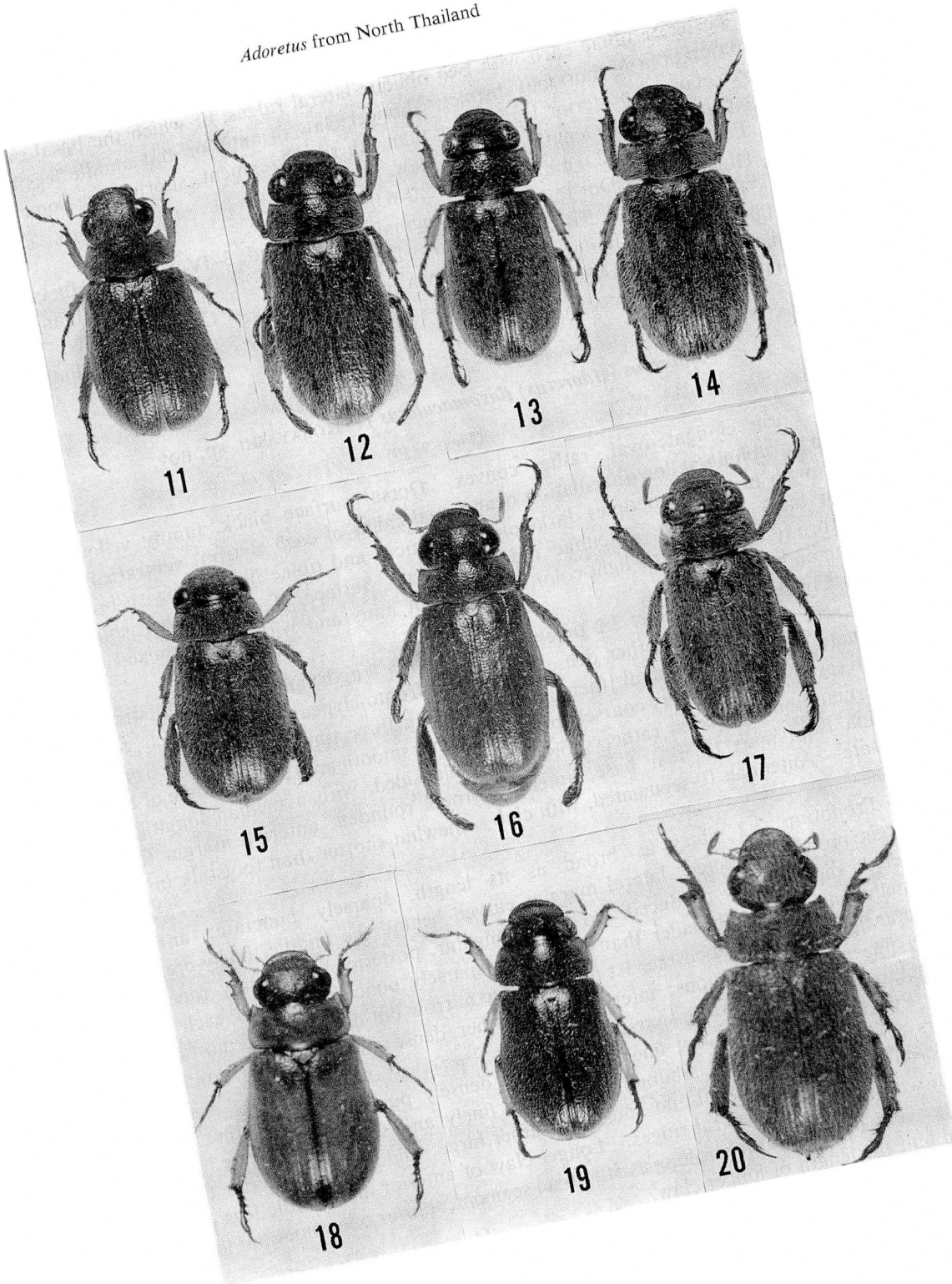
Pygidium feebly convex in male, scarcely so in female, finely and rather sparsely punctate, with rather long hairs on the whole disk. Abdominal sternite finely and sparsely punctate, anal sternite with a transverse elevation at the middle in male, flattened in female. Anterior tibia tridentate, apical and 2nd teeth rather large; middle



Figs. 8–10. Male genitalia of *Adoretus* (*Adoretus*) spp.; left, dorsal view; right, lateral view. —— 8, *A. pachysomatus* sp. nov.; 9, *A. flavomaculatus* sp. nov.; 10, *A. senohi* sp. nov.

Figs. 11–20. —— 11, *Adoretus hirasawai* sp. nov.; 12, *A. meo* sp. nov.; 13, *A. aquilonis* sp. nov.; 14, *A. subguttatus* sp. nov.; 15, *A. breviunguiculatus* sp. nov.; 16, *A. nigrofuscus* sp. nov.; 17, *A. matsumotoi* sp. nov.; 18, *A. pachysomatus* sp. nov.; 19, *A. flavomaculatus* sp. nov.; 20, *A. senohi* sp. nov.

Adoretus from North Thailand



and posterior tibiae each with two oblique lateral ridges, of which the basal one of posterior tibia is short but distinct. Longer claw of anterior and middle legs cleft; longer claw of posterior leg shorter than 5th tarsal segment, shorter one somewhat longer than half the length of longer claw.

Length: 10.0–12.0 mm; breadth: 5.0–6.0 mm.

Holotype: ♂, Doi Pui, near Chiangmai, N. Thailand, 3–IV–1986, H. HIRASAWA leg. Paratypes: 1 ♂, 9 ♀♀, same data as for the holotype; 1 ♂, 1 ♀, near Chiangmai (1,300 m alt.), N. Thailand, H. HIRASAWA leg.; 1 ♂, Fang — Chiang Dao, N. Thailand, 22–V–1989, K. MASUMOTO leg.; 1 ♀, Ban Lang Lat (1,350 m alt.), N. Thailand, 30–IV–1989, H. HIRASAWA leg.

Adoretus (*Adoretus*) *flavomaculatus* H. KOBAYASHI, sp. nov.

(Figs. 9, 19)

Form elongate-oval, rather convex. Dorsal surface black, faintly yellowish, with an oblong yellow maculation near apical callus of each elytron; ventral surface yellowish brown (sometimes dark-colored), femora and tibiae light yellowish brown, tarsi blackish brown, antennae reddish brown. Surface of body rather shining, uniformly covered with light-colored recumbent hairs and without intermixed erect setae on elytra.

Clypeus semicircular, 2.2 times as broad as its length, anterior margin strongly reflexed, coarsely and rather densely punctate; fronto-clypeal suture distinct, gently arcuate. Eyes rather small, their interspace being three times as broad as frons in both sexes. Labrum very coarsely punctate, with a smooth area at the middle of base; intermandibular process rather short, subparallel-sided, with a median longitudinal carina from apex to near base, anterior corners rounded, anterior margin feebly sinuate. Antennae 10-segmented, with club somewhat shorter than footstalk in both sexes.

Pronotum 2.2 times as broad as its length, sparsely punctate; anterior margin broadly bordered; lateral margins curved behind the middle, finely crenate, anterior angles gently produced and subrectangular, posterior ones gently rounded. Scutellum triangular, broader than its length, sparsely punctate. Elytra each with a sutural and four discal costae, 1st to 3rd costae narrow but distinct, outermost costa very fine and inconspicuous; intervals with rather dense and somewhat confluent punctures; epipleura bearing sparse setae.

Pygidium feebly convex, finely and rather densely punctate, with rather long hairs on the whole disk. Abdominal sternites finely and sparsely punctate. Anterior tibia tridentate, apical and 2nd teeth rather large; middle and posterior tibiae each with two oblique lateral ridges. Longer claw of anterior and middle legs cleft; longer claw of posterior leg as long as 5th tarsal segment, shorter one somewhat longer than half the length of longer claw.

Length: 9.5–10.0 mm; breadth: 4.5–5.0 mm.

Holotype: ♂, Taton, N. Thailand, 27–V–1980, H. SENOH leg. Paratypes: 2 ♀♀, Fang — Chiang Dao, N. Thailand, 22–V–1989, K. MASUMOTO leg.

Adoretus (*Adoretus*) *senohi* H. KOBAYASHI, sp. nov.

(Figs. 10, 20)

Form elongate-oval, rather convex. Dorsal surface yellowish brown, ventral surface blackish brown; femora and tibiae light yellowish brown, tarsi reddish brown, antennae yellowish brown. Surface of body rather shining, very densely covered with yellowish gray recumbent hairs and without intermixed erect setae on elytra.

Clypeus semicircular, 2.0 times as broad as its length, anterior margin reflexed and bordered, finely and densely punctate; fronto-clypeal suture distinct and straight. Eyes rather small, their interspace being 2.6 times as broad as frons in both sexes. Labrum rather coarsely granulate; intermandibular process rather short, almost V-shaped and rounded at apex, with a median longitudinal carina from apex to middle. Antennae 10-segmented, with club as long as 2nd to 7th segment combined in male, a little shorter than that in female.

Pronotum 2.3 times as broad as its length, finely and rather sparsely punctate; lateral margins curved at the middle, anterior angles produced but not acute, posterior ones gently rounded. Scutellum triangular, broader than its length, rather densely punctate. Elytra each with a sutural and four discal costae, 1st to 3rd costae fine and narrow, outermost costa very fine and inconspicuous; intervals with rather dense and somewhat confluent punctures; epipleura bearing sparse setae.

Pygidium gently convex, coarsely transversely strigose, bearing rather long erect hairs on the whole disk. Abdominal sternites rather finely strigose. Anterior tibiae tridentate, apical and 2nd teeth rather large, 3rd tooth almost vanished in male, very minute in female; middle and posterior tibiae each with two oblique lateral ridges, of which the basal one of posterior tibia is indistinct. Longer claw of anterior and middle legs rather deeply cleft; longer claw of posterior leg shorter than 5th tarsal segment, shorter one three-fourths the length of longer claw.

Length: 6.0–7.0 mm; breadth: 3.5–4.0 mm.

Holotype: ♂, Doi Suthep, N. Thailand, 14–V–1980, T. SENOH leg. Paratypes: 2 ♀♀, same data as for the holotype.; 5 ♂♂, 9 ♀♀, same locality as for the holotype, 7–V–1980, T. SENOH leg.

要　　約

小林裕和: 北部タイ産コイチャコガネ属のコガネムシ類.——コイチャコガネ属 *Adoretus* に含まれる10種のコガネムシの新種を，北部タイから記載した．このうち，7種は *Chaetadoretus* 亜属に，残りの 3 種は *Adoretus* 亜属に属するものである．それぞれの新種を次のように命名した: *A.* (*C.*) *breviunguiculatus*, *A.* (*C.*) *hirasawai*, *A.* (*C.*) *nigrofuscus*, *A.* (*C.*) *meo*, *A.* (*C.*) *aquilonis*, *A.* (*C.*) *subguttatus*, *A.* (*C.*) *matsumotoi*, *A.* (*A.*) *pachysomatus*, *A.* (*A.*) *flavomaculatus*, *A.* (*A.*) *senohi*.

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Elytra, Tokyo, **19** (1): 74, May 15, 1991

Occurrence of *Mucronianus virgatus* (Coleoptera, Anthribidae) in Northwest Thailand

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Mucronianus virgatus JORDAN (1923, p. 85) was described on a single male specimen collected by Mr. M. R. VITALIS in September at Luang Prabang in Northwest Laos.

About ten years ago, I collected four specimens of this species at three stations in the northwestern part of Thailand. These stations are only distant for 300–360 km from the type locality of the species. The collecting data of the specimens taken are as follows:

1 ♂, Chiang Dao, Chiang Mai Prov., NW Thailand, 26–V–1980, T. SENOH leg.; 1 ♂, 1 ♀, Doi Suthep, Chiang Mai Prov., NW Thailand, 9–VI–1980, T. SENOH leg.; 1 ♂, Doi Nam Maejai, near Fang, Chiang Mai Prov., NW Thailand, 21～25–VII–1981, T. SENOH leg.

Distribution. NW Laos and NW Thailand.

Reference

JORDAN, K., 1923. Les Anthribides de l'Indochine. *Faune ent. Indochine, Saigon*, **6**: 71–113 (and *Opusc. Inst. sci. Indochine*, (1): 41 pp.).

Elytra, Tokyo, **19** (1): 75–76, May 15, 1991

A New Subspecies of *Macrodorcas okinawanus* (Coleoptera, Lucanidae) from the Ryukyu Islands

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Abstract A new subspecies of *Macrodorcas okinawanus* NOMURA is described and illustrated from the southern Ryukyu Islands, Southwest Japan.

Macrodorcas okinawanus NOMURA, 1964, was originally described from Okinawa-hontô as a subspecies of *M. rectus* (MOTSCHULSKY, 1857). Later, it was considered by KUROSAWA (1976) to be a full species, which was split up into two subspecies, *M. rectus okinawanus* and *M. r. amamianus* NOMURA, 1964. Since then, *M. o. kubotai* FUJITA et ICHIKAWA, 1985, has been described from Tokunoshima Is. It is therefore regarded as an endemic species to the Amami–Okinawa group of the central Ryukyus.

In the summer of 1982, the author found another form of *M. okinawanus* in the Yaeyama group of the southern Ryukyus. Despite intensive and repeated surveys, only a single individual has been known so far. It will be described in the following lines.

Before going further, the author wishes to express his sincere gratitude to Professor Seiji AZUMA of the University of the Ryukyus, Messrs. Kano SUGIMOTO, Koji AZUMA, Tokuzo OMOTO, Kazuo MINATO and Hiroki SATO for their kind aid in this study, and also to Mr. Fumiki BANDO for preparing the excellent drawing inserted in this paper.

Macrodorcas okinawanus yaeyamaensis subsp. nov.

(Fig. 1)

This new subspecies is different from the nominotypical one in the following points: 1) body above reddish brown (almost blackish in the nominotypical form); 2) coarse punctures on elytra less shiny; 3) body shorter and broader; 4) mandibles shorter and broader in male; 5) pronotum as wide as elytra (wider than elytra in the nominotypical form); 6) pronotal sides with lateral angulation rounded and situated at basal third.

Length. Male, 28.2 mm (incl. mandibles), 24.7 mm (excl. mandibles). Width. Male, 10.0 mm.

Locality. Japan (Iriomote-jima Is.).

Type specimen. Holotype ♂, Urauchi River, Iriomote-jima Is., Okinawa Pref., 16–VII–1982, S. HORI leg. The holotype is deposited in the University of the Ryukyus

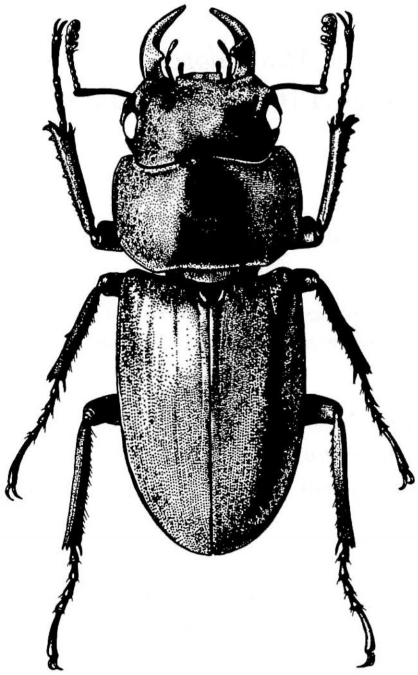

Fig. 1. *Macrodorcas okinawanus yaeyamaensis* HORI, subsp. nov.; ♂, from Iriomote-jima of the Yaeyama Islands in Okinawa Prefecture.

Museum.

Until now only one individual has been caught at the upstream of the River Urauchi at the western side of Iriomote-jima Island. It was accidentally found flying at night.

要　　約

堀　繁久：沖縄県八重山諸島産リュウキュウコクワガタの1新亜種.——沖縄県の八重山諸島にある西表島で得られたリュウキュウコクワガタ *Macrodorcas okinawanus* NOMURA を調べた結果，いままで知られていない形質をもっていることが判明したので，これを新亜種 *yaeyamaensis* subsp. nov. として記載した．この亜種は，奄美群島および沖縄群島に分布する *M. okinawanus* subspp. に似ているが，体色や点刻，大顎や前胸背板の形態などの差異によって区別できる．

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Elytra, Tokyo, **19** (1): 77–83, May 15, 1991

Description of a New Cavernicolous Species of the Genus *Batrisodellus* (Coleoptera, Pselaphidae) from Southeast China[1)]

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Abstract A new cavernicolous species, *Batrisodellus callissimus*, is described from Guilin, Southeast China. This is the first record of the genus outside Japan.

The genus *Batrisodellus* belonging to the subtribe Batrisina has been known to occur in Japan and is recorded from Southeast China for the first time. A new species, *Batrisodellus callissimus*, is described from limestone caves in Guilin City.

Genus *Batrisodellus* JEANNEL

Batrisodellus JEANNEL, 1958, Mém. Mus. Hist. nat., Paris, (A), **18**: 37–38. —— NEWTON & CHANDLER, 1989, Field., Zool., (53): 34. —— TANABE & NAKANE, 1989, Jpn. J. Ent., **57**: 734–741. Type species: *Batrisodes nipponensis* RAFFRAY, 1909.

The genus *Batrisodellus* JEANNEL belongs to the division II of the subtribe Batrisina in JEANNEL's system and is well-defined by the eleventh antennal segment with an internal denticle at the basal part. This genus contains four known Japanese species, and a species is newly described below from China. Some of them are known to be cavernicolous.

Batrisodellus callissimus sp. nov.

(Figs. 1–3)

Male (Fig. 1). Length 2.0–2.1 mm. Width 0.6 mm.

Body light brown to reddish brown, very slender, antennae and legs remarkably

1) Contribution from the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka (Ser. 4, No. 24).

elongate.

Head 1.4 times as long as wide; clypeus well expanded anteriorly, its anterior margin arcuate and slightly thick; frons concave and glabrous at median part, strongly convex and pubescent at lateral parts; vertex weakly convex with a pair of divergent carinae from lateral parts of frons to tempora, a median longitudinal carina in posterior 2/5 and a pair of deep dorsal tentorial pits. Eyes located at posterior 2/5, each ovoid, composed of about 40 facets. Antennae 1.5–1.6 mm long, very slender, reaching hind margin of elytra, 1st segment slightly longer than wide, subcylindrical, 2nd to 8th subequal in width, each thickened distally, 9th twice as long as wide, thickened distally in dorsal view, weakly excavated laterally, 10th shorter and thicker than 9th, excavated ventro-laterally, 11th (Fig. 3 A–B) largest, elongate, roundly expanded externally, strongly excavated internally with an internal denticle at basal 1/7 and its apical part conical; relative lengths from base to apex is 1.1 : 1.0 : 1.0 : 1.2 : 1.3 : 1.3 : 1.3 : 1.1 : 1.3 : 3.9. Mouthparts well projected anteriorly; labrum (Fig. 2 A) short, acutely projected at both antero-lateral corners, with a pair of round-headed setae at antero-median part and some long setae along anterior margin; mandibles (Fig. 2 B) thickened basally, each with three to four inner teeth; maxillae (Fig. 2 C) short, with a few setae on external side, maxillary palpi elongate, each 4-segmented, 1st segment very short, subcylindrical, 2nd slender, weakly thickened distally, 3rd short and subcylindrical, 4th largest, fusiform and pubescent, widest at basal 2/5; labium (Fig. 2 D) short, partially membranous on anterior part, labial palpi each 3-segmented, 1st segment very short and cylindrical, 2nd elongate and tubular, weakly curved externally, with a long and bold seta at apex, 3rd slender, as bold as apical seta of 2nd.

Pronotum 1.2 times as long as wide, widest at middle, round-sided and pubescent with a shallow median longitudinal sulcus, a pair of subparallel lateral sulci, a transverse depression at posterior 1/4 and a pair of rudimentary longitudinal carinae between median longitudinal sulcus and lateral sulci. Elytra slightly longer than wide, narrowed anteriorly, widest at posterior 1/3, dorsal surface weakly convex and pubescent; each elytron with 3 basal foveae and two indistinct sulci. Legs very slender; fore femora thickened in middle part, each with sensory setae in a line on ventral side; fore tarsi short, 2nd segment (Fig. 3 C) with a small denticle covered by pubescence at apex; hind trochanters very short, each with a short denticle on postero-ventral side. Hind wings well developed, each about as long as body.

Abdomen about as long as wide, weakly narrowed at base, rounded posteriorly, 4th segment largest, weakly convex on dorsal surface with a pair of short basal carinae, a pair of broad foveae at basal part and a pair of divergent lateral carinae, 5th to 6th short, 5th longer than 6th, 7th broad, 1.5 times as long as 6th, 8th tergite transverse and ovoid, 8th sternite semicircular and flattened at median part. Male genitalia (Fig. 2 E–F) weakly sclerotized and asymmetrical: median lobe bulbous on basal part with a broad basal foramen, a short ventral projection and two apical spines, ventro-apical spine broad, extending to the left at apex with two short denticles on the right side, dorso-apical spine slender, arcuately curved to the right and narrowed distally;

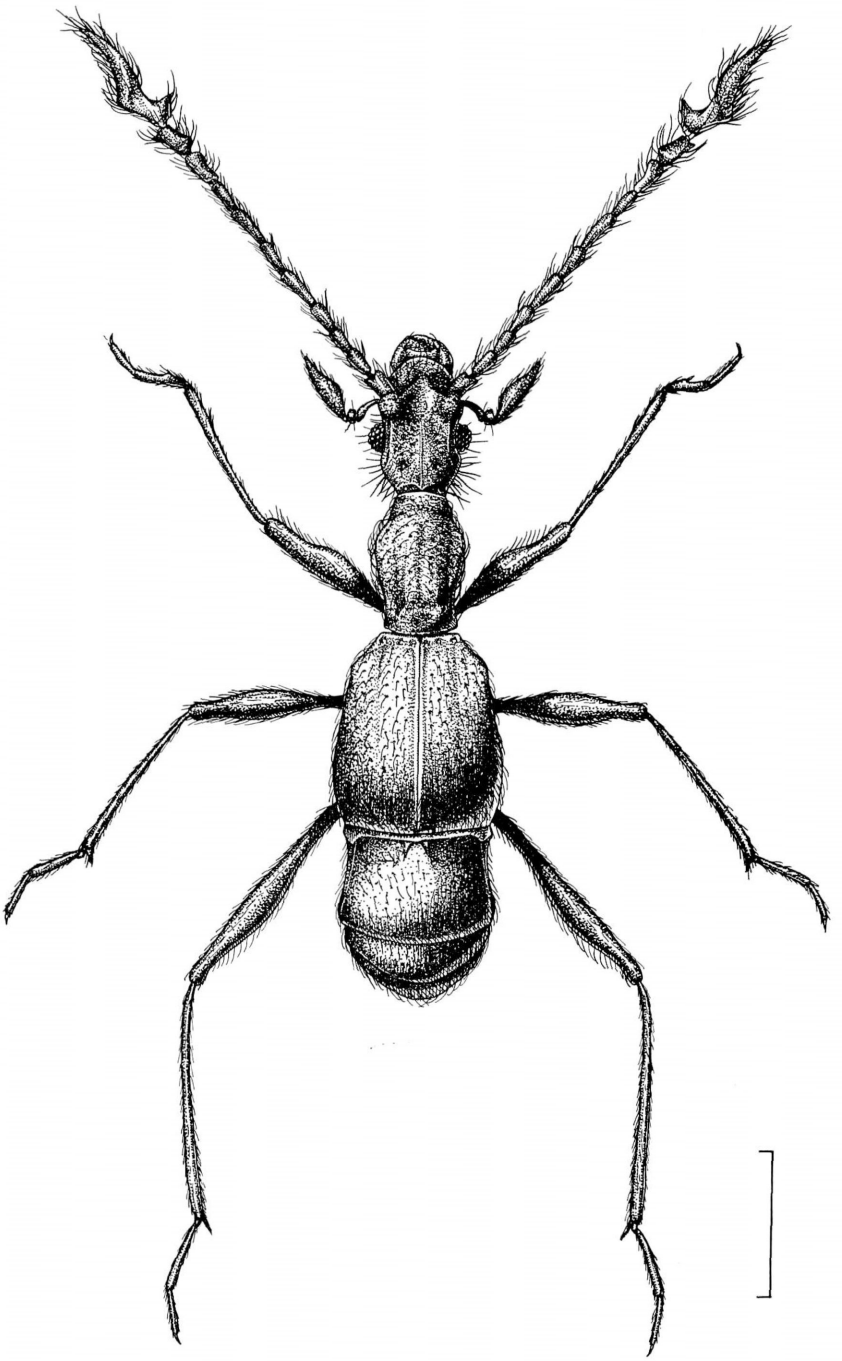

Fig. 1. *Batrisodellus callissimus* sp. nov., male, dorsal aspect (scale: 0.50 mm).

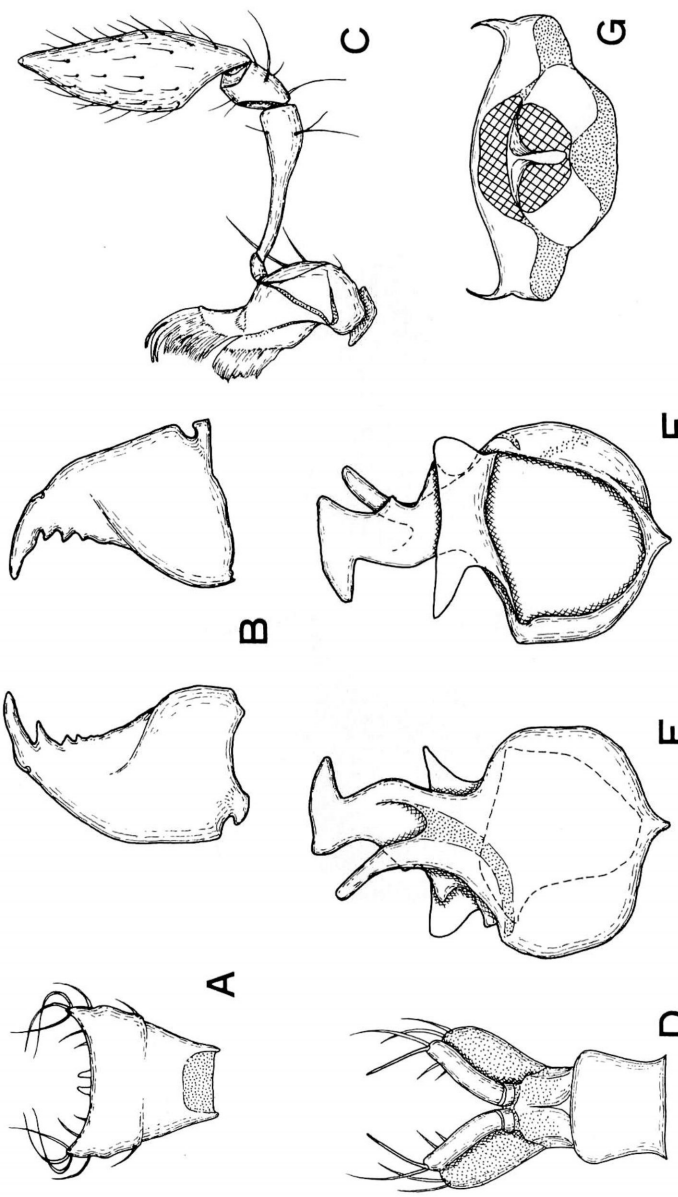

Fig. 2. *Batrisodellus callissimus* sp. nov., male (A–F); ditto, female (G). —— A, Labrum; B, mandibles; C, maxilla; D, labium; E, aedeagus in dorsal view; F, ditto, ventral view; G, 8th sternite and genital plate in posterior view.

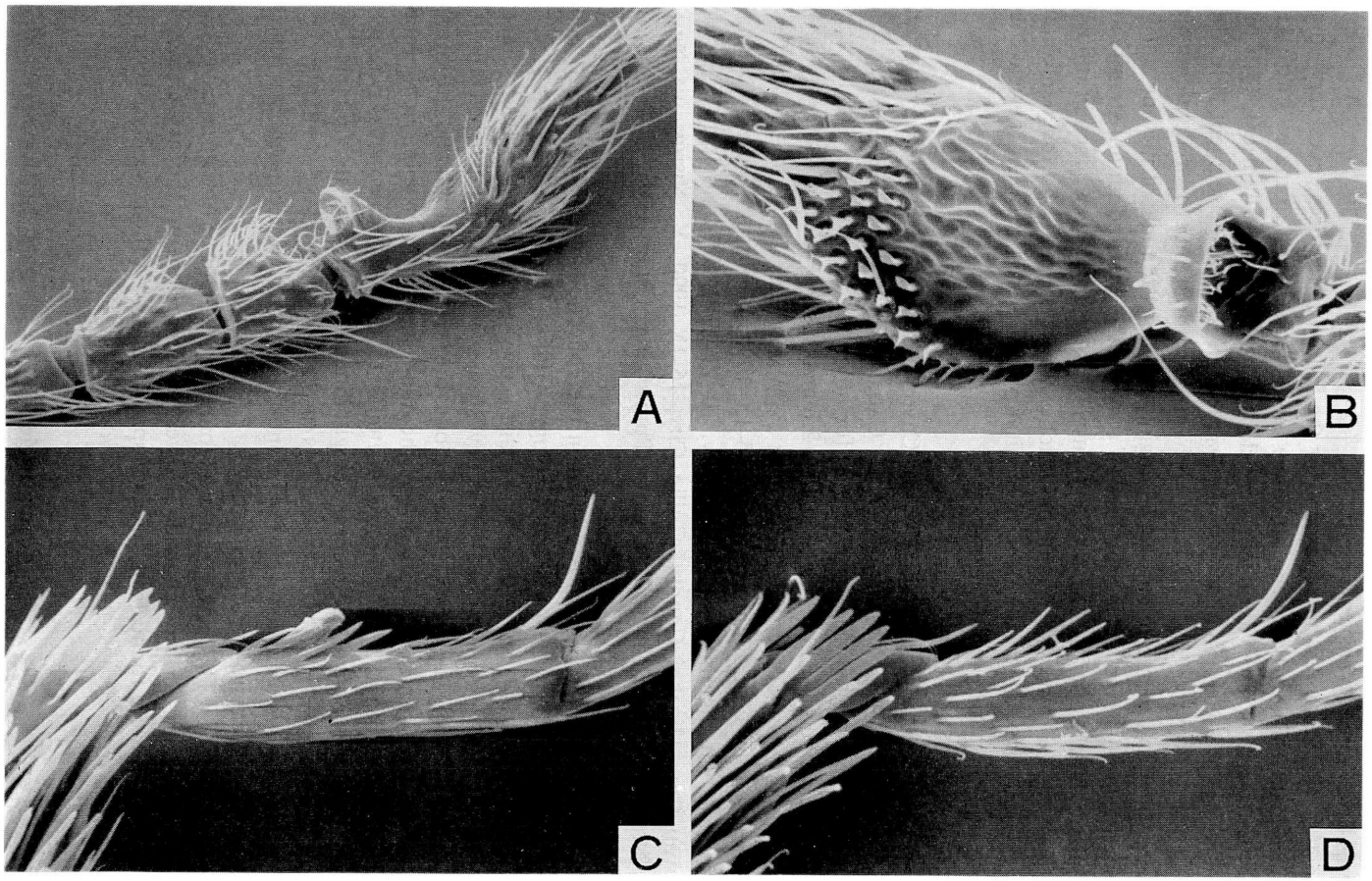

Fig. 3. *Batrisodellus callissimus* sp. nov., male (A–C); ditto, female (D). —— A, Eighth to 11th antennal segments in ventral view (×150); B, 11th antennal segment in internal view (×350); C–D, 2nd tarsal segment (×200).

parameres fused into a transverse plate.

Female. Similar to the male, except for the following features: eyes very small, each composed of about 10 facets; antennae more slender than in male, 9th to 11th segments with neither excavation nor denticle, 9th to 10th subcylindrical, 11th fusiform; metasternum weakly convex; fore tarsi slender, 2nd tarsal segment (Fig. 3 D) flat on ventral side, mid tibiae and hind trochanters without mucro or denticle; hind wings very short and membranous, each clinging on humeral angle of metanotum.

Female genitalia (Fig. 2 G) composed of two lobes of 9th abdominal sternite and genital plate; basal lobe of 9th sternite transverse in ventral view, membranous at median part, apical lobe wider than basal lobe, transverse and shortened medially, weakly sclerotized on both lateral parts; genital plate situated between the two lobes of 9th sternite, T-shaped in posterior view.

Distribution. Southeast China.

Type series. Holotype: male, Zhuyan Cave (=Liangyan Cave), Caoyangxiang, Guilin City, 11–II–1991, Y. NISHIKAWA, J. CAO, K. HAGAMI, Y. AWAKURA & F. WANG leg. Allotype: female, same data as for holotype. Paratypes: 7 males and 2 females, same data as for holotype; 3 males, 2 females, same locality as for holotype, 18–IX–1990, Y. NISHIKAWA, M. YOSHIDA & F. WANG leg.; 3 males, Yinyan Cave, Qixing Park, Guilin City, Guangxi, China, 15–IX–1990, Y. NISHIKAWA leg.; 1 female, Ludiyan Cave, Guangmingshan, Guilin City, 10–VI–1979, S. UÉNO leg.; 2 females, Taipingyan Cave, Jiazhai County, Guilin City, 16–IX–1990, Y. NISHIKAWA leg.; 1 female, Niubiyan Cave, Yangshuo County, Putaoxiang, Guilin City, 12–II–1991, Y. NISHIKAWA leg.

The holo- and allotypes are deposited in the collection of the Chinese Museum of Karst Geology, Institute of Karst Geology, Guilin, China.

Remarks. *Batrisodellus callissimus* is a distinctive species in this genus by having clearly asymmetrical male genitalia. This new species is easily distinguished from the Japanese species of this genus by the slender body, the large excavation and the internal spine of the eleventh antennal segment and the mid femur without spine in the male. However, the pronotum of this species is similar to that of *B. cerberus* TANABE et NAKANE in having a pair of rudimentary longitudinal carinae, and its elongate body and legs are similar to those of *B. coprea* TANABE et NAKANE. These similarities may be a parallelism caused by reduction of pronotal carinae and a convergence due to adaptation to cave environment, respectively.

Biological notes. This new species was found on the floor of limestone caves lying around Guilin City. Many individuals were captured from the undersides of stones, and a few were found from beneath spread straws on the cave floor (personal communication from Professor Y. NISHIKAWA).

Acknowledgement

We wish to express our sincere thanks to Professor YUAN Daoxian and Mr. CAO

Jianhua (Inst. of Karst Geology) as well as to Professor K. MORIMOTO (Kyushu Univ.) for their encouragement. Our cordial thanks are due to Dr. S.-I. UÉNO (National Science Museum, Tokyo) and Professor Y. NISHIKAWA (Ohtemon-Gakuin Univ.) for their kind guidance and submitting the whole materials for our study. We are also indebted to Mr. T. TANABE (Tokushima Pref.) for his helpful suggestions and loan of the type specimens used in this work. We are very grateful to Messrs. JIANG Lideng, HUANG Junfa, HUANG Jifu, WANG Huirong, PANG Fengbao, M. YOSHIDA, K. HAGAMI and Y. AWAKURA for their assistance in the field.

要　約

野村周平・王 福星：中国南部の好洞窟性 *Batrisodellus* 属 1 新種の記載．—— 従来，日本のみから知られていた *Batrisodellus* 属を初めて中華人民共和国南東部より記録し，廣西壮族自治区桂林市の石灰洞から採集された 1 新種 *B. callissimus* を記載した．本種は，日本産の 3 種とは，胴体や肢がいちじるしく細長いことと触角末端節の特徴的な内方突起により容易に区別できる．また，雄交尾器中央片がいちじるしく左右非対称である点でも，本属においてきわめて特異である．

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Elytra, *Tokyo*, **19** (1): 84, May 15, 1991

沖縄本島における *Apharinodes papageno* (アリヅカムシ科) の基準産地の破壊

野　村　周　平

Shûhei NOMURA: Crisis of *Apharinodes papageno* (Pselaphidae) at the Type Locality in Okinawa Island, Southwest Japan

Apharinodes papageno NOMURA は，ヒゲナガアリヅカムシ亜科 Pselaphinae ハナダカアリヅカムシ族 Hybocepharini に属する大型で顕著なアリヅカムシである．本種は，NOMURA (1989) が沖縄本島北部，国頭村伊江林道を基準産地として記載した珍種で，同属の近似種が中国南部，シンガポールなどから発見されており，本属の北限に当たるという点からも貴重な存在である．本種の基準産地は伊江林道の途中，西銘岳の中腹にあって，林道から分かれた細い枝道に沿った，約 200 m 四方の狭い範囲である．筆者の知るかぎり，1988 年までこの産地はスダジイの大木を交えた原生林で，樹冠が鬱閉し，湿度の高い森であった．現在，基準産地以外に本種の生息は知られていない．

筆者が 1991 年 3 月にこの地を訪れた際には，林道の拡張によって一帯の照葉樹林は開削され，枝道は車が入れるくらいにまで広げられ，あたりの林は一部伐採されて乾燥が進んでいた．筆者は過去 4 回にわたってこの地を訪れ，以下に示す同じ方法で土壌性甲虫類の定量採集を行っている．このような照葉樹林の開削によって，*Apharinodes papageno* の個体数がどう変化したか，また常在性の土壌甲虫（アリヅカムシ，コケムシ，ムクゲキノコムシ）群集の多様度がどのように推移したかを下の表に示す．多様度指数として情報量による種多様度指数 H'（シャノンウィナー関数：下式）を使用した．

$$H'=-\sum\frac{ni}{N}\ln\frac{ni}{N}$$ （ni は i 番目の種の個体数，N は全個体数，単位は nit）

＜定量調査の場所＞　沖縄県国頭村伊江林道辺野喜ダム上方 1.5 km 地点（標高約 300 m）．

＜定量調査の方法＞　1 m 四方のコドラートを林内 5 カ所に設置し，その中の落葉，腐植土を 5 mm 目のメッシュでふるい，落ちたものをベルレーゼ装置に 48 時間以上かけて土壌動物を抽出した．

＜定量調査の結果＞

調査日	土壌甲虫の種数	個体数	H'	*A. papageno* の個体数
14. Mar. 1985	11	20	2.178	1
22. Apr. 1986	11	22	2.303	3
11. Oct. 1988	10	19	2.009	7
14. Mar. 1991	6	7	1.748	0

以上の結果から考察すると，*Apharinodes papageno* は，その生息地となる照葉樹林（原生林）の伐採とそれにともなう森林土壌の乾燥化によって絶滅の危機に瀕していると考えられる．

末筆ながら，日頃よりご指導いただく九州大学農学部昆虫学教室の森本桂教授，沖縄での採集に便宜をはかっていただき，現地の情報を提供して下さった琉球大学農学部昆虫学研究室の東清二教授ならびに屋富祖昌子先生に厚くお礼申し上げる．

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Elytra, Tokyo, 19 (1): 85–92, May 15, 1991

Three New *Gabrius* (Coleoptera, Staphylinidae) from Japan

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Abstract Three new staphylinid beetles belonging to the genus *Gabrius* are described from Japan under the names of *G. okamotoi*, *G. multipunctatus* and *G. japonicus*. They are relatively large-sized within the genus and have peculiarly shaped male genitalia. *Gabrius multipunctatus* is the first Japanese member bearing nine punctures in the inner row on its pronotum.

The *Gabrius* fauna of Japan was studied by SHARP (1874, 1889), CAMERON (1930), BERNHAUER (1939), TOTTENHAM (1940) and SMETANA (1960, 1973, 1984), and fifteen species have been recorded up to the present.

Through the courtesy of Mr. Iwao OKAMOTO, I have recently had an opportunity to examine an interesting species of this genus obtained at Anjûkyô in Hiroshima Prefecture, West Japan. On this occasion, I examined many specimens of the Japanese species collected at various localities.

After a careful study, it became clear that the species collected at Anjûkyô and two more species found in central Honshu and Hokkaido are new to science. They will be described in the present paper.

The following abbreviations are used in this paper: HL – greatest length of head; HW – greatest width of head, including eyes; CL – longitudinal diameter of eye; PO – length of postocular area; PL – length of pronotum, measured along the mid-line; PW – greatest width of pronotum; EL – greatest length of elytra; EW – greatest width of elytra.

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 Messrs. T. GOH, A. IZUMI, S. NISHIGAKI, I. OKAMOTO and N. YASUDA for their help in supplying with material, and to Mr. Akinori YOSHITANI for his assistance in preparing the illustration of whole insect and male secondary sexual characters inserted in the present paper.

Gabrius okamotoi sp. nov.

(Figs. 1–5)

Body elongate, nearly parallel-sided and moderately shining. Head and pro-

notum piceous black to black; elytra, abdomen and antennae dark brown; mouth parts and legs brownish yellow, inner portion of tibiae somewhat darkened.

Body length: 7.0–7.5 mm.

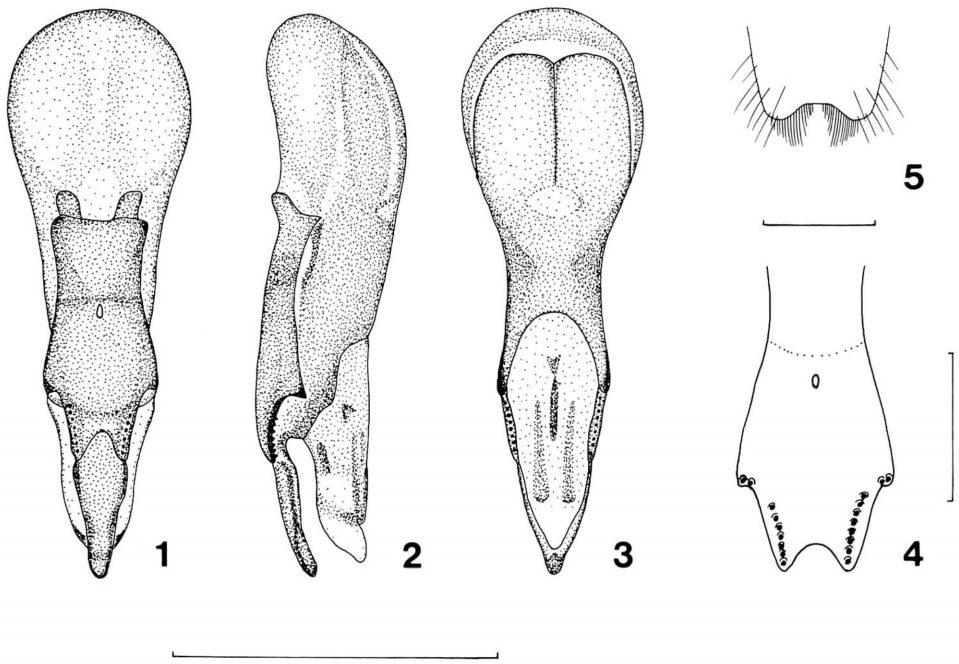
Head subquadrate, slightly longer than wide (HL/HW=1.09), widest just before posterior angles and indistinctly narrowed anteriad, with lateral sides slightly arcuate; frons triangularly and shallowly impressed, the disc almost impunctate; median interocular punctures widely separated, nearly four times as distant from each other as from ocular punctures, postero-laterally with sparse and rather strong setiferous punctures; surface covered with microscopic transversely lineate ground sculpture. Eyes small though feebly prutruding from lateral lines of head, its longitudinal diameter a little smaller than the length of postocular area (CL/PO=0.76). Antennae long, almost reaching the posterior margin of pronotum, and hardly thickened towards apex, basal three segments polished, the remainings opaque, 1st segment dilated apically, about 3.5 times as long as broad, 2nd about a half as long as 1st (2nd/1st=0.48) and about twice as long as broad, 3rd elongate, a little longer than 2nd (3rd/2nd=1.30), 4th to 10th subequal in length to one another and feebly dilated towards each apex, 4th to 6th gradually increasing in width, 7th to 10th each about as long as broad (width/length=1.03), the apicalmost subacuminate towards the tip, a little longer than 10th (11th/10th=1.38) and about 1.5 times as long as broad.

Pronotum oblong, a little longer than wide (PL/PW=1.24) and about as wide as head (HW/PW=1.00), widest behind anterior angles and slightly narrowed posteriorly; lateral sides almost straight as seen from above; anterior margin broadly rounded, though subtruncated at middle, posterior margin feebly arcuate; anterior angles obtuse and not visible from above, posterior angles narrowly rounded; disc on either side of the middle with a somewhat irregular row of seven punctures, and outside this series with three or four punctures; surface covered with very fine microscopic transversely lineate ground sculpture. Scutellum large, triangular, finely and densely punctured and pubescent, surface with the same ground sculpture as on pronotum.

Elytra subtrapezoidal, somewhat dilated posteriad and flat above, slightly wider than long (EW/EL=1.07), and a little longer than pronotum (EL/PL=1.31), considerably wider than pronotum (EW/PW=1.73); lateral sides almost straight; posterior angles broadly rounded; surface finely and densely punctured, and densely covered with brownish pubescence decumbent backwards, devoid of microscopic ground sculpture.

Abdomen elongate, slightly dilated towards the 6th segment which is the widest, 7th to the extremity distinctly narrowed; surface covered with finer and denser punctures and pubescence than on elytra; 8th sternite in male somewhat deeply and widely emarginate at middle of posterior margin, which bears numerous long and rather strong setae becoming gradually shorter both medially and laterally. Legs relatively long, protarsi thin in both sexes.

Male genital organ relatively small but voluminous, well sclerotized and very peculiar; median lobe gradually narrowed towards apex; fused paramere broad, strong-



Figs. 1–5. *Gabrius okamotoi* sp. nov., male genital organ; ventral view (1); lateral view (2); dorsal view (3) (scale: 1.0 mm); underside of fused paramere (4) (scale: 0.3 mm); and apical portion of male abdominal sternite 8 (5) (scale: 0.8 mm).

ly widened anteriorly, and then abruptly narrowed at about anterior fourth, forming a sharp angle on each side, anterior margin semicircularly emarginate; black tubercles on the underside of paramere seven to eight in number, forming two irregular longitudinal rows, two isolated tubercles being present on each lateral margin at the corner of narrowed part.

Type series. Holotype: ♂, Anjûkyô, Kake-chô, Yamagata-gun, Hiroshima Pref., 20–X–1990, I. OKAMOTO leg.; paratypes: 3 ♂♂, same data as for the holotype; 1 ♂, Nakatsuya, Yoshiwa-mura, Hiroshima Pref., 28–VII–1990, I. OKAMOTO leg.

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

Distribution. Japan (western Honshu).

Notes. In general appearance, this new species somewhat resembles *G. unzenensis* BERNHAUER, but can be readily distinguished from the latter by the larger and robust body, different structure of male genital organ and secondary sexual characters of the last abdominal sternite in the male.

All the specimens of the type series were found from heaps of wet fallen leaves accumulated by the water at the sides of a narrow stream.

Gabrius multipunctatus sp. nov.

(Figs. 6–11)

Closely similar to *G. okamotoi* in external features, but can easily be distinguished from the latter by the following points: body larger and more robust; longitudinal diameter of eye much smaller than the length of postocular area (CL/PO=0.62); inner dorsal row of punctures on pronotum composed of eight to nine ones, usually nine; elytra about as broad as long (EW/EL=0.99); differently shaped male genital organ and secondary sexual character of abdominal sternite in male.

The ratios of body parts are summarized as follows: HL/HW=1.09; PL/PW=1.32; HW/PW=1.02; EL/PL=1.30; EW/PW=1.69. Body length: 8.0–8.5 mm.

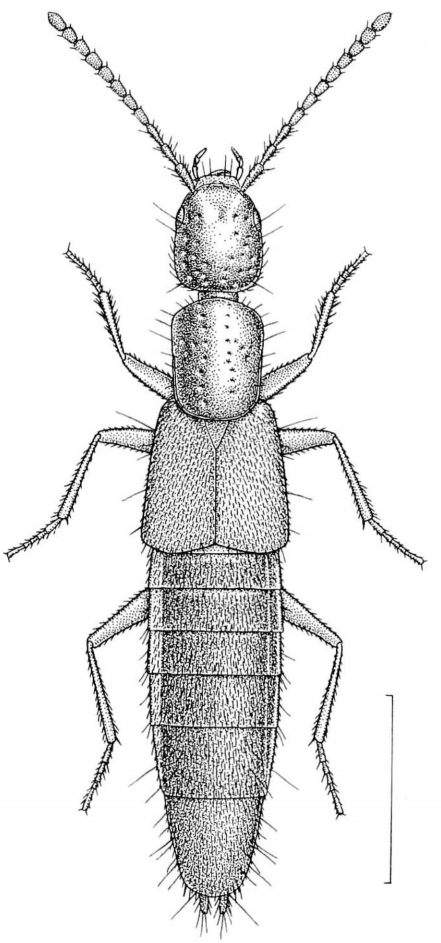
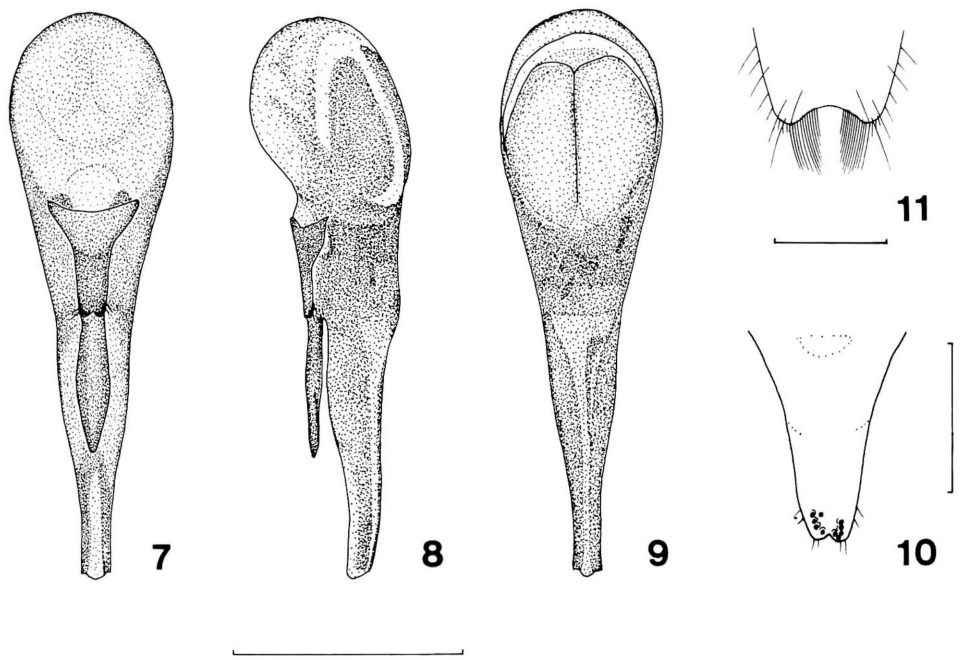


Fig. 6. *Gabrius multipunctatus* sp. nov., ♂, from Akazawa Spa in Yamanashi Pref. (Scale: 2.0 mm.)



Figs. 7–11. *Gabrius multipunctatus* sp. nov., male genital organ; ventral view (7); lateral view (8); dorsal view (9) (scale: 1.0 mm); underside of fused paramere (10) (scale: 0.3 mm); and apical portion of male abdominal sternite 8 (11) (scale: 0.8 mm).

Male. Eighth sternite deeply and subtriangularly emarginate at the middle of posterior margin, small triangular median area before the emargination flattened and smooth, latero-apical margins of the emargination provided with rather strong and very long setae becoming gradually shorter both medially and laterally.

Male genital organ rather large, well sclerotized and very peculiar; median lobe relatively broad, gradually and distinctly narrowed towards almost truncated apex; fused paramere very small, strongly narrowed towards apical margin, which is shallowly and subtriangularly excised at the middle; underside of paramere with about five black tubercles on each side near the apex.

Type series. Holotype: ♂, Akazawa Spa, Masuho, Yamanashi Pref., 4–V–1974, Y. SHIBATA leg.; allotype: ♀, same data as for the holotype. Paratypes: 1 ♂, same data as for the holotype; 1 ♂, Gozaishi, Yamanashi Pref., 27–VII–1967, Y. SHIBATA leg.; 2 ♀♀, Kinzandaira, Sudama, Yamanashi Pref., 25–VIII–1986, Y. SHIBATA leg.; 1 ♀, Mt. Sobatsubuyama, Haibara, Shizuoka Pref., 21–VIII–1986, A. IZUMI leg.; 1 ♂, Kanamegawa, Minoge, Kanagawa Pref., 18–X–1986, A. IZMUI leg.

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.

Distribution. Japan (central Honshu).

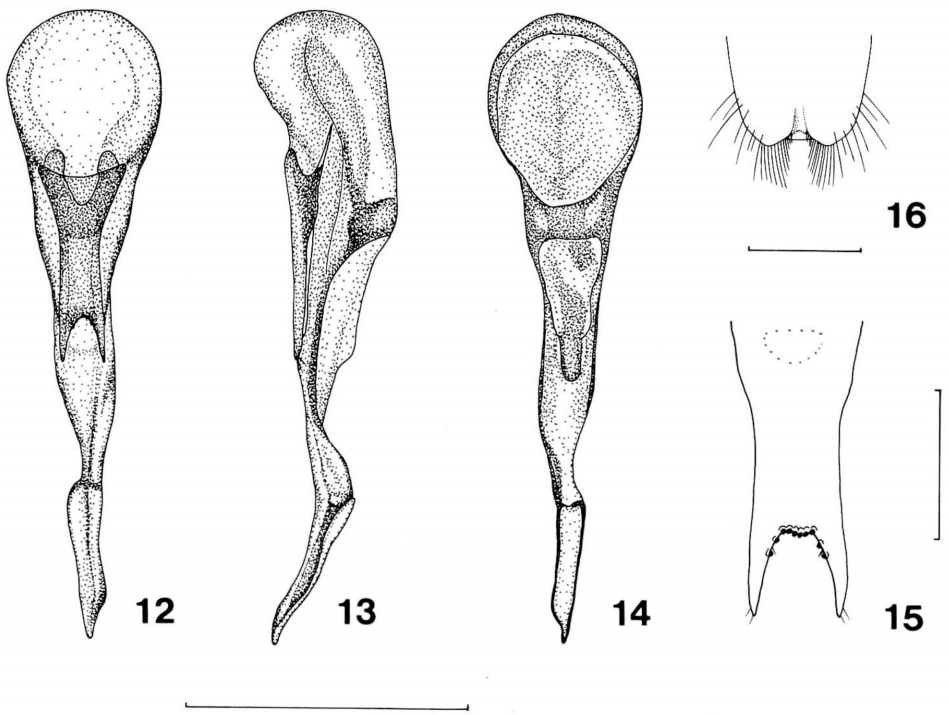
Notes. This peculiar new species can be easily distinguished from the other Japanese species by having nine punctures in the inner row on the pronotum and uniquely shaped male genitalia.

Variation in the dorsal rows of punctures on the pronotum is as follows: of the eight specimens of the type series, three (2 ♂♂, 1 ♀) lack one puncture on one side, and one (1 ♂) on both sides.

Gabrius japonicus sp. nov.

(Figs. 12–16)

The present new species also closely resembles *G. okamotoi* in general appearance, but differs from it in the following points: body a little larger in size; head oval and somewhat longer than broad (HL/HW=1.20), eyes small and flat, its longitudinal diameter much smaller than the length of postocular area (CL/PO=0.64), punctures of the inner dorsal row on pronotum six in number; elytra slightly longer than pronotum (EL/PL=1.19); and differently shaped male genital organ and secondary sexual character of 8th abdominal sternite in male.



Figs. 12–16. *Gabrius japonicus* sp. nov., male genital organ; ventral view (12); lateral view (13); dorsal view (14) (scale: 1.0 mm); underside of fused paramere (15) (scale: 0.3 mm); and apical portion of male abdominal sternite 8 (16) (scale: 0.8 mm).

The ratios of body parts are summarized as follows: PL/PW=1.30; HW/PW=0.91; EW/EL=1.08; EW/PW=1.66. Body length: 7.5–8.0 mm.

Male. Eighth sternite moderately and rather widely emarginate at the middle of posterior margin, small subtriangular median area before the emargination flattened and smooth, latero-apical margins of the emargination provided with rather strong and long setae, which gradually become shorter both medially and laterally, and of which the innermost short setae extend for a short distance upwards along the lateral margin of the median smooth portion.

Male genital organ rather large, asymmetrical, well sclerotized and very peculiar; median lobe produced into a long and slender projection which is more or less asymmetrical; fused paramere relatively short and narrow, with the apical part divided into two fairly narrow lobes widely separated from each other; black tubercles on the underside of paramere ranged along the median part of apical margin.

Type series. Holotype: ♂, Near Bodai, Tanzawa, Kanagawa Pref., 25–IV–1971, Y. SHIBATA leg.; allotype: ♀, same locality as for the holotype, 4–V–1969, Y. SHIBATA leg. Paratypes: 1 ♀, Near Ohkura, Tanzawa, Kanagawa Pref., 20–IV–1969, Y. SHIBATA leg., 1 ♀, same locality, 27–IV–1974, Y. SHIBATA leg.; 1 ♀, Hikawa, Okutama, Tokyo, 5–V–1968, T. GOH leg.; 1 ♂, 2 ♀♀, Near Kurio, Minamiaiki, Nagano Pref., 20–IX–1986, S. NISHIGAKI leg.; 1 ♀, Near Nidoage, Gumma Pref., 21–VIII–1960, Y. SHIBATA leg.; 1 ♀, River Ishikari, 1,100 m alt., Daisetsu Mts., Hokkaido, Japan, 22–VIII–1983, N. YASUDA leg.; 1 ♀, Sôunkyô, Kamikawa-chô, Hokkaido, Japan, 7–V–1981, N. YASUDA leg.

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.

Distribution. Japan (central Honshu, Hokkaido).

Notes. The present new species can be easily distinguished from the other Japanese species by the hypertrophied apical part of the median lobe of male genitalia.

要　　約

柴田泰利: 日本産ホソコガシラハネカクシ属 (*Gabrius*) の 3 新種. —— 日本産ホソコガシラハネカクシ属の研究は, SHARP (1874, 1889), CAMERON (1930), BERNHAUER (1939), TOTTENHAM (1940) および SMETANA (1960, 1973, 1984) らによって行われ, 現在までに 15 種が記録されている. そのうち, 7 種は前胸背板中央両側の点刻列が 6 個のもので, 8 種は 7 個のものである.

この属に含まれる種は, いずれも体長 10 mm 以下の小型で, 外見はコガシラハネカクシ (*Philonthus*) 属のものによく似ているが, 下唇肢第 2 節は先端に向かって膨らみ, 第 3 節は細く短いこと, および雄の前脚付節は拡張しないなどの点で識別できる.

今回, 日本各地からの標本を調べていたところ, 本属のなかでも大型できわめて特徴のある雄交尾器をもつ 3 種をみつけることができた. そのうちの 1 種は, 日本から記録のなかった前胸背板の中央両側に 9 点刻 (8–9 個) をもつ種で, 残りの 2 種はそれぞれ 7 点刻, 6 点刻のものである. 精査の結果いずれも新種と認められたので, 下記のとおり命名記載した.

オカモトホソコガシラハネカクシ *Gabrius okamotoi* は，前胸背板の点刻列が 7 個で，雄交尾器は幅広く，側片は先端に向かって拡張するが先端から約 1/4 のところで鋭くえぐられ，先端裏面両側の黒色突起が 7–8 個であることなどの特徴により他種との識別は容易である．

オオホソコガシラハネカクシ *Gabrius multipunctatus* は，日本産既知種のなかでは最大で，前胸背板の点刻列は 9 個 (8–9 個) からなる．雄交尾器側片はきわめて小さく，先端はわずかに二裂し，先端裏面両側に 5 個の黒色突起があるなどの点で識別は容易である．

ヤマトホソコガシラハネカクシ *Gabrius japonicus* は，前胸背板の点刻列が 6 個で，雄交尾器中葉はいちじるしく細長く左右不対称である点が，他の日本産の種とはいちじるしく異なり，きわめて容易に識別することができる．

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The Micropeplids (Coleoptera) from the Tian-mu Mountains in Zhejiang Province, East China[1)]

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Abstract Three Chinese species of micropeplids obtained on the Tian-mu Mountains in Zhejiang Province are dealt with. Two of them belong to *Micropeplus* and the other to *Peplomicrus*. One of the former and the latter prove new to science and are described under the names of *M. sinensis* and *P. yinae*.

Up to the present, no micropeplids have been recorded from China. The Sino-Japanese Cooperative Study on Soil Fauna of Subtropical Forests in China made in 1989 brought forth a short series of micropeplids obtained on the Tian-mu Mountains in Zhejiang Province. They were classified into three species, of which two belong to the genus *Micropeplus* and the remaining one belongs to *Peplomicrus*.

After a careful examination, it has become clear that one of the *Micropeplus* and the *Peplomicrus* are new to science, as will be described in the present paper. The holotypes of the two new species to be described are deposited in the collection of the Shanghai Institute of Entomology, Academia Sinica, China.

Before going further, the authors wish to express their hearty thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kindness in giving them much valuable advice on the present study. Deep gratitute is also due to Professor YIN Wen-ying of the Shanghai Institute of Entomology, Academia Sinica, and Professor Gentaro IMADATÉ of Tokyo Medical and Dental University for their kind help through the Sino-Japanese cooperative study.

Micropeplus fulvus japonicus SHARP

Micropeplus fulvus ERICHSON, var. *japonicus* SHARP, 1874, Trans. ent. Soc. Lond., **1874**: 101.
Micropeplus fulvus japonicus: NAKANE, 1963, Icon. Ins. Japon. Col nat. ed., **2**: 81, pl. 41, fig. 1.
Other references are omitted.

1) This study is supported by the Grant-in-aid No. 01041032 for Field Research of the Monbusho International Scientific Research Program, Japan.

The Chinese specimens obtained agree well with the Japanese subspecies in body size, structure of vertexal carinae and ground sculpture on the surface of pronotum rather than with the nominotypical subspecies.

Specimens examined. 1 ♀, Tian-mu Mountains, Tai-shun County, Zhejiang Province, China, 2–IX–1989, S. UÉNO leg.; 2 ♂♂, 2 ♀♀, same collecting data as above.

Distribution. China, Japan (Honshu, Shikoku).

Micropeplus sinensis sp. nov.

(Figs. 1–6)

Body length: 2.5 mm (from front margin of head to anal end).

Body broadly elongate-oval and convex. Colour reddish black, moderately shining, except for subopaque head and pronotum, deplanate sides of pronotum, antennae and legs, all of which are yellowish brown.

Male. Head subtriangular, about twice as broad as long, lateral margins remarkably reflexed for the large part; surface uneven, impunctate, but covered with distinct coriaceous ground sculpture, largely depressed on frontal part and deeply impressed on each side of the middle before base, provided with a longitudinal median carina extending forwards to basal third, and also with a fine transverse carina at anterior third on the inner side of each eye, the carina a little shorter than the transverse diameter of an eye; clypeus not visible from above, strongly transverse, surface covered with coriaceous ground sculpture as on head; eyes somewhat prominent and coarsely faceted. Antennae relatively short, receding onto the under surface of pronotum for their reception; basalmost and apicalmost segments opaque, 2nd to 5th subopaque, 6th to 8th polished, 1st segment robust and dilated apicad, a little longer than broad (length/width=1.33), 2nd narrowed apicad, nearly 1.5 times as long as broad, considerably shorter (2nd/1st=0.70) and narrower (2nd/1st=0.67) than 1st, 3rd to 5th gradually decreasing in length, 3rd elongate, more than 1.5 times as long as broad, 4th oblong, distinctly longer than broad (length/width=1.67), 5th slightly longer than broad (length/width=1.13), 6th to 8th each much smaller than 5th and transverse, 8th 1.5 times as broad as long, apicalmost largest and oval, about 1.5 times as long as broad, remarkably pubescent in apical half and narrowly pointed at the apex.

Pronotum markedly convex at the median part and reflexed at the lateral parts, subtrapezoidal, narrowed apicad, twice as broad as long and remarkably broader than head (pronotum/head=1.83), widest just before the base, thence narrowed anteriad, much more strongly so in apical two-thirds than in basal third; lateral margins obsoletely bordered, feebly arcuate in basal third but almost straight in apical two-thirds; anterior margin broadly and clearly emarginate, posterior one bisinuate; anterior angles produced forwards and narrowly rounded at the apices, posterior ones nearly rectangular; surface impunctate, but covered with coriaceous ground sculpture; median area provided with six cells enclosed by costae, three in anterior half and three

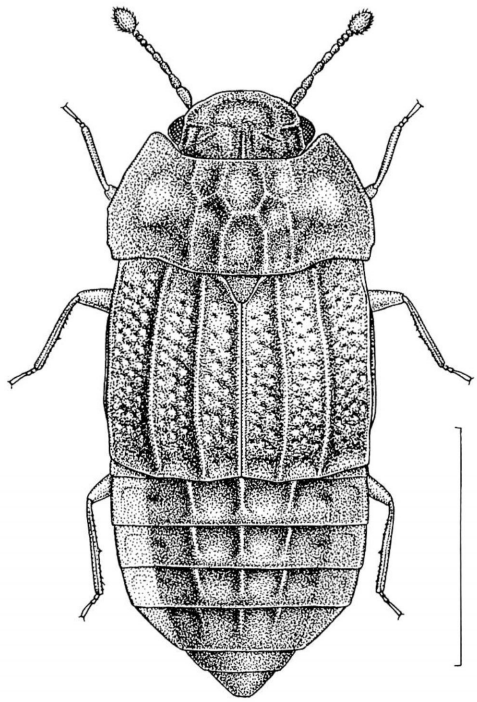
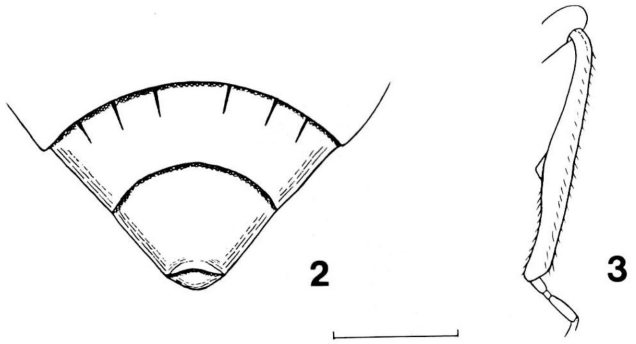
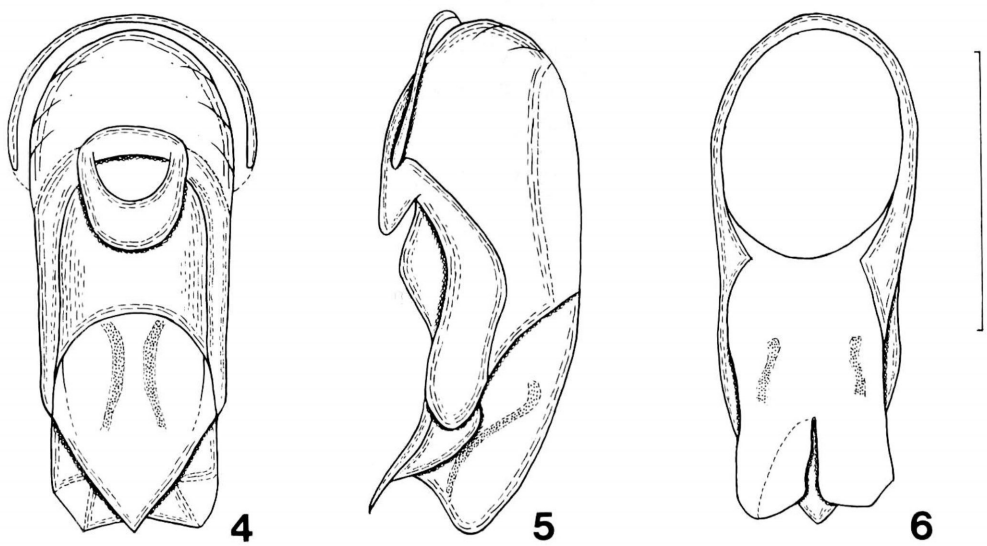


Fig. 1. *Micropeplus sinensis* n. sp., holotype (♂). Scale: 1.0 mm.

in posterior half, the anterior central and posterior central cells more conspicuously marked than the remaining; interspace of costae depressed, each side of basal area largely and shallowly depressed. Scutellum subtriangular, relatively large and gently convex, surface more or less uneven, impunctate, but finely coriaceous all over. Elytra transverse (width/length=1.28), considerably longer (elytra/pronotum=1.64) and slightly broader than pronotum (elytra/pronotum=1.05), a little widened in posterior sixth, distinctly elevated on dorsum but abruptly and transversely depressed in apical sixth along posterior margin; each elytron provided with four longitudinal keels throughout, one sutural, two discal and one humeral, of which the sutural pair are not so strong than the others; interspaces between keels with irregular and longitudinal rows of somewhat coarse punctures, 1st interspace with two rows, 2nd with three rows and 3rd with four rows; epipleural keel distinctly and arcuately raised, interspace between epipleural and humeral keels with a pseudepipleural keel, which is almost straight and abbreviated both behind humeral angle and before apical angle; interspace between epipleural and pseudepipleural keels with three irregular rows of coarse punctures, interspace between humeral and pseudepipleural keels also with a row of coarse punctures. Legs relatively short; protarsi thin; mesotibiae each armed with a small subtriangular tooth behind middle on internal margin; each metatibia also with a more developed tooth near the middle.



Figs. 2–3. Male secondary sexual characters of *Micropeplus sinensis* n. sp.; 2, last three abdominal sternites; 3, metatibia. Scale: 0.25 mm.



Figs. 4–6. Male genital organ of *Micropeplus sinensis* n. sp.; 4, ventral view; 5, lateral view; 6, dorsal view. Scale: 0.25 mm.

Abdomen convex medially and narrowed apicad; surface of each tergite impunctate, but finely coriaceous, the coriaceous ground sculpture becoming much coarser on lateral explanate parts than on median part; first four visible tergites each deeply transversely depressed in basal half and provided with three equidistant and longitudinal keels; 4th visible tergite also with three longitudinal keels, which are finer than those on the others and abbreviated to basal half; first four visible sternites each provided with three longitudinal carinae on each side, 5th visible sternite also with three longitudinal carinae on each side in basal third; subapical sternite shallowly emarginate at the apex of posterior margin, and obscurely depressed before the emargination.

Genital organ oblong and almost symmetrical. Median lobe nearly parallel-sided in basal two-thirds and abruptly narrowed in apical third towards the apex which is distinctly pointed in ventral view, with basal piece large and somewhat globular; viewed laterally, ventral surface remarkably elevated in basal half and depressed in apical half. Parameres fused with median lobe, elongate, though considerably shorter than median lobe.

Female. Unknown.

Holotype: ♂, Tian-mu Mountains, Tai-shun County, Zhejiang Province, China, 2–IX–1989, S. UÉNO leg.

Distribution. China.

Notes. Externally similar to *M. yasutoshii* Y. WATANABE from Japan, but differs from the latter in the following points: colour blackish; head more coarsely coriaceous all over and the transverse carina at the inner side of each eye stronger; pronotum more strongly convex medially; and, different configuration of male genital organ.

Peplomicrus yinae sp. nov.

(Figs. 7–8)

Body length: 1.5 mm (from front margin of head to anal end).

Body fusiform and convex. Colour dark reddish brown and subopaque, with antennae, except for the apicalmost segment, reddish brown, both sides of pronotum, narrow areas along the posterior margin of elytra and legs yellowish brown.

Female. Head subtriangular and depressed above, strongly transverse, more than twice as broad as long; clypeo-frontal area subvertical and largely invisible from dorsal side, semicircular and transverse, anterior margin arcuate and very finely bordered, surface gently convex medially, impunctate but rather coarsely coriaceous; disc flat, antero-lateral border more or less raised, subtriangularly emarginate at the middle; surface impunctate and more strongly coriaceous than in clypeo-frontal area, longitudinally furrowed along the median line in the whole length, surface of the furrow nearly glabrous and provided with a fine longitudinal carina in posterior half; postocular part short, about a half as long as the longitudinal diameter of an eye, which is somewhat prominent and coarsely faceted. Antennae nine-segmented and short, receding onto the under surface of pronotum for their reception, all the segments nearly polished, except for setose apicalmost segment; 1st segment enlarged but contracted at the base, slightly longer than broad (length/width=1.11), 2nd narrowed apicad, somewhat longer than broad (length/width=1.25) but a little shorter (2nd/1st=0.75) and clearly narrower (2nd/1st=0.50) than 1st, 3rd to 5th elongate and subequal to one another in both length and width, each about 1.25 times as long as broad, 6th almost as long as broad but slightly shorter than 5th (6th/5th=0.80), 7th and 8th nearly equal in length to each other, each transverse and a little broader (7th or 8th/6th=1.25) but somewhat shorter (7th or 8th/6th=0.63) than 6th, apicalmost the largest, oval, nearly 1.5 times as long as broad, much longer than (apicalmost/8th=8.10) and more than

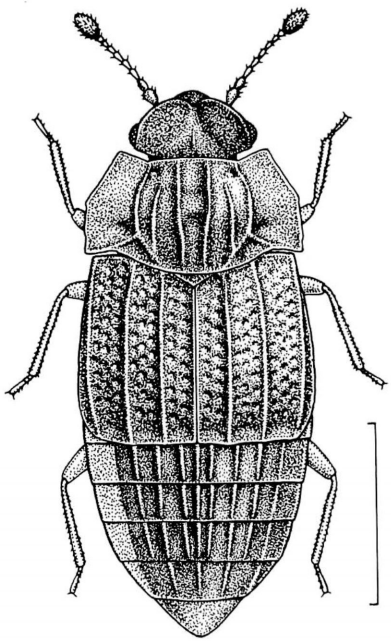


Fig. 7. *Peplomicrus yinae* n. sp., holotype (♀). Scale: 0.5 mm.

2.5 times as broad as 8th, narrowly rounded at the tip.

Pronotum convex medially, subtrapezoidal and strongly transverse (width/length= 1.79), widest at base, narrowed anteriad, slightly so in posterior half and abruptly so in anterior half, anterior margin broadly emarginate but almost straight at the middle, posterior one bisinuate, broadly rounded at the middle and moderately produced backwards; anterior angles more acutely pointed than the posterior ones, which are nearly rectangular; surface impunctate but covered all over with coriaceous ground sculpture; median area provided with five longitudinal cells enclosed by costae, the median cell subdivided into two cells at the middle by a vague transverse carina, lateral and sublateral cells connected with each other in anterior fourth, each interspace between the costae being depressed, lateral areas broadly explanate, provided with a depression outside each outermost costa behind the middle. Scutellum small, somewhat convex at the middle. Elytra subquadrate, distinctly transverse (width/length= 1.31) and about 1.5 times as long as pronotum, somewhat dilated posteriad and elevated dorsally, but abruptly and transversely depressed in apical fifth along posterior margin; surface covered with coriaceous ground sculpture, each elytron provided with four longitudinal keels, one sutural, two discal and one humeral, the sutural keel somewhat finer than the others, all the keels extending throughout, interspaces between keels with irregular longitudinal rows of coarse punctures, 1st interspace with two rows, 2nd and 3rd each with about three rows, pseudepipleural keel present between epipleural margin and humeral keel, strongly and arcuately raised throughout,

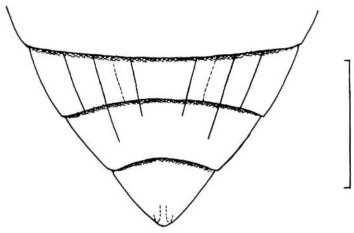


Fig. 8. Abdominal sternites of *Peplomicrus yinae* n. sp., ♀. Scale: 0.25 mm.

interspace between epipleural margin and pseudepipleural keel impunctate but coarsely coriaceous, interspace between pseudepipleural and humeral keels distinctly broader than the space between epipleural margin and pseudepipleural keel, surface with shallow and coarse punctures which are arranged in two or three rows. Legs relatively short, meso- and metatibiae simple.

Abdomen relatively broad, gradually narrowed towards the anal end; surface of each tergite impunctate but covered with coriaceous ground sculpture, which becomes indistinct at the median part; first three visible tergites each provided with seven longitudinal keels, the median keel somewhat finer than those of both sides, the fourth visible tergite provided with three longitudinal keels, which disappear before the posterior margin; first four visible sternites each with three longitudinal keels on each side and also with a vague longitudinal elevation between inner two keels on each side; fifth visible sternite with two longitudinal keels on each side, the inner keel being much shorter than the outer and not extending beyond the middle of the sternite; preapical sternite broadly emarginate at the middle of posterior margin; apical sternite feebly, shortly, and longitudinally depressed at the middle before posterior margin.

Male. Unknown.

Notes. The present new species is markedly different from the other members of the genus in configuration of pronotum, less transverse elytra and structure of abdominal keels.

This is the first record of a membrer of the genus *Peplomicrus* from the Palearctic Region.

Holotype: ♀, top of West Tian-mu Mountain (alt. 1,506 m), Tai-shun County, Zhejiang Province, China, 5–IX–1989, S. UÉNO leg.

Distribution. China.

The specific name is dedicated to Professor YIN Wen-ying, Shanghai Institute of Entomology, Academia Sinica, who arranged the Sino-Japanese cooperative research on soil fauna of the Tian-mu Mountains.

要　　約

渡辺泰明・罗 志义: 中国浙江省天目山で採集されたチビハネカクシ科. —— 中国からは，これまでにチビハネカクシ科の記録がなかったが，1989年に実施された日中共同学術調査によって，浙江省天

目山の森林保護地域から3種が採集された．これらの3種を，国立科学博物館の上野俊一博士のご厚意によって検することができたので，その結果を報告した．

そのうちの1種は *Micropeplus fulvus* ERICHSON に該当するが，雄交尾器を含めた形態的特徴は，ヨーロッパ産のものより日本産亜種の *M. fulvus japonicus* SHARP によりよく一致する．残りの2種はそれぞれ新種と判定したので，下記のとおりに命名記載した．

Micropeplus sinensis Y. WATANABE et LUO

本種は，体長および外部形態が日本から発見された *M. yasutoshii* Y. WATANABE に似ているが，色彩は暗色で，頭部表面の微細構造がより粗いこと，複眼内縁中央近くに存在する横隆条がより顕著であること，前胸背板がはるかに強く凸隆すること，また雄交尾器の中葉両側が基半では平行で，後半は末端に向かって急激に狭まること，側片が中葉より顕著に短いことなどの点で，後者から区別される．

Peplomicrus yinae Y. WATANABE et LUO

本種は雌1個体のみが採集されたが，前胸背板側縁は中央が角ばるのみで明瞭な歯状突起をもたないこと，上翅の第1間室の点刻列が2列であること，腹部基方3節の各背板に7縦隆条をそなえることなどの形態的特徴の組合わせによって，本属の他種から容易に区別される．

なお，*Peplomicrus* は，これまで新大陸から記録されていた属で，ユーラシア大陸からは初めての記録となる．種名は，中国科学院上海昆虫研究所の尹文英教授に献名した．

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Redescriptions of the Japanese Species of the Genus *Hololepta* (Coleoptera, Histeridae), Part 1

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Abstract The Japanese species of the genus *Hololepta* PAYKULL are revised. Male genitalia of these species are figured and a key to the species is provided. This paper is the first part of a series of redescriptions for the Japanese *Hololepta*, and contains a description of the genus, a key to the Japanese species and a redescription of *H. amurensis*.

Introduction

The genus *Hololepta* PAYKULL is a main group in the tribe Hololeptini of the subfamily Histerinae. The members of this genus are known from 117 species in the world (MAZUR, 1984), and have been divided into 2 subgenera, *Hololepta* and *Leionota*. The former occurs in Japan.

In his first study of the Japanese *Hololepta*, LEWIS (1884) recorded *amurensis* and described *depressa* and *parallela*. Afterwards, he (1894) proposed the new name *higoniae* for his *parallela*, because this name was preoccupied. ADACHI (1930) studied these species and prepared a key to them. NAKANE (1963) and HISAMATSU (1985) gave photographs of the adults of the Japanese species. Up to the present, however, the genitalia of these species have not been studied in detail.

In this study, I am also going to recognize the three species and to redescribe them. The male genitalia of the species and several taxonomic features are figured. In this part, a description of the genus and a key to the Japanese species are provided, and one of the species, *amurensis*, is redescribed. The subsequent part of this series will contain redescriptions of the other two species.

Before going further, I wish to express my cordial thanks to Dr. T. NAKANE, Chiba, for his encouragement to my study and allowing me to examine his valued collection (NA). My thanks are also due to Dr. S.-I. UÉNO of the National Science Museum (Nat. Hist.), Tokyo (NSMT), and Dr. G. A. SAMUELSON of the Bishop Museum, Hawaii (BSM), for their kindness in giving me the opportunity to examine material in the collections under their care. Deep gratitude is also expressed to the following entomologists for their kindness in offering material: Dr. K. BABA, Mr. K. HOSOKAWA, Mr. A. KASHIZAKI, Dr. M. KIUCHI, Mr. S. KONDO, Mr. S. KUDÔ, Mr. M. MORI, Dr. S. NAOMI, Mr. N. NISHIKAWA, Mr. K. MAKIHARA, Mr. K. MASUMOTO, Mr. M. SATÔ, Mr. S. SHIYAKE, Mr. H. TAKIZAWA, Mr. H. TANAKA, Prof. K. TAZOE, Mr. Y. TAKAI. Last

but not least, I wish to convey my hearty thanks to Professor S. TAKAGI, Entomological Institute, Faculty of Agriculture, Hokkaido University (EIHU), for critically reading the manuscript. This study was partly supported by a Grant-in-Aid, Ministry of Education, Science and Culture, Japan, No. 610950221833 (1990).

Genus ***Hololepta*** PAYKULL, 1811

Hololepta PAYKULL, 1811, 101; ERICHSON, 1834, 87; MARSEUL, 1853, 135; 1857, 135, 155; LACORDAIRE, 1854, 249; JACQUELIN-DUVAL, 1858, 98; SCHMIDT, 1885, 281, 284; 1889, 72; 1907, 3, 7; GANGLBAUER, 1899, 353; REITTER, 1909, 280; JAKOBSON, 1911, 638, 642; KUHNT, 1913, 365; BICKHARDT, 1916, 25; 1921, 45; CARNOCHAN, 1917, 378; DESBORDES, 1917a, 297–301; 1917b, 165–168; COOMAN, 1939, 61; WITZGALL, 1971, 178; KRYZHANOVSKIJ & REICHARDT, 1976, 403; VIENNA, 1980, 340; MAZUR, 1973, 50; 1981, 171; 1984, 249; HISAMATSU, 1985, 221.

Type species: *Hololepta humilis* PAYKULL, 1811. Designated by LEACH, 1817, 79.

Description of adult. Body flat (Fig. 3 B), usually black and shining, rarely metallic shining (*Hololepta atrovirens* from Sumatra). Head not retractile, porrect, horizontal in repose; frontal stria weakly developed or absent; area behind eyes feebly excavated; ventral side of head with antennal groove along margin of eye (Fig. 1 A–C). Scape of antenna long, slender and basally geniculate; pedicel small; club flat and oval, its segmentation more or less clear, the suture being oblique and V-shaped. Mandible well developed, anteriorly directed and more or less curved at apex; on ventral side with a deep groove, into which the maxillary palp is applied. Pronotum transverse, broad and smooth, its sides usually round; marginal stria often complete laterally, but absent anteriorly, its apical end deeply excavated in male of some species; basal margin arcuate or bisinuate. Epipleura of pronotum without hair. Elytra short, their sides nearly parallel; posterior margins divergently produced posteriorly; epipleura narrow, usually elevated at middle; epipleural marginal stria usually complete; a deep longitudinal fossa present on lateral margin of elytron; dorsal stria strongly reduced, usually 1st and/or 2nd dorsal striae rudimentarily present on near basal margin. Propygidium flat, large, horizontal, and usually punctate laterally or striate. Pygidium short, transverse, vertical and strongly punctate or not punctate. Prosternal lobe short, its anterior margin variable in shape (Fig. 2 A–C), usually arcuate anteriorly; prosternal keel flat and broad in the subgenus *Hololepta*, while narrow and elevated in the subgenus *Leionota*; carinal striae absent. Anterior margin of mesosternum broadly emarginate medially, its marginal stria complete laterally but broadly interrupted anteriorly; disk short and impunctate. Metasternum broad and flat; intercoxal disk impunctate; lateral disk usually coarsely punctate; lateral metasternal stria obliquely and posteriorly extended. Intercoxal disk of 1st abdominal sternum with a stria on each side. Second abdominal sternum often with a short stria on each lateral half. Protibia broadly expanded, usually with 3 to 4 large and strong denticles on outer margin, with an S-shaped groove on dorsal surface for the reception of the tarsus, and with a large denticle near base of internal margin. Meso- and metatibiae with

one or two rows of strong spines. Profemur always with femoral marginal stria along basal margin. Tarsi 5–5–5. Aedeagus flat and strongly sclerotized; basal piece short; parameres completely fused, but shortly divided apically; gonopore opened under side. Eighth sternum (Fig. 3 G–H) of male densely with long hairs on caudal margin. Spermatheca (Fig. 3 L) of female consisting of 1 global sac and usually with a spermathecal gland. Hind wing (Fig. 3 M) with M–Cu loop basally; anal lobe not divided.

Larva and pupa. HAYASHI (1985) and MAMAYEV (1974) studied the larva and pupa of *Hololepta amurensis*.

The genus *Hololepta* is divided into two subgenera by the following characters:

1 (2) Prosternum usually large, flat or little elevated, its anterior margin truncate or arcuate. Posterior tibia weakly dentate. Mentum without groove. ..... Subgenus *Hololepta*

2 (1) Prosternum narrow, elevated, its anterior margin acute. Posterior tibia usually dentate. Groove of mentum M-shaped. ..... Subgenus *Leionota*

The subgenus *Hololepta* is distributed all over the world and well represented in the Neotropical Region, while *Leionota* is found in the Nearctic, Neotropical and Ethiopian Regions.

Subgenus ***Hololepta*** PAYKULL, 1811

This subgenus includes 80 species in the world.

Key to the Japanese Species of *Hololepta*

1 (4) Propygidium without stria (Fig. 1 D–E).

2 (3) Anterior margin of prosternal lobe outwardly arcuate (Fig. 2 A). Body size (head excluded) larger, 7.3–8.7 mm. Large fovea present on pronotal anterior angle in male. ..... *H. amurensis* REITTER, 1879.

3 (2) Anterior margin of prosternal lobe feebly emarginate (Fig. 2 B). Body size smaller, 5.7–7.0 mm. ..... *H. depressa* LEWIS, 1884.

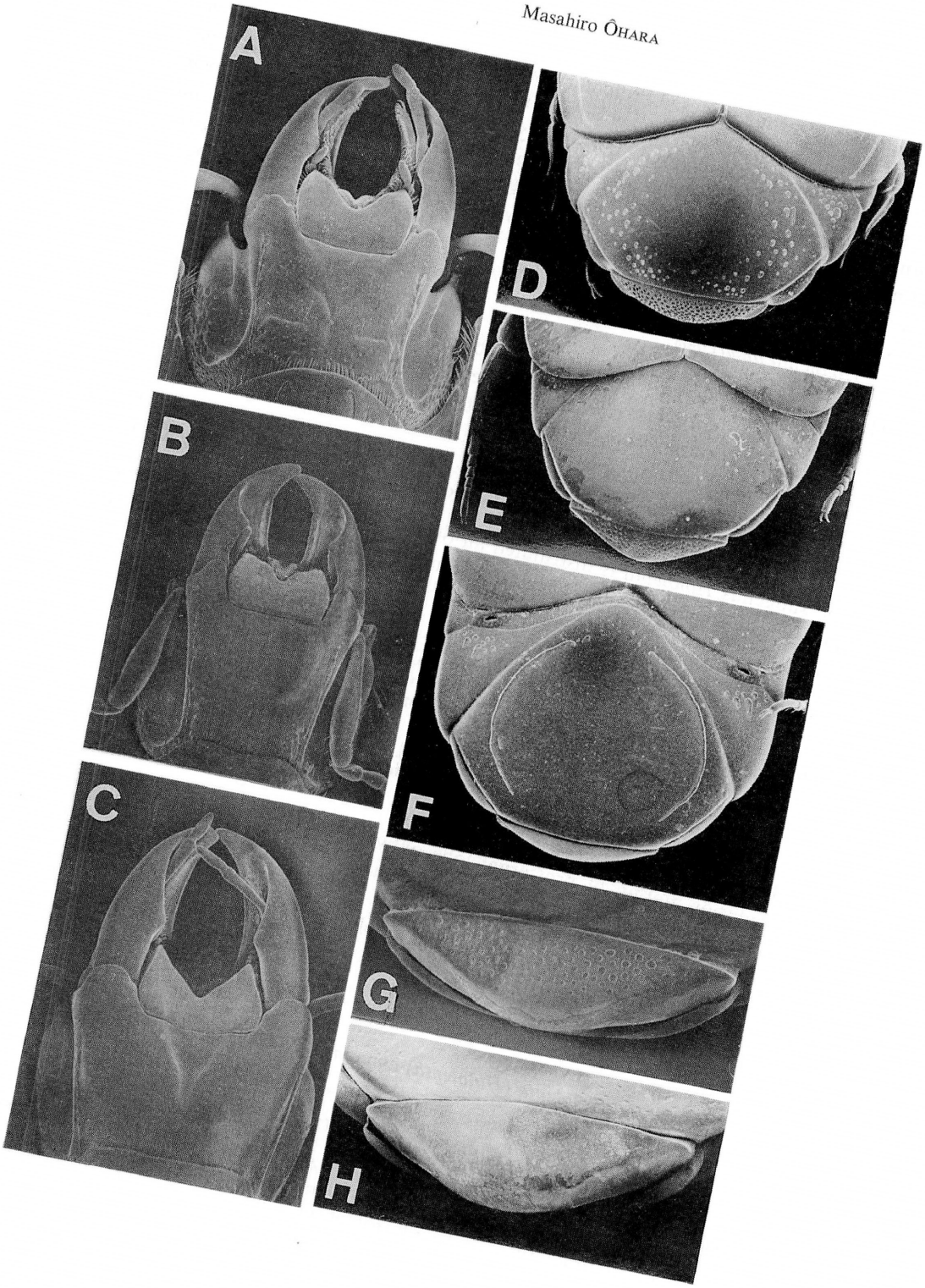
4 (1) Propygidium with stria on each side (Fig. 1 F). ..... *H. higoniae* LEWIS, 1894.

Hololepta* (*Hololepta*) *amurensis REITTER, 1897

[Japanese name: Ô-hirata-emmamushi]

(Figs. 1 A, D, 2 A, D, 3–4)

Hololepta amurensis REITTER, 1879, 213 [East Siberia; "Amuland"]; LEWIS, 1884, 133 ["common in all the forest of Japan of moderate elevation"]; JAKOBSON, 1911, 133; ADACHI, 1930, 251 [key; noted]; NAKANE, 1963, 69, pl. 35, fig. 3 [noted; photo]; KRYZHANOVSKIJ & REICHARDT, 1976, 406 [key; figured; noted]; HISAMATSU, 1985, 230, pl. 40, fig. 33 [noted; photo].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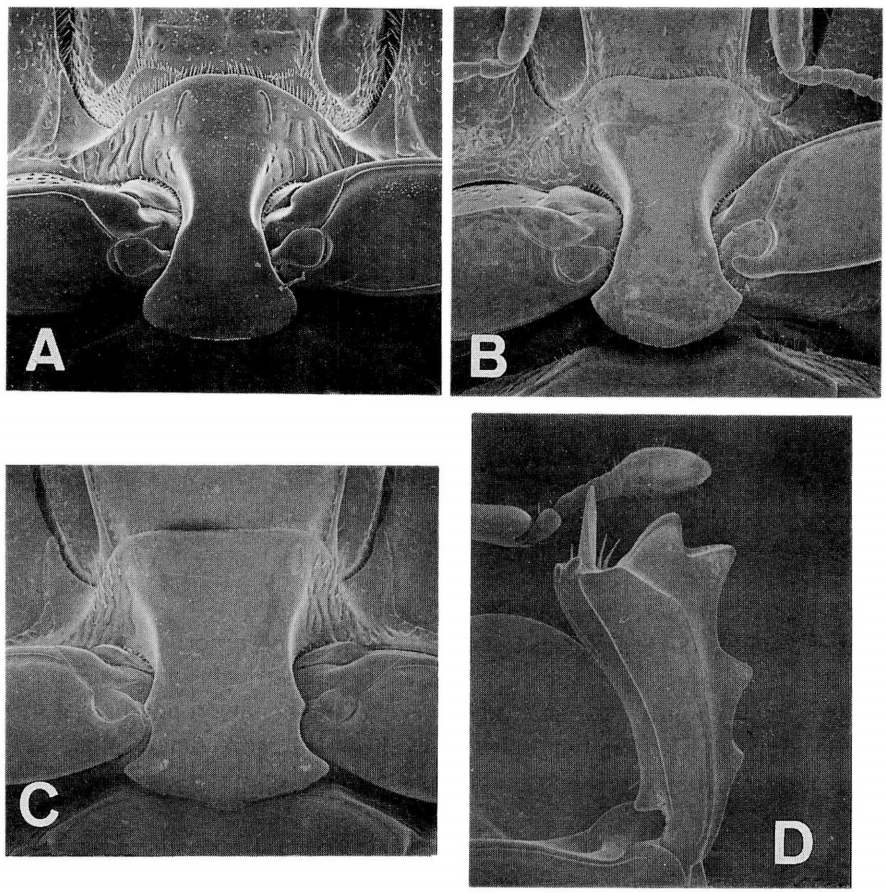


Fig. 1 (on p. 104). A–C, Head, ventral view; D–F, propygidium; G, H, pygidium.——A, D, *Hololepta amurensis* REITTER. B, E, G, *H. depressa* LEWIS. C, F, *H. higoniae* LEWIS. H, *H. plana* (SULZER).

Fig. 2 (on p. 105). A–C, Prosternum; D, protibia, ventral view. —— A, D, *Hololepta amurensis* REITTER. B, *H. depressa* LEWIS. C, *H. higoniae* LEWIS.

Hololepta (*Hololepta*) *amurensis*: BICKHARDT, 1910, 5 [catalogued]; BICKHARDT, 1916, 26 [catalogued]; MAZUR, 1984, 259 [catalogued].

Description. Male (Fig. 3 A) and female. Body length: PPL (=length between anterior angles of pronotum and apex of pygidium) male, 6.8–8.1 mm, female, 6.15–7.7 mm, PEL (=length between anterior angles of pronotum and apices of elytra) male, 4.85–5.7 mm, female, 4.3–5.3 mm. Width: male, 4.0–5.4 mm, female, 3.9–5.4 mm. Biometric data are given in Table 1. Body depressed, oblong, black and shining; tarsi, maxillary palpi and antennae rufopiceous.

Surface of head sparsely clothed with fine punctures which are separated by about four times their diameters, and roundly depressed on each side behind eye. Mandible

Table 1. Biometric data for *Hololepta amurensis* REITTER.

Part measured	Male	Female
APW	1.7–2.2 (2.04±0.017) 49	1.8 –2.5 (2.20±0.027) 47
PW	3.7–5.0 (4.47±0.042) 49	3.7 –5.25 (4.62±0.053) 47
PL	2.0–2.6 (2.36±0.023) 49	2.0 –2.7 (2.38±0.026) 47
EL	2.3–3.1 (2.73±0.026) 49	2.2 –3.0 (2.67±0.029) 47
EW	4.0–5.4 (4.84±0.045) 49	3.9 –5.4 (4.82±0.053) 47
ProW	2.8–3.9 (3.40±0.035) 49	2.75–3.8 (3.31±0.036) 47
ProL	1.8–2.7 (2.32±0.027) 49	1.7 –2.5 (2.12±0.028) 47
PTL	1.1–1.8 (1.51±0.020) 48	1.2 –1.8 (1.57±0.020) 47
MSTL	1.0–1.6 (1.28±0.017) 49	1.0 –1.7 (1.28±0.020) 47
MTTL	1.1–1.7 (1.43±0.016) 49	1.1 –1.8 (1.40±0.019) 47

Measurements in mm. APW — width between anterior angles of pronotum; PW — maximal width between lateral margins 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; ProL — length of propygidium in mesial; PTL — length of protibia; MSTL — length of mesotibia; MTTL — length of metatibia. The table reads: observed limits (mean±standard error) number observations.

well developed. Labrum with a deep impression on mid-line.

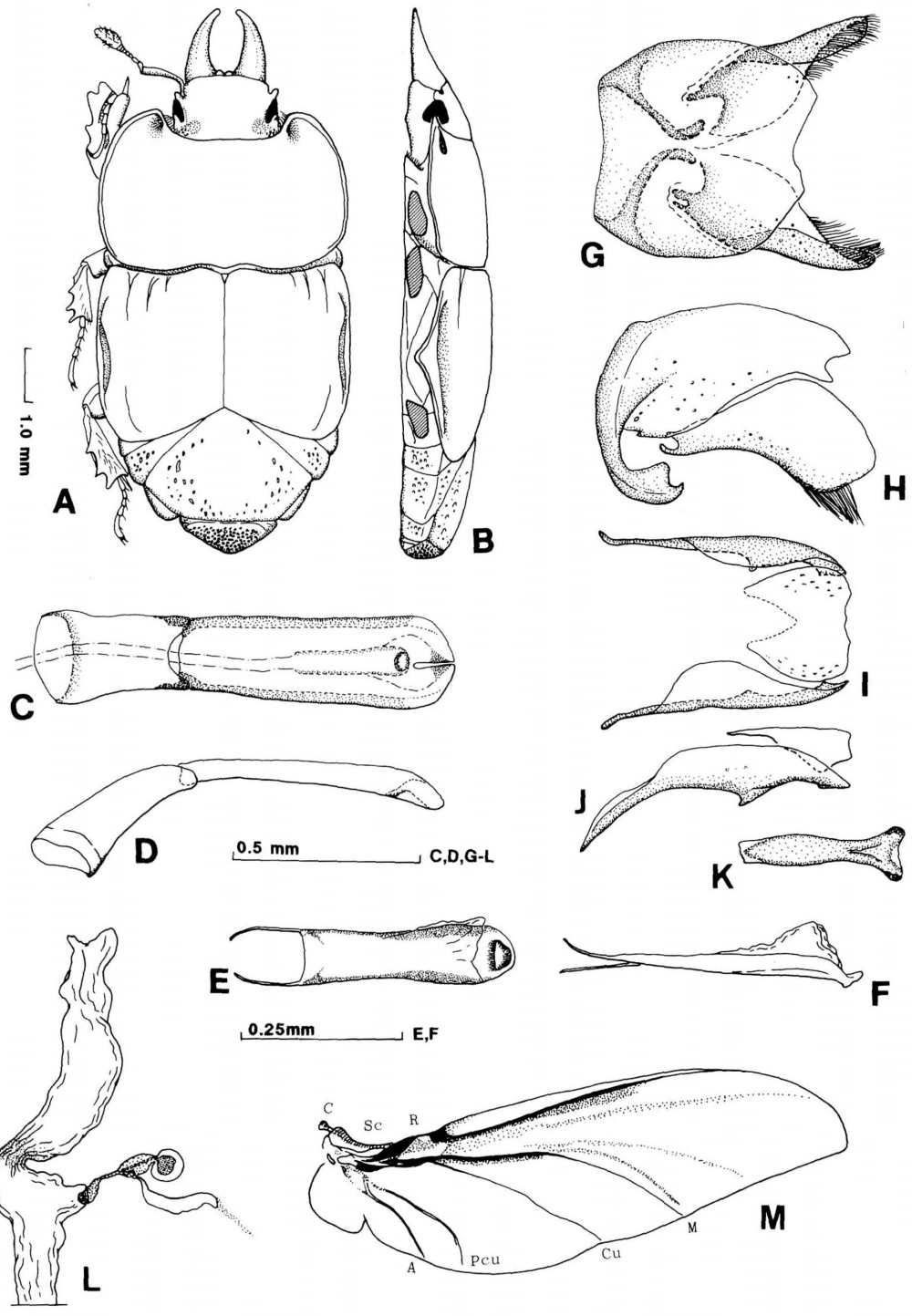
Pronotal sides arcuate and convergent anteriorly and posteriorly. Anterior angles round. Marginal pronotal stria complete laterally and strongly carinate, bent at anterior angle, then ending. In male, apical end of marginal pronotal stria strongly excavated. Surface of pronotum sparsely clothed with microscopic punctures like that of head, and sometimes other, coarse, punctures sparsely scattered on lateral third.

Epipleura of elytron feebly depressed along epipleural marginal stria, and with alutaceous ground sculpture. Marginal epipleural stria complete and strongly carinate. Margin of elytron with a large and deep longitudinal fossa occupying middle four-sixths; area inside the fossa covered with alutaceous microsculpture. First dorsal stria broadly interrupted at middle. Rudimentary 2nd and 3rd striae present on basal eighth. Surface of elytra sparsely clothed with microscopic punctures, which are separated by three times or more their diameters.

Surface of propygidium (Fig. 1 D) flat and sparsely covered with large, longitudinal oblong and shallow punctures laterally. Pygidium short, and densely covered with round, deep and coarse punctures.

Prosternal lobe (Fig. 2 A) rounded at apex, without marginal stria; disk impunctate medially, and with longitudinal depressions laterally. Prosternal keel flat, narrowest at middle, becoming broader posteriorly; posterior margin of the keel feebly and

Fig. 3. *Hololepta amurensis* REITTER. —— A, Adult, male, dorsal view; B, ditto, lateral view; C, aedeagus, dorsal view; D, ditto, lateral view; E, median lobe of aedeagus, dorsal view; F, ditto, lateral view; G, male genitalia, 8th tergite and sternum, dorsal view; H, ditto, lateral view; I, ninth and 10th tergites, dorsal view; J, ditto, lateral view; K, spicules, dorsal view; L, spermatheca and bursa copulatrix, lateral view; M, right hind wing.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posteriorly arcuate, the margin overhanging the anterior area of mesosternum; disk impunctate.

Anterior margin of mesosternum covered with prosternal keel, the covered area depressed in a fan-shape to fit the margin of prosternal keel; marginal stria of mesosternum separated onto each side of anterior margin, and abbreviated on posterior half of lateral margin. Meso-metasternal suture complete, obtusely angulate at middle. Lateral stria of metasternum extending posteriorly, outwardly arcuate, the apical end attaining to near the anterior margin of hind coxa. Intercoxal disk of meso- and metasterna impunctate. Lateral disk of metasternum densely covered with large, round and shallow punctures which usually continue to one another on basal half, and with hairs.

Intercoxal disk of 1st abdominal sternum impunctate, and with a complete stria on each side. Second abdominal sternum with a stria on each lateral half.

Protibia (Fig. 2 D) with 4 denticles on outer margin. Ventral side of profemur completely with posterior femoral stria. Meso- and metatibiae with 3 denticles on outer margin.

Male genitalia as shown in Fig. 3 C–K.

Female genitalia as shown in Fig. 3 L.

Specimens examined. 44 ♂♂, 59 ♀♀ and 11 exs.

[Hokkaido] 2 ♀♀, Okushibetsu, Kamikawa, Teshio, 24–VII–1947, 6–VIII–1949, T. HASEGAWA leg. (NSMT); 1 ♀, Oketo, Okushibetsu, 25–VII–1941, H. UCHIDA leg. (NSMT); 2 ♂♂, Mizugami, Abashiri, 9–VIII–1951, T. KUMATA leg. (EIHU); 5 exs., Sapporo, 13–VI, 4–VII–1965, 17–VII–1966, 26–V, 24–VIII–1968, H. TAKIZAWA leg.; 1 ex., ditto, VIII–1923, J. F. ILLINGWORTH leg. (BSM); 1 ♀, ditto, 20–VIII–1927, K. SATÔ leg. (NSMT); 1 ♂, 1 ♀, Maruyama, Sapporo, 4–VI–1942, Y. NISHIO leg. (NA); 1 ♀, ditto, VI–1987, M. SATÔ leg.; 1 ♂, ditto, 25–V–1989, S. SHIYAKE leg.; 1 ♂, ditto, 25–VI–1979, S. KUDÔ leg.; 1 ♂, Nishikibashi, Sapporo, 9–VII–1982, K. HOSOKAWA leg.; 1 ♂, Heiwano-taki, Sapporo, 23–VII–1979, T. FUJISAWA leg. (EIHU); 1 ♂, 1 ♀, Misumai, Sapporo, 2–VII–1975, M. MORI leg.; 1 ♀, Jôzankei, 12–VIII–1943, T. HASEGAWA leg. (NA); 1 ♀, ditto, 18–VI–1985, M. ÔHARA leg.; 1 ♂, ditto, 11–VII–1953, Y. KUROSAWA leg. (NSMT); 1 ♀, ditto, 12–VIII–1943, T. HASEGAWA leg. (NSMT); 2 ♀♀, ditto, 17–IX–1954, T. KUMATA leg. (EIHU); 1 ♂, ditto, 27–VI–1951, M. KONISHI leg. (EIHU); 1 ♂, ditto, 17–VI–1954, Y. TASE leg.; 1 ♂, Toyotaki, Sapporo, 23–V–1979, T. FUJISAWA leg. (EIHU); 2 ♂♂, 1 ♀, Hakkenzan, Sapporo, 5, 7–VI–1977, 1–VII–1978, N. NISHIKAWA leg.; 1 ♀, Horumi, Sapporo, 18–V–1952, T. KUMATA leg. (EIHU); 1 ex., Asari-mura, 5–VIII–1950, T. HASEGAWA leg. (NSMT); 2 ♂♂, Otaru, 1–VIII–1954, T. KUMATA leg. (EIHU); 1 ♀, Makkari-sanroku, 18–VIII–1921, no collector's name (NSMT); 1 ♀, Mt. Muine-yama, 20–VII–1964, S. UÉNO leg. (NSMT); 1 ♂, 1 ♀, Hidaka, 1955, S. WATANABE leg. (NA); 1 ♂, Kamikawa, 21–VI–1934, T. OKUTANI leg. (NA); 1 ♂, 1 ♀, Toyomae, Kiritachi-tôge, 17–VII–1986, T. NISHIDA leg.; 3 ♀♀, Tomakomai, 27–VII–1974, A. KASHIZAKI leg.; 1 ♂, 1 ♀, Eniwa, Isari-gawa, 16–VI–1986, M. MORI leg.; 1 ♂, 1 ♀

Shikotsuko, 28–VI–1976, M. MORI leg.

[Honshu] 〈Aomori-ken〉 1 ♂, 1 ♀, Minami-tsugaru, 18–VII–1954, K. SHIMOYAMA leg. (NSMT); 2 ♂♂, 2 ♀♀, Kokitaira, Takedate, Minami-tsugaru, 16–VI, 5, 10–VIII–1952, K. SHIMOYAMA leg. (NSMT); 1 ♂, Heiroku, ditto, 20–VI–1952, K. SHIMOYAMA leg. (NSMT); 1 ♂, ditto, 12–VI, 7–VII–1961, A. ABE leg. (NA). 〈Fukushima-ken〉 2 ♀♀, Kotoribi, Narahara, Minami-aizu, 5–VII–1949, Y. KUROSAWA leg. (NSMT). 〈Saitama-ken〉 2 exs., Izugatake, 28–IV–1969, H. TAKIZAWA leg. 〈Tokyo-to〉 1 ♀, Takaosan, 11–VI–1963, S. KONDO leg.; 1 ♀, ditto, 4–VIII–1971, K. MASUMOTO leg.; 2 ♂♂, 1 ♀, ditto, 25–VI–1962, S. NOMURA leg. (NSMT); 1 ♀, Aoiwa, Okutama, 8～10–VIII–1951, S. NOMURA leg. (NSMT); 2 ♀♀, Okutama, 17–V–1955, Y. KUROSAWA leg. (NSMT); 1 ♂, Nippara, 26–VII–1966, Y. KUROSAWA leg. (NSMT). 〈Kanagawa-ken〉 1 ♂, Keyakitaira, Tanzawa, 20–VI–1940, D. MATSUSHITA leg. (NA). 〈Niigata-ken〉 1 ♂, 1 ♀, Kurokawa, 24～26–VI–1983, K. Baba leg. 〈Nagano-ken〉 1 ♂, 1 ♀, Yokokawa Valley, Tatsuno, 28–IX–1990, S. SHIYAKE leg.; 1 ex., Shirakaba-ko, 6～7–VI–1987, H. TAKIZAWA leg.; 1 ♂, Sanosaka, Hakuba, 8–V–1983, M. KIUCHI leg.; 2 ♂♂, 1 ♀, Fukushima, Kiso, 6–VIII–1966, T. NAKANE leg. (NA); 1 ♀, Shimashima, 2–VIII–1948, S. ÔSAWA leg. (NA); 1 ♂, Tokura, 6–VII–1950, S. UÉNO leg. (NA); 1 ♂, Tokura–Hatomachi, 9–VII–1951, T. NAKANE leg. (NA); 1 ♀, Tobira, Matsumoto, 18–VI–1982, M. KIUCHI leg.; 2 ♀♀, Karuisawa, 31–VII–1951, no collector's name (NSMT). 〈Gumma-ken〉 1 ♂, 1 ♀, Osawa, 15–VI–1963, S. KONDO leg. 〈Yamanashi-ken〉 1 ♂, Daibosatsu, 11–VIII–1962, S. KONDO leg. 〈Gifu-ken〉 1 ♀, Kujôgun, 18–VI–1978, Y. TAKAI leg. 〈Nara-ken〉 2 ♀♀, Kasuga, 28–IX–1983, YOKOYAMA leg. (NA). 〈Shiga-ken〉 1 ♂, Meiodani, 1–VI–1984, H. ASHIDA leg. 〈Wakayama-ken〉 2 ♀♀, Mt. Otousan, 16～19–VII–1982, H. MAKIHARA leg. 〈Kyoto-fu〉 1 ♀, Kurama, 14–V–1950, T. NAKANE leg. (NA); 1 ♀, Daihizan, 7–VIII–1940, T. OKADA leg.; 1 ♀, Sasari, 8–IV–1964, Y. KISHII leg. (NA). 〈Hyôgo-ken〉 1 ♀, Sasayama, Tanba, 30–VI–1950, K. IWATA leg. (NA). 〈Okayama-ken〉 1 ♀, Kamba, 19–V–1940, T. OKUTANI leg. (NSMT).

[Kyushu] 〈Kumamoto-ken〉 1 ♂, Ichifusayama, 1～2–VIII–1988, S. NAOMI leg. 〈Kagoshima-ken〉 1 ♀, Sata-Ôsumi, 25–V–1952, T. NAKANE leg. (NA). 〈Miyazaki-ken〉 1 ♀, Miike, 14–X–1984, M. ÔHARA leg.; 1 ♂, 1 ♀, Shiiba, 1–VIII–1970, A. NAGAI leg. 〈Tsushima Is.〉 1 ♀, Uchiyama, 17–VII–1960, T. NAKANE leg.; 1 ♀, Mt. Ôboshiyama, Mine, 5～9–VI–1983, H. MAKIHARA leg.; 1 ex., Are, 18–IX–1982, H. TANAKA leg.; 1 ♀, Meboro, Mt. Mitake, 15～18–VII–1968, S. MIYAMOTO & A. NAKASHIMA leg. (NSMT).

[Nansei Iss.] 〈Yakushima Is.〉 1 ♀, Ôkawa-rindô, 2–VII–1975, H. MAKIHARA leg.

[Taiwan] 1 ♂, Wushe, 20–VI–1940, no collector's name.

[Korea] 1 ♂, Kwang-neung, central Korea, no date and collector's name. (NSMT).

Distribution (Fig. 4). Japan (Hokkaido; Honshu; Shikoku; Kyushu; Sado Is.; Izu Islands; Tsushima Is.; Yakushima Is.); East Siberia; Primorskij Kray; Korea; Taiwan; China. New to Taiwan.

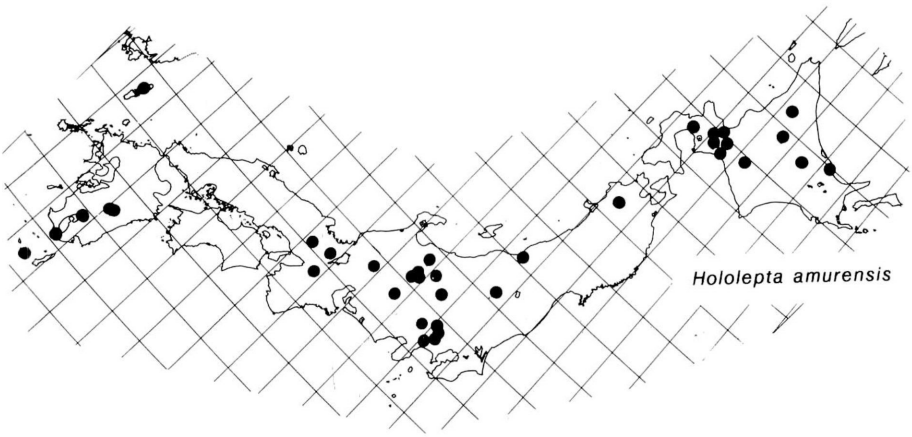

Fig. 4. Collection sites of *Hololepta amurensis* in Japan.

Remarks. In general appearance *H. amurensis* resembles *H. depressa.* However, it is distinguished from the latter by the body larger, the punctation of propygidium coarser (Fig. 1 D) and the anterior margin of prosternal lobe outwardly arcuate (Fig. 2 A).

要　　約

大原昌宏: 日本産ヒラタエンマムシ属の再記載, 1. —— ヒラタエンマムシ属 *Hololepta* にふくまれる日本産3種の検索表を作成し, 属の記載をおこなった. これら3種は, 前尾節板 (Fig. 1 D–F) と前胸腹板ののど板前縁 (Fig. 2 A–C) の形質状態によって区別できる. また, オオヒラタエンマムシ *H. amurensis* の再記載をおこない, 雌雄交尾器, 後翅を図示した.

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

Elytra, Tokyo, **19** (1): 111–114, May 15, 1991

A New Species of the Genus *Trichotichnus* (Coleoptera, Carabidae) from Central Honshu, Japan

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Abstract A new harpaline carabid beetle, *Trichotichnus daibosatsunis* sp. nov., is described from central Honshu, Japan. It resembles *T. leptopus* (BATES), occurring sympatrically with the latter. They are, however, clearly distinguished from each other by difference of their pronota and aedeagi.

The Japanese species of the harpaline carabid genus *Trichotichnus* (s. str.) was classified by HABU (1973) into four species-groups. One of them, the *leptopus* group, is characterized by having cordate pronotum and reduced wings, and comprises nine montane species hitherto described. There are, however, still many unsolved problems in this group, since its members vary from locality to locality and are often difficult to determine ranges of respective taxa. In this paper, I am going to describe a new species of this group under the name of *Trichotichnus daibosatsunis* sp. nov., which occurs on the Kwantô Mountain Range of central Honshu, Japan. It resembles *T. leptopus* (BATES) in general appearance and sympatrically occurs with the latter, but is clearly discriminated from it by different configuration of pronotum and aedeagus. The abbreviations used herein are the same as those explained in other papers of mine.

I wish to express my 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. Atsuo IZUMI and Minoru TAO for their kind offer of the materials.

Trichotichnus* (*Trichotichnus*) *daibosatsunis sp. nov.

[Japanese name: Daibosatsu-tsuya-gomokumushi]
(Figs. 1–2, 4)

Description. Length 9.6–11.0 mm. Width 3.9–4.4 mm. Black, shiny and iridescent; labrum and mandibles reddish brown, apices of the latter blackish; clypeus and outer sides of frontal furrows generally reddish brown; antennae, palpi and legs yellowish brown.

Head gently convex, somewhat narrower than that of *T. leptopus*; labrum weakly emarginate at apex, instead of being distinctly emarginate. Pronotum gently convex, clearly narrower than that of *T. leptopus*, widest at apical third, ca. 1.4 times as wide as head (PW/HW 1.36–1.43, mean 1.40), ca. 1.35 times as wide as long (PW/PL 1.30–

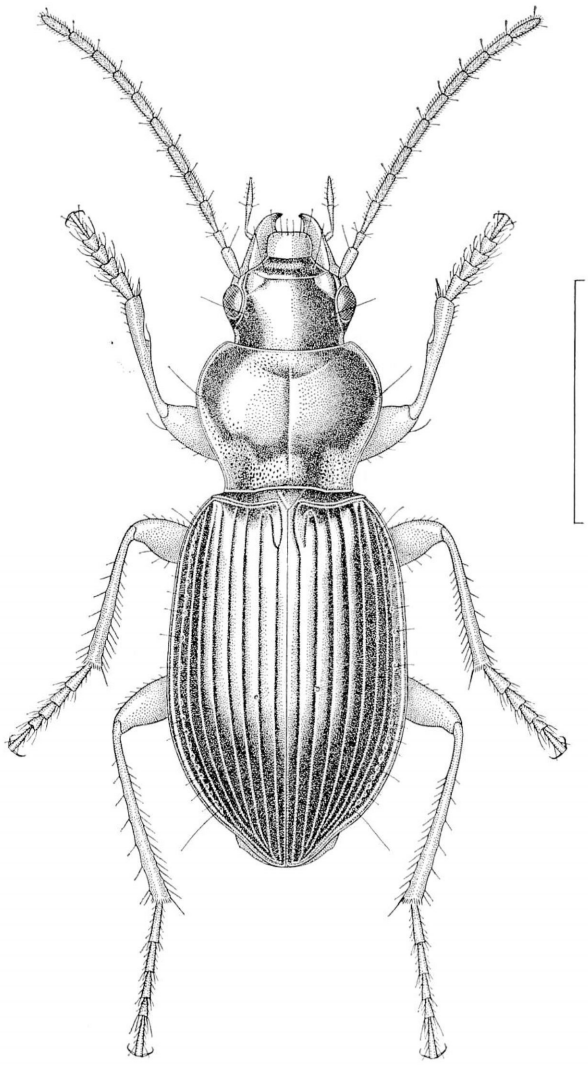
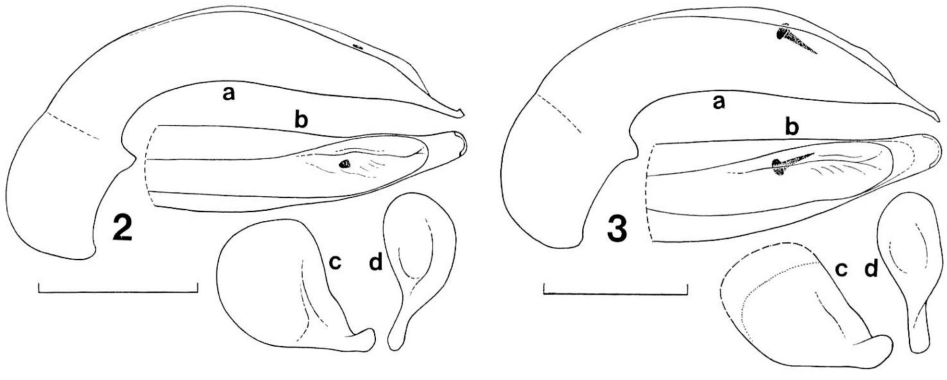


Fig. 1. *Trichotichnus* (*Trichotichnus*) *daibosatsunis* sp. nov., ♂, from the Nikkawa-dani, Yamanashi Pref. Scale: 4 mm.

1.38, mean 1.35), ca. 1.43 times as wide as base (PW/PBW 1.38–1.48, mean 1.43); lateral margins well arcuate, and strongly convergent posteriad, then sinuate before sharp basal angles, which are somewhat produced laterally; apical margin finely bordered; basal margin finely but distinctly bordered; basal foveae relatively deep, strongly and densely punctate; outer sides of basal foveae depressed and punctate as in *T. leptopus*; apical arcuate depression distinct, strongly punctate; median line distinct; surface irregularly punctate except on disc.



Figs. 2–3. Male genitalia of *Trichotichnus* (*Trichotichnus*) spp. —— 2, *T.* (*T.*) *daibosatsunis* sp. nov. from the Nikkawa-dani, Yamanashi Pref.; 3, *T.* (*T.*) *leptopus* (BATES), from Mt. Mitake-san, Tokyo; a, aedeagus in left lateral view; b, same in dorsal view, with omitted basal part; c, left paramere; d, right paramere. Scale: 1 mm.

Elytra ovate, gently convex, widest at about middle, ca. 1.3 times as wide as pronotum (EW/PW 1.24–1.33, mean 1.30), ca. 2.7 times as long as pronotum (EL/PL 2.51–2.79, mean 2.70), ca. 1.54 times as long as wide (EL/EW 1.48–1.59, mean 1.54); humeral part less conspicuous than in *T. leptopus*, with humeral angles more obtuse than in the latter; basal borders gently curved, very minutely dentate at shoulders; lateral margins gently and rather straightly divergent posteriad from behind shoulders, gently arcuate at the widest part, then roundly convergent to preapical emarginations, which are shallow, though relatively distinct, apices rounded; scutellar striole rather long as in *T. leptopus*; striae distinctly impressed throughout, almost smooth; intervals gently convex, though almost flat on disc; interval 3 with a dorsal pore, adjoining stria 2 at about middle; marginal series of pores 24–29 in number. Wings reduced.

Venter shiny; prosternum and apical part of metasternum, and pro-, meso- and metepisterna punctate; lateral sides of sternites 3–4 punctate; median parts of sternites 4–5 sparsely and minutely pubescent.

Aedeagus moderately bent at basal third, then almost straightly extending to apex, though weakly curved downwards at the apical part; apical third somewhat curved to the right in dorsal view; apical lobe as long as or a little longer than wide, distinctly bordered at the apex, which is distinctly reflexed; inner sac with a minute chitinized piece near apical orifice; left paramere wide; right one relatively wide, rounded at apex.

Type series. Holotype: ♂, Nikkawa-dani, Enzan-shi, Yamanashi Pref., 24–IX–1981, S. KASAHARA leg.; allotype: ♀, same locality as for the holotype, 28–VI–1981, A. IZUMI leg.; paratypes: 2 ♂♂, Mt. Daibosatsu, Enzan-shi, Yamanashi Pref., 10–VI–1979, M. TAO leg.; 1 ♂, same locality, 12–VIII–1978, M. TAO leg.; 1 ♂, Nikkawa-dani, Enzan-shi, Yamanashi Pref., 10–IX–1982, S. KASAHARA leg.; 1 ♀, same

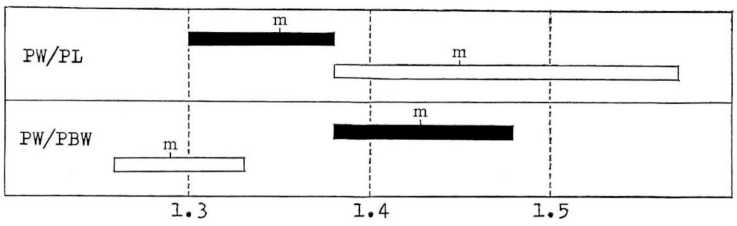


Fig. 4. Diagram showing proportions of pronota in *Trichotichnus* (*Trichotichnus*) spp.; black bar, *T.* (*T.*) *daibosatsunis* sp. nov.; white bar, *T.* (*T.*) *leptopus* (BATES); m, mean.

locality, 22–VI–1985, S. KASAHARA leg.; 1 ♂, Tabayama-mura, Yamanashi Pref., 4–VII–1980, S. KASAHARA leg.; 1 ♂, Unazawa, Mt. Ohtake-san, Okutama-machi, Tokyo, 29–VI–1982, S. KASAHARA leg.; 1 ♂, Mt. Mitake-san, Ohme-shi, Tokyo, 30–V–1981, S. KASAHARA 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 my collection.

Notes. Though the present new species is similar to *T. leptopus*, it is easily discriminated from the latter by the following points: General appearance slenderer; pronotum clearly narrower, with lateral margins more strongly convergent posteriad; pronotal base almost as wide as apex, while the base is always wider than apex in *T. leptopus*; aedeagus slenderer; apical lobe more strongly bordered at the apex, which is clearly reflexed, while it is slightly curved ventrad in *T. leptopus*; chitinized piece of inner sac very small and flat, not peg-like.

要　　約

笠原須磨生：本州中部産ツヤゴモクムシ属の1新種.——本州中央部の関東山地から，ツヤゴモクムシ属のツヤゴモクムシ種群に属する1新種，ダイボサツツヤゴモクムシ *Trichotichnus* (*Trichotichnus*) *daibosatsunis* を記載した．本種はツヤゴモクムシ *T.* (*T.*) *leptopus* (BATES) にやや似ていて，これと同所的にみられるので混同されやすいが，前胸背板と陰茎の形態が明らかに異なるので識別はむずかしくない．

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HABU, A., 1961. Revisional study of the species of the Trichotichni, the subtribe of the tribe Harpalini, from Japan (Coleoptera, Carabidae). *Bull. natn. Inst. agr. Sci., Tokyo*, (C), (13): 127–169.

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Elytra, Tokyo, **19** (1): 115–123, May 15, 1991

Notes on the Bembidiinae (Carabidae) of Japan

III. *Bembidion semilunium* NETOLITZKY and its New Relative

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Abstract Two Japanese bembidiine carabids related to *Bembidion lunatum* (DUFTSCHMIDT) are dealt with. *Bembidion semilunium* is redescribed and a new related species is described under the name of *B. bandotaro*. *Bembidion yanoi* is regarded as a synonym of *B. semilunium*. Brief notes concerning *B. lunatum* and *B. serorum* NETOLITZKY are also given.

In 1986, *Bembidion yanoi* JEDLIČKA (1951, p. 108) was redescribed by myself as a full species based on ample material, not as a subspecies of *B. semilunium* NETOLITZKY (1914, p. 170), because constant differences were observed between the so-named two forms mainly in the coloration of antennal segments and legs as well as in the shape of aedeagal apical lobe (cf. MORITA, 1986, pp. 67–72). After the publication of my paper, I was given opportunities to examine the type material of both *B. semilunium* and *B. yanoi* through the kindness of Dr. STORK and Dr. BÍLÝ. Contrary to my expectation, a direct comparative study has made it evident that they are specifically identical with each other.

On the other hand, according to my investigations and to the accounts of related species given by NETOLITZKY (1943, pp. 32–34), JEDLIČKA (1965, pp. 119–122) and KRYZHANOVSKIJ (1979, pp. 26–38), the species regarded by myself as "*B. semilunium*" must be new to science. To avoid further confusion, I am going to redescribe NETOLITZKY's species, one of the common bembidiines in Japan, and to describe its new relative under the name of *B. bandotaro*.

The abbreviations used herein are as follows: HW – greatest width of head; PW – greatest width of pronotum; PL – length of pronotum, measured along the median line; PA – width of pronotal apex; PB – width of pronotal base; EW – greatest width of elytra; EL – greatest length of elytra; M – arithmetic mean; BM – British Museum (Natural History); NW – Naturhistorisches Museum Wien; NP – National Museum, Prague; NSMT – National Science Museum (Nat. Hist.), Tokyo.

I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critically reading the manuscript of this paper. Thanks are also due to Dr. V. G. SHILENKOV of Irkutsk State University and to Dr. Alexander DOSTAL of Wien for giving me very useful information, and to Dr. Heinrich SCHÖNMANN and Dr. Manfred JÄCH of the Naturhistorisches Museum Wien for their kind help. Further, I am deeply indebted to Dr. Svatopluk BÍLÝ and Dr. Ivo

KOVÁR of the National Museum, Prague, and Dr. N. E. STORK and Mr. M. J. D. BRENDELL of the British Museum (Natural History) for loan of type material under their care. My deep indebtedness is also due to the following colleagues and friends, whose kind aid and support enabled the completion of this paper: Dr. Kazuyoshi KUROSA, Dr. Sadahiro OHMOMO, Dr. Yûki IMURA, Messrs. Michiaki HASEGAWA, Shôichi IMASAKA, Tsutomu MATSUDA, Hideo OHKAWA, Masahiro ÔHARA, Shôtarô TANAKA, Satoshi YAMAUCHI and Masataka YOSHIDA.

Bembidion (Peryphus) semilunium NETOLITZKY

[Japanese name: Futamon-mizugiwa-gomimushi]
[=Nise-tsumaki-mizugiwa-gomimushi]

(Figs. 1–4)

Bembidion semilunium NETOLITZKY, 1914, Ent. Mitt., Berlin-Dahlem, **3**: 170; 1914, Ent. Bl., Berlin, **7/8**: 171; 1943, Koleopt. Rdsch., Wien, **29**: 33.
Bembidion (Peryphus) semilunium janoi: KIRSCHENHOFER, 1984, Koleopt. Rdsch., Wien, **57**: 81.
Bembidion (Peryphus) Yanoi JEDLIČKA, 1951, Acta Soc. ent. čech., **48**: 108.
Bembidion janoi: JEDLIČKA, 1965, Ent. Abh. Mus. Tierk. Dresden, **32**: 124.
Bembidion (Peryphus) yanoi: NAKANE, 1978, Nature & Insects, Tokyo, **13**(6): 22. —— MORITA, 1986, Ent. Rev. Japan, Osaka, **41**: 67, figs. 1–2.

Length: 5.25–6.30 mm (from apical margin of clypeus to apices of elytra).

Body elongate and convex. Colour as in *B. lunatum* (DUFTSCHMIDT), though the antennae, proximal third to halves of femora, and metatrochanters are always dark brown; elytral spots variable in size, usually separated from each other, sometimes large and fused at the apical part, or rarely disappearing.

Head rather large, without punctures; frontal furrows wide, deep, almost parallel and extending to anterior supraorbital pores; posterior supraorbital pores situated a little before the post-eye level; eyes prominent; antennae fairly long, reaching basal third of elytra; scape dilated; relative lengths of antennal segments II and III≒1: 1.74; microsculpture almost vanished, but forming isodiametric or wide meshes on neck.

Pronotum transverse subcordate, widest at a level a little before the middle; PW/HW 1.24–1.38 (M 1.31) in 33 ♂♂, 22 ♀♀, PW/PL 1.21–1.36 (M 1.28) in 33 ♂♂, 22 ♀♀, PW/PA 1.46–1.64 (M 1.51) in 33 ♂♂, 22 ♀♀, PW/PB 1.16–1.29 (M 1.25) in 33 ♂♂, 22 ♀♀; apex narrower than base, almost straight or slightly emarginate; PA/PB 0.76–0.88 (M 0.82) in 33 ♂♂, 22 ♀♀; sides more strongly convergent towards apex than towards base; apical angles rounded, not advanced; hind ones nearly rectangular, with carinae; base nearly straight or very slightly oblique on each side; median line distinct, reaching neither apex nor base; anterior transverse impression with coarse punctures; basal foveae rather large and deep; basal area densely and coarsely punctate; anterior marginal setae situated a little before the widest part, posterior ones situated just before hind angles; microsculpture composed of trans-

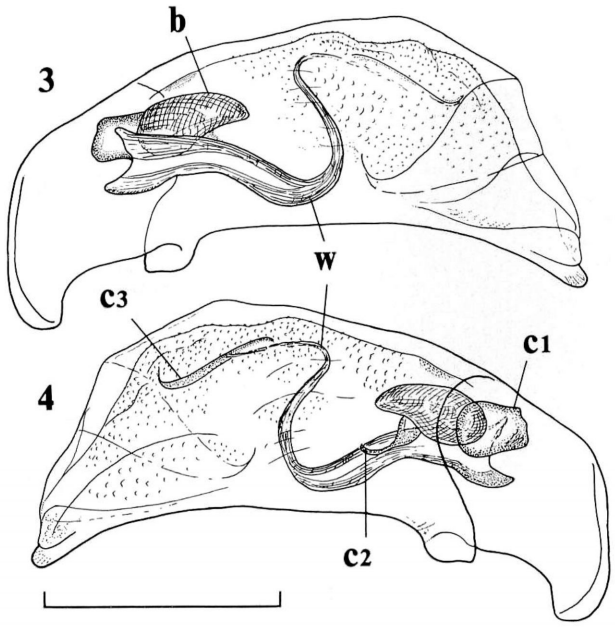
Figs. 1–2. *Bembidion semilunium* NETOLITZKY; 1, holotype; 2, labels attached to the holotype.

verse meshes.

Elytra elongate-ovate; EW/PW 1.46–1.65 (M 1.56) in 33 ♂♂, 22 ♀♀, EL/EW 1.46–1.64 (M 1.56) in 33 ♂♂, 22 ♀♀; sides nearly parallel at about middle and slightly emarginate before apices; striae superficial, rather strongly punctate, becoming shallower towards apices; stria 7 visible but marked with a row of fine punctures; scutellar striole long, rather strongly punctate; apical striole short and shallow, usually free at the anterior end, rarely close to stria 5 or 7 (in the latter case, the apical striole is rather long); intervals moderately convex but flat at apices; microsculpture composed of transverse lines partially forming transverse meshes in ♂, of transverse meshes partially forming transverse lines in ♀.

Metasternal process very widely bordered at the median part.

Male genital organ small and moderately sclerotized. Aedeagus short and robust; viewed laterally, apical lobe short and simply rounded at the extremity. Inner sac covered with very poorly sclerotized scales and armed with five components of sclerites (W, b, C1–C3); a whip-shaped piece (W) strongly twisted at the middle of inner sac; bundle of fibres (b) situated between the proximal part of whip-shaped piece and a small plate (C1); a small piece (C2) situated just at the right side of whip-shaped piece; an additional linear piece (C3) situated at the apical end of whip-shaped piece; viewed laterally, ostium flag moderately wide and not regularly arcuate. Styles long, right style a little longer than the left; right style usually provided with one long seta and three short setae at the apex or subapical part; left style usually provided with



Figs. 3–4. Aedeagus of *Bembidion semilunium* NETOLITZKY from Houkisawa, Kanagawa Pref., Central Japan; 3, left lateral view; 4, right lateral view (W: whip-shaped piece, b: bundle of fibres, C1–C3: copulatory pieces). (Scale: 0.5 mm.)

one long seta and several short setae at the apex or subapical part.

Additional specimens examined. 1 ♂ (Holotype), "SYNTYPE"/"? n. species"/"Typus *semilunium*, NETOLIZKY det."/"Japan. G. LEWIS. 1910–320."/"Miyanoshita. 11. V. – 14. V. 80."/"Type H. T." (BM); 1 ex, "Japan HILLER"/"coll. NETOLITZKY"/"Cotype 1914 *semilunium* NETOLITZKY det."/"COTYPE"/"Coll. Netolitzky" (NW); 1 ♂, "NEAR OSAKA 11–1949 Coll. Yoshio YANO"/"Cotype"/"Mus. Nat. Pragae 23973 Inv."/"*Yanoi* sp. n. det. Ing. JEDLIČKA" (NP); 1 ♀, "JAPAN near Osaka coll. K. KULT."/"TYPUS"/"Mus. Nat. Pragae 23972 Inv."/"*Yanoi* sp. n. det. ING. JEDLIČKA" (NP); 2 ♀♀, Motomachi, Riv. Shiriuchi-gawa, Shiriuchi-chô, Hokkaido, 28–VI–1986, S. MORITA leg.; 12 ♂♂, 4 ♀♀, Junsainuma, Hokkaido, 27–VI–1986, S. MORITA leg.; 1 ♂, Sawara, Sawara-machi, Hokkaido, 27–VI–1986, S. MORITA leg.; 1 ♂, Mt. Daitô-dake, Miyagi Pref., 25–V–1974, S. MORITA leg.; 2 ♂♂, Tanigawa-onsen, Gunma Pref., 17–VI–1990, S. MORITA leg.; 6 ♂♂, 5 ♀♀, Oppama, Yokosuka-shi, Kanagawa Pref., 15–V–1972, S. MORITA leg.; 2 ♂♂, Hirayu-onsen, Gifu Pref., 16–VII–1988, S. MORITA leg.; 1 ♀, Shinyama, Shimabara-shi, Nagasaki Pref., 15–IV–1979, S. IMASAKA leg.

Range. Japan: Hokkaido, Is. Rishiri-tô; Tôhoku District (Aomori Pref., Iwate Pref., Miyagi Pref.), Kantô District (Gunma Pref., Tochigi Pref., Kanagawa Pref., Tokyo), Chûbu District (Shizuoka Pref., Yamanashi Pref., Nagano Pref., Gifu Pref.), Kinki District (Kyoto, Wakayama Pref., Hyôgo Pref., Osaka), Chûgoku District

(Tottori Pref.), Kyushu District (Nagasaki Pref.).

This species is unknown from the Shikoku District, but may probably occur there.

Notes. The presence of an additional copulatory piece (C 3) was overlooked when this species was redescribed by myself (1986, pp. 69–70). This fact was indicated by Dr. SHILENKOV (pers. comm.). It is very difficult to examine this copulatory piece, since it is wholly concealed by the membraneous walls. Besides, this and the apical end of the whip-shaped piece lie overlapping each other. It can be observed with certainty only when the inner sac is extracted and extended.

LINDROTH's (1953, p. 175, fig. 8–a) and KRYZHANOVSKIJ's (1979, p. 29, figs. 13–16) drawings of the male genitalia of the *lunatum* group do not show presence of this copulatory piece. This is strange since all the members of the *lunatum* group seem to have the same type of copulatory pieces. It is therefore necessary to re-examine their male genital organs.

This species is common both in plains and in mountainous areas. Most specimens recorded above were found from under stones at the edges of rivers, streams and ponds. According to TANAKA (1962), it was taken at light in Tokyo together with the following new species.

Bembidion (Peryphus) bandotaro MORITA, sp. nov.

[Japanese name: Ô-futamon-mizugiwa-gomimushi]
[=Tsumaki-mizugiwa-gomimushi]

(Figs. 5–6)

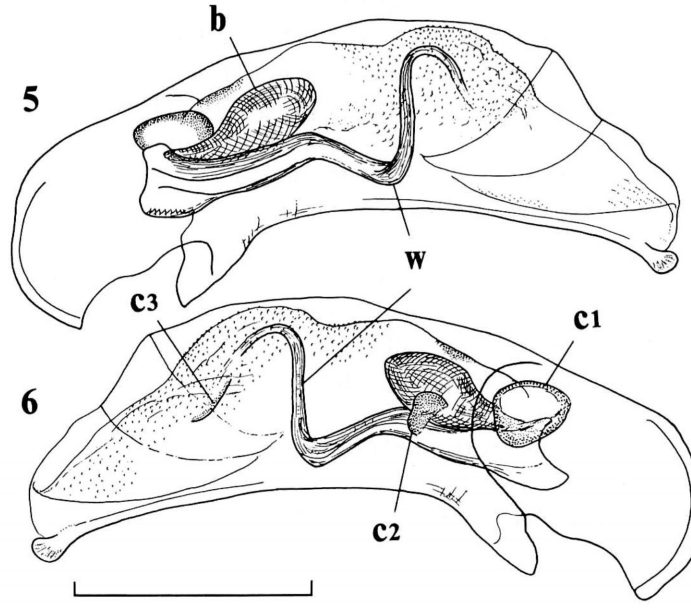
Peryphus (s. str.) *semilunius*: UÉNO, 1954, Shin Konchû, Tokyo, **7**: 56 [*partim*].
Bembidion semilunium semilunium: JEDLIČKA, 1965, Ent. Abh. Mus. Tierk. Dresden, **32**: 121.
Bembidion (*Peryphus*) *semilunium*: NAKANE, 1978, Nature & Insects, Tokyo, **13** (6): 22.
Bembidion semilunium: MORITA, 1985, Coleopt. Japan Col., Osaka, **2**: 97, pl. 18, fig. 14; 1986, Ent. Rev. Japan, Osaka, **41**: 67. fig. 3.

Length: 5.55–6.90 mm (from apical margin of clypeus to apices of elytra).

Relatively large species. Colour as in *B. lunatum* (DUFTSCHMIDT); palpi, antennal segments 1–3 and basal half of segment 4, and legs light reddish brown to reddish brown; rest of antennal segments and mandibles dark brown.

Head rather large with slender antennae; relative lengths of antennal segments II and III≒1: 1.56; scape nearly parallel-sided or very slightly arcuate (in the latter case, the outer area is concave at about middle); microsculpture almost vanished but forming isodiametric or wide meshes on neck.

Pronotum transverse subcordate; PW/HW 1.29–1.37 (M 1.32) in 13 ♂♂, 6 ♀♀, PW/PL 1.24–1.33 (M 1.28) in 13 ♂♂, 6 ♀♀, PW/PA 1.41–1.55 (M 1.49) in 13 ♂♂, 6 ♀♀, PW/PB 1.24–1.32 (M 1.28) in 13 ♂♂, 6 ♀♀, PA/PB 0.82–0.92 (M 0.86) in 13 ♂♂, 6 ♀♀; sides moderately arcuate in front though less strongly so than in *B. lunatum*; reflexed lateral borders gradually becoming wider from the level of anterior marginal setae to the apical end of postangular carinae; median line deeply impressed



Figs. 5–6. Aedeagus of *Bembidion bandotaro* MORITA, sp. nov. from Toride, Ibaraki Pref., Central Japan; 5, left lateral view; 6, right lateral view (W: whip-shaped piece, b: bundle of fibres, C1–C3: copulatory pieces). (Scale: 0.5 mm.)

on disc; anterior transverse impression with no coarse punctures; basal area sparsely punctate; microsculpture composed of wide or isodiametric meshes in apical and basal areas, and of transverse meshes on disc.

Elytra elongate-ovate; EW/PW 1.48–1.60 (M 1.53) in 13 ♂♂, 6 ♀♀, EL/EW 1.51–1.63 (M 1.57) in 13 ♂♂, 6 ♀♀; sides gently arcuate and very slightly emarginate before apices; striae rather weakly punctate; stria 7 usually vanished, rarely marked with a row of microscopic punctures; apical striole deep; microsculpture irregular, largely consisting of transverse lines but partially disordered.

Metasternal process very widely bordered at the median part.

Male genital organ relatively large, elongate and moderately sclerotized. Aedeagus elongate; apical lobe roundly dilated in lateral view; inner structure basically similar to that of *B. semilunium*, though the ostium flag is regularly arcuate in lateral view.

Type series. Holotype: ♂, allotype: ♀, Toride-shi, 9～10–VIII–1982, S. MORITA leg. (NSMT). Paratypes: 9 ♂♂, 14 ♀♀, Toride-shi, 17–IX–1972, K. KUROSA leg.; 3 ♂♂, 1 ♀, Toride-shi, 23–IX–1973, S. MORITA leg.; 1 ♂, Toride-shi, 10–VI–1980, S. MORITA leg.; 19 ♂♂, 18 ♀♀, Toride-shi, 9～10–VIII–1982, S. MORITA leg.; 3 ♂♂, 4 ♀♀, Toride-shi, 20–VIII–1983, S. MORITA leg.; 4 ♂♂, 3 ♀♀, Tatebayashi-shi, 5–V–1973; S. MORITA leg.; 1 ♀, Ashikaga-shi, 5–VI–1973, H. OHKAWA leg.; 2 ♂♂, 1 ♀, Honjô-shi, 13–V–1990, S. MORITA leg.; 4 ♂♂, 3 ♀♀, Honjô-shi, 18–VIII–1990, S.

MORITA leg.

Localities. Japan: Toride-shi (type locality!), Ibaraki Prefecture; Tatebayashi-shi, Gunma Prefecture; Ashikaga-shi, Tochigi Prefecture; Honjô-shi, Saitama Prefecture.

A total of 92 specimens available for this study collected on the basin of the River Tone-gawa were selected for the type series.

Other specimens examined. *1 ♀, Shoro, Kushiro-shi, Hokkaido, 26–VI–1981, S. MORITA leg., *5 ♂♂, same locality, 23–VIII–1983, S. MORITA leg.; *2 ♂♂, 1 ♀, Môrai-kaigan, Hokkaido, 25–VIII–1981, S. MORITA leg.; *Ishikari, Riv. Ishikari-gawa, Hokkaido, 4 ♂♂, 27–VI–1982, S. MORITA leg.; *6 ♂♂, 5 ♀♀, Ikeda-shi, Riv. Tokachi-gawa, Hokkaido, 9–VII–1982, S. MORITA leg.; *1 ♂, Obihiro-shi, Riv. Tokachi-gawa, Hokkaido, 18–VI–1976, 2 ♀♀, same locality, 7–VII–1982, S. MORITA leg.; *1 ♂, Nishiobihiro, Riv. Tokachi-gawa, Hokkaido, 8–VII–1982, S. MORITA leg.; 1 ♀, Kabuto-numa, Sarobetsu, Hokkaido, 5–VII–1982, S. & E. MORITA leg.; 1 ♂, Nayoro-shi, Riv. Nayoro-gawa, Hokkaido, 25–VII–1981, S. OHMOMO leg.; 2 ♂♂, 1 ♀, Moto-machi, Riv. Shiriuchi-gawa, Shiriuchi-chô, Hokkaido, 28–VI–1986, S. MORITA leg.; *1 ♂, Nakasato, Riv. Iwaki-gawa, Aomori Pref., 19–X–1981, Y. IMURA leg.; 1 ♂, Tanuma, Tochigi Pref., 6–V–1972; T. SHIMADA leg.; *1 ♂, 2 ♀♀, Ikoma-shi, Nara Pref., T. MATSUDA leg.; *1 ♂, 1 ♀, Taira, Shirahama-chô, Wakayama Pref., S. TANAKA leg.; *1 ♀, Kamiakui, Riv. Akui-gawa, Tokushima Pref., 20–VI–1962, M. YOSHIDA leg.; *1 ♂, Iidani, Riv. Katsuura-gawa, Tokushima Pref., M. YOSHIDA leg.; *1♂, Mt. Bizan, Jizôin, Tokushima Pref., 2–VI–1963, M. YOSHIDA leg.

Each record marked with an asterisk has already been reported by myself in 1986.

Range. Japan: Hokkaido; Tôhoku District (Aomori Pref.); Kantô District (Ibaraki Pref., Gunma Pref., Tochigi Pref., Saitama Pref.); Kinki District (Nara Pref., Wakayama Pref.); Shikoku District (Tokushima Pref.).

Notes. This new species can be distinguished from *B. semilunium* by the following key.

1 (2) Smaller on an average (5.25–6.30 mm); antennal segments and basal halves of femora darker; elytral apical spots usually small; relative lengths of antennal segments II and III≒1: 1.74; scape dilated; elytral striae rather strongly punctate, 7 visible; aedeagus short and robust, apical lobe simply rounded in lateral view; ostium flag not regularly arcuate. . *B. semilunium* NETOLITZKY.

2 (1) Larger on an average (5.55–6.90 mm); antennal segments 1–3 and basal half of 4 as well as legs light reddish brown to reddish brown; elytral apical spots always large and fused; relative lengths of antennal segments II and III≒1: 1.56; scape nearly parallel-sided or very slightly arcuate; elytral striae rather weakly punctate, 7 usually vanished; aedeagus elongate, apical lobe roundly dilated in lateral view; ostium flag regularly arcuate. . . . *B. bandotaro* sp. nov.

As was already mentioned in the introduction of this paper, I assigned the name *semilunium* to the species from the River Tone-gawa, as most Japanese carabid spe-

cialists did. Besides, in his key to the bembidiine carabids of East Asia, JEDLIČKA (1965, p. 121) also expressed the same view, as follows:" ..... dreieinhalb Fühlerglieder, Palpen und Beine hellgelb, Rest der Fühler mehr oder weniger geschwärzt ..... der siebente Streifen fehlt". Probably, he was unable to make a critical re-examination of the type of *B. semilunium* at that time.

On the other hand, this new species is closely allied to *B. serorum* NETOLITZKY (1934, p. 68) described from China.[1] This Chinese form was later reduced to a subspecies of *B. semilunium* (NETOLITZKY, 1943, p. 33; JEDLIČKA, 1965, p. 121). I had an opportunity to examine the holotype of *B. serorum* in the Naturhistorisches Museum Wien, and found slight differences between the Chinese and Japanese forms: in *B. bandotaro*, the pronotum has less arcuate sides, deeper basal foveae, and more strongly punctate basal part. I was, however, unable to study it in more detail at that time. At my request, Dr. DOSTAL took trouble to re-examine it and to measure the length of antennal segments. Judging from our investigations, *B. serorum* must be regarded as a full species, and *B. bandotaro* is more closely similar in general appearance to *B. serorum* than to *B. semilunium*. There is, however, a very wide geographical gap between their ranges, and I prefer to consider *B. bandotaro* to be a full species.

Like *B. semilunium*, *B. bandotaro* has a wide range in Japan. In my experience, this beetle always inhabits lower places, though often coexisting with the former. Its type locality is the bed of the River Tone-gawa by Toride, which is one of the best known collecting sites of carabid beetles, yielding nearly one hundred species.

The specific name of this new species is derived from a variant name of the River Tone-gawa.

要　約

森田誠司：日本産ミズギワゴミムシ類の知見．III. *Bembidion semilunium* NETOLITZKY と近縁の1新種．——筆者は，1986年に，ニセツマキミズギワゴミムシ *Bembidion yanoi* JEDLIČKA を再記載し雄交尾器を図示した．ところが最近，*B. semilunium* と *B. yanoi* の正，副基準標本を直接，比較検討した結果，*B. yanoi* は，*B. semilunium* の同物異名であるという結論に達した．そして，じゅうらい多くの研究者がツマキミズギワゴシムシ *B. semilunium* とみなしてきた種は，新種であることが明らかになった．本篇では，両者を記載し，さらに検索表で区別点を明示した．また，混乱を避けるために，じゅうらい用いられてきた和名を破棄し，新たに *B. semilunium* にフタモンミズギワゴミムシ，*B. bandotaro* にオオフタモンミズギワゴミムシという和名を与えた．

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1) Specimen examined. 1 ♀ (holotype), "Hweisin Kansu"/"Coll. NETOLITZKY"/"*serorum* det. NETOLITZKY! Type "/"TYPUS"/"coll. NETOLITZKY". It has the following coloration and relative lengths of antennal segments 2 and 3: legs and antennal segments 1–3 yellowish brown; rest of segments darker; 2: 3≒1: 1.63 (left), 1: 1.53 (right).

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Elytra, Tokyo, **19** (1): 124, May 15, 1991

Occurrence of *Lebia viridis* (Coleoptera, Carabidae) in Tokyo

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Since NAKANE (1989) first recorded the North American lebiine carabid beetle, *Lebia viridis* SAY, from Sakura in Chiba Prefecture, Central Japan, this imported species has been collected from various places in the Kwantô District (HIRANO, 1990; KASAHARA & NISHIYAMA, 1990), and seems to expand its habitat rather rapidly. In Ibaraki Prefecture, it was found in a mass of flea beetles belonging to the genus *Altica* on the leaves of a sunny grassland, as was recorded in America (LINDROTH, 1969). Here I will report it from Tokyo based on some specimens collected by Messrs. H. EBIHARA, K. ISHIZUKA, M. NISHIMURA and A. NISHIYAMA, to whom I wish to express my heartfelt thanks.

Specimens examined. 2 exs., Yotsugi, Katsushika-ku, Tokyo, 24–IX–1989, A. NISHIYAMA leg.; 3 exs., Senju, Adachi-ku, Tokyo, 16–VIII–1990, H. EBIHARA leg.; 1 ex., Akatsuka, Itabashi-ku, Tokyo, 13–VI–1990, M. NISHIMURA leg.; 1 ex., Kusabana, Akigawa-shi, Tokyo, 22–IX–1990, K. ISHIZUKA leg.

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Elytra, Tokyo, **19** (1): 125–126, May 15, 1991

Bembidiine Carabid Beetles from Sakhalin

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Abstract Eleven bembidiine carabids are recorded from the Island of Sakhalin. Two of them, *Bembidion cnemidotum* and *B. lucillum* are first recorded from the Soviet Far East. All but one are common to Hokkaido.

Through the courtesy of Mr. Oleg BERLOV, I was able to examine a number of bembidiine carabids collected in the Island of Sakhalin. From this island, nine species of *Bembidion* excluding two undetermined ones have already been recorded (KÔNO, 1944; JEDLIČKA, 1965; KRYZHANOVSKIJ & MOLODOVA, 1973). In this paper, I am going to record all the bembidiine carabids collected by Mr. BERLOV and his family. Of these, *Bembidion cnemidotum* and *B. lucillum* are recorded for the first time from the Soviet Far East. Their redescriptions will be given at another opportunity.

Bembidion (*Chrysobracteon*) *conicolle* MOTSCHULSKY
1 ♂, 4 ♀♀, Kluchevoe, Riv. Susuya, 7–VI–1988.
B. (*Eurytracelus*) *pogonoides* BATES
1 ♀, Kluchevoe, Riv. Susuya, 7–VI–1988.
B. (*Eupetedromus*) *inouyei* HABU
1 ♂, Kluchevoe, Riv. Susuya, 7–VI–1988.
B. (*Notaphus*) *fasciatum* (MOTSCHULSKY)
3 ♂♂, 7 ♀♀, Kluchevoe, Riv. Susuya, 7–VI–1988.
B. (*Plataphodes*) *tetraporum* BATES
7 ♂♂, 5 ♂♂, Kirillovo, 29–V–1988; 5 ♂♂, 7 ♀♀, Pozharskoe, Riv. Kamenka, 4–VI–1988.
B. (*Plataphus*) *altaicum* (GEBLER)
1 ♀, Firsovo, Riv. Firsovka, 10–VI–1989.
B. (*Plataphus*) *lucillum* BATES
1 ♂, Firsovo, Riv. Firsovka, 10–VI–1989.
B. (*Blepharoplataphus*) *hiogoense* BATES
1 ♂, Firsovo, Riv. Fisrsovka, 10–VI–1989.
B. (*Peryphus*) *dolorosum* (MOTSCHULSKY)
3 ♂♂, 3 ♀♀, Kirillovo, 29–V–1988; 15 ♂♂, 21 ♀♀, Pozharskoe, Riv. Kamenka, 4–VI–1988; 2 ♂♂, 2 ♀♀, Kluchevoe, Riv. Susuya, 7–VI–1988; 3 ♂♂, 2 ♀♀, Firsovo, Riv. Firsovka, 10–VI–1989.
B. (*Peryphus*) *cnemidotum* BATES
1 ♂, 2 ♀♀, Kluchevoe, Riv. Susuya, 7–VI–1988.

B. (*Peryphus*) *petrosum* GEBLER

1 ♂, Firsovo, Riv. Firsovka.

Though *B. petrosum attuense* LINDROTH (1963, p. 334) was described from the Island of Attu of the Aleutian Islands, the Sakhalin population does not belong to this subspecies. The elytral maculation of the latter is almost identical with that of Siberian specimens.

In concluding, I wish to thank Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kindness in reading the original manuscript of this paper. My thanks are also due to Mr. Oleg BERLOV for offering invaluable material for this study, and to Mr. Hideaki MATSUMOTO for his kind help.

要　　約

森田誠司：サハリンのミズギワゴミムシ類．——サハリンで採集されたミズギワゴミムシ類 11 種を記録した．そのうち，*Bembidion cnemidotum* と *B. lucillum* は，ソビエト極東地域から初めての記録だろうと思われる．

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Elytra, Tokyo, **19** (1): 127–135, May 15, 1991

Discovery of a Highly Specialized Cave Trechine (Coleoptera, Trechinae) in Southeast China

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Abstract An extraordinary trechine beetle is described from a limestone cave in Southeast China under the name of *Sinaphaenops mirabilissimus* gen. et sp. nov. It seems to have a relationship, though remote, to the members of the *Erebotrechus* series, but is readily recognized on its unique body form and peculiar chaetotaxy. This is the first record of an eyeless trechine beetle from Mainland China.

Anophthalmic trechine beetles are known from various parts of the world. They are especially abundant in the temperate zone of the Northern Hemisphere, and in East Asia many genera and species have been described from Japan, Korea and Taiwan. However, none of such eyeless species have so far been recorded from Mainland China in spite of existence of vast calcareous areas and innumerable limestone caves. Many caves have been examined by experienced biologists in the Provinces of Hebei, Shandong, Jiangsu, Zhejiang, Guangdong, Guangxi and Guizhou, but the results obtained were almost always discouraging. This did not appear to mean that the caves examined were naturally devoid of the fauna, but might have been caused by artificial destruction of habitats, above all by tight pavement of cave floors. It was, therefore, hoped to locate such caves as had not been tampered with and to examine their faunas.

At last at the beginning of this year, the junior author came across an eyeless beetle while invesigating limestone caves at the southeastern part of Guizhou near the Guangxi border. It looked like a leptodiroid bathysciine at first sight, but a close examination proved that in reality it was a trechine beetle showing the highest morphological modification adaptive to subterranean existence. Though the material now at hand is not yet satisfactory, the authors are going to introduce this remarkable finding into science in view of its utmost importance.

The abbreviations used in this paper are as follows: HW – greatest width of head; PW – greatest width of prothorax; PNW – greatest width of pronotum; PL – length of pronotum, measured along the mid-line; PA – approximate width of pronotal apex;

PB – approximate width of pronotal base; EW – greatest width of elytra; EL – greatest length of elytra.

Before going into further details, the authors wish to express their heartfelt thanks to Professor YUAN Daoxian and Mr. CAO Jianhua of the Institute of Karst Geology, Guilin, Mr. XU Tingyu of Mao-lan, and Professor Yoshiaki NISHIKAWA of Ohtemon-Gakuin University, Osaka, for their kind help and encouragement in pursuing bio-speological investigations in southern China.

Genus ***Sinaphaenops*** S. UÉNO et F. WANG, nov.

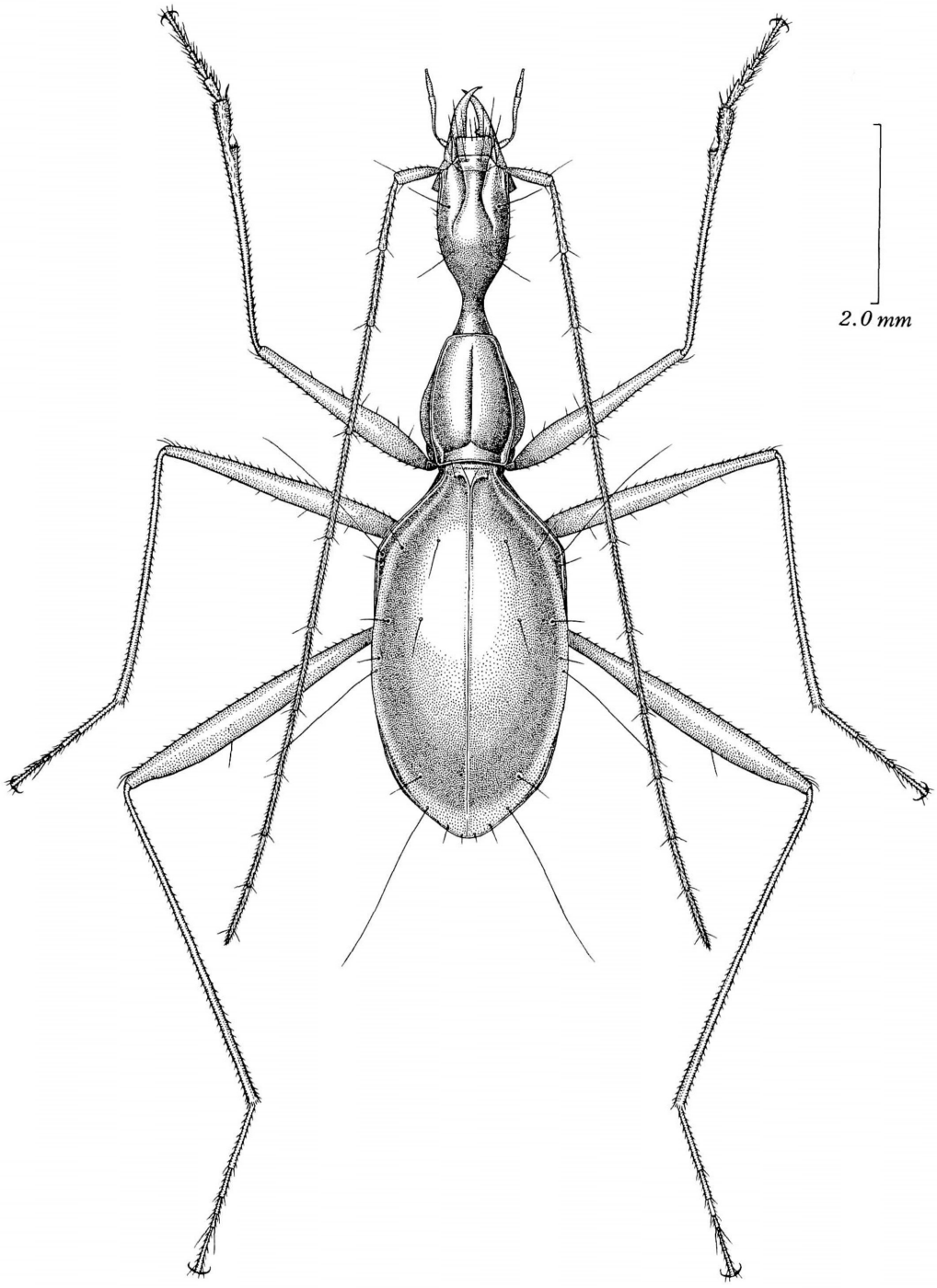
Type species: *Sinaphaenops mirabilissimus* S. UÉNO et F. WANG, sp. nov.

An aphaenopsoid genus showing the highest morphological modification adaptive to subterranean existence. Probably related, though remotely, to the members of the *Erebotrechus* series, but distinguished at first sight from them, and also from all the other known genera of the subfamily, by the peculiar conformation of head, complete absence of marginal setae on pronotum, and the unique arrangement of marginal umbilicate pores on elytra.

Habitus aphaenopsoid or rather leptodiroid, with very long head and prothorax and hemi-ovoidally convex elytra; surface completely glabrous on dorsum but sparsely pubescent on abdominal sternites; all appendages extremely long and slender; inner wings absent. Colour reddish brown, translucent and shiny.

Head very long and narrow, much longer than prothorax, with very slender neck constriction shaped like a long hourglass; frontal furrows incomplete, fairly deep and almost straight in front, sinuate behind, and obsolete before the level of posterior supraorbital seta; eyes completely vanished, without trace of preocular line; genae gradually convergent behind, each provided with several fairly long hairs at the lower part; two pair of supraorbital setae present on lines convergent behind, the posterior pair very widely distant from the anterior; labrum transverse, very slightly emarginate at apex. Mandibles very slender, tridentate, feebly arcuate, and acute at the apices. Labium completely fused though trace of labial suture is perceptible by transparency; mentum provided with a porrect tooth in apical emargination, which is either simple or very slightly notched at the tip; submentum sexsetose; ligula semicircularly produced, octosetose; paraglossae moderately arcuate, extending much beyond ligula; labial palpus long and very slender, penultimate segment only slightly dilated at the apex and quadrisetose, apical one about three-fourths as long as the penultimate, subcylindrical though slightly dilated at proximal two-fifths. Maxillae very slender, only a little shorter than mandibles; lacinia gently arcuate and sparsely provided with thin recurved spines and hairs on the inner margin; maxillary palpus very long and slender, completely glabrous, penultimate segment subcylindrical in basal half and then gradually dilated towards the apex, apical segment about seven-eighths as long

Fig. 1. *Sinaphaenops mirabilissimus* S. UÉNO et F. WANG, gen. et sp. nov., ♂, from Tian-zhong Dong Cave in Southeast China.


2.0 mm

as the penultimate, slightly dilated at basal two-fifths, and subcylindrical in apical third. Antennae exceedingly long and slender, extending much beyond the apices of elytra, scape the shortest, though thickest, of all the segments, followed by the penultimate, which is obviously shorter than segment 2 and slightly shorter than the terminal, segment 4 the longest.

Prothorax elongate, much longer than wide though wider than head, widest at about basal two-fifths and more gradually narrowed towards apex than towards base, which is much wider than the former; pronotal sides finely but entirely bordered, gently arcuate only near the widest part and hardly sinuate before hind angles, the fine borders continuing onto apex and base; both front and hind angles rounded; marginal setae totally absent; dorsum convex, with a distinct median line which reaches neither apex nor base; basal transverse impression sulciform and continuous, though arcuate on each side and forming an obtuse re-entrant angle at the middle; basal foveae small and narrow, extending anteriorly along the side borders; no postangular carinae. Propleura remarkably tumid and widely visible from above outside the side borders. Scutellum small though distinct.

Elytra ovate, much wider than prothorax, very strongly convex, and fused together, with narrowly peduncled bases, oblique prehumeral borders, distinct shoulders, and narrowly rounded apices; basal area foveolate between suture and basal setiferous pore; side borders complete from basal peduncle to apex, but invisible from above at the middle part due to lateral expansion of dorsum; striae and strioles totally vanished; two setiferous dorsal pores present on the site of stria 3; preapical pore absent; two apical pores present, the smaller posterior one adjoining the border at the apical corner, and the larger anterior one near the side border; marginal series of umbilicate pores not aggregated, the first pore widely distant from marginal gutter and lying just in front of the level of the second pore, the second and third pores adjoining marginal gutter and very near to each other, the fourth pore widely distant from the third and also from marginal gutter, and nearer to the fifth pore than to the third, the fifth and sixth pores also distant from marginal gutter, close to each other and lying at the two ends of a short groove, the seventh and eighth pores not unusually spaced, both not adjoining marginal gutter, and the former being widely removed from it.

Ventral surface smooth except for abdominal sternites; prosternum sparsely provided with setae of various lengths along the median line; prosternal process curved ventrad and remarkably dilated between conical procoxae; mesosternum narrowly peduncled anteriad, with the process angulately dilated between conical mesocoxae; metasternum short and transverse, with the process long, fairly broad and finely bordered. Abdominal sternites, inclusive of the anal one in ♂, each provided with two pair of setae along the posterior margin, and sparesely pubescent except for lateral parts.

Legs exceedingly long and very slender; pro- and mesocoxae large and conically protruding; pro- and mesotrochanters elongate; protibiae straight, moderately dilated in apical third and with toilet organ at about apical fifth, entirely pubescent, and not

externally grooved; tarsi thin though not exceedingly long, segment 1 much longer than segments 2–4 together in mesotarsus, about as long as the latter in metatarsus, segment 4 with a long hyaline ventral apophysis in pro- and mesotarsi; in ♂, protarsal segments 1 and 2 elongate though moderately dilated, the former being about twice as long as wide, each narrowly spurred inwards at the apex and furnished beneath with sexual adhesive appendages.

Male genitalia very small; aedeagus short, depressed, widely open on dorsum, and surmounted with large membraneous sac, with elongate basal part widely open ventrad and rather short apical lobe obtusely tuberculate at the tip; sagittal aileron present; inner sac scaly though the scales are hardly sclerotized, and armed with a large anisotopic copulatory piece, which is higher than lateral walls of aedeagus; styles not large, each bisetose at the apex.

Notes. Because of the extreme modification of its external morphology, it is difficult to determine with confidence the true affinity of this strange genus. It looks like a member of the *Aphaenops* series in many respects (cf. JEANNEL, 1928, pp. 24–25, 140–251; CASALE & LANEYRIE, 1982, pp. 24–26, 157–175), and has several important features, including the peculiar shape of prothorax, in common with *Sardaphaenops* CERRUTI et HENROT (1956, p. 121) from Sardinia, one of the most specialized aphaenopsoid trechines in the world. However, the resemblance seems to have been brought about through convergence, merely showing that the two genera are at the ultimate stage of subterranean evolution of trechine beetles. *Sinaphaenops* has tridentate mandibles, which are not found in any genera belonging to the *Aphaenops* series.

Sinaphaenops differs from the relatives of *Aphaenops* also in evolutionary trend. It shows a leptodiroid modification of hind body, which is hemi-ovoid and typically physogastric, whereas none of the latter genera show indication of this type of specialization. In this respect, *Sinaphaenops* resembles *Gulaphaenops* S. UÉNO (1987, p. 3) from the Korean Peninsula, but the latter is related to the genus *Suzuka* of the *Trechoblemus* series as was already pointed out by the senior author (UÉNO, 1987, p. 2, 1989, pp. 20–21) and does not seem to belong to the same phyletic group with the former.

The most probable candidates that may have some relationship with *Sinaphaenops* seem to the authors to be the members of the *Erebotrechus* series from New Zealand. This genus-group has so far been known from two aphaenopsoid species, *Erebotrechus infernus* BRITTON (1964, p. 625, fig. 1) and "*Duvaliomimus*" *lamberti* BRITTON (1960, p. 34, fig. 1), the latter of which actually belongs to a new genus related to *Erebotrechus*.[1] Both have tridentate mandibles, and though not comparable with *Sinaphaenops*, they show a trend of undergoing leptodiroid modification. This is particularly apparent in "*Duvliomimus*" *lamberti*, whose fore-body is very narrow and whose elytra are strongly convex. Unfortunately, BRITTON's descriptions and illustrations of these aphaenopsoid trechines are not only inadequate but misleading in certain critical points. For instance, the humeral set of marginal umbilicate pores on elytra is not

1) It is unfortunate that the authors cannot cite the new generic name, which is supposed to be given by Mr. J. I. TOWNSEND together with full redescriptions of these remarkable trechine beetles.

aggregated in both the species, contrary to BRITTON's account of "setiferous punctures of the elytra as in *Duvaliomimus*."

Needless to say, there is a very wide geographical gap between Southeast China and South Island of New Zealand, so that relationship between *Sinaphaenops* and the *Erebotrechus* group may not be direct. In fact, the latter is different from the former in the number of submental setae (eight instead of six), in the chaetotaxy of pronotum and elytra, in the structure of protibiae, and so on. This may mean that *Sinaphaenops* forms its own group remotely related to the *Erebotrechus* series. However, a similar faunal relationship between East Asia and New Zealand is already known in the Trechinae, that is, Japanese *Thalassoduvalius* is related to New Zealand *Duvaliomimus* (cf. UÉNO, 1956, 1978), and the common ancestor of these genera is considered to have originated in the Asian Continent, most probably somewhere in Mainland China. Perhaps, the ancestral beetle that gave rise to *Sinaphaenops* and the *Erebotrechus* series also originated in the Asian Continent, but its descendants became so much differentiated through long isolation under the earth that evidences to corroborate their direct relationship may have become more and more obscured (cf. UÉNO, 1982).

Sinaphaenops mirabilissimus S. UÉNO et F. WANG, sp. nov.

(Figs. 1–3)

Length: 7.60–8.30 mm (from apical margin of clypeus to apices of elytra).

A large species of peculiarly modified facies, with very long fore-body, hemi-ovoidally convex elytra, and exceedingly long appendages. Colour reddish brown, shiny except for elytra which are dull shining, with lighter apical halves of antennae; palpi pale yellowish brown.

Head very long and narrow, barely two-fifths as wide as long, widest at about apical third and about four-fifths as high as wide at that part, subparallel-sided in front, gradually narrowed behind into very narrow, cylindrical neck constriction, which is only one-third as wide as the widest part, and then dilated again towards prothoracic articulation, which is fully 1.5 times as wide as the narrowest part; dorsum convex, especially in an area before the middle surrounded by the posterior parts of frontal furrows; frons longitudinally convex, supraorbital areas less so; frontal furrows almost straight and gradually convergent posteriad in the anterior parts, externally arcuate just before the level of anterior supraorbital pore, and then roundly sinuate and obsolete before the level of posterior supraorbital pore; microsculpture sharply impressed, mostly consisting of transverse meshes in anterior part and on neck, but largely of transverse lines in posterior part before neck constriction; genae feebly arcuate in dorsal view; antennae extremely long and very thin, extending beyond the apices of elytra at least by two apical segments and the apical half of the 9th, scape the shortest though thickest, fully 1.5 times as wide as segment 2 and nearly 3 times as wide as terminal segment, segments 2–10 each cylindrical except for gentle apical dilatation, segment 2 nearly 1.5 times as long as scape and equal in length to

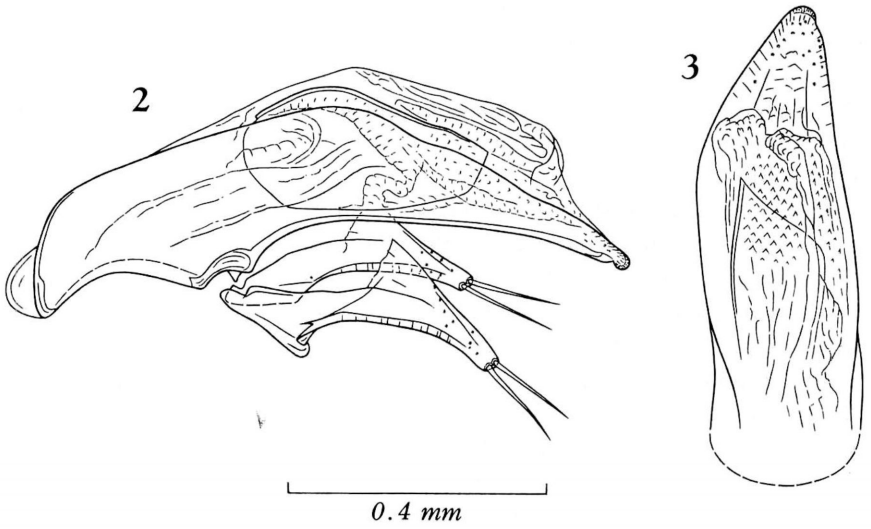
segment 8, segment 4 the longest and about 16.5 times as long as median width, segments 5–9 gradually decreasing in length towards apex, segment 9 about 11 times as long as median width, segment 10 a little longer than scape but slightly shorter than terminal segment, which is nearly 10 times as long as wide; relative lengths of antennal segments from base to apex as follows: 1.00, 1.43, 1.57, 2.29, 2.19, 1.95, 1.64, 1.43, 1.30, 1.12, 1.20.

Prothorax elongate with prolonged apical part, wider than head, much longer than wide, widest at about basal two-fifths, and more gradually narrowed towards apex than towards base; PW/HW 1.36–1.38, PL/PW 1.40–1.43; pronotum narrow though still wider than head, PNW/HW 1.17–1.21, PL/PNW 1.57–1.67; all pronotal margins finely and continuously bordered; pronotal sides gently arcuate at the widest part, nearly straight in front and very slightly arcuate near front angles, and without appreciable ante-basal sinuation; apex very narrow and truncated, with front angles narrowly rounded and not produced; base much wider than apex, slightly emarginate on each side; hind angles effaced and widely rounded; PNW/PA ca. 2.30–2.38, PNW/PB ca. 1.38–1.41, PB/PA ca. 1.66–1.68; dorsum longitudinally convex, especially at the anterior part, with rather steep apical declivity; median line deeply impressed in basal two-thirds, though not extending onto basal area; microsculpture distinct, mostly consisting of very transverse meshes, and partially of transverse lines; apical transverse impression very deep and narrow, widened and longitudinally strigose at the median part, and laterally entering into small basal foveae, which are deep and smooth at the bottom; propleura strongly convex, especially at the posterior parts.

Elytra ovate, much wider than prothorax, and much longer than wide, widest at about two-fifths from bases or a little behind that level; EW/PW 2.01–2.14, EL/EW 1.69–1.81; dorsum very strongly convex, higher than a half the width of elytra, and laterally expanded at about middle so as to conceal reflexed side borders from dorsal view; meshes of microsculpture coarse, almost isodiametric or somewhat transverse throughout; basal parts briefly pedunculate, each elytron with a distinct basal foveole near suture; shoulders distinct, very obtusely angulate; prehumeral borders long, oblique, very slightly sinuate, and complete to basal peduncle; sides subparallel from behind shoulders to apical two-fifths, then gently arcuate to the level of the apicalmost pore of the marginal umbilicate series, and narrowly and conjointly rounded at apices, with very slight preapical emargination; setiferous dorsal pores situated at about one-sixth and two-fifths from base respectively, the anterior one lying sightly before the level of the first pore of the marginal series and the posterior one at about the level of the fourth umbilicate pore.

Ventral surface and legs as described under the genus; metatibia only a little shorter than elytra; tarsi slender though not very long, protarsus about three-sevenths as long as protibia, meso- and metatarsi about three-fifths as long as respective tibiae.

Male genital organ very small though moderately sclerotized. Aedeagus a little less than two-ninths as long as elytra, short, depressed, only slightly arcuate, and widely membraneous on dorsum, with large basal part gently curved ventrad; viewed laterally,



Figs. 2–3. Male genitalia of *Sinaphaenops mirabilissimus* S. UÉNO et F. WANG, gen. et sp. nov., from Tian-zhong Dong Cave in Southeast China; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

apical half gradually narrowed towards apex; viewed dorsally, apical half nearly parallel-sided to the level of apical orifice and ending in a subtriangular apical lobe; apical lobe inclined to the left, slightly curved ventrad, and left ventrally tuberculate at the tip, which is blunt in lateral view, narrowly rounded in dorsal view; basal orifice very large, almost horizontal, and widely emarginate at the sides; sagittal aileron small though moderately sclerotized; ventral margin nearly straight at middle in profile. Copulatory piece very large, about two-fifths as long as aedeagus, irregularly subovate with pointed right dorsal corner, and rather heavily sclerotized along the dorsal margin. Styles short with narrow apical parts, left style much larger than the right, each bearing two short setae at the apex.

Female unknown.

Type series. Holotype ♂ (preserved in glycerine-alcohol) and 2 ♂♂ (dried), 29–I–1991, WANG Fuxing leg. The holotype is preserved in the Chinese Museum of Karst Geology, Institute of Karst Geology, Guilin.

Type locality. Limestone cave called Tian-zhong Dong, at Mao-lan of Libo County, in Guizhou Province, Southeast China.

Notes. The type locality of this remarkable new species, Tian-zhong Dong, is a limestone cave lying at an altitude of 750 m. The cave is of moderate size, with the galleries of about 550 m in total length. The trechine beetle was discovered at a spot about 100 m removed from the entrance. It is a prowler on stalagmitic walls, all the known specimens having been found crawling on moist stalagmites.

要　　約

上野俊一・王 福星：中国南東部で発見された極限のアシナガメクラチビゴミムシ.—— 中国大陸には，広大な石灰岩地帯と数えきれないほど多くの洞窟があるが，局地的とはいえかなり綿密な探索が行なわれたにもかかわらず，無眼のチビゴミムシ類が発見されたことはこれまでになかった．ところが，今年の1月末に，貴州省南東部の茂兰にある天钟洞で，頭部（とくに頸部）や前胸部が異常なまでに伸長し，上翅が膨隆して背の高い気室をつくり，触角や肢の極端に細長いメクラチビゴミムシの1種が見つかった．極限まで特殊化の進んだこのチビゴミムシは，疑いの余地もない新属新種で，世界的にみても比べうるものがない．それで，*Sinaphaenops mirabilissimus* という新名を与えて，この論文に記載した．

いちじるしい形態的変化のために，この特異な属の系統関係を決定するのは容易でないが，大顎の構造や膨腹現象をともなう特殊化の傾向からみて，おそらくニュージーランドの洞窟から知られる2属に，遠い類縁をもつものではないかと考えられる．ニュージーランドに北半球起源の昆虫類がかなり多いことはよく知られている事実で，チビゴミムシ類の場合にもイソチビゴミムシの例がある．中国のアシナガメクラチビゴミムシとニュージーランドのものとの関係は，イソチビゴミムシの場合ほど密接ではないが，中国大陸が多くのチビゴミムシ類をはぐくんだ地域のひとつであることを示す証拠になるかもしれない．

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Elytra, *Tokyo*, **19** (1): 136, May 15, 1991

A New Record of *Yamautidius latipennis* (Coleoptera, Trechinae)

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Yamautidius (*Yamautidius*) *latipennis* (S. UÉNO) (1960, p. 67, figs. 1–2; 1982, pp. 13, 44, figs. 40–41) is one of the rare species of Japanese trechines, so far known from two small collections made in a small limestone cave, Minamiyama-dô, which is located at Shimogendai of Minamiyama in Oda-machi at the western part of the Island of Shikoku. Recently, a specimen of an eyeless trechine beetle was collected by Mr. Hiroyuki KIYOHARA in a limestone cave about 2.7 km north-northwest of Minamiyama-dô, and was identified with *Y. latipennis* though slightly differing from the specimens of the type population in details of both external and genitalic features. Its collecting data are as given below.

1 ♂, Ryû'ô-dô Cave, Tenjinshita, Tatéishi, Oda-machi, Ehimé Pref., 5–III–1991, H. KIYOHARA leg. (NSMT).

The two caves, Minamiyama-dô and Ryû'ô-dô, lie in the Oda-gawa drainage but belong to different tributaries of the river. Their locations are also different in altitude, the former (ca. 380 m above sea-level) being about 200 m higher than the latter (ca. 180 m above sea-level). The single specimen known from the new locality was found at a spot about 100 m removed from the entrance.

In closing this brief report, I wish to thank Mr. Hiroyuki KIYOHARA, Dr. Kazuo ISHIKAWA and Mr. Tadashi YAMAUCHI for their kindness in submitting the invaluable specimen to me for taxonomic study.

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Elytra, Tokyo, 19 (1): 137–140, May 15, 1991

Occurrence of a New Anophthalmic *Trechiama* (Coleoptera, Trechinae) on the Yüshan Mountains in Central Taiwan[1)]

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Abstract A new anophthalmic species of the trechine genus *Trechiama* is described from the northeastern part of the Yüshan Mountains in central Taiwan, under the name of *T. cuancao*. It is upper hypogean, occurring at high elevations above 2,500 m in altitude.

Since the first eyeless species was discovered in the subalpine zone of Mt. Hsüeh Shan (cf. UÉNO, 1989), our knowledge about subterranean members of Taiwanese trechine beetles has become rapidly enriched (UÉNO, 1990, 1991), and now we have records of four species of two genera, *Trechiama hamatus* S. UÉNO, *T. chui* S. UÉNO, *Masuzonoblemus tristis* S. UÉNO and *M. humeratus* S. UÉNO. All of them occur on high mountains, and are either endogean or upper hypogean in the subalpine zone.

In the present paper, I am going to add one more anophthalmic trechine beetle to the subterranean fauna of Taiwan. It is a new *Trechiama* of the *hamatus* group discovered by the autumn expedition 1990. This new species is typically upper hypogean, and seems to be restricted to the immediate vicinities of several gullies at the northeastern part of the Yüshan Mountains. The abbreviations used herein are the same as those explained in other papers of mine.

In preparing this report, I am much indebted to Professor Yau-I CHU and Mr. Chiun-chen KER for their kind collaboration, and to Professor Jun-ichi AOKI and Professor Yoshiaki NISHIKAWA for their unfailing aid in the field.

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

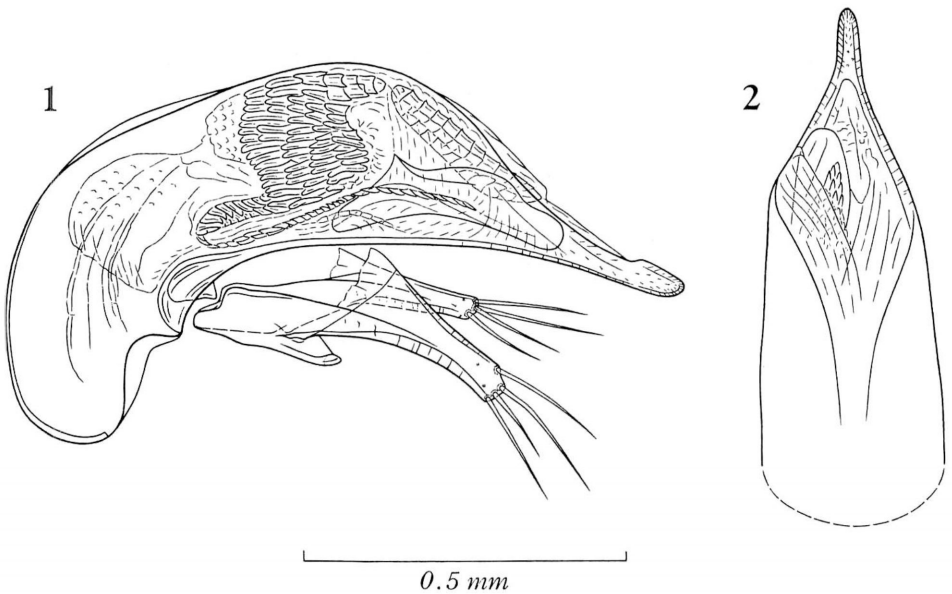
(Figs. 1–2)

Length: 4.65–5.10 mm (from apical margin of clypeus to apices of elytra).

Externally very close to *T. chui* S. UÉNO (1990, p. 26, figs. 5–6) from Mt. Nengkao-pei-feng, and barely distinguishable from it by slight difference in the shape of prothorax, but its male genitalia are markedly different from those of *T. chui*, above all in configuration of aedeagal apical lobe, copulatory piece, and teeth-patches.

Colour as in *T. chui*. Head and elytra similar to those of *T. chui*, with the excep-

1) This study is supported by the Grant-in-aid No. 01041099 for Field Research of the Monbusho International Scientific Research Program, Japan.



Figs. 1–2. Male genitalia of *Trechiama* (s. str.) *cuancao* S. UÉNO, sp. nov., from Kuan-kao on the Yüshan Mountains; left lateral view (1), and apical part of aedeagus, dorso-apical view (2).

tion of apical striole, which is longer and less arcuate, usually joining or directed to stria 7; antennae reaching apical two-fifths of elytra. Pronotum widest at about three-fourths from base, rather abruptly narrowed in front and more gradually so towards ante-basal sinuation; sides more briefly and strongly arcuate in apical third than in *T. chui*, very slightly so at middle, shallowly sinuate at a level between basal seventh and sixth, and then either subparallel or slightly divergent towards hind angles; front angles more obtuse than in *T. chui*; other pronotal features as in *T. chui*. Standard ratios of body parts as follows: PW/HW 1.32–1.39 (M 1.36), PW/PL 0.98–1.08 (M 1.03), PW/PA 1.44–1.53 (M 1.49), PW/PB 1.37–1.44 (M 1.40), PB/PA 1.03–1.11 (M 1.06), EW/PW 1.64–1.77 (M 1.71), EL/EW 1.60–1.69 (M 1.64). Legs as in *T. chui*.

Male genital organ generally similar to that of *T. chui*, but larger and more robust. Aedeagus slightly more than one-third as long as elytra, high at about middle though hardly arcuate, with large basal part strongly bent ventrad and almost straight apical lobe; basal orifice relatively small, with the sides deeply emarginate; sagittal aileron absent; dorsal margin almost semicircularly rounded in profile, ventral margin almost straight at middle; apical lobe narrow and compressed, slightly curved ventrad but slightly reflexed in apical half, and blunt at the extremity. Inner sac scaly, especially in apical part, though the scales are hardly sclerotized, and armed with a copulatory piece and two large patches of heavily sclerotized teeth; copulatory piece about one-third as long as aedeagus, spatulate in basal half, narrow in apical part, and

narrowly rounded at the apex; proximal teeth-patch very large, left lateral, wide at middle, and sigmoidally curved, with a row (partially rows) of teeth continuing from the ventro-proximal end of the teeth-patch and narrowly extending posteriad to the left side of copulatory piece; dorso-apical teeth-patch also very large, compact though still bearing perceivable component teeth, and not protruding from apical orifice. Styles as in *T. chui* though more slender, each bearing four setae at the tip.

Type series. Holotype: ♂, allotype: ♀, Chun-ta Lin-tao, 2,560 m alt., 23–X–1990, Y. NISHIKAWA leg. Paratypes: 1 ♂, same data as for the holotype; 1 ♀, Chun-ta Lin-tao, 2,550 m alt., 26–X–1990, S. UÉNO leg.; 1 ♂ (teneral), 4 ♀♀ (incl. 1 teneral), Pa-t'ung-kuan Ku-tao, 2,720 m alt., 23–X–1990, S. UÉNO & Y. NISHIKAWA leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Kuan-kao (Chun-ta Lin-tao on the eastern side and Pa-t'ung-kuan Ku-tao on the western side), 2,550–2,720 m in altitude, on the Yüshan Mountains, in Hsin-i Hsiang of Nan-t'ou Hsien, central Taiwan.

Notes. This new species doubtless belongs to the group of *Trechiama hamatus* so far known from two species occurring on Mt. Neng-kao-pei-feng, and seems particularly close to *T. chui* as is indicated by similarity of their male genitalia. It is, however, considerably different from *T. chui* in details of the inner armature, and cannot be regarded as a geographical race of the latter species. It is probable that an ancestral trechine of the *chui* type first colonized high mountains of central Taiwan, became differentiated into sister species, and on certain mountains, also gave rise to more specialized forms like *T. hamatus* of Mt. Neng-kao-pei-feng.

Kuan-kao is an abandoned village lying at the northeastern part of the Yüshan Mountains, which branch off from the Chung-yang Mountain Range, and is about 67 km distant to the south-southwest from Mt. Neng-kao-pei-feng, a peak on the Chung-yangs. A narrow ridge coming down from Mt. Pa-t'ung-kuan Shan (3,335 m in height) passes through Kuan-kao, and extends northwestwards to Mt. Chun-ta Shan (2,703 m in height) and other lower peaks. *Trechiama cuancao* was found on either side of this steep ridge, and though it is extremely difficult to cross it from one collecting site to the other, the distance between them is only about 400 m in a beeline. At every site, the beetle was dug out from a colluvium of shale deposited at the foot of a cliff with trickling water, or in other words, at the very head of a small gully. It was not so active when exposed, and was easily caught with an aspirator.

The new specific name *cuancao* is derived from a Latinized spelling of Kuan-kao, the type locality.

要　　約

上野俊一：台湾玉山山地で得られたナガチビゴミムシ属の盲目種．—— 台湾の中央部，玉山山地の北東部に位置する観高から，ナガチビゴミムシ属の1新種を記載し，*Trechiama cuancao* S. UÉNO と命名した．この新種は，*Trechiama hamatus* 群に属し，外観が *T. chui* S. UÉNO に酷似してい

るが，雄交尾器，とくに交尾片の形状のいちじるしい相違によって，容易に識別できる．

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Elytra, Tokyo, **19** (1): 140, May 15, 1991

Pterostichus shibatai ISHIDA (Coleoptera, Carabidae) from the Taikou Mountains of the Kii Peninsula, Central Japan

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In one of my previous papers (1990, p. 182), I made the comment that *Pterostichus shibatai* ISHIDA (1961, pp. 7–8) had never been found on Mt. Ohdaigahara-zan and was almost certainly not extant on the mountain. Very recently, however, I received four specimens of this pterostichine carabid obtained by Mr. Nobuyuki NARUKAWA in the Chichigatani Valley, which is about 10 km distant to the north-northeast from Mt. Ohdaigahara-zan. Zoogeographically, they are useful for filling a wide blank in our knowledge about the distributional range of this beetle. Their collecting data are as given below:

4 ♂♂, Chichigatani Valley, Miyagawa-mura, Mie Pref., 5–V–1989, N. NARUKAWA leg.

I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reading the manuscript of this paper. My thanks are also due to Mr. Nobuyuki NARUKAWA for his kind help.

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Elytra, Tokyo, **19** (1): 141–149, May 15, 1991

Nouveaux *Carabus* (*Apotomopterus*, *Eucarabus*, *Oreocarabus*, *Megodontus*) du Yunnan, du Qinghai et du Jiangxi

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Abstract Two new species and two new subspecies of the genus *Carabus* (s. lat.) are described from the mountainous regions of China: *Carabus* (*Apotomopterus*) *elegantcollis* sp. nov. from Jiangxi, *C.* (*Eucarabus*?) *roborowskii lajiensis* subsp. nov. from Qinghai, *C.* (*Oreocarabus*) *rhododendron* sp. nov. and *C.* (*Megodontus*) *taliensis kezukai* subsp. nov. from Yunnan. *C.* (*Pagocarabus*) *wagae schmidi* BREUNING hitherto known only from Sikkim are recorded from Northwest Yunnan.

Ce travail fait suite à un premier article publié récemment dans cette même revue (DEUVE & IMURA, 1990), par lequel nous entamions des recherches portant sur l'inventaire en cours de réalisation des espèces chinoises du genre *Carabus* L. (=sous-tribu Carabina). Plusieurs entomologistes ont bien voulu nous confier l'étude de spécimens de leurs collections, récoltés par eux-même ou qui leur ont été communiqués par d'autres, et nous donnons ci-dessous les descriptions ou diagnoses des taxons qui se sont avérés nouveaux pour la science.

Il nous faut signaler par la même occasion les captures d'espèces peu connues, comme *Carabus* (*Acathaicus*) *idolon* SEMENOW (Gansu: Wen Xian, 1.100 mètres) et *C.* (*Eucarabus*) *degensis* DEUVE (Sichuan: Col de Chola, 4.800 mètres). Plus intéressant, une forme bien caractérisée de *Carabus* (*Pagocarabus*) *wagae* FAIRMAIRE, décrite du Sikkim sous le nom de *schmidi* BREUNING, a été retrouvée identique dans les hautes montagnes du Yunnan, c'est-à-dire à plus de mille kilomètres de distance de la seule localité précédemment connue. Ceci illustre, s'il était besoin, l'ampleur, mais aussi l'intérêt, du travail qui reste à accomplir pour une connaissance et une compréhension de la répartition et de la variation géographiques des espèces déjà répertoriées. En règle générale, pays au relief accidenté et souvent de hautes montagnes, le domaine chinois favorise l'isolement des populations et donc la diversification des espèces.

Nous tenons à remercier vivement le Dr. Shun-Ichi UÉNO, du National Science Museum (Nat. Hist.) de Tokyo, qui a accepté ce manuscrit pour publication dans la revue *Elytra*. Notre gratitude s'exprime également à l'intention de MM. Hisatoshi

KEZUKA, Satoshi KOIWAYA, Kunio KUME et Hiroshi MIYAMA, pour la confiance témoignée par leur précieuse collaboration.

1. *Carabus* (*Apotomopterus*) *eleganticollis* DEUVE et IMURA, n. sp.

(Figs. 1, 5)

Holotype: 1 ♂, Chine, Jiangxi, Mont Lu Shan (octobre 1987), *in* coll. National Science Museum (Nat. Hist.), Tokyo. Paratypes (dont allotype): 1 ♂, 9 ♀♀, même provenance, *in* coll. Y. IMURA.

Longueur: 27,5–28,5 mm. Largeur: 9,0–9,5 mm. Noir concolore modérément luisant, sans reflets métalliques. Appendices noirs.

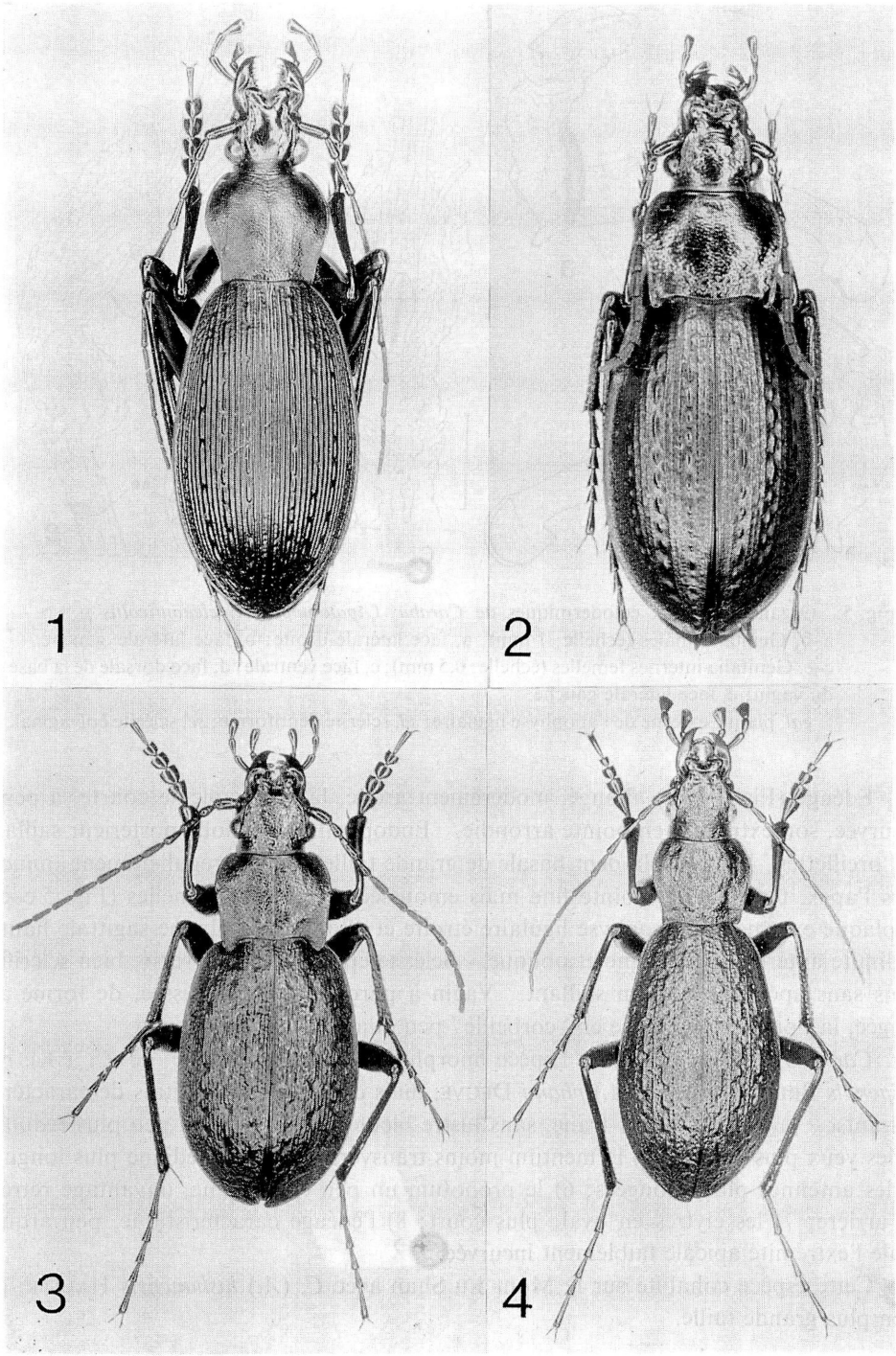
Tête moyenne, les yeux assez grands et proéminents, hémisphériques. Front et vertex modérément convexes, presque lisses, très faiblement ridulés, finement microponctués. Fossettes frontales peu profondes, estompées en arrière à hauteur des orbites. Labre à peine plus large que le clypéus, le bord antérieur fortement incurvé. Mandibules courtes, sans particularité. Palpes moyens, le dernier article modérément dilaté; l'avant-dernier article des palpes maxillaires plus long que le dernier; l'avant-dernier labial dichète (holotype) ou trichète (allotype). Dent médiane du mentum fine et aiguë, toutefois un peu plus courte que les lobes latéraux. Submentum bisétulé. Antennes longues, atteignant (♀) ou dépassant (♂) le milieu des élytres, dépassant en arrière de 5,5 articles la base du pronotum; le 4ème article plus long que le 2ème.

Pronotum un peu cordiforme, 1,17 fois plus large que long, sa plus grande largeur à peine avant le milieu, les côtés très nettement sinués en arrière avant les angles postérieurs qui sont petitement lobés, le sommet aigu mais mousse. Disque modérément convexe, finement mais densément ridulé-grumeleux, les gouttières latérales non marquées, les rebords marginaux en un fin ourlet de rebordement à peine relevé. Sillon médian fin. Fossettes basales à peine indiquées. Une (holotype) ou deux (allotype) soies marginales médianes; une soie basale.

Elytres modérément convexes, en ovale très allongé, davantage rétrécis en avant qu'en arrière, la plus grande largeur après le milieu. Epaules étroites, arrondies. Sommet à peine sinué chez le mâle, faiblement échancré chez la femelle, l'angle latéro-apical alors obtus et émoussé. Sculpture triploïde homodyname, les stries presque lisses, très faiblement ponctuées par endroit. Intervalles primaires interrompus en assez courts chaînons par des fossettes ponctiformes; les intermédiaires réguliers et égaux entre eux.

Pattes moyennes, assez longues, les protarses du mâle fortement dilatés et munis de phanères adhésifs, le 4ème article alors à peu près aussi large que le 3ème. Apophyse prosternale glabre dans les deux sexes. Propleures lisses, les métépisternes très faiblement ponctués. Ventrites abdominaux sillonnés.

Figs. 1–4. Habitus des holotypes des taxons nouveaux, vue dorsale. — 1, *Carabus* (*Apotomopterus*) *eleganticollis* n. sp.; 2, *C.* (*Eucarabus*?) *roborowskii lajiensis* n. subsp.; 3, *C.* (*Oreocarabus*) *rhododendron* n. sp.; 4, *C.* (*Megodontus*) *taliensis kezukai* n. subsp.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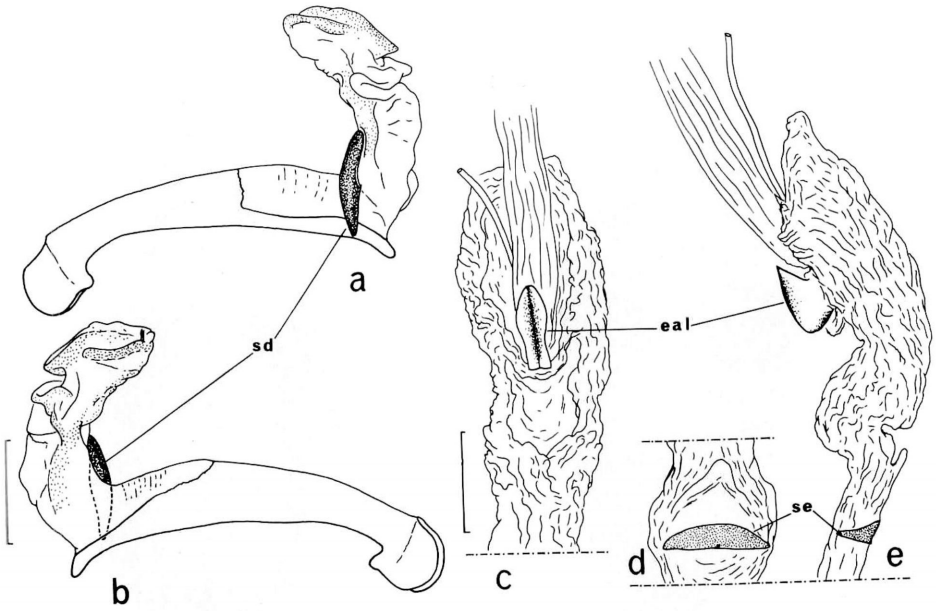

Fig. 5. Organes génitaux ectodermiques de *Carabus* (*Apotomopterus*) *eleganticollis* n. sp. — a–b, Genitalia mâles (échelle: 1 mm); a, face latérale droite; b, face latérale gauche. — c–e, Genitalia internes femelles (échelle: 0,5 mm); c, face ventrale; d, face dorsale de la base du vagin; e, face latérale gauche.

eal, plaque externe de l'apophyse ligulaire; *sd*, sclérite dentiforme; *se*, sclérite épivaginal.

Edéage (Fig. 5 a–b) allongé, modérément arqué, la lame apicale courte, à peine incurvée, son extrémité en pointe arrondie. Endophallus sans lobe postérieur saillant ni "oreillettes" latérales, la dent basale de grande taille, longue, régulièrement amincie vers l'apex, terminée en pointe fine mais émoussée. Genitalia femelles (Fig. 5 c–e): la plaque externe de l'apophyse ligulaire étroite et allongée; la plaque sagittale haute, sa limite antérieure rectiligne et oblique. Sclérite épivaginal transverse, bien sclérifié, mais sans apodème médian saillant. Vagin à paroi fortement plissée, de forme allongée, la bourse copulatrice en "corbeille" peu dilatée transversalement.

Caractères diagnostiques. Espèce morphologiquement proche de *C.* (*A.*) *cyanipennis* BREUNING et *C.* (*A.*) *phami* DEUVE, mais distincte par les états de caractères suivants: 1) le coloris noir franc, sans lustre bleuté; 2) la taille un peu plus réduite; 3) les yeux plus grands; 4) le mentum moins transverse, le dent médiane plus longue; 5) les antennes plus allongées; 6) le pronotum un peu cordiforme, davantage rétréci en arrière; 7) les élytres en ovale plus court; 8) l'édéage caractéristique, peu arqué, seule l'extrémité apicale faiblement incurvée.

Cette espèce cohabite sur le Mont Lu Shan avec *C.* (*A.*) *lushanensis* HAUSER, de bien plus grande taille.

2. ***Carabus* (*Eucarabus*?) *roborowskii lajiensis*** DEUVE et IMURA, n. subsp.

(Fig. 2)

Holotype: 1 ♀, Chine, Qinghai, à l'ouest de Xining, Laji Shan, 3.650 mètres (7 juillet 1987), *in* coll. National Science Museum (Nat. Hist.), Tokyo. Allotype: 1 ♀, même provenance, *in* coll. Y. IMURA.

Longueur: 19,0 mm. Largeur: 7,0 mm. Coloris brun cuivré uniforme, les appendices noirs, seuls les fémurs rougeâtres. Pronotum: lt/Lt=1,33.

Morphologiquement proche de *sininensis* SEMENOW, *lajjensis* s'en distingue par: 1) la taille à peine plus réduite; 2) les articles distaux des antennes plus courts; 3) les élytres plus courts et moins rétrécis en avant, aux côtés davantage arqués, les intervalles quaternaires de la sculpture plus réduits.

Il faudra connaître le mâle pour préciser le statut de ce taxon, qui pourrait représenter une bonne espèce.

3. ***Carabus* (*Oreocarabus*) *rhododendron*** DEUVE et IMURA, n. sp.

(Figs. 3, 6)

Holotype: 1 ♂, Chine, Yunnan nord-occidental, environs de Dêgên, Monts Hengduan Shan, Mont Baimaxue Shan, 4.300 mètres (27–30 mai 1989), *in* coll. National Science Museum (Nat. Hist.), Tokyo. Paratypes: 1 ♂, 1 ♀ (allotype), même provenance, (26–31 mai 1989), *in* coll. Y. IMURA.

Longueur: 16,5–17,0 mm. Largeur: 6,0–6,5 mm. Coloris variable, brun cuivré à vert cuivré, les appendices noirs.

Tête moyenne, les yeux saillants, le front et le vertex modérément convexes, très fortement ridulé-ponctué. Fossettes frontales faibles et courtes. Labre à bord antérieur incurvé. Mandibules courtes, sans particularité, la dent térébrale saillante à droite, effacée à gauche. Palpes à dernier article peu dilaté; l'avant-dernier article maxillaire plus court que le dernier; l'avant-dernier labial dichète. Dent médiane du mentum très fine et aiguë, un peu plus courte que les lobes latéraux. Submentum bisétulé. Antennes moyennes, atteignant (♀) ou dépassant (♂) le tiers antérieur des élytres et dépassant de 4,5 (♀) à 5 (♂) articles la base du pronotum; le 2ème article large mais plus court que le 4ème; les articles 5 à 9 avec une plage glabre plus ou moins concave sur leur face inférieure.

Pronotum peu rétréci en arrière, subquadrangulaire, 1,36 fois plus large que long, la plus grande largeur au tiers antérieur, puis les côtés faiblement sinués avant les angles postérieurs qui sont fortement saillants en arrière, les lobes longs et larges, l'extrémité aiguë mais émoussée. Disque modérément convexe, fortement ridulé-ponctué, le sillon médian superficiel, les marges un peu relevées, plus fortement dans la moitié postérieure. Fossettes basales très peu marquées. Une soie marginale médiane; une soie basale.

Elytres convexes, en ovale peu allongé, davantage rétrécis en avant qu'en arrière,

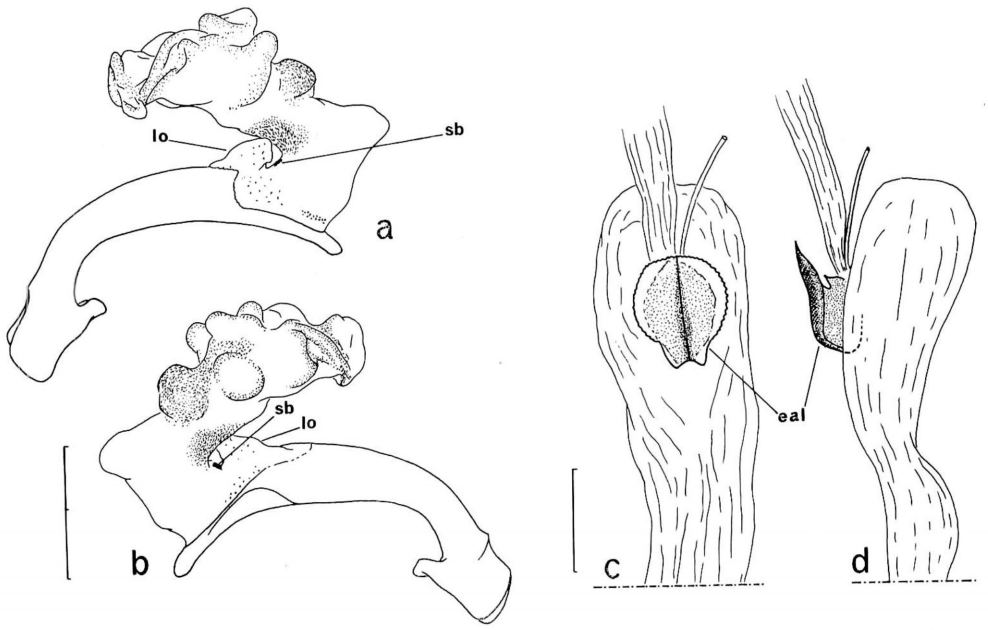

Fig. 6. Organes génitaux ectodermiques de *Carabus* (*Oreocarabus*) *rhododendron* n. sp. — a–b, Genitalia mâles (échelle: 2 mm); a, face latérale droite; b, face latérale gauche. — c–d, Genitalia internes femelles (échelle: 0,5 mm); c, face ventrale; d, face latérale gauche.
eal, plaque externe de l'apophyse ligulaire; *lo*, lobe ostial; *sb*, sclérite basal.

la plus grande largeur après le milieu, les épaules toutefois assez larges, arrondies. Sculpture heptaploïde hétérodyname; les intervalles primaires prédominants, jusqu'à deux fois plus élevés et plus larges que les intermédiaires, interrompus en courts chaînons par des fossettes peu profondes mais assez larges; les intervalles secondaires, tertiaires et quaternaires de même force entre eux, mais fins et irréguliers, souvent sous la forme de mouchetures discontinues. Sommet de l'élytre non échancré, à peine subsinué chez la femelle.

Pattes moyennes, les protarses du mâle avec les quatre premiers articles dilatés et pourvus de phanères adhésifs. Pleures throaciques lisses. Ventrites abdominaux non sillonnés.

Edéage (Fig. 6 a–b) modérément arqué, la lame apicale est courte, assez étroite, mais à peine dilatée à son extrémité qui est arrondie. Lobe ostial développé, unilobulaire. Endophallus avec une petite sclérification basale. Genitalia femelles comme sur la Fig. 6 c–d, le vagin et la bourse copulatrice simples, peu différenciés, leur paroi plissée. L'apophyse ligulaire avec une plaque externe large, subcirculaire, la plaque sagittale assez haute, son bord antérieur échancré. Pas de sclérite épivaginal visible

Caractères diagnostiques. Espèce très distincte de toutes les espèces morphologiquement voisines. Elle diffère de *C.* (*Eucarabus*?) *handelmazzettii* MANDL, égale-

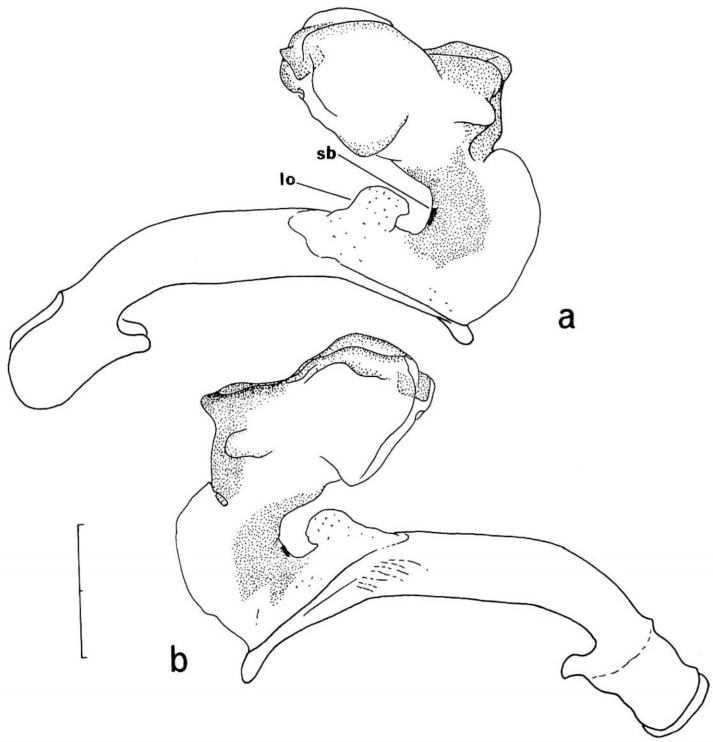

Fig. 7. Genitalia mâles ectodermiques de *Carabus* (*Megodontus*) *taliensis kezukai* n. subsp. (échelle: 2 mm). — a, Face latérale droite; b, face latérale gauche.
lo, lobe ostial; *sb*, sclérite basal.

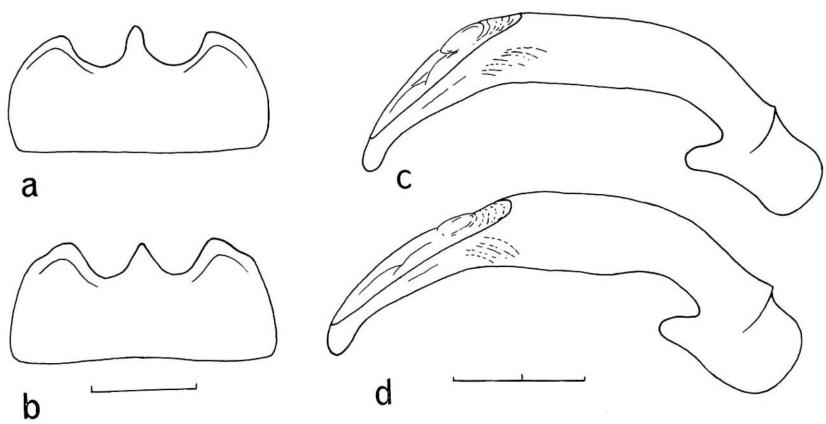

Fig. 8. Détails morphologiques comparatifs de *Carabus* (*Megodontus*) *taliensis* subspp. — a–b, Mentum, face ventrale (échelle: 1 mm); a, *C.* (*M.*) *t. kezukai* n. subsp.; b, *C.* (*M.*) *t. atentsensis* Deuve. — c–d, Edéage mâle, face latérale gauche (échelle: 2 mm); c, *C.* (*M.*) *t. kezukai* n. subsp.; d, *C.* (*M.*) *t. atentsensis* Deuve.

ment du Yunnan, par de nombreux caractères: 1) le front moins grossièrement ponctué; 2) le mentum sans rides longitudinales à la limite du secteur médian et des lobes latéraux, la dent médiane plus fine et saillante; 3) le pronotum moins transverse, les lobes basaux plus allongés en arrière; 4) les élytres en ovale plus court, les intervalles intermédiaires irréguliers mais distincts; 5) l'édéage très différent, l'apex beaucoup plus étroit.

Derivatio nominis. Le nom de cette espèce fait référence à la région géographique où elle a été découverte, qui serait le centre de dispersion des *Rhododendron*. Dans ces massifs et vallées encaissées du Yunnan nord-occidental et de ses confins tibétains, le nombre d'espèces de *Rhododendron* est particulièrement élevé et leur diversification écologique extrême. Ce nombre décroît ensuite à proportion que l'on s'éloigne de cette zone. On sait aussi que les *Rhododendron* appartiennent à des formations végétales, montagnardes, subalpines ou alpines, auxquelles sont souvent associées des espèces du genre *Carabus*.

4. *Carabus* (*Pagocarabus*) *wagae schmidi* BREUNING

Carabus (*Pagocarabus*) *wagae schmidi* BREUNING, 1973, Misc. zool., **3**, p. 43; localité typique: Sikkim, Chumtang.

Carabus (*P.*) *wagae schmidi* BREUNING a été décrit du Sikkim où vit aussi la sous-espèce *sanchari* ANDREWES. Il est donc pour le moins surprenant de retrouver des populations identiques dans le Yunnan, à mille kilomètres de distance à travers des régions de haute montagne. Nous avons pu étudier quatre exemplaires (2 mâles, 2 femelles), absolument identiques à la série typique, portant les indications de provenance suivantes: "Chine, Yunnan nord-occidental, environs de Dêgên, Monts Hengduan Shan, Mont Baimaxue Shan, 4.300 mètres".

5. *Carabus* (*Megodontus*) *taliensis kezukai* DEUVE et IMURA, n. subsp.

(Figs. 4, 7, 8 a, c)

Holotype: 1 ♂, Chine, Yunnan nord-occidental, environs de Dêgên, Mont Baimaxue Shan, 4.300 mètres (27–30 mai 1989), *in* coll. H. KEZUKA.

Longueur: 24,5 mm. Largeur: 8,0 mm. Noir concolore, les appendices noirs. Pronotum: lt/Lt=1,20. Edéage (Figs. 7, 8 c).

Cette sous-espèce se distingue de toutes les formes connues de *C.* (*M.*) *taliensis* FAIRMAIRE et *C.* (*M.*) *yulongxuensis* DEUVE par l'épaississement de la dent médiane du mentum (Fig. 8 a) et par ses élytres plus courts et plus larges. Les deux taxons les plus proches morphologiquement sont *C.* (*M.*) *taliensis taliensis* FAIRMAIRE et *C.* (*M.*) *taliensis atentsensis* DEUVE.

De *taliensis*, ce nouveau Carabe se distingue aussi par le pronotum plus transverse et moins rétréci en arrière, par les élytres plus courts et moins convexes, avec les intervalles secondaires davantage apparents et les fossettes primaires plus profondes en

arrière, et par le coloris d'un noir profond, sans lustre verdâtre.

D'atentsensis, *kezukai* diffère par le pronotum également plus transverse, avec des angles basaux plus arrondis, la surface discale plus convexe et moins densément ponctuée, par les élytres plus larges, et par le coloris plus terne. L'édéage est un peu différent, sa partie médiane proportionnellement plus allongée par rapport à la lame apicale, l'apex plus étroit (comparer Figs. 8, c et d).

要　約

Thierry DEUVE・井村有希：中国（江西省，青海省，云南省）から発見されたオサムシの 2 新種，2 新亜種．―― 中国各地（江西省，青海省，云南省）から得られたオサムシを検し，以下のものを記載あるいは記録した：1）江西省北部の庐山（Lu Shan）から *Carabus* (*Apotomopterus*) *elegantcollis* sp. nov. を記載した．本種は *C.* (*A.*) *cyanipennis* BREUNING や *C.* (*A.*) *phami* DEUVE に近いが，下唇基節，前胸背板，交尾器などの形態が異なる；2）青海省東部の拉脊山（Laji Shan）から *C.* (*Eucarabus*?) *roborowskii lajiensis* subsp. nov. を記載した．近縁の（亜）種 *sininensis* SEMENOW より触角がやや短く，上翅形態にも違いがみられる；3）云南省北西端にある白马雪山（Baimaxue Shan）の高所で得られた 3 種のオサムシについて述べた．ひとつめは，*Oreocarabus* 亜属に属する新種で，云南省が世界有数のシャクナゲの自生地であることに因み，*C.* (*O.*) *rhododendron* sp. nov. と命名記載した．本種は，同じく云南省から記載されている *C. handelmazzettii* MANDL に近いが，下唇基節，前胸背板，上翅の形態により区別されるほか，陰茎の形態も大きく異なる．ふたつめは，*C.* (*Pagocarabus*) *wagae* FAIRMAIRE で，白马雪山で得られた標本は，既知の亜種 *schmidi* BREUNING と形態的によく一致するものであった．本亜種は，シッキム産の標本に基づき記載されたが，今回，基産地から 1,000 km 近くも隔たった云南省北部から同一亜種とみなし得る集団が発見されたことはきわめて興味深い．みっつめは，*C.* (*Megodontus*) *taliensis* FAIRMAIRE の新亜種で，*kezukai* subsp. nov. として命名記載した．本新亜種は，基亜種より前胸背板がやや横に長く，上翅はやや短く，上翅彫刻の形態も異なっている．また，亜種 *atentsensis* DEUVE とは，前胸背板や陰茎の形態が異なることにより区別できる．

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Records of Some Coleoptera from the Island of Ikema-jima, the Ryukyus

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Up to the present, 9 species of the Cerambycidae and 4 of the Chyrysomelidae have been recorded from the Island of Ikema-jima of the Ryukyus. Some years ago, I had an opportunity to examine 18 examples of the Coleoptera obtained by Mr. Hiroshi MAKIHARA on the Island of Ikema-jima of the Ryukyus on July 4, 1977. After studying the specimens, I have come to the conclusion that they are classified into 4 species of 3 families as listed below. I am indebted to Mr. H. MAKIHARA for his kindness in offering the materials.

Helodidae

Scirtes japonicus KIESENWETTER, 1874 4 exs.

Mordellidae

Mordellina amamiensis (NOMURA, 1951) 6 exs.
Falsomordellistena altestrigata (MARSEUL, 1876) 7 exs.

Chrysomelidae

Lema rugifrons JACOBY, 1889 1 ex.

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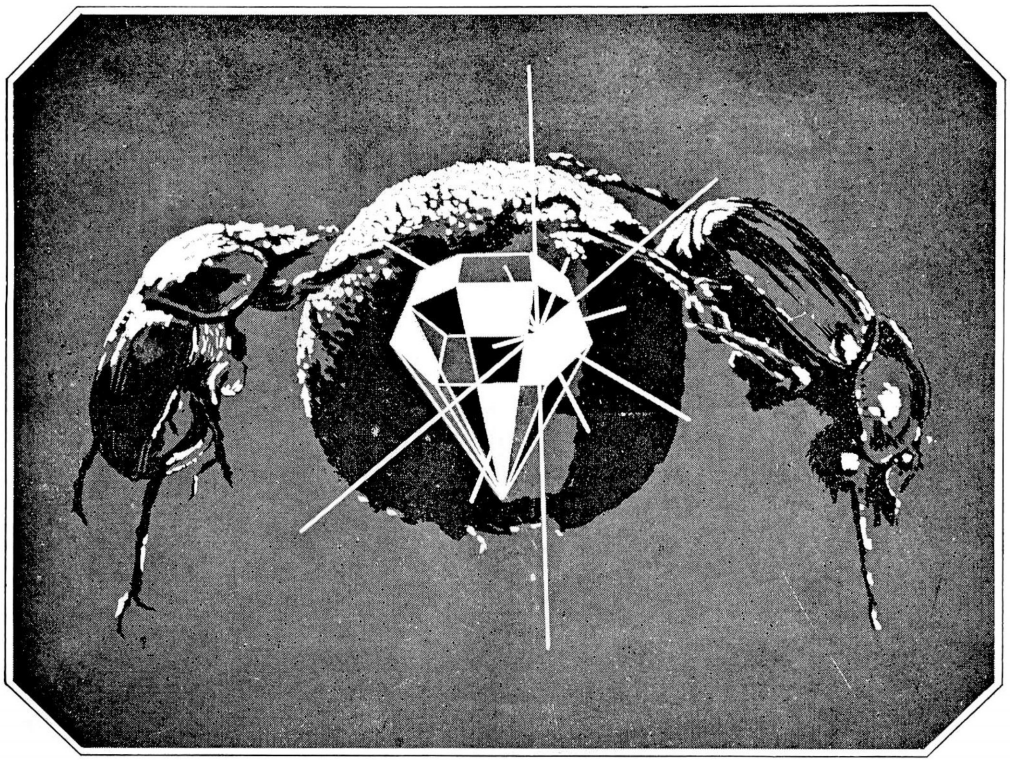

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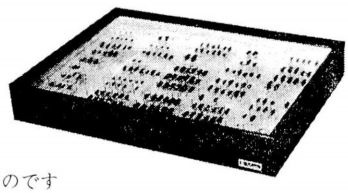

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UÉNO, S.-I., & WANG F.: Discovery of a Highly Specialized Cave Trechine (Coleoptera, Trechinae) in Southeast China ·····127
UÉNO, S.-I.: Occurrence of a New Anophthalmic *Trechiama* (Coleoptera, Trechinae) on the Yüshan Mountains in Central Taiwan ·····137
DEUVE, Th., & Y. IMURA: Nouveaux *Carabus* (*Apotomopterus*, *Eucarabus*, *Oreocarabus*, *Megodontus*) du Yunnan, du Qinghai et du Jiangxi ·····141

Short Reports (for details see General Index to be inserted in No. 2) **短 報** (詳細については第 2 号に掲載する総目次を参照) ·····
····· 18, 24, 30, 43, 44, 56, 62, 74, 84, 124, 136, 140, 150

ELYTRA Vol. 19, No. 1 CONTENTS

SENOH, T.: The Anthribid Beetles of the Genus *Mecotropis* (Coleoptera, Anthribidae) from North Vietnam 1

槇原 寛・斉藤明子・佐藤正孝: ヤツボシハナカミキリとツマグロハナカミキリ (2) 5

[MAKIHARA, H., A. SAITO & M. SATÔ: Studies on the *Leptura arcuata* Species-group (2) (Coleoptera, Cerambycidae)]

IWATA, R.: Increased Adult Body Length with Delayed Emergence Date in *Necydalis formosana* (Cerambycidae) 19

NARITA, Y.: Description of the Larva of *Donacia clavareaui* (Coleoptera, Chrysomelidae 21

MASUMOTO, K.: Two New Tenebrionid Species (Coleoptera, Tenebrionidae) from Japan 25

ANDO, K.: A New *Camariomorpha* (Coleoptera, Tenebrionidae) from North Borneo 31

OKUSHIMA, Y.: A New Species of the Cantharid Genus *Athemus* (Coleoptera, Cantharidae) from Okinawa Island, Southwest Japan 35

大平仁夫: ジュウジミズギワコメツキの形態について 39

[ÔHIRA, H.: Notes on the Morphological Structure of *Fleutiauxellus cruciatus* (Coleoptera, Elateridae) from Japan]

江崎功二郎: コメツキムシ科 4 種の行動観察 45

[ESAKI, K.: Ethological Observations of Four Species of the Elateridae (Coleoptera) from Japan]

HATTORI, T.: Studies on the Buprestidae (Coleoptera) of Taiwan. II. A New Species of the Genus *Dicerca* 57

KOBAYASHI, H.: Notes on the Genus *Adoretus* (Coleoptera, Scarabaeidae) from North Thailand 63

HORI, S.: A New Subspecies of *Macrodorcas okinawanus* (Coleoptera, Lucanidae) from the Ryukyu Islands 75

NOMURA, S., & WANG F.: Description of a New Cavernicolous Species of the Genus *Batrisodellus* (Coleoptera, Pselaphidae) from Southeast China 77

SHIBATA, Y.: Three New *Gabrius* (Coleoptera, Staphylinidae) from Japan 85

WATANABE, Y., & LUO Z.: The Micropeplids (Coleoptera) from the Tian-mu Mountains in Zhejiang Province, East China 93

ÔHARA, M.: Redescriptions of the Japanese Species of the Genus *Hololepta* (Coleoptera, Histeridae), Part 1 101

KASAHARA, S.: A New Species of the Genus *Trichotichnus* (Coleoptera, Carabidae) from Central Honshu, Japan 111

MORITA, S.: Notes on the Bembidiinae (Carabidae) of Japan. III. *Bembidion semilunium* NETOLITZKY and its New Relative 115

MORITA, S.: Bembidiine Carabid Beetles from Sakhalin 125

[*Continued onto the inside back cover.*]