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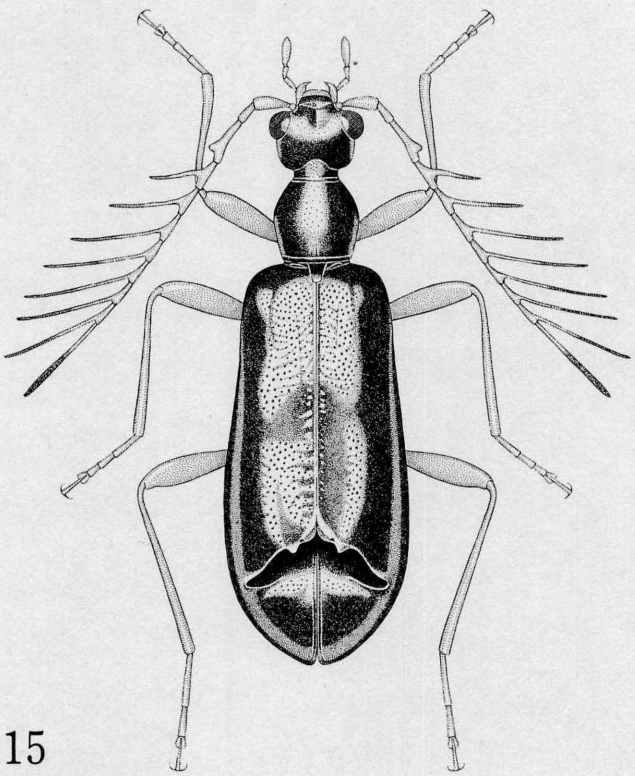

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THE JAPANESE SOCIETY OF COLEOPTEROLOGY
TOKYO

ELYTRA

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表 紙: オカモトツヤアナハネムシ
Cover: *Tosadendroides okamotoi* KÔNO
[*del.* Sumao KASAHARA]

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

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

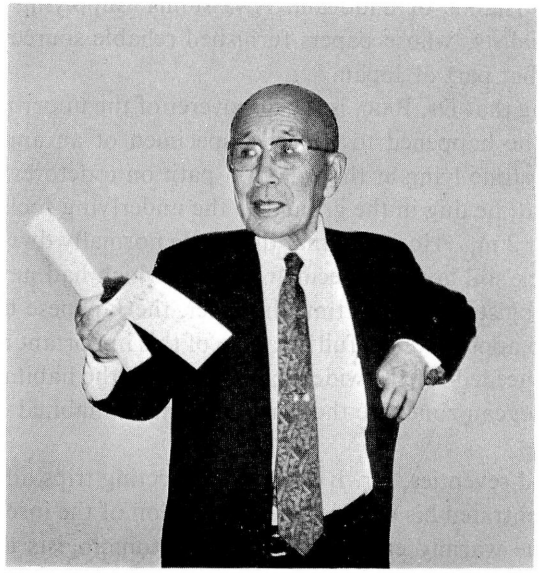

Photo by S.-I. UÉNO
Takamatsu, Oct. 3, 1990

In Memoriam Kintaro BABA

(28 Jun. 1912 – 6 Jan. 1993)

All the Japanese coleopterists, both professionals and amateurs, will miss Kintaro BABA's humorous speeches and words of encouragement. Kinataro BABA, a medical doctor, Honorary Member of the Japanese Society of Coleopterology, and the owner of Kurokawa Hospital in Niigata Prefecture, passed away suddenly from cerebral infarction on January 6, 1993, at the age of 80. He suffered from angina pectoris for some years, but none of us were anxious about his cerebral condition.

Dr. BABA was born at Haraoka of Tomiura-machi, Chiba Prefecture, on June 28, 1912, as a son of the SAKAIS, and was adopted into the BABAS when he was a grammar school boy. He grew up at Kurokawa in Niigata Prefecture, and though he hoped to become an entomologist, he attended Niigata Medical College, meeting the wishes of his adoptive family. He became a medical doctor in 1939, and received his M. D. degree in 1947. As the superintendent of Kurokawa Hospital, he resumed his studies on entomology, working on the biology of ant lions and dragonflies at first, and extending his interest to all the groups of insects. At this stage, one of his most noted

works on beetles was that on *Damaster*. He made careful collectings in Niigata Prefecture including the Islands of Sado and Awa-shima, supplying innumerable specimens to many specialists, whose papers furnished reliable sources of information on the insect fauna of that part of Japan.

It is worth noting that Dr. BABA is the discoverer of the upper hypogean fauna. In the winter of 1965, he happened to collect a specimen of an anophthalmic trechine beetle from under a stone lying at the side of a path on a deforested hill. Searching for its original habitat, he dug in the ground to the underlying rock and finally located it at a depth of about 2 m. He found that the beetle normally dwelt in narrow fissures of shale under a thick soil layer, a peculiar habitat which had never been looked for by previous entomologists. At that time, however, the Japanese biospeology was not yet mature enough to appreciate the full meaning of this important discovery, and some ten years more were needed for the wide recognition that the habitats of this kind, now called the upper hypogean zone, are the place originally inhabited by the so-called terrestrial cave animals.

In the sixties and seventies, Dr. BABA made collecting trips all over Japan, and in the eighties, he concentrated his energies on clarification of the insect fauna of Taiwan. At the same time, he warmly encouraged young entomologists and supported their studies in various ways. He also patronized entomological societies and associations including ours, and often rescued them from financial collapse. In doing so, he wanted to realize the dream of his youth to become a great entomologist and to create a paradise for insect lovers.

Dr. BABA's devotion to the Japanese entomology will continue to inspire those who knew him, who love insects and who wish for a bright future of the Japanese entomology.

Shun-Ichi UÉNO
Department of Zoology,
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Elytra, Tokyo, **21** (1): 3–25, May 15, 1993

Female Reproductive Organs of Cerambycid Beetles from Japan and the Neighbouring Areas

IV. Callichromini through Cleomenini

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Abstract Thirty-eight species of cerambycine longicorn beetles are examined for their female reproductive organs. They are distributed to 29 genera of 6 tribes (Callichromini through Cleomenini). General discussion is given on the whole subfamily, concluding that the female genitalia are generally not useful for determining interrelationship of cerambycine tribes and genera, but that the Pyrestini and Purpuricenini are highly specialized and the Obriini must be the most specialized of the Japanese members of the subfamily Cerambycinae.

In the last part dealing with the Cerambycinae, 29 genera of 6 tribes are taken up and 38 species in total are examined for their female reproductive organs. They are the Callichromini (4 spp. of 2 genn.), Callidiini (8 spp. of 5 genn.), Clytini (16 spp. of 14 genn.), Anaglyptini (5 spp. of 4 genn.), Purpuricenini (3 spp. of 2 genn.), and Cleomenini (2 spp. of 2 genn.). A general discussion on the subfamily Cerambycinae will be given after the descriptive part, and references supplementary to those given at the end of the first part will also be compiled.

Results

Tribe Callichromini

Aromia moschata orientalis PLAVILSTSHIKOV, 1933

(Figs. 131–133)

Collecting data of the material used. Abashiri River, Memanbetsu, Hokkaido, 14–VIII–1979, T. MATSUMOTO leg.

Paraproct moderate in size, its baculi almost straight, rather thick, thickened at the bases and protruding to each lateral side; valvifer distinct with slightly curved thin baculi; coxite rather broad and narrowed towards the apex, its baculi thin and slightly sinuate; coxite lobes broad but rather short, with long tactile hairs; stylus moderate in size, rather heavily sclerotized except for apex; dorsal baculi shorter than paraproct baculi, thin and slightly sinuate; proctiger baculi thin, bent at the apical parts; vaginal plates very narrow; bursa copulatrix swollen in apical half, constricted at the middle

and narrow in basal half; spermatheca bent at middle, rather heavily sclerotized and clearly distinguishable from the duct; spermathecal gland attached to near the base at the outer side of the capsule; spermathecal duct short, thick, straight and entering into the vagina.

Chloridolum (*Chloridolum*) *loochooanum* GRESSITT, 1934

(Figs. 134–136)

Collecting data of the material used. Hatsuno, Amami-ohshima Is., Kagoshima Pref., 5–VII–1972, S. OKAJIMA leg.

Paraproct moderate in size, with thin baculi which are rectangularly bent outwards at the bases; valvifer distinct, its baculi thin, almost straight, and continuing anteriorly to paraproct baculi; coxite baculi sinuate and with inwardly sclerotized areas at each base; coxite rather short; stylus moderate in size, sclerotized except for the apex; dorsal baculi shorter than paraproct baculi, thin and slightly sinuate; proctiger baculi slightly sinuate; vaginal plates long, dilated towards the apex in apical third; bursa copulatrix very large, constricted at basal third; spermatheca bent near the middle and moderately sclerotized; spermathecal duct thick, sinuate, sclerotized at base, and entering into an impression at the basal part of bursa copulatrix.

Notes. In the two other Japanese species of the genus, *C.* (*C.*) *thaliodes* BATES and *C.* (*Leontium*) *viride* (THOMSON), the bases of the bursa copulatrix are also impressed or hollowed. In *C.* (*C.*) *thaliodes*, the basal part of the spermathecal duct is sclerotized as in *C.* (*C.*) *loochooanum*, but not in *C.* (*L.*) *viride*.

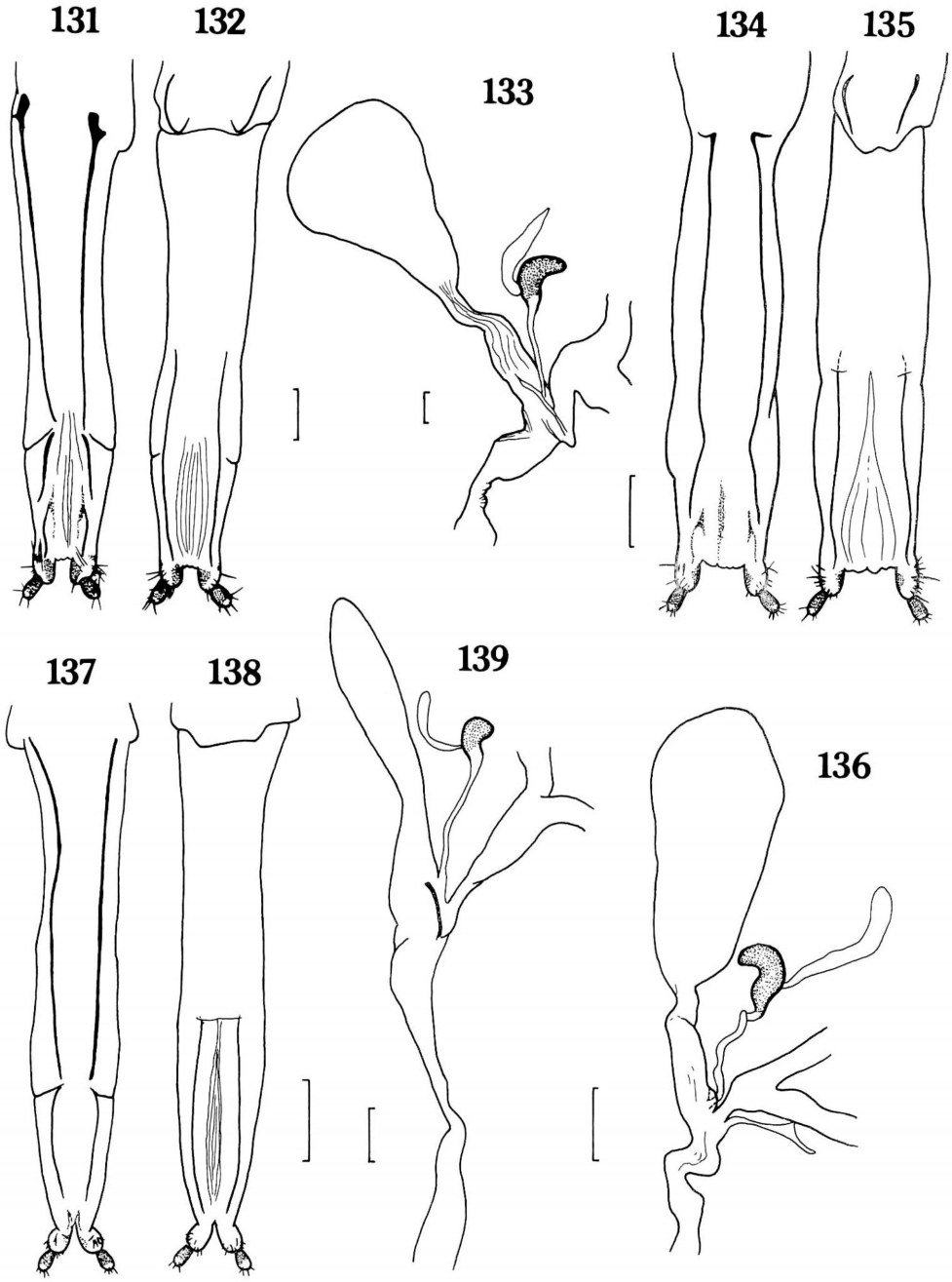
Tribe Callidiini

Ropalopus (*Proropalopus*) *signaticollis* SOLSKY, 1872

(Figs. 137–139)

Collecting data of the material used. Data unknown.

Paraproct moderate in size, its baculi rather thick and slightly sinuate; valvifer distinct with slightly curved baculi; coxite very short, with very short and thin baculi, and well constricted at the apex; coxite lobes rather broad, weakly sclerotized, and with short tactile hairs; stylus rather heavily sclerotized except for the apex; dorsal baculi a little longer than half the length of paraproct baculi, and slightly curved; proctiger absent; vaginal plates very narrow and sclerotized; bursa copulatrix long but rather narrow; spermatheca curved at middle, weakly sclerotized in apical two-thirds, but hardly sclerotized in basal third; spermathecal duct thick, slightly sinuate and entering into the basal part of bursa copulatrix.



Figs. 131–139. —— 131–133, *Aromia moschata orientalis*; 134–136, *Chloridolum* (*Chloridolum*) *loochooanum*; 137–139, *Ropalopus* (*Proropalopus*) *signaticollis*. Ovipositor, ventral view (131, 134, 137); ovipositor, dorsal view (132, 135, 138); internal reproductive organs (133, 136, 139). (Scale: 0.5 mm.)

Callidium (Callidium) violaceum (LINNAEUS, 1758)

(Figs. 140–142)

Collecting data of the material used. Sunagawa-shi, Hokkaido, 19–VI–1981, R. SAITO leg.

Paraproct extremely long, with small sclerotized part at each outer side at the base, its baculi thick and almost straight; valvifer distinct with thick and straight baculi; coxite short and very narrow, with thin baculi; coxite lobes rather narrow; stylus somewhat broad, moderately sclerotized except for the apex; dorsal baculi shorter than half the length of paraproct baculi; proctiger baculi extremely short and thin; vaginal plates very narrow; bursa copulatrix long but rather narrow; spermatheca curved at middle, its sclerotization becoming heavier towards both apex and base; spermathecal duct short, straight and entering into the basal part of bursa copulatrix.

Callidiellum rufipenne (MOTSCHULSKY, 1860)

(Figs. 143–145)

Collecting data of the material used. Kominawa, Takao, Tokyo Met., 21–IV–1981, M. SAKAI leg.

Paraproct long, with thick and almost straight baculi; valvifer distinct, its baculi thick and connected with paraproct baculi at the bases; coxite baculi bifurcate at middle, the area between the baculi being sclerotized; coxite lobes rather long and narrow, hardly sclerotized, and with some tactile hairs; stylus fairly long, and sclerotized except for the apex; dorsal baculi shorter than paraproct baculi, thin and almost straight; proctiger baculi slightly curved; vaginal plates long and straight, filiform; bursa copulatrix broad, abruptly bent at the base; spermatheca weakly sclerotized, slightly curved at middle, and constricted at the base, with the gland small and attached to the middle of outer side; spermathecal duct thin, coiled several times and entering into basal third of bursa copulatrix.

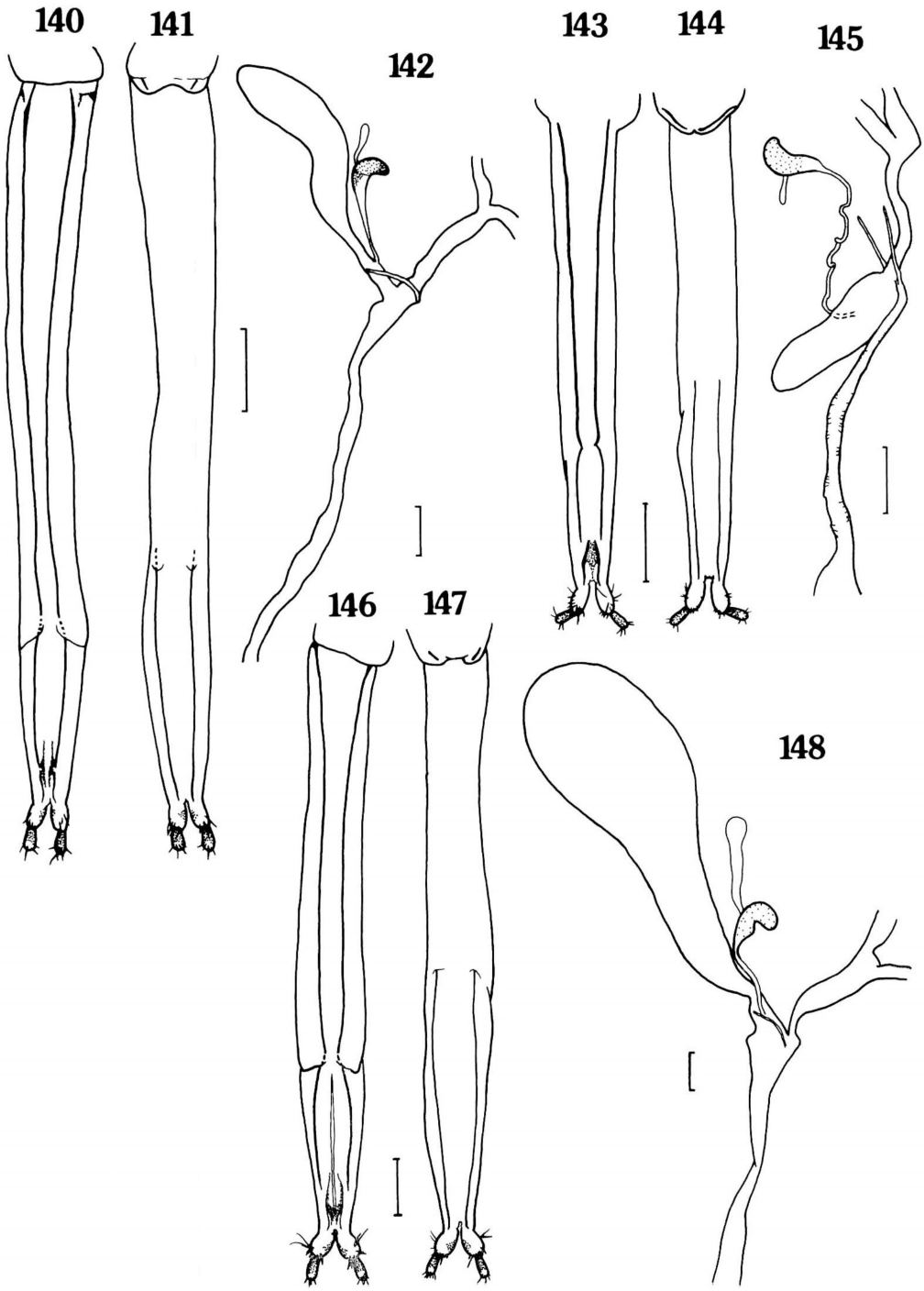
Semanotus japonicus (LACORDAIRE, 1869)

(Figs. 146–148)

Collecting data of the material used. Sugitate, Matsuyama-shi, Ehime Pref., 4–IV–1974, Y. NOTSU leg.

Paraproct long, its baculi rather thick and slightly sinuate; valvifer distinct and somewhat long, with thick baculi; coxite narrow, with thin but inwardly sclerotized baculi; coxite lobes broad; stylus moderate in size, sclerotized except for the apex; dorsal baculi shorter than paraproct baculi, thin and almost straight; proctiger baculi

Figs. 140–148. —— 140–142, *Callidium (Callidium) violaceum*; 143–145, *Callidiellum rufipenne*; 146–148, *Semanotus japonicus*. Ovipositor, ventral view (140, 143, 146); ovipositor, dorsal view (141, 144, 147); internal reproductive organs (142, 145, 148). (Scale: 0.5 mm.)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very short and thin; vaginal plates filiform; bursa copulatrix very large, swollen in the apical part and gradually narrowed towards the base; spermatheca weakly sclerotized, bent at middle, and with an internal protrusion in basal half; spermathecal duct short, thick, almost straight, and entering into the basal part of bursa copulatrix.

Phymatodes (Phymatodes) testaceus (LINNAEUS, 1758)

(Figs. 149–151)

Collecting data of the material used. Ban'yasawa, Tateiwa-mura, Fukushima Pref., 18–VI–1983, A. SAITO leg.

Paraproct moderate in size, its baculi thin and slightly sinuate; valvifer distinct with thin baculi; coxite constricted at apex, with very short and simple baculi; coxite lobes weakly sclerotized; stylus moderate in size and weakly sclerotized except for the apex; dorsal baculi almost straight, rather long and almost of the same length as paraproct baculi; proctiger baculi thin and slightly curved; vaginal plates very narrow, aciculate; bursa copulatrix large, swollen in apical two-thirds, and constricted at basal third; spermatheca curved and hardly sclerotized; spermathecal duct thick, very short, and entering into the base of bursa copulatrix.

Phymatodes (Phymatodellus) vandykei GRESSITT, 1935

(Figs. 152–154)

Collecting data of the material used. Otaru, Hokkaido, 30–IV–1979 (emerged at Nakano, Tokyo).

Paraproct moderate in size, its baculi thin and slightly sinuate; valvifer distinct, with thin and almost straight baculi; coxite devoid of baculi; coxite lobes rather short, hardly sclerotized; stylus weakly sclerotized except for the apex; dorsal baculi almost straight, and shorter than paraproct baculi; proctiger absent; vaginal plates filiform and somewhat sclerotized; bursa copulatrix large but not swollen; spermatheca abruptly bent at base and also at apical third, hardly sclerotized; spermathecal duct very short and thin, entering into the basal part of bursa copulatrix.

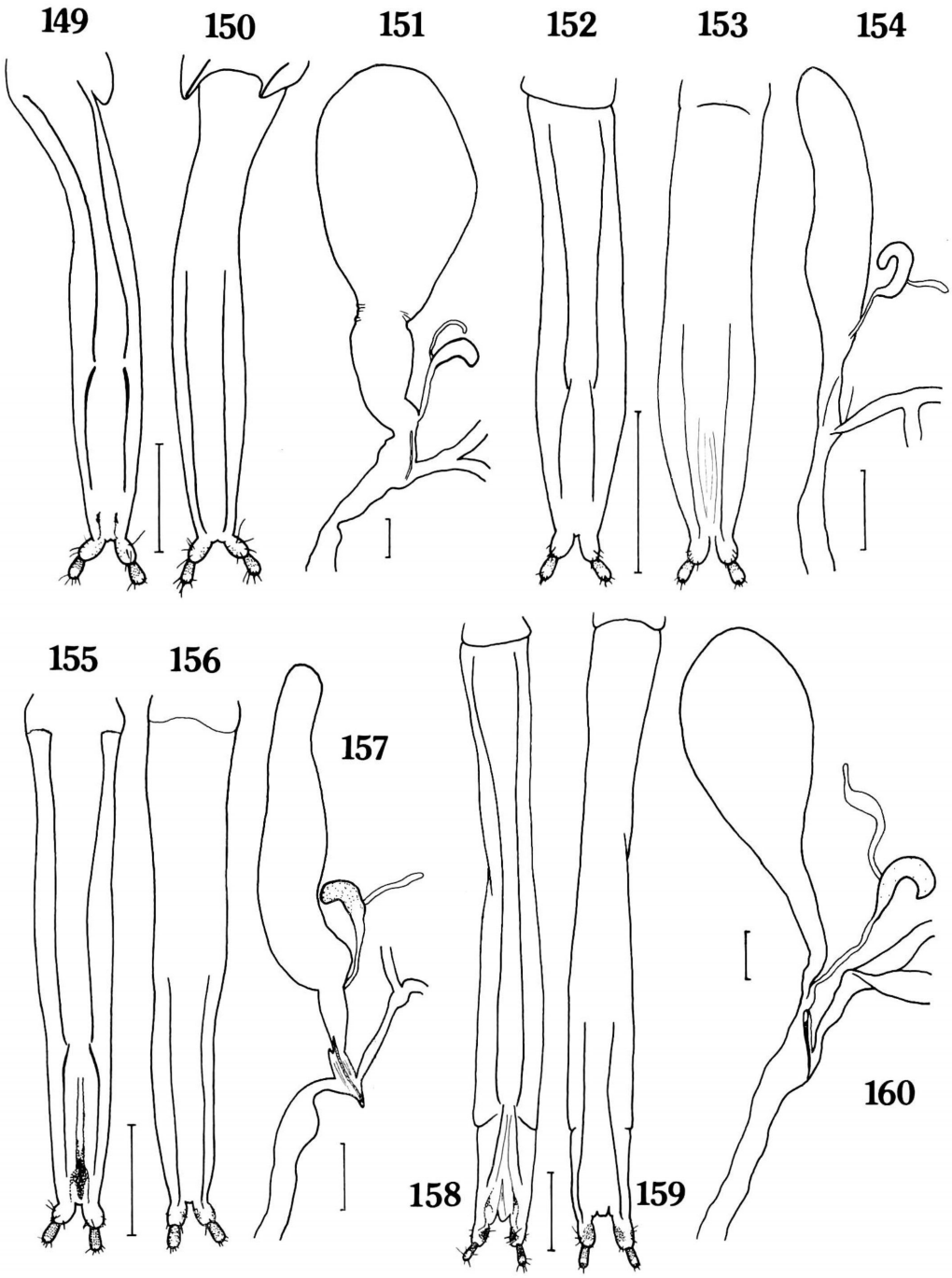
Phymatodes (Poecilium) maaki KRAATZ, 1873

(Figs. 155–157)

Collecting data of the material used. Masutomi, Sudama-chô, Yamanashi Pref., 22–V–1971, H. KOBAYASHI leg.

Paraproct rather long, its baculi thin, slightly sinuate, and rectangularly bent at

Figs. 149–160. —— 149–151, *Phymatodes (Phymatodes) testaceus*; 152–154, *P. (Phymatodellus) vandykei*; 155–157, *P. (Poecilium) maaki*; 158–160, *Xylotrechus cuneipennis*. Ovipositor, ventral view (149, 152, 155, 158); ovipositor, dorsal view (150, 153, 156, 159); internal reproductive organs (151, 154, 157, 160). (Scale: 0.5 mm.)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the bases; valvifer distinct, with thin and long baculi; coxite constricted at apex, its baculi short but extending their sclerotized parts towards the base of valvifer; coxite lobes hardly sclerotized; stylus weakly sclerotized except for the apex; dorsal baculi thin, slightly sinuate, and shorter than paraproct baculi; proctiger absent; vagina abruptly dilated at the base, forming a dish-like dilatation; vaginal plates very long, filiform and weakly sclerotized; bursa copulatrix very long, constricted at basal fourth; spermatheca curved and weakly sclerotized; spermathecal duct very short, entering into the constriction of bursa copulatrix at its basal fourth.

Notes. In another Japanese species of the genus, *P.* (*Paraphymatodes*) *albicinctus* BATES, the bursa copulatrix is also attached to a dish-like dilatation at the base of the vagina.

Tribe Clytini

Xylotrechus cuneipennis (KRAATZ, 1879)

(Figs. 158–160)

Collecting data of the material used. Shindenbara, Tateiwa-mura, Fukushima Pref., 17–VI–1983, A. SAITO leg.

Paraproct long, its baculi thin and slightly sinuate; valvifer distinct and with thin and almost straight baculi; coxite hardly constricted, its baculi sinuate and inwardly sclerotized in basal halves; coxite lobes moderate in size; stylus moderately sclerotized except for the apex; dorsal baculi thin, sinuate and shorter than half the length of paraproct baculi; proctiger absent; vaginal plates very narrow, straight and heavily sclerotized except for the apices; bursa copulatrix ovoid in the apical part, and gradually narrowed towards the base; spermatheca abruptly bent at middle and hardly sclerotized; spermathecal duct short, thick, slightly sinuate, and entering into the base of bursa copulatrix.

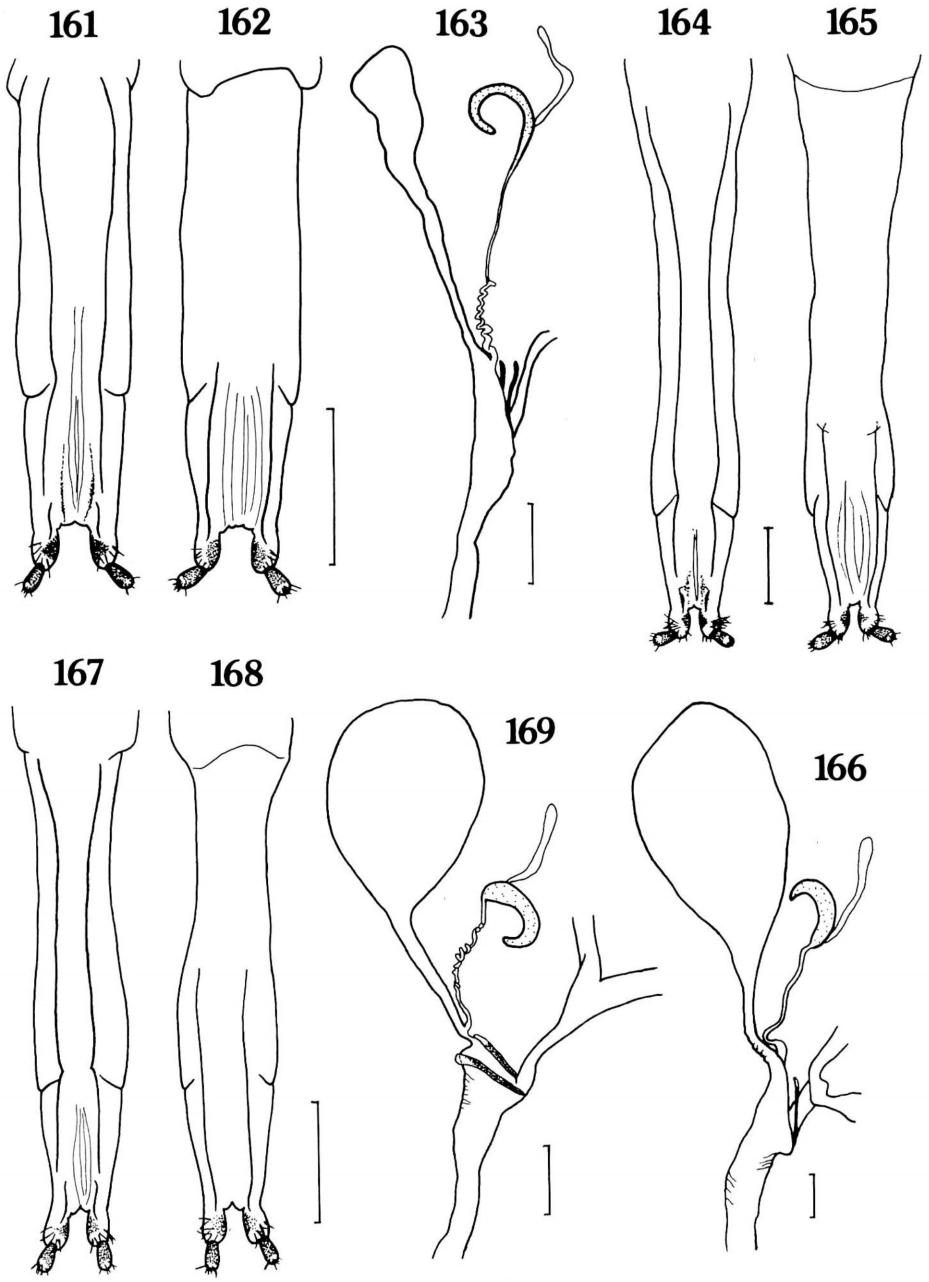
Notes. In *X. rusticus* (LINNAEUS, 1758), the female genitalia are similar in general conformation to those of this species.

Perissus kiusiuensis kiusiuensis OHBAYASHI, 1958

(Figs. 161–163)

Collecting data of the material used. Minamitane, Tanegashima Is., Kagoshima Pref., emerged 7–IV–1984, K. MORI leg.

Paraproct moderate in size, its baculi thin and slightly sinuate; valvifer distinct with straight baculi which are connected with paraproct baculi at the bases; coxite hardly constricted, with short baculi; coxite lobes rather heavily sclerotized at each inner side; stylus rather large and heavily sclerotized except for the apex; dorsal baculi thin, slightly sinuate, and much shorter than paraproct baculi; proctiger absent; vaginal plates narrow, slightly sinuate, and heavily sclerotized except for the apices; bursa



Figs. 161–169. —— 161–163, *Perissus kiusiuensis kiusiuensis*; 164–166, *Cyrtoclytus caproides caproides*; 167–169, *Clytus melaenus*. Ovipositor, ventral view (161, 164, 167); ovipositor, dorsal view (162, 165, 168); internal reproductive organs (163, 166, 169). (Scale: 0.5 mm.)

copulatrix fairly large in apical half; spermatheca very narrow, strongly curved as a whole, and weakly sclerotized; spermathecal duct thin and straight in basal half, coiled many times in apical half, and entering into the base of bursa copulatrix.

Cyrtoclytus caproides caproides (BATES, 1873)

(Figs. 164–166)

Collecting data of the material used. Marunuma, Katashina-mura, Gunma Pref., 21–VI–1978, A. TAKASU leg.

Paraproct long, its baculi thick and sinuate; valvifer distinct, with rather thin baculi which are connected with paraproct baculi at the bases; coxite baculi short but thick; coxite lobes rather heavily sclerotized at each inner side; stylus rather heavily sclerotized except for the apex; dorsal baculi short and thin, almost a half as long as paraproct baculi; proctiger absent; vaginal plates filiform and heavily sclerotized; bursa copulatrix very large in apical two-thirds, narrow in basal third; spermatheca curved and weakly sclerotized; spermathecal duct sinuate, abruptly curved and thickened at the apex just before entering into the basal part of bursa copulatrix.

Notes. The spermathecal duct is also thickened at the apex in *Brachyclytus singularis* KRAATZ, 1879.

Clytus melaenus BATES, 1884

(Figs. 167–169)

Collecting data of the material used. Masho Pass, Fukui Pref., 18–V–1982, T. MATSUMOTO leg.

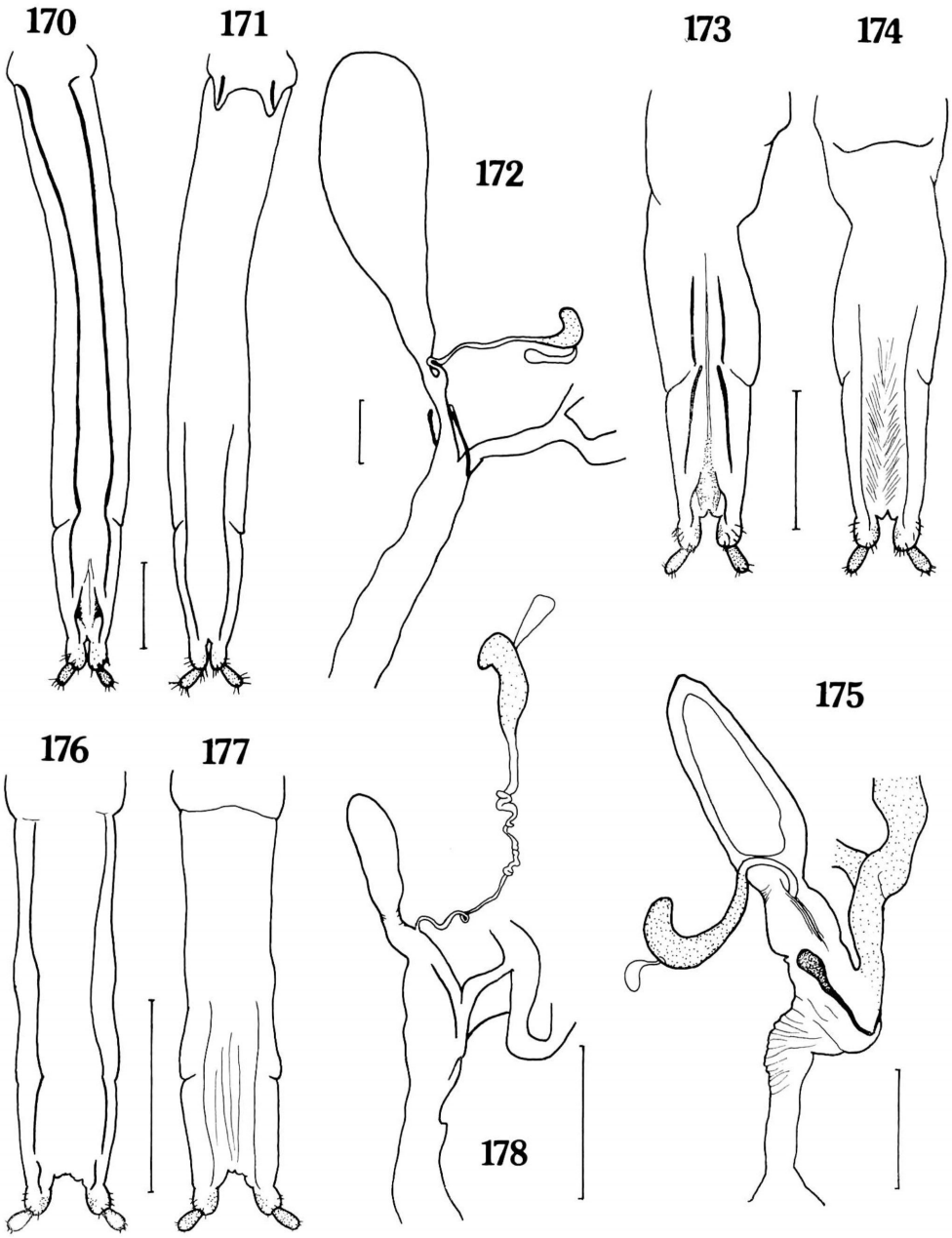
Paraproct moderate in size, its baculi rather thick and slightly sinuate; valvifer distinct, with straight baculi which are basally connected with paraproct baculi; coxite baculi thin and sinuate; coxite lobes moderately sclerotized, especially at the inner sides; stylus rather large and moderately sclerotized except for the apex; dorsal baculi thin and a little shorter than paraproct baculi; proctiger absent; vaginal plates narrow and heavily sclerotized except for the apices; bursa copulatrix ovoid in apical half, constricted at the middle and narrow in basal half; spermatheca strongly curved, hardly sclerotized; spermathecal duct coiled many times except for the basal and apical parts, entering to near the base of bursa copulatrix.

Notes. In *Kazuoclytus lautoides* (HAYASHI, 1950), the spermathecal duct is also coiled as in this species.

Plagionotus pulcher (BLESSIG, 1879)

(Figs. 170–172)

Collecting data of the material used. Shindenbara, Tateiwa-mura, Fukushima Pref., 17–VI–1983, A. SAITO leg.



Figs. 170–178. —— 170–172, *Plagionotus pulcher*; 173–175, *Epiclytus yokoyamai*; 176–178, *Amamiclytus subnitidus*. Ovipositor, ventral view (170, 173, 176); ovipositor, dorsal view (171, 174, 177); internal reproductive organs (172, 175, 178). (Scale: 0.5 mm.)

Paraproct long, its baculi thick, sinuate, and rectangularly bent outwards at the bases; valvifer distinct, with thick baculi which are connected with paraproct baculi at the bases; coxite baculi weakly curved, with sclerotized areas inwards; coxite lobes hardly sclerotized; stylus weakly sclerotized except for the apex; dorsal baculi thin, almost a half as long as paraproct baculi; proctiger baculi short, thick and straight; vaginal plates filiform and sclerotized except for the apical parts; bursa copulatrix broad and gradually narrowed towards the base; spermatheca bent at middle, blunt at the apex, and weakly sclerotized; spermathecal duct slightly sinuate, abruptly curved and thickened at the apical part, and entering into the basal part of bursa copulatrix.

Notes. In *Rhaphuma xenisca* (BATES, 1884), *R. diminuta diminuta* (BATES, 1884), *Chlorophorus japonicus* (CHEVROLAT, 1863) and *Grammographus notabilis notabilis* (PASCOE, 1862), general conformation of female genitalia is very similar to that in this species except for one character which is the thickness of the apical part of the spermathecal duct.

Epiclytus yokoyamai (KANO, 1933)

(Figs. 173–175)

Collecting data of the material used. Near Masutomi, Sudama-chô, Yamanashi Pref., 13–VI–1987, R. INAGAWA leg.

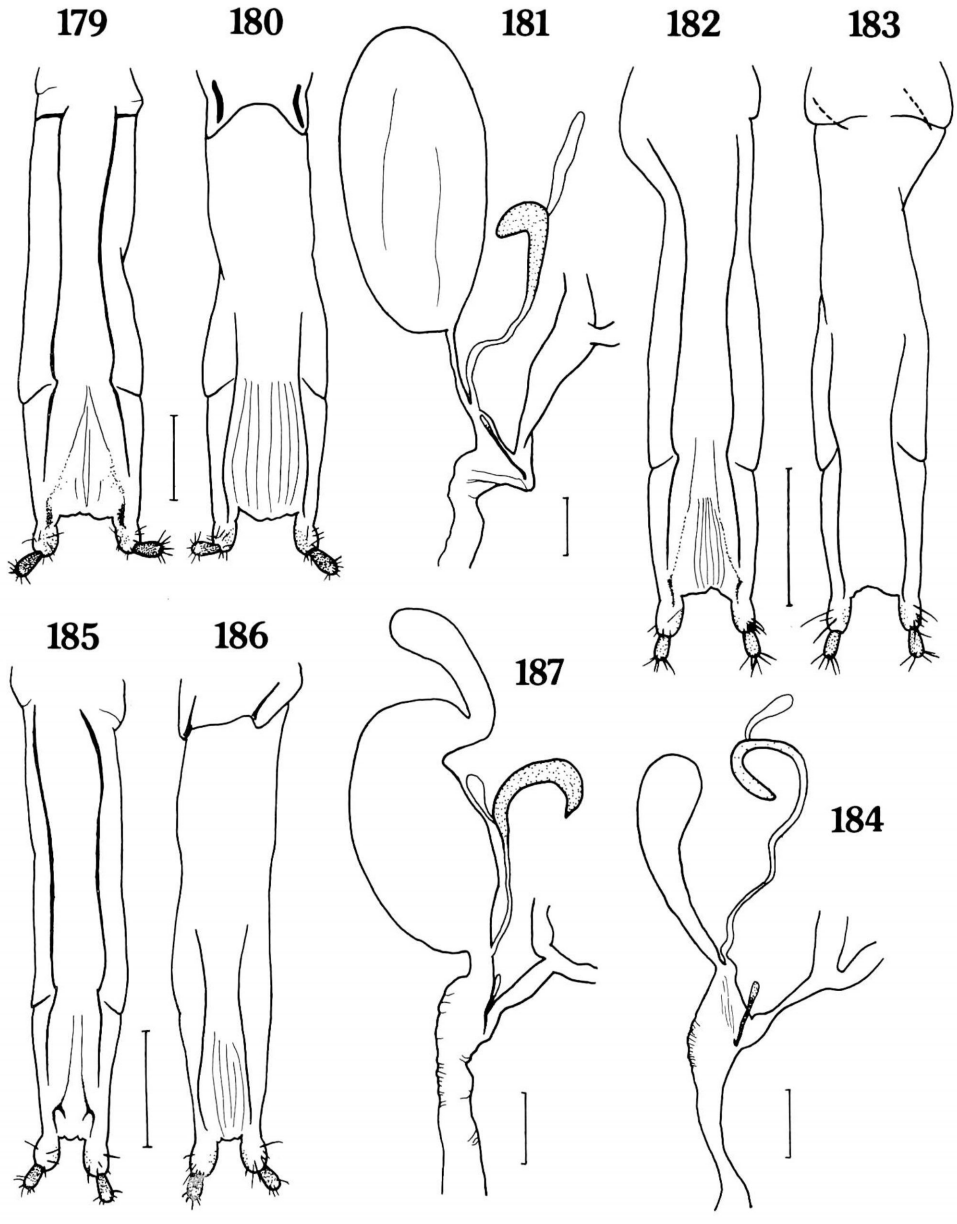
Paraproct short, its baculi very short though rather thick, and almost straight; valvifer distinct with straight and rather thick baculi; coxite baculi sinuate; coxite lobes rather broad, weakly sclerotized at each inner side, and with some tactile hairs; stylus narrow, weakly sclerotized except for the apex, which bears tactile hairs; dorsal baculi long and thin, obviously longer than paraproct baculi, and slightly sinuate; proctiger absent; vagina broadened at the base and with many transverse wrinkles; vaginal plates well sclerotized, very narrow at bases though gradually broadened towards the apices; bursa copulatrix rather broad at the basal part, constricted at basal third, and again broadened in the apical part, which forms a doubled pouch, with a longitudinal furrow on the ante-basal part, into which enters the spermathecal duct; spermatheca strongly bent at apical third to which is attached the small gland, and gradually narrowed towards the base; spermathecal duct extremely short and thick.

Amamiclytus subnitidus HOLZSCHUH, 1984

(Figs. 176–178)

Collecting data of the material used. Central Formosa, 1967.

Paraproct rather short, its baculi very thin, slightly sinuate; valvifer distinct, with thin and almost straight baculi; coxite baculi short, thin and sinuate; coxite lobes weakly sclerotized at each inner side; stylus moderate in size, and weakly sclerotized; dorsal baculi very thin, slightly sinuate, and obviously shorter than paraproct baculi;



Figs. 179–187. —— 179–181, *Hayashiclytus acutivittis inscriptus*; 182–184, *Demonax transilis*; 185–187, *Paraclytus excultus*. Ovipositor, ventral view (179, 182, 185); ovipositor, dorsal view (180, 183, 186); internal reproductive organs (181, 184, 187). (Scale: 0.5 mm.)

proctiger absent; vaginal plates sclerotized though very thin filiform; bursa copulatrix small, weakly constricted at basal third; spermatheca weakly sclerotized, abruptly bent at apical third, and gradually narrowed towards the base, with the gland near the subapical bend; spermathecal duct irregularly coiled, and entering into the basal part of bursa copulatrix.

Notes. It is generally considered that the genus *Amamiclytus* is close to *Rhaphuma*. However, the result of comparison of the female genitalic features shows that there is no special similarity between these two genera.

Hayashiclytus acutivittis inscriptus (BATES, 1884)

(Figs. 179–181)

Collecting data of the material used. Narutaki, Hinoemata-mura, Fukushima Pref., 23–VI–1984, S. SAITO leg.

Paraproct moderate in size, its baculi thick, bifurcate at the base, the inner branches being short and extending anteriorly, and the outer ones rectangularly extending to lateral sides; valvifer distinct, with thick and straight baculi; coxite baculi not clearly rod-like, disappearing anteriorly into converging folds; coxite lobes weakly sclerotized at each inner side; stylus moderate in size, rather heavily sclerotized except for the apex; dorsal baculi thin, slightly sinuate and a little shorter than paraproct baculi; proctiger baculi very thick, and slightly curved; vaginal plates filiform, sclerotized except for the apices; bursa copulatrix ovoid in apical two-thirds, strongly constricted at basal third and forming bursal duct; spermatheca weakly sclerotized, bent at apical third, and narrow at basal two-thirds; spermathecal duct short and thick, entering into the basal part of bursa copulatrix.

Demonax transilis BATES, 1884

(Figs. 182–184)

Collecting data of the material used. Mt. Takao, Tokyo Met., 30–V–1971, H. KOBAYASHI leg.

Paraproct moderate in size, with thin and sinuate baculi; valvifer distinct, its baculi thin and almost straight; coxite baculi rather thick though short; coxite lobes rather broad, hardly sclerotized, and bearing rather long tactile hairs; stylus weakly sclerotized except for the apex; dorsal baculi thin, sinuate, and a little shorter than paraproct baculi; proctiger baculi thin and almost straight; vaginal plates straight, filiform, sclerotized except for the apices; bursa copulatrix rather small, broadened in apical part, narrowed towards the base; spermatheca extremely narrow, strongly curved as a whole, hardly sclerotized, and not clearly distinguishable from its duct, which is sinuate and enters into the vagina.

Tribe Anaglyptini

Paraclytus excultus BATES, 1884

(Figs. 185–187)

Collecting data of the material used. Ashio, Tochigi Pref., 29–V–1976, Y. NAGASHIMA leg.

Paraproct moderate in size, its baculi thick and slightly bisinuate; valvifer distinct, its baculi slightly curved, rather thick though thinned towards the apices; coxite baculi furcate at apical fourth, with shorter internal branches; coxite lobes rather broad, weakly sclerotized at each inner side, and with some tactile hairs; stylus moderate in size, and sclerotized except for apex; dorsal baculi weakly curved, and shorter than paraproct baculi; proctiger baculi short and straight; vaginal plates sinuate, thin at the bases though thickened towards the apices, and sclerotized in basal halves; bursa copulatrix large and sigmoidal, subglobular in basal part though narrower apically, constricted at the base; spermatheca narrow, strongly arcuate and tapering, with the gland attached to near the base of the outer side; spermathecal duct short, straight and entering into the base of bursa copulatrix.

Anaglyptus (Anaglyptus) matsushitai HAYASHI, 1955

(Figs. 188–190)

Collecting data of the material used. Near Masutomi, Sudama-chô, Yamanashi Pref., 13–VI–1987, R. INAGAWA leg.

Paraproct long, its baculi thick; valvifer distinct with rather long and almost straight baculi; coxite hardly constricted, with the baculi short and sharply bent inwards at the bases; coxite lobes short, with rather long tactile hairs; stylus moderate in size, sclerotized except for the apex, and bearing some long tactile hairs; dorsal baculi almost straight and somewhat shorter than paraproct baculi; proctiger baculi thin, short, and almost straight; vaginal plates sclerotized and aciculate; bursa copulatrix oval in apical half, narrow in basal half, with narrow longitudinal sclerotization; spermatheca curved and almost of the same width in apical two-thirds, with the gland fairly long and attached to the basal third of the outer side of spermatheca; spermathecal duct very short, rather thick, sinuate, and entering into bursa copulatrix at its basal third.

Oligoenoplus rosti rosti (PIC, 1911)

(Figs. 191–193)

Collecting data of the material used. Yunohana, Tateiwa-mura, Fukushima Pref., VI–1983, H. MAKIHARA leg.

Paraproct moderate in size, with thin and slightly sinuate baculi; valvifer distinct,

with almost straight baculi; coxite baculi rather thick though simple; coxite lobes hardly sclerotized, with rather long tactile hairs; stylus moderate in size, sclerotized except for the apex; dorsal baculi thin, a little shorter than paraproct baculi; proctiger baculi rather thick, almost straight; vaginal plates sclerotized and filiform; bursa copulatrix broad throughout; spermatheca narrow, curved, and weakly sclerotized; spermathecal duct short and thick, linearly sclerotized at the apex, and entering into the basal part of bursa copulatrix.

Notes. In *Anaglyptus* (*Akajimatora*) *bellus bellus* MATSUMURA et MATSUSHITA, 1933, general conformation of the female genitalia is similar to that of this species, with linear sclerotization at the apex of spermathecal duct, though the sclerotization is weaker than in this species. Because of this characteristic feature, *A. bellus bellus* is closer to this species than to *A.* (*Anaglyptus*) *matsushitai*. *Hirticlytus comosus* (MATSUSHITA, 1941) is also similar to this species in the feature of the female genitalia, but its spermathecal duct is not sclerotized.

Tribe Purpuricenini

Purpuricenus* (*Sternoplistes*) *spectabilis MOTSCHULSKY, 1857

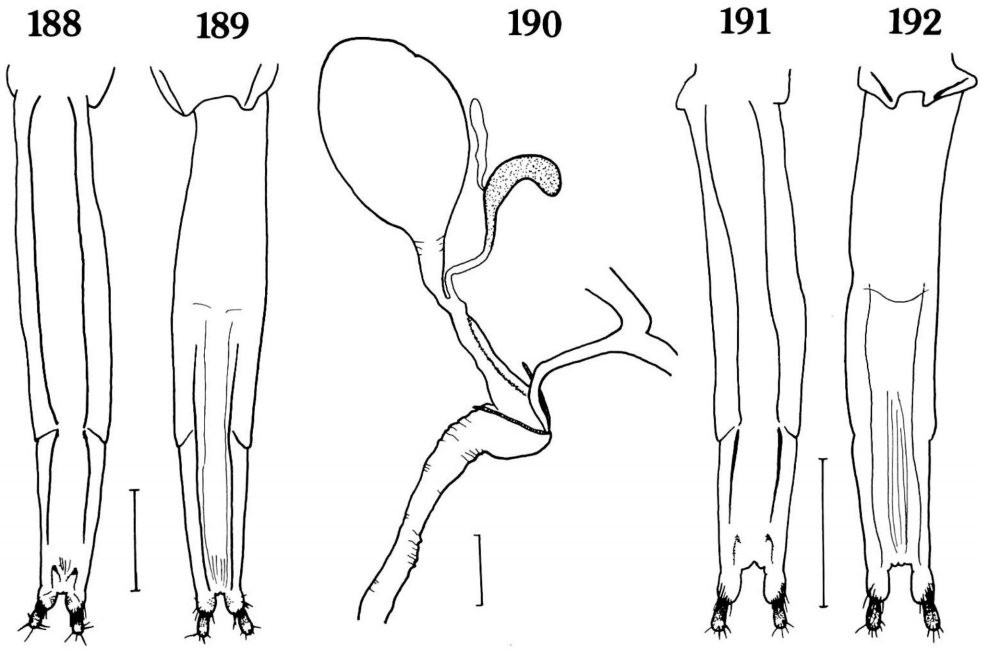
(Figs. 194–196)

Collecting data of the material used. Tobira, Nagano Pref., 18–VII–1969, H. KOBAYASHI leg.

Paraproct extremely short and broad, its baculi thick, curved, bifurcate at basal fourth; valvifer indistinct; coxite very short and broad, wholly pubescent, its baculi forming widely sclerotized parts, and rod-like only at their anterior external portions; coxite lobes weakly sclerotized, with many rather long tactile hairs; stylus narrow, sclerotized except for the apex; dorsal baculi very short, not rod-like but forming irregular sclerotized patches; proctiger baculi very thick, slightly curved; vaginal plates narrow and extremely long, gently curved, and heavily sclerotized except for the apices; bursa copulatrix ovoid in apical half, slightly constricted at the middle, and gradually narrowed towards the base; spermatheca abruptly bent at middle, its basal part very narrow; spermathecal duct coiled once before the middle, sinuate, and entering into the basal part of bursa copulatrix.

Notes. In *Purpuricenus* (*Sternoplistes*) *lituratus* GANGLBAUER, 1886, and *Amarysius sanguinipennis* (BLESSIG, 1872), the female genitalia are also peculiar in conformation as in this species.

Figs. 188–196. —— 188–190, *Anaglyptus* (*Anaglyptus*) *matsushitai*; 191–193, *Oligoenoplus rosti rosti*; 194–196, *Purpuricenus* (*Sternoplistes*) *spectabilis*. Ovipositor, ventral view (188, 191, 194); ovipositor, dorsal view (189, 192, 195); internal reproductive organs (190, 193, 196). (Scale: 0.5 mm.)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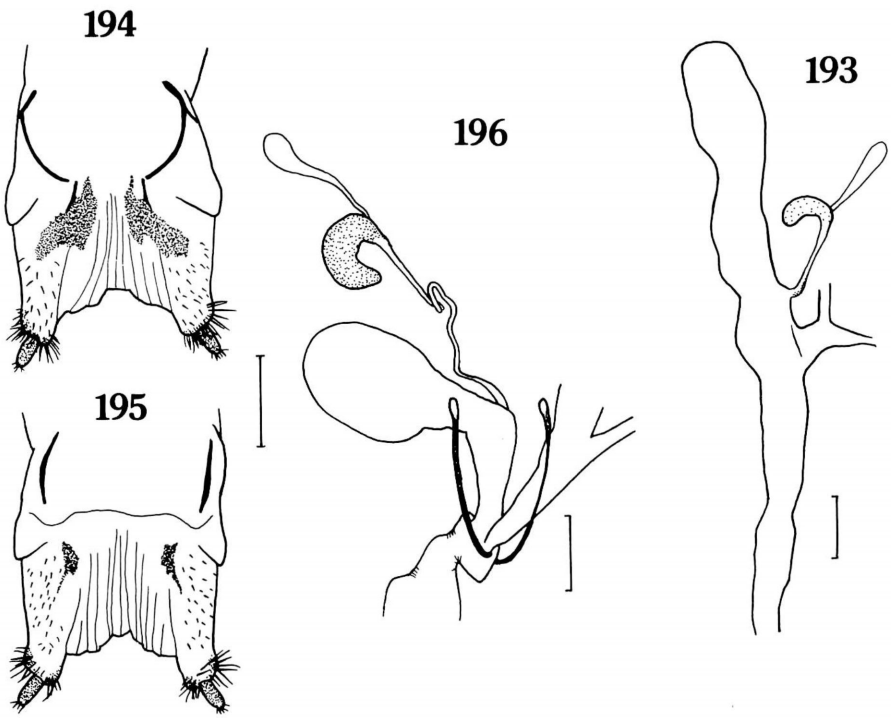
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Tribe Cleomenini

Kurarua rhopalophoroides HAYASHI, 1951

(Figs. 197–199)

Collecting data of the material used. Mt. Kasuga, Nara Pref., 23–IV–1979, A. SEKI leg.

Paraproct rather short, with thin and almost straight baculi; valvifer indistinct; coxite baculi slightly curved, and connected with paraproct baculi at each base; coxite lobes rather long, sclerotized at each inner side; stylus rather heavily sclerotized except for the apex; dorsal baculi a little longer than paraproct baculi and slightly sinuate; proctiger baculi thin and inwardly bent at apical third; vaginal plates not detected; bursa copulatrix not ovoid, rather narrow throughout; spermatheca narrow, strongly arcuate, and rectangularly bent near the base; spermathercal duct thin, coiled once at the base, sinuate, rectangularly bent before the apical portion, which is stiff, and entering into the basal part of bursa copulatrix.

Artimpaza setigera setigera (PIC, 1928)

(Figs. 200–202)

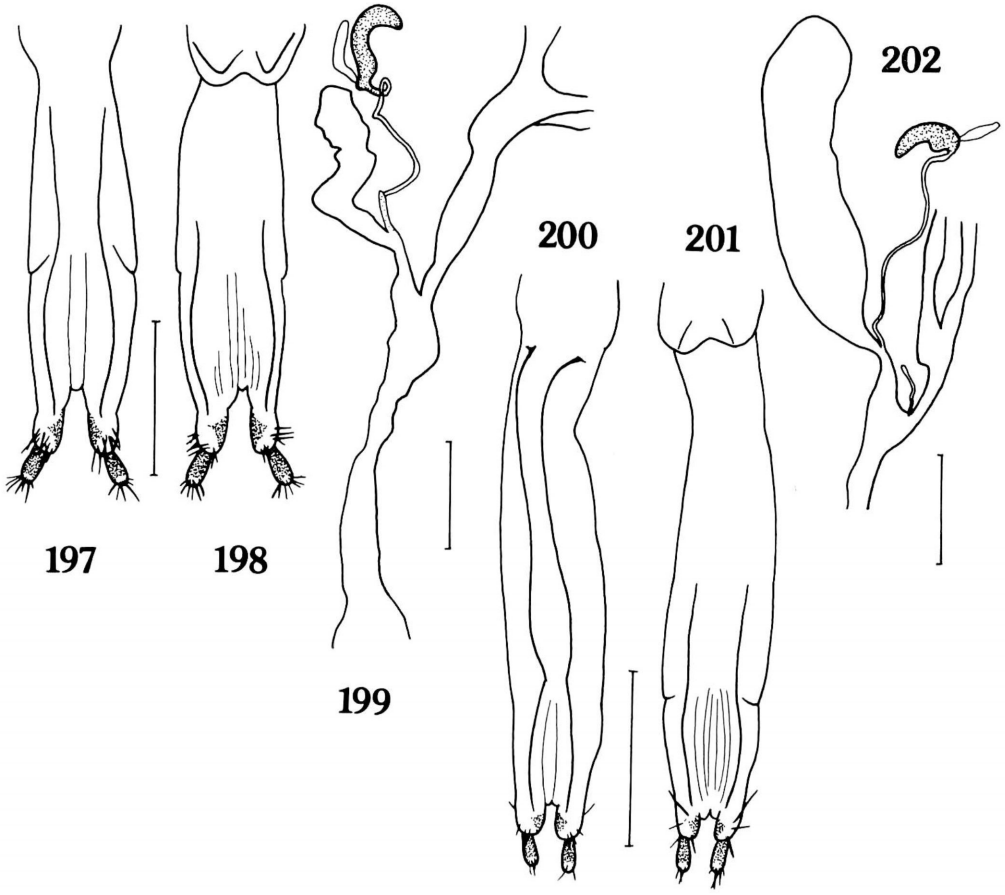
Collecting data of the material used. Musha, Taiwan, V–1942, T. SHINORA leg.

Paraproct rather long, its baculi thin and sinuate, though somewhat thickened at each base; valvifer indistinct; coxite hardly constricted, its baculi thin, slightly curved, and connected with paraproct baculi at each base; coxite lobes rather narrow, moderately sclerotized at each inner side; stylus moderate in size, sclerotized except for the apex; dorsal baculi thin and sinuate, obviously shorter than paraproct baculi; proctiger baculi short, thin and straight; vaginal plates very narrow and sinuate; bursa copulatrix long and broad, though narrow at basal fourth; spermatheca bent near the base, inwardly broadened in basal half, and narrowed in apical half; spermathecal duct long, thin, sinuate, and entering into the base of bursa copulatrix.

Discussion [Cerambycinae]

Since the time of THOMSON (1860–'61) and LACORDAIRE (1869), higher classification in the subfamily Cerambycinae has not been much changed. It is true that minor re-arrangement has been made from time to time, and certain groups, like disteniines, asemines and, of course, lepturines, have been removed from the subfamily. However, phylogenetic scrutiny of remaining tribes and genera has seldom been made, probably because of difficulty in arranging them in a convincing order. On the other hand, many new species have been added to the subfamily as recognition of species is usually not difficult, which makes the phylogenetic analysis more and more difficult.

In the latest monograph of the Japanese Cerambycidae, NIISATO (1992 a) classified the Japanese species of the subfamily Cerambycinae into 68 genera of 18 tribes.



Figs. 197–202. —— 197–199, *Kurarua rhopalophoroides*; 200–202, *Artimpaza setigera setigera*. Ovipositor, ventral view (197, 200); ovipositor, dorsal view (198, 201); internal reproductive organs (199, 202). (Scale: 0.5 mm.)

His arrangement of the tribes is as follows: Cerambycini – Methiini – Hesperophanini – Achrysonini – Phoracanthini – Callidiopini – Obriini – Stenopterini – Molorchini – Cleomenini – Thraniini – Pyrestini – Rosaliini – Callichromini – Purpuricenini – Callidiini – Clytini – Anaglyptini. These tribes are about the same as those recognized by HAYASHI (1983) in his check-list, though NIISATO placed *Comusia* in the tribe Obriini and *Merionoeda* in the Stenopterini. Besides, he arranged the Cleomenini at the side of the Molorchini and Purpuricenini next to the Callichromini.

My own study of the female genitalia reached a result somewhat different from those given by HAYASHI and NIISATO. In many cases, these organs are not useful for classifying cerambycine tribes and genera, but sometimes, they are strikingly modified and furnish fundamental characters for phylogenetic study. The features that are

worth noting are as summarized below.

a) Cerambycini, Methiini, Hesperophanini, Phoracanthini and Callidiopini

No characteristics indicating diagnostic tribal features are found in the female genitalia of the species belonging to these tribes, though some features are species specific; in *Massicus raddei* (Cerambycini), all the baculi are very thick and the coxite lobes are very broad; in *Xystrocera globosa* (Methiini), the spermatheca is divided at the apical part and not sclerotized, and the bursa copulatrix bears distinctly defined duct; in *Leptoxenus ibidiiformis* (Methiini), the bursa copulatrix is unusually small; the problem of the taxonomic position of the genus *Comusia*, which was tentatively placed in the tribe Methiini in the second part of this series, will be taken up under the Obriini; in *Gnatholea eburifera* (Hesperophanini), the paraproct baculi are composed of two pairs, a peculiarity that does not appear in any other cerambycines at all; in *Stenodryas clavigera clavigera* (Phoracanthini), the paraproct is extremely short and the proctiger is absent.

b) Thraniini, Rosaliini, Callichromini, Callidiini, Cleomenini

In the Thraniini, though only one species is examined, the paraproct baculi and coxite baculi are clearly connected with each other, and the coxite is not constricted at the base; in the two species of the Rosaliini, *Rosalia* (*Rosalia*) *batesi* and *Acrocyrtidus elegantulus longicornis*, the coxite is narrow but the coxite lobes are broad; in the four species of the two genera of the Callichromini, the base of the bursa copulatrix, into which the spermathecal duct enters, is either hollowed or provided with many grooves; in the Callidiini, the paraproct is rather long in most species, the proctiger tends to reduce or disappears, and the sclerotization of the spermatheca is rather weak; in the Cleomenini, the valvifer is absent. Though the genus *Kurarua* was originally erected as a member of the Molorchini, *K. rhopalophoroides* has normally developed proctiger and seems to have no direct affinity to the Molorchini, in which the proctiger is always absent.

c) Molorchini

In all the species belonging to this tribe, the proctiger is absent, and the vaginal plates are sclerotized. NIISATO (1992 a) regarded the genus *Merionoeda*, which had been currently placed in the Molorchini by many Japanese specialists, as a member of the Stenopterini. This view is supported by the conformation of its female genitalia. *Merionoeda* is closer to the Stenopterini or Obriini than to the Molorchini, though I cannot say whether or not the genus is really a member of the Stenopterini.

In any case, there is no similarity between the Molorchini and the Stenopterini or Obriini.

d) Clytini, Anaglyptini

The Clytini is composed of many genera and species, though no diversification can be observed in the conformation of their female genitalia, and no direct affinity can be detected between the Clytini and Anaglyptini so far as concerned with these organs.

e) Pyrestini, Purpuricenini

Close similarity of these tribes has not been clearly recognized before, though they were placed side by side by GRESSITT (1951) in his monograph of the Chinese Cerambycidae. In reality, they are closely related to each other so far as concerned with the female genitalia, especially in the following points: the 8th abdominal segment bears many long bristles, the paraproct is very short, and the coxite is also short and bears long tactile hairs. These similarities seem to suggest a high probability that the two tribes belong to the same lineage.

f) Obriini, Stenopterini

The cerambycines belonging to these tribes are very peculiar in the conformation of their female genitalia. In all the species excluding *Obrium nakanei* and the species of *Ibidionidum*, the 4th abdominal sternite (2nd visible sternite) is distinctly emarginate and bears numerous long modified bristles along the posterior edge, some of which undergo sensilla-like modification, and the 5th and 6th segments are also shortened. The paraproct, valvifer and coxite are fused together in many species and completely devoid of their baculi, both the coxite and styli bear long tactile hairs, and the proctiger is always absent. The spermatheca is heavily sclerotized, and the spermathecal duct is long and thin, sometimes coiled many times. In the genus *Obrium*, both the paraproct and coxite considerably vary in length, sometimes even between two species whose external morphology is closely similar to each other in the adult.

The tribe Stenopterini is usually distinguished from the Obriini by shortening or tapering of the elytra, but I cannot find any genitalic characters that distinguish the former from the latter.

Conclusion

Though fairly diverse, the female genitalia are generally not useful for determining affinity or disparity of cerambycine tribes and genera. Even the Clytini, a large, homologous and externally isolated group, does not show any genitalic peculiarity distinguishing it from many other cerambycine tribes. As regards the Methiini, CROWSON (1955, p. 149) noted its partial resemblance to the Lamiinae, but so far as concerned with the Japanese species, *Xystrocera globosa* and *Leptoxenus ibidiiformis*, the female genitalia are fundamentally identical with those of other non-specialized groups of the Cerambycinae, and show no direct relationship to those of the Lamiinae. On the other hand, *Comusia* belongs to the obriine stock, not belonging to the Methiini. This was already pointed out by MARTINS (1977, pp. 112, 114) and followed by NIISATO (1992 a, p. 482), and the present study also reached the same result (SAITO, 1991, pp. 167–168).

There are, however, some tribes in which the female genitalia are highly modified and show remarkable specialization. In the Molorchini, for instance, the proctiger is always absent, though the other parts are not much modified. The same feature is also found in certain species of the Callidiini and Clytini. On the other hand, *Merionoeda*, which was previously placed in the Molorchini, does not belong to this tribe

but is closer to the Obriini. Though NIISATO (1992 a, p. 448) treated it as a member of the Stenopterini, it is difficult to determine from my study of the female genitalia to which tribe *Merionoeda* really belongs.

As was pointed out before, the two tribes, Pyrestini and Purpuricerini, are highly specialized and closely related to each other as viewed from the morphology of female genitalia. More striking is the Obriini, which must be the most specialized of the Japanese longicorn beetles belonging to the Cerambycinae. It is not only remarkable in the unique modification of ovipositor but also in that of the abdominal sternites.

要　約

斉藤明子：日本および近隣地域に産するカミキリムシ類の雌生殖器．II–IV．アオスジカミキリ族からホタルカミキリ族まで．—— 日本とその近隣地域に分布するカミキリムシ類のうち，カミキリ亜科に含まれる属の代表的な種を選んで，雌生殖器を精査した．その結果から導かれた，いくつかの種群についての類縁関係や分類学的地位に関する見解をまとめた．

カミキリ亜科に含まれる種では，外部形態の多様化にもかかわらず，雌生殖器の構造は全体に同質的であり，その形態は，族や属の類縁関係を知るために有効でない場合が多い．しかし，いくつかの種群では腹部第9節に顕著な変形が認められ，類縁関係を知る手がかりとなっている．

オガサワラチャイロカミキリ属は，最近になってアオスジカミキリ族からアメイロカミキリ族に移され，後者の一員として扱われることが多いが，雌生殖器の構造からみても，この処置を支持する結果が得られた．

NIISATO (1992 a) は，モモブトコバネカミキリ属を，ヒゲナガコバネカミキリ族のものではなく，モモブトコバネカミキリ族の1属として扱っているが，雌生殖器の構造からみても，この属とヒゲナガコバネカミキリ族とは類縁的に大きく離れたものだろうと考えられる．アメイロカミキリ族とモモブトコバネカミキリ族では，腹部第9節が短縮し棒状片 (baculi) を欠くなど，共通したいちじるしい特異性を多くの種が示している．したがって，これら2族の類縁関係が近いことは確実である．しかし，モモブトコバネカミキリ属が，アメイロカミキリ族とモモブトコバネカミキリ族のいずれに含まれるべきであるかはわからない．

クスベニカミキリ族とベニカミキリ族でも，腹部第9節が短縮するという特異性がいちじるしく，類縁関係が近いものと考えられる．

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Elytra, Tokyo, **21** (1): 25, May 15, 1993

Occurrence *Philonthus discoideus* GRAVENHORST (Coleoptera, Staphylinidae) on Torishima of the Izu Islands

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Recently, I had an opportunity to re-examine a species of staphylinid beetle obtained on Torishima Island previously recorded as *Philonthus* sp. (WATANABE, 1963, p. 172, pl. 3, fig. 17). It was found that this species agrees with *Philonthus discoideus* GRAVENHORST widely distributed in Japan except Hokkaido. Its collecting data are as given below.

1 ♂, Torishima Is. of the Izu Isls., Japan, 14–VII–1961, Y. WATANABE leg.

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WATANABE, Y., 1963. The insect fauna of Torishima. *Meteorological data and report of Marcus and Torishima Islands*, pp. 169–174, pl. 3.

Elytra, Tokyo, **21** (1): 26, May 15, 1993

A New Record of *Trechus plutenkoi kushironis* S. UÉNO (Coleoptera, Trechinae)

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Through the courtesy of Drs. Kazuyoshi and Yoshiro KUROSA, I was given an opportunity to examine a specimen of a trechine beetle apparently referable to *Trechus* (*Epaphius*) *plutenkoi kushironis* S. UÉNO (1992, p. 2, figs. 1–3). It was obtained at Utonai-numa a little more than 200 km west by south of the type locality. Its collecting data are as follows:

1 ♀, Utonai-numa, Tomakomai-shi, central Hokkaido, 2–IX–1992, Y. KUROSA leg. (NSMT).

This specimen, 4.30 mm in the length of body, is slightly different from the type series in somewhat larger eyes and broader base of the pronotum, but otherwise agrees well with the latter. The standard ratios of its body parts are as follows: PW/HW 1.33, PW/PL 1.39, PW/PA 1.53, PW/PB 1.22, PB/PA 1.26, EW/PW 1.45, EL/EW 1.54.

The discovery of *T. plutenkoi kushironis* at Utonai-numa in central Hokkaido is of special interest from the zoogeographical viewpoint, since the Ishikari Lowlands, near the southern end of which lies the boggy lake, is separated from eastern Hokkaido by a range of high mountains continuing from the Daisetsu Volcanoes in the north to the non-volcanic Hidakas in the south. These high mountains make an impassable barrier to such a strictly paludicolous beetle as *T. p. kushironis*, even though the trechine has fully functional hind wings. It is probable that the ancestor of the species may have been widely distributed in the lowlands in the past when they were marshy all over. Later drying of lands, both natural and artificial, may have restricted its habitats to certain boggy areas, making its distribution quite discontinuous as is obseved at the present time.

In closing this brief report, I wish to thank Drs. Kazuyoshi and Yoshiro KUROSA for their kindness in submitting the important specimen of the rare species to me for taxonomic study.

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Elytra, Tokyo, **21** (1): 27–31, May 15, 1993

New Records of Cerambycid Beetles (Coleoptera) from China

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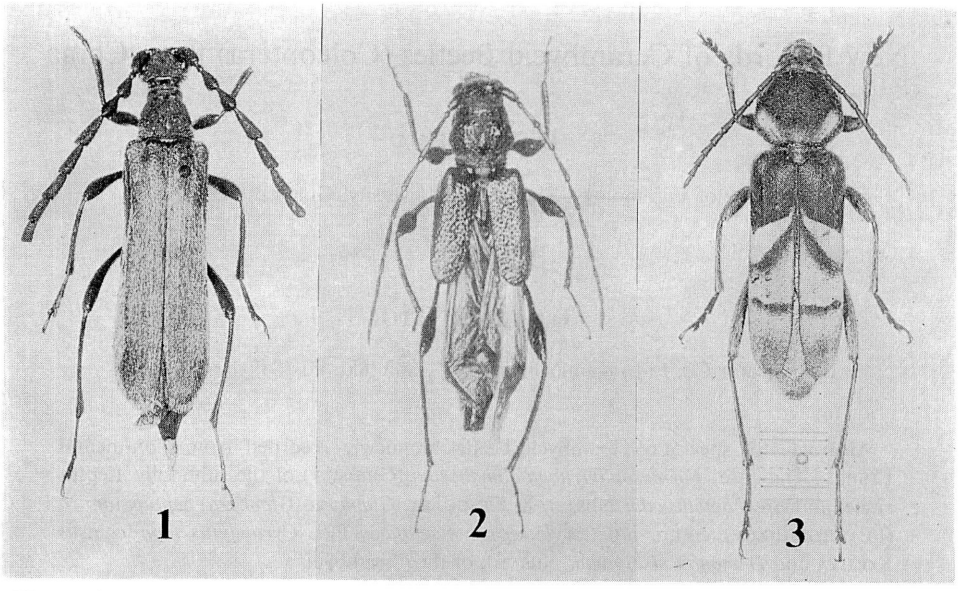
Abstract Six species of cerambycid beetles are newly recorded from Continental China. They are: *Formosophyrrhona cinnabarina* (GRESSITT) of the subfamily Lepturinae, and *Stenhomalus odai* NIISATO et KINUGASA, *Glaphyra* (*Glaphyra*) *heptapotamica* (PLAVILSTSHIKOV), comb. nov., *Xylotrechus magnificus* PIC, *Cyrtoclytus monticallisus* KOMIYA and *Demonax nishiyamai* NIISATO, of the Cerambycinae.

In the latest check list of the Chinense cerambycid beetles, HUA (1982) counted total 2,198 species from China including Taiwan, and classified them into 6 subfamilies: Prioninae (73 spp.), Aseminae (24 spp.), Disteniinae (8 spp.), Lepturinae including Philidae (274 spp.), Cerambycinae (636 spp.), and Lamiinae (1,183 spp.). Though 493 species were newly recorded after the publication of the monograhical work entitled "Longicorn beetles of China" (GRESSITT, 1951), faunal investigation of the Cerambycidae seems still insufficient as compared with those of some other coleopteran families. For this reason, we intend to carry on accurate and continuous researches of the fauna.

Through our cooperative study of the Chinese cerambycid beetles, we were able to examine several species unrecorded from Continental China. Four species listed below have previously been recorded from such countries neighboring the Chinese territory as Indochina, Russia and Japan. All the Chinese specimens examined are preserved in the collection of the Institute of Entomology, Zhongshan University, Guangzhou, China.

We thank Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for kindly reading the original manuscript of this short report, to Miss Hua ZHANG for her support in the laboratory work, and also to Mr. Takao ARAI for the loan of specimens.



Figs. 1–3. —— 1. *Formosophyrrhona cinnabarina*, ♀, from Hainan. —— 2. *Glaphyra* (*Glaphyra*) *heptapotamica*, ♀, from Ningxia Huizu Zizhiqu. —— 3. *Xylotrechus magnificus*, ♂, from N. Thailand.

Lepturinae

Formosophyrrona cinnabarina (GRESSITT)

(Fig. 1)

Corennys cinnabarina GRESSITT, 1951, Longicornia, **2**, p. 122, pl. 4, fig. 4.
Formosophyrrona cinnabarina: M. HAYASHI *et al.*, 1988, Chinese J. Ent., **8**, p. 183.

Specimen examined. 1 ♀, Wufenqu, Mt. Jianfengling, S. Hainan, China, 22–II–1982, Z.-Y. CHEN leg.

Distribution. Hainan Prov. (new record), Taiwan.

Notes. The female specimen examined may be slightly different from the typical population occurring in Taiwan. The dorsal pubescence in the Hainan specimen is slightly longer and more reddish than that in the Taiwanese.

Cerambycinae

Stenhomalus odai NIISATO et KINUGASA

Stenhomalus odai NIISATO et KINUGASA, 1982, Elytra, Tokyo, **9**, p. 13, figs. 1–b & 2.

Specimen examined. 1 ♀, Jinghong, Xishuangbanna Daizu Zizhizhou, Yunnan Prov., China, V–1982.

Distribution. Yunnan Prov. (new record), N. Thailand.

Notes. *Stenhomalus odai* is not so rare in northern Thailand. NIISATO has examined many specimens of this species since its original description.

Glaphyra (Glaphyra) heptapotamica (PLAVILSTSHIKOV), comb. nov.

(Fig. 2)

Molorchus heptapotamicus PLAVILSTSHIKOV, 1940, Fauna SSSR, Ins. Coléopt., **22**, p. 163.

Specimens examined. 3 ♀♀, Wrzhong, Ningxia Huizu Zizhiqu, China, V–1992.

Distribution. Ningxia Huizu Zizhique (new record); Russia (Urals through Tien Shan Mts.).

Notes. Though having peculiar facies, this species no doubt belongs to the genus *Glaphyra* because of its prothoracic structure which is one of the most important characters for separating *Glaphyra* from *Molorchus*. The fore coxal cavities of *heptapotamica* are externally closed behind, since the furcasterna (basal plates of coxal cavities) are well developed and extend behind. Therefore, we treat this species as a member of *Glaphyra*.

Three female specimens examined were emerged from twigs of the apple tree. According to TSHEREPANOV (1981, pp. 69–72), the larvae of this species are rearing under the barks of dog rose and buckthorn in the southern Urals, Russia.

Xylotrechus magnificus PIC

(Fig. 3)

Xylotrechus magnificus PIC, 1992, Mél. Exot.-Ent., (37), p. 12.

Specimens examined. 1 ♀, Xinping, Yunnan Prov., China, VIII–1981; 1 ♂, Waiang Papao, Chieng Rai, N. Thailand, 22–V–1992; 1 ♂, same locality, 19–VI–1992.

Distribution. Yunnan Prov. (new record); Laos, Thailand (new record).

Notes. It has been expected that this large clytine species could be found in the neighbourhood of the Laotian territory. As recorded above, we were able to examine total three specimens of this species collected from two different localities. This species is peculiar in the proportions of prothorax and elytra, and is affiliated with Japanese *X. villioni* VILLARD (1982, p. 51).

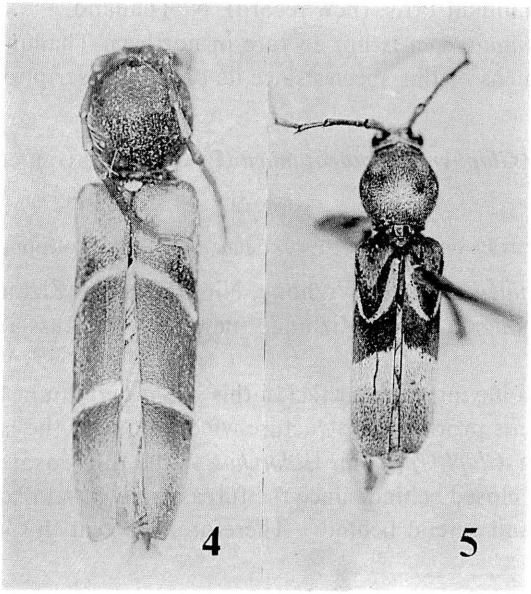
Cyrtoclytus monticallisus KOMIYA

(Fig. 4)

Cyrtoclytus monticallisus KOMIYA, 1980, Elytra, Tokyo, **7**, p. 33, fig. A.

Specimen examined. 1 ♂, Jinxinsanjiao, Guangxi Zhuangzu Zizhiqu, China, 12–IV–1982.

Distribution. Guangxi Zhuangzu Zizhiqu (new record); Japan (Honshu).



Figs. 4–5. —— 4. *Cyrtoclytus monticallisus*, ♂, from Guangxi Zhuangzu Zizhiqu. —— 5. *Demonax nishiyamai*, ♀, from Fujian.

Notes. A single Chinese specimen examined well agrees with the Japanese specimens in external features. Though no morphological difference is observed between the two populations, the present discovery is very interesting from the zoogeographical viewpoint, since Guangxi Zhuangzu Zizhiqu of Southeast China is distant from the original locality for more than 2,700 km in a bee-line.

In his original description, KOMIYA (1980, p. 34) compared this species with *C. multizonus* GRESSITT (1951, p. 260) as an "alliant" species. According to our examination of the holotype of *C. multizonus* preserved in the collection of Zhongshan University, it seems to have some relationship to *C. monticallisus*, and is rather similar to *C. formosanus* GRESSITT (1934, p. 167).

Demonax nishiyamai NIISATO, 1984

(Fig. 5)

Demonax nishiyamai NIISATO, 1984, Elytra, Tokyo, **11**, p. 11, figs. 2, 6.

Specimen examined. 1 ♀, Mt. Wuyi-Shan, Fujian Prov., China, XI–1984, J.-H. LU leg.

Distribution. Fujian Prov. (new record), Taiwan.

Notes. This is a second record of the species, which was originally described from the central mountains of Taiwan (Lienhwachi, type locality), and any additional record has so far been unknown. As was already suggested in the original description,

this species somewhat resembles *D. simillimus* GRESSITT (1939, p. 103, pl. 1, fig. 2) known from East China including Fujian Province and *D. formosomontanus* IKEDA et NIISATO (1984, p. 9, figs. 1 & 5) from Taiwan, but it is distinct from them in its large and laterally expanded pronotum, and apically narrowed elytra.

要　　約

华　立中・新里達也：中国新記録のカミキリムシ．—— 中山大学（広東省広州市）昆虫学研究所所蔵標本より中国未記録のカミキリムシ 6 種を記録するとともに，いくつかの分類学的な知見を加えた．これらは，ハナカミキリ亜科のツヤアカハネハナカミキリ *Formosophyrrona cinnabarina*（海南省），カミキリ亜科の *Stenhomalus odai*（云南省），*Glaphyra* (*Glaphyra*) *heptapotamica* comb. nov,（宁夏回族自治区），*Xylotrechus magnificus*（云南省；タイ北部），アカネキスジトラカミキリ *Cyrtoclytus monticallisus*（広西壮族自治区），ニシヤマトゲヒゲトラカミキリ *Demonax nishiyamai*（福建省）である（括弧内は新記録産地）．

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Elytra, Tokyo, **21** (1): 32, May 15, 1993

Some Records of Alpine Cerambycid Beetles (Coleoptera) from Taiwan

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Through the courtesy of Dr. Shun-Ichi UÉNO, I was able to examine a small cerambycid collection collected by the 1989 collaborated survey of the high altitude fauna of Taiwan, made by the National Science Museum, Tokyo, and National Taiwan University. Though the collection does not include new record from the island, I should like to report on them since such alpine fauna of cerambycid beetles has not been sufficiently known so far. All the specimens listed below are deposited in the zoological collection of the National Science Museum (Nat. Hist.), Tokyo. I wish to thank Dr. Shun-Ichi UÉNO for giving me the opportunity to examine his museum collection, and for his continuous guidance.

Cephalallus oberthuri SHARP, 1905

1 ♂, Wu-ling (1,740 m alt.), Hoping Hsiang, Taichung Hsien, 27–VI–1989, S.-I. UÉNO leg.

Formosotoxotus auripilosus (KANO, 1933)

1 ♂, Tzu-en (1,990 m alt.), Hsiulin Hsiang, Hwalien Hsien, 26–VI–1989, S.-I. UÉNO leg.

Encyclops viridipennis MAKIHARA, 1978

1 ♂, Mt. Hsüeh Shan (2,460 m alt.), Hoping Hsiang, Taichung Hsien, 29–VI–1989, S.-I. UÉNO leg.

Leptura mushana (TAMANUKI, 1939)

2 ♀♀, Mt. Hsüeh Shan (2,460 m alt.), Hoping Hsiang, Taichung Hsien, 29–VI–1989, S.-I. UÉNO leg.; 1 ♂, same locality (3,100 m alt.) and collecter, 1–VII–1989.

Obrium piceorubrum HAYASHI, 1971

1 ♂, Tzu-en (1,990 m alt.), Hsiulin Hsiang, Hwalien Hsien, 26–VI–1989, S.-I. UÉNO leg.

Erythrus formosanus BATES, 1866

1 ♀, Taman (750 m), Fuhsing Hsiang, Taoyuan Hsien, 4–VII–1989, S.-I. UÉNO leg.

Euseboides matsudai GRESSITT, 1938

1 ♂, Mt. Chinan Shan, Liukuei Hsiang, Kaohsiung Hsien, 30–X–1989, T. YAMASAKI leg.; 2 ♂♂, Mt. Chuanching Shan, Hoping Hsiang, Taichung Hsien, 20–X–1989, T. YAMASAKI leg.

Rhodopina subuniformis GRESSITT, 1951

1 ♂, Tzu-en (1,990 m alt.), Hsiulin Hsiang, Hwalien Hsien, 26–VI–1989, S.-I. UÉNO leg.

Pseudocalamobius pubescens HASEGAWA, 1987

1 ♂, Kuanyuan (2,380 m), Hsiulin Hsiang, Hwalien Hsien, 25–VI–1989, S.-I. UÉNO leg.

Elytra, Tokyo, **21** (1): 33–40, May 15, 1993

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

III. Two New Species of the Subgenus *Cryptopidonia* from Taiwan

Mikio KUBOKI

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Abstract Two new species of the lepturine genus *Pidonia* are described from Taiwan. Both belong to the subgenus *Cryptopidonia*; one of them, named *P.* (*C.*) *anmashana*, is related to *P. pilushana*, while the other, named *P.* (*C.*) *fushani*, to *P. takahashii*.

The species of the genus *Pidonia* occur mainly in the temperate zone of the Holarctic Region, and more than 90 species have been known to belong to this genus. Up to the present, 19 species have been recorded from Taiwan. Study of the Formosan fauna still remains quite insufficient, despite its importance for analysing the origin of the Japanese fauna.

The present paper contains the result of my study on the species of the genus *Pidonia* obtained on Mt. An-ma Shan, 2,200 m in altitude, of the Ta-hsüeh-shan Mts., T'ai-chung Hsien, northwestern Taiwan. The holotypes of the new species to be described below will be deposited in the collection of the National Museum of Natural Science, T'ai-chung, Taiwan.

In preparing this report, I am much indebted to Mr. K. SUZUKI who gave me opportunity to work on this interesting material. My thanks are also due to Mr. Fu-shan CHEN for his kind help in the field.

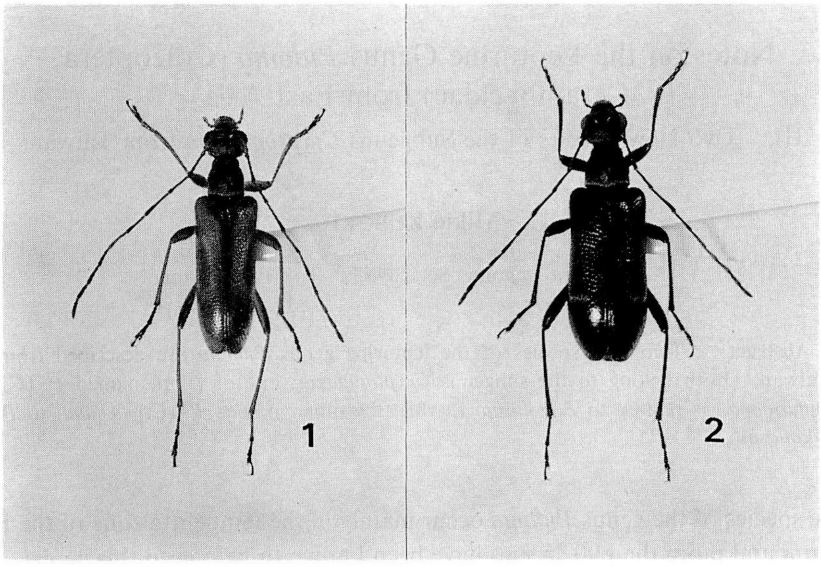
Pidonia (*Cryptopidonia*) *anmashana* KUBOKI, sp. nov.

(Figs. 1–6)

Body minute to small, relatively roundish and furnished with pale fulvous pubescence.

Length: 6.9–5.2 mm (male), 7.2–5.2 mm (female); breadth: 1.9–1.4 mm (male), 2.1–1.5 mm (female).

Color. Male:— Body fulvous to black; head reddish fulvous, sometimes with dark brown vertex; mouth-parts yellowish fulvous except for reddish brown apex of each mandible; eyes black; antennae fulvous; third and following segments infuscated, sometimes third to fifth segments fulvous except for dark brown apex of each segment; prothorax reddish fulvous, sometimes dark brown on both sides; scutellum reddish fulvous; coxae and trochanters fulvous; femora fulvous, sometimes apex of each hind



Figs. 1–2. *Pidonia* (*Cryptopidonia*) *anmashana* KUBOKI, sp. nov., from Mt. An-ma Shan in northwestern Taiwan; 1, ♂; 2, ♀.

femur dark brown; tibiae fulvous, sometimes each apex of mid and hind tibiae faintly infuscated; tarsi dark brown to black; claws reddish brown. Elytra almost yellowish fulvous with black markings; the black portions frequently becoming dull submetallic blue. Ventral surface:— head fulvous; thorax fulvous; meso- and metasterna darkened; abdomen fulvous, each of first to second or third sternites dark brown. Elytral markings:— sutural marking indistinctly present, broadened basally, almost terminating in the point of apical fourth of elytra, sometimes entirely absent; basal marking wanting; latero-basal marking small; latero-median marking oblong, rather developed but obscure; latero-posterior marking wanting; apical band faintly present, sometimes entirely absent.

Female:— Body coloration and markings distinctly more developing in female than in male; head, thorax and scutellum black; elytra black frequently becoming vivid metallic blue with two pairs of arcuate whitish yellow markings, sometimes these markings gradually reducing or entirely disappearing; antennae and legs brownish black to black; coxae and trochanters fulvous; ventral surface:— head, thorax and abdomen black.

Structure. Head broader across eyes than basal width of prothorax (male, 1.16: 1; female, 1.10: 1); terminal segment of maxillary palpus broadened apically with straight outer margin; tempora slightly narrowed posteriorly in anterior half and abruptly constricted in posterior half, almost impunctate and shining, with several setae; frons subvertical and transverse, covered with coarse punctures, bearing a fine but distinct median longitudinal furrow extending backwards to vertex; vertex weakly

convex above, coarsely punctured; gula shining, very sparsely clothed with long pubescence. Eyes relatively prominent, moderately faceted, shallowly emarginate at middle of internal margins. Antennae relatively short and slender, inserted just behind the level across frontal margins of eyes, slightly longer (male) or distinctly shorter (female) than body; first segment distinctly dilated towards apex, weakly shining, sparsely clothed with fine pubescence; second to eleventh segments densely clothed with fine appressed pubescence and sparsely with fine erect pubescence; comparative length of each antennal segment as follows:— $5>1+2=3>4=6$ (male) or $5>1+2>3>4=6$ (female).

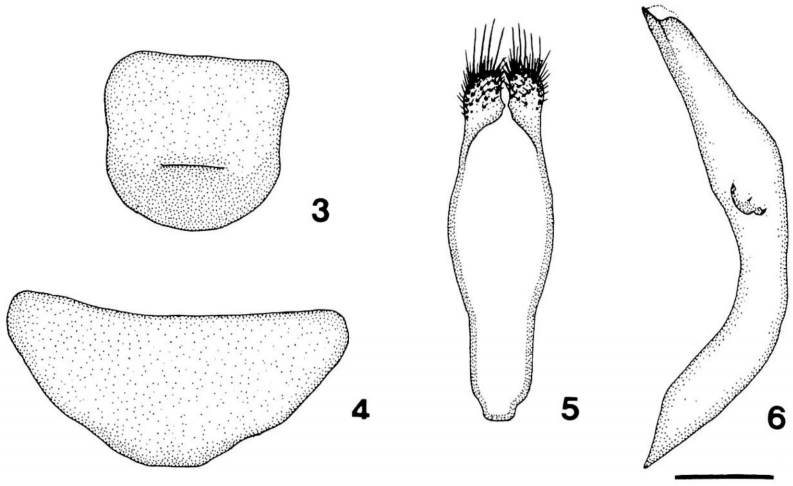
Prothorax longer than basal width (male, 1.07: 1; female, 1.01: 1), shallowly constricted both behind apex and before base, roundly expanded laterally just before the middle; breadth across expanded portions slightly shorter than base; basal margin weakly bisinuate, obviously broader than apical margin (male, 1.37: 1; female, 1.38: 1); disk of pronotum convex above, finely and closely punctured, sparsely clothed with fine pubescence; posterior lateral setae long; prosternum shining, extremely thinly clothed with short pubescence; meso- and metasterna finely punctate, densely clothed with fine appressed pubescence. Scutellum small and triangular, slightly longer than broad, bearing thin pubescence on the surface. Elytra 2.40 times (male) or 2.31 times (female) as long as basal width, gradually narrowed posteriorly (male) or almost parallel-sided (female), separately rounded at apices; surface sparsely and finely punctured, sparsely clothed with suberect pubescence; interspace between punctures broader than diameter of each puncture.

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

Abdomen elongate and gradually narrowed toward apex; surface of each sternite densely covered with extremely fine pubescence; in male, apex of last sternite rounded and very shallowly emarginate at middle (Fig. 4), apex of last tergite rounded (Fig. 3); in female, apex of last sternite rounded, apex of last tergite truncate.

Male genitalia:— Median lobe weakly sclerotized, long, relatively thick, less curved ventrally (Fig. 6) and acutely pointed at apex; lateral lobes shorter than median lobe; each apex rounded and densely furnished with long terminal hairs (Fig. 5); endophallus long and furnished with a pair of falcate sclerites; diverticulum located at the apical portion of endophallus long.

Female genitalia:— Spermatheca minutely striated, lightly sclerotized, relatively swollen, strongly curved at middle, widest near the middle, abruptly narrowed apically; the part continuing to spermathecal duct funnel-shaped without transverse crease; spermathecal gland located at lateral wall; vagina enlarged basally; valvifer narrowed apically; apical segment of coxite furnished with sensory pubescence; stylus sclerotized



Figs. 3–6. *Pidonia* (*Cryptopidonia*) *anmashana* KUBOKI, sp. nov., ♂. —— 3, Last tergite; 4, last sternite; 5, lateral lobes of male genitalia, ventral view; 6, median lobe of the same, lateral view. Scale: 0.3 mm.

and ovate, enlarged apically with long sparse hairs at the terminal area.

Type series. Holotype: ♂, Mt. An-ma Shan, 2,200 m alt., Ta-hsüeh-shan Mts., T'ai-chung Hsien, 1–V–1990, M. KUBOKI leg. Paratypes: 2 ♂♂, 2 ♀♀, same data as for the holotype; 3 ♂♂, 2 ♀♀, same locality, 2～5–V–1990, M. KUBOKI leg.; 11 ♂♂, 5 ♀♀, same locality, 1～5–V–1990, K. SUZUKI leg.; 10 ♂♂, 11 ♀♀, same locality, 4～5–V–1991, M. KUBOKI leg.; 3 ♂♂, 3 ♀♀, same locality, 4～5–V–1991, K. SUZUKI leg.

Distribution. Northwestern Taiwan.

This remarkable new species was discovered in an evergreen mixed forest on Mt. An-ma Shan, which lies near the southwestern end of the Ta-hsüeh-shan Mountain Range.

Flight period. May.

Flower records. Lithocarpus, Trochodendron aralioides.

Remarks. This new species is allied to *Pidonia pilushana* S. SAITO, but can be distingished from the latter by the following key:

1. Elytral markings: sutural marking of male clearly present, combining with apical band; apical band distinct; tempora less developed, narrowed in anterior half and gently constricted in posterior half; apex of male last sternite somewhat deeply emarginate at middle; median lobe of male genitalia strongly curved ventrally with its apex strongly sclerotized and faintly bending inside ..... *P. pilushana* S. SAITO.
2. Elytral markings: sutural marking of male indistinctly present, broadened basally, almost terminating in the portion of apical fourth of elytra, sometimes entirely

absent; apical band faintly present, sometimes entirely absent; tempora well developed, slightly narrowed posteriorly in anterior half and abruptly constricted in posterior half; apex of male last sternite very shallowly emarginate at middle; median lobe of male genitalia weakly curved ventrally with its apex weakly sclerotized and produced ..... *P. anmashana* sp. nov.

Pidonia (Cryptopidonia) fushani KUBOKI, sp. nov.

(Figs. 7–12)

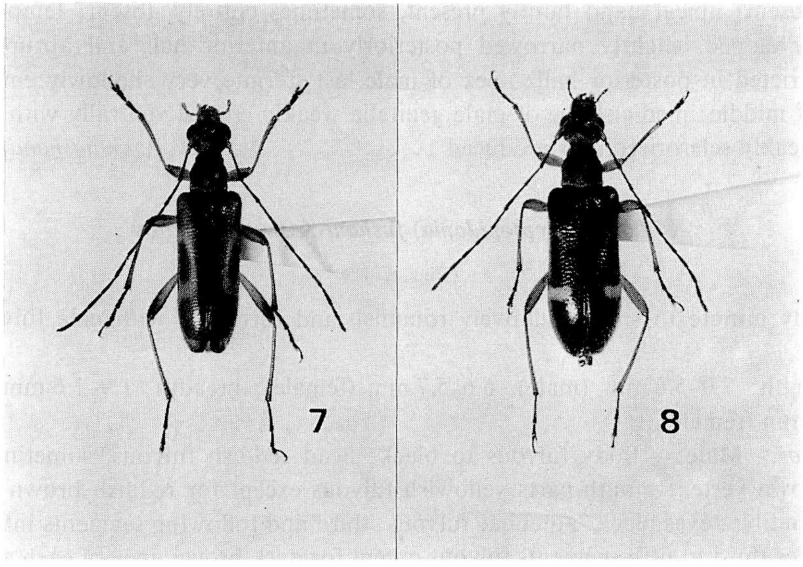
Body minute to small, relatively roundish and furnished with pale fulvous pubescence.

Length: 7.0–5.6 mm (male), 6.6–5.7 mm (female); breadth: 1.9–1.6 mm (male), 1.9–1.7 mm (female).

Color. Male:— Body fulvous to black; head reddish fulvous, sometimes with dark brown vertex; mouth-parts yellowish fulvous except for reddish brown apex of each mandible; eyes black; antennae fulvous; third and following segments infuscated, sometimes third to fifth segments fulvous except for dark brown apex of each segment; prothorax reddish fulvous, sometimes dark brown on both sides; scutellum reddish fulvous; coxae and trochanters fulvous; femora fulvous, sometimes apex of each hind femur dark brown; tibiae fulvous, sometimes each apex of mid and hind tibiae faintly infuscated; tarsi dark brown to black; claws reddish brown. Elytra almost yellowish fulvous with black markings; the black portions inclined to become dull submetallic blue. Ventral surface:— head fulvous; thorax fulvous; meso- and metasterna darkened; abdomen fulvous, each of first to second or third sternites dark brown. Elytral markings:— sutural marking narrowly present, sometimes entirely absent; basal marking wanting; latero-basal marking small; latero-median marking oblong, rather developed but obscure; latero-posterior marking wanting; apical band faintly present, sometimes entirely disappearing.

Female:— Body coloration and markings distinctly more developing in female than in male; head, thorax and scutellum black; elytra black frequently becoming vivid metallic blue with two pairs of arcuate whitish yellow markings, sometimes these markings gradually reducing or entirely disappearing; scape and pedicel yellowish brown; third and following segments infuscated; coxae and trochanters brownish yellow; femora and tibiae almost brownish yellow, sometimes infuscated at their apices, tarsi and claws dark brown; ventral surface:— head and thorax black, abdomen reddish brown; each of first to second sternites darkened to black.

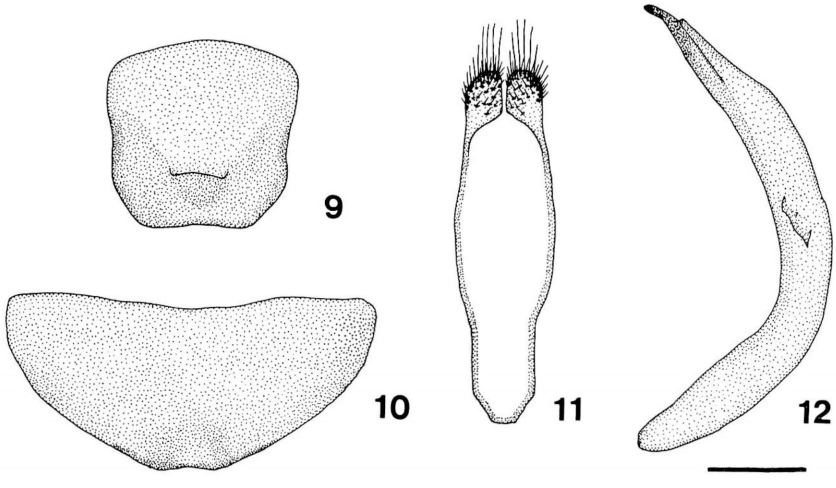
Structure. Head broader across eyes than basal width of prothorax (male, 1.17: 1; female, 1.10: 1); terminal segment of maxillary palpus broadened apically with straight outer margin; tempora narrowed posteriorly in anterior half and abruptly constricted in posterior half, almost impunctate and shining, with several setae; frons subvertical and transverse, covered with coarse punctures, bearing a fine but distinct median longitudinal furrow extending backwards to vertex; vertex weakly convex



Figs. 7–8. *Pidonia* (*Cryptopidonia*) *fushani* KUBOKI, sp. nov., from Mt. An-ma Shan in northwestern Taiwan; 7, ♂; 8, ♀.

above, coarsely punctured; gula shining, very sparsely clothed with long pubescence. Eyes relatively prominent, moderately faceted, shallowly emarginate at middle of internal margins. Antennae relatively short and slender, inserted just behind the level across frontal margins of eyes, slightly longer (male) or distinctly shorter (female) than body; first segment distinctly dilated towards apex, weakly shining, sparsely clothed with fine pubescence, second to eleventh segments densely clothed with fine appressed pubescence and sparsely with fine erect pubescence; comparative length of each antennal segment as follows:— $5>1+2=3>4\geqq6$ (male) or $5>1+2>3>4>6$ (female).

Prothorax longer than basal width (male, 1.11: 1; female, 1.00: 1), shallowly constricted both behind apex and before base, roundly expanded laterally just before the middle; breadth across expanded portions slightly shorter than base; basal margin weakly bisinuate, obviously broader than apical margin (male, 1.33: 1; female, 1.38: 1); disk of pronotum convex above, finely and closely punctured, sparsely clothed with fine pubescence; posterior lateral setae long; prosternum shining, extremely thinly clothed with short pubescence; meso- and metasterna finely punctate, densely clothed with fine appressed pubescence. Scutellum small and triangular, slightly longer than broad, bearing thin pubescence on the surface. Elytra 2.37 times (male) or 2.27 times (female) as long as basal width, gradually narrowed posteriorly (male) or almost parallel-sided (female), separately rounded at apices; surface sparsely and finely punctured, sparsely clothed with suberect pubescence; interspace between punctures broader than diameter of each puncture.



Figs. 9–12. *Pidonia* (*Cryptopidonia*) *fushani* KUBOKI, sp. nov., ♂. —— 9, Last tergite; 10, last sternite; 11, lateral lobes of male genitalia, ventral view; 12, median lobe of the same, lateral view. Scale: 0.3 mm.

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

Abdomen elongate and gradually narrowed toward apex; surface of each sternite densely covered with extremely fine pubescence; in male, apex of last sternite rounded and very shallowly emarginate at middle (Fig. 10), apex of last tergite truncate (Fig. 9); in female, apex of last sternite rounded, apex of last tergite truncate.

Male genitalia:— Median lobe weakly sclerotized, long, relatively thick, less curved ventrally (Fig. 12) and acutely pointed at apex; lateral lobes shorter than median lobe; each apex rounded and densely furnished with long terminal hairs (Fig. 11); endophallus long and furnished with a pair of falcate sclerites; diverticulum located at the apical portion of endophallus long.

Female genitalia:— Spermatheca minutely striated, lightly sclerotized, relatively swollen, strongly curved at middle, widest near the middle, abruptly narrowed apically; the part continuing to spermathecal duct funnel-shaped without transverse crease; spermathecal gland located at lateral wall; vagina enlarged basally; valvifer narrowed apically; apical segment of coxite furnished with sensory pubescence; stylus sclerotized and ovate, enlarged apically with long sparse hairs at the terminal area.

Type series. Holotype: ♂, Mt. An-ma Shan, 2,200 m alt., Ta-hsüeh-shan Mts., T'ai-chung Hsien, 1–V–1990, M. KUBOKI leg. Paratypes: 1 ♂, 1 ♀, same data as for

the holotype; 2 ♂♂, 2 ♀♀, same locality, 2～5–V–1990, M. KUBOKI leg.; 8 ♂♂, 2 ♀♀, same locality, 1～5–V–1990, K. SUZUKI leg.; 5 ♂♂, 2 ♀♀, same locality, 4～5–V–1991, M. KUBOKI leg.; 1 ♂, same locality, 4～5–V–1991, K. SUZUKI leg.

Distribution. Northwestern Taiwan.

Flight period. May.

Flower records. *Lithocarpus*, *Trochodendron aralioides*.

Remarks. This new species is closely allied to *Pidonia takahashii* KUBOKI, but can be distinguished from the latter by the following key:

1. Prothorax deeply constricted both behind apex and before base; disk of elytron deeply and irregularly punctured; humeral angles of female elytra yellowish brown; median lobe of male genitalia weakly curved.... *P. takahashii* KUBOKI.
2. Prothorax shallowly constricted both behind apex and before base; disk of elytron shallowly and regularly punctured; humeral angles of female elytra black inclining to become vivid metallic blue; median lobe of male genitalia strongly curved..... *P. fushani* sp. nov.

要　　約

窪木幹夫: 東アジア産ヒメハナカミキリ属の知見. III. 台湾北西部で発見された *Cryptopidonia* 亜属の2新種. —— 台湾北西部，鞍馬山の亜高山帯常緑混交林から採集された *Pidonia* 属の2新種，*P.* (*C.*) *anmashana* と *P.* (*C.*) *fushani* を記載した．前者は *P. pilushana* S. SAITO に近縁であるが，雄の上翅S紋やA紋が不明瞭でときに消失すること，頭側の頬がよく発達し角ばること，雄の腹部末端節腹板中央の三角形の切れ込みが弱いこと，雄交尾器の中葉片の湾曲が弱く先端が曲がらないことなどの差異によって区別できる．また，後者は *P. takahashii* KUBOKI に似ているが，前胸前後縁のくびれが弱いこと，上翅が浅く不規則に点刻されること，雌の上翅肩部が黒く青色の金属光沢を帯びること，雄交尾器の中葉片が強く湾曲することなどの点で区別できる．

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Lady Beetles (Coleoptera, Coccinellidae) of the Russian Far East

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Abstract Faunistics and ecological characteristics of the Coccinellidae of the Far East and perspectives of their use in biological control of plant pests are dealt with. Eighty species of lady beetles have been known from the Russian Far East.

Our investigations have established that the coccinellid fauna of the Russian Far East includes 80 species (Table 1). The coccinellid fauna of Primorye is the richest in species composition. There are 65 species observed over the territory of this region, 55 species are registered in the Amur Region, 50 in Khabarovsk, 35 on Sakhalin, 29 in the Magadan Region, 20 on Kunashir, and 16 on Kamchatka (KUZNETSOV, 1975, 1981 a, b, 1983, 1984).

Characteristics of the geographical location of regions, originality of relief and abundance of plant clusters affect the formation of the coccinellid fauna. Fauna of lady beetles includes 24 palearcharctic species distributed in Primorye and Priamurye of Russia, Japan, China and the Korean Peninsula.

Lady beetles are observed in different plant formations. Distribution and occurrence of the Coccinellidae in the main landscapes of the Russian Far East are given in Table 1. The species composition of lady beetles of the broadleaved and mixed coniferous broadleaved forests from the forest formations is the most abundant in Primorye. Twenty-nine species live on the forest-bushy vegetation; 27 of them live on broadleaved trees, 22 on *Larix* species and 20 on fir-spruce forests (20). In the belt of alpine vegetation represented by mountain tundra, forest-tundra and creeping vegetation (*Pinus pumila* REGEL), we have found 15 species of lady beetles. Number and species variety of lady beetles decreased as the moistening increased in different formations of herbs. Fauna of lady beetles is mostly rich in the steppe meadows of the Prikhanka Plain and scanty in the peat-bogs and tundra.

According to the character of feeding of beetles and larvae, 4 species of the Coccinellidae (*Henosepilachna vigintioctomaculata*, *Epilachna chinensis*, *Cynegetis impunctata* and *Subcoccinella vigintiquatuorpunctata*) are phytophagous, one species (*Psyllobora vigintiduopunctata*) mycetophagous and the other 75 species predators, eating aphids mostly. *Henosepilachna vigintioctomaculata* ia a serious pest of potatoes and vegetables and the remaining 3 species were observed in meadows.

Different species of aphids, mealybugs, armored scales, psyllids, leaf beetle larvae,

Table 1. Distribution and occurrence of the Coccinellidae in landscapes of the Russian Far East.

N	Species	Plant formation							
					Forest				
		Agrocoenosis	Meadow	Mire	Broadleaved	Mixed coniferous-broadleaved	Fir-spruce	Larch	Mountain alpine tundra and forest-tundra
1	2	3	4	5	6	7	8	9	10
1.	*Serangium lygaeum* KHNZORIAN				+	+			
2.	*Stethorus punctillum* WEISE	++	+		++	+	+		
3.	*Stethorus* (*Allostethorus*) *amurensis* KHNZORIAN				+				
4.	*Pseudoscymnus hareja* (WEISE)				+	+			
5.	*Scymnus* (*Scymnus*) *nigrinus* KUGELANN					+	+	+	
6.	*S.* (*S.*) *frontalis* (FABRICIUS)	+	++						
7.	*S.* (*S.*) *jakowlewi* WEISE		+						
8.	*S.* (*S.*) *rubromaculatus* (GOEZE)	+	+						
9.	*S.* (*S.*) *crinitus* FÜRSCH	+	++						
10.	*S.* (*S.*) *abietis* PAYKULL					+	++	+	+
11.	*S.* (*Neopullus*) *fuscatus* BOHEMAN		+	++					
12.	*S.* (*Pullus*) *ferrugatus* (MOLL)				++	++			
13.	*S.* (*P.*) *haemorrhoidalis* HERBST	+	+						
14.	*S.* (*P.*) *auritus* THUNBERG				+				
15.	*S.* (*P.*) *suturalis* THUNBERG					++	+		
16.	*S.* (*P.*) *limbatus* STEPHENS		+						
17.	*Nephus koreanus* FÜRSCH		+						
18.	*N. redtenbacheri* (MULSANT)		+						
19.	*N. koltzei* (WEISE)	+	++						
20.	*N. bipunctatus* (KUGELANN)		+						
21.	*Hyperaspis amurensis* WEISE	+	++						
22.	*H. asiatica* LEWIS	+	++						

23.	*H. leechi* MIYATAKE		+							
24.	*H. erythrocephala gyotokui* KAMIYA	+	++							
25.	*Chilocorus rubidus* HOPE	+			+					
26.	*Ch. renipustulatus* (SCRIBA)				+					
27.	*Ch. kuwanae* SILVESTRI				++	+				
28.	*Ch. bipustulatus* (LINNAEUS)				+					
29.	*Ch. inornatus* WEISE	+			++	+				
30.	*Exochomus mongol* BAROVSKY				+					
31.	*Ex. nigromaculatus* (GOEZE)		+							
32.	*Rodolia limbata* (MOTSCHULSKY)				+	+				
33.	*Coccidula rufa* (HERBST)	+	++	+++						
34.	*Anisosticta kobensis* LEWIS	+	++	++						
35.	*A. bitriangularis* (SAY)		+	+						
36.	*A. strigata* (THUNBERG)			+						
37.	*A. sibirica* BIELAWSKI	+	++	+++						
38.	*A. novemdecimpunctata* LINNAEUS		+	+						
39.	*Ceratomegilla ulkei* CROTCH		+							
40.	*Hippodamia tredecimpunctata* (LINNAEUS)	+++	+++	+++						+
41.	*H. septemmaculata* (DE GEER)		++	+						
42.	*Adonia variegata* (GOEZE)	+	++	+						
43.	*A. amoena* (FALDERMANN)		+++							
44.	*A. arctica* (SCHNEIDER)		+						+	+
45.	*Semiadalia apicalis* (WEISE)		+							
46.	*Adalia conglomerata* (LINNAEUS)					++	++	++		++
47.	*A. bipunctata* (LINNAEUS)				++	+		+		+
48.	*A. koltzei* (WEISE)					+				
49.	*Coccinella septempunctata* LINNAEUS	+++	+++	+	++	+	+	+		+
50.	*C. sachalinensis* OHTA		+							
51.	*C. ainu* LEWIS				+					
52.	*C. undecimpunctata* LINNAEUS	+	+		+					
53.	*C. magnifica* REDTENBACHER		+							
54.	*C. nivicola* MULSANT		+				+	++		+
55.	*C. trifasciata* LINNAEUS .		+				++	++		+

Table 1. (Continued)

1	2	3	4	5	6	7	8	9	10
56.	*C. hieroglyphica mannerheimi* MULSANT						+	++	+
57.	*C. transversoguttata* FALDERMANN				+			+	+
58.	*Coccinula quatuordecimpustulata sinensis* WEISE	+++	+++	+	++	+	+	+	
59.	*Harmonia axyridis* (PALLAS)	+++	++	+	+++	+++	++	+	
60.	*Oenopia conglobata* (LINNAEUS)				+	+			
61.	*O. bissexnotata* (MULSANT)		+		+				
62.	*Myrrha octodecimguttata* (LINNAEUS)							+	
63.	*Calvia decimguttata* (LINNAEUS)	+			++	+++	+	+	
64.	*C. quatuordecimguttata* (LINNAEUS)	+	+		+++	+++	++	++	+
65.	*C. duodecimmaculata* (GEBLER)	+			++	++	++	+	+
66.	*C. quinquedecimguttata* (FABRICIUS)				+	+			
67.	*Propylea japonica* (THUNBERG)	+	++		+	+			
68.	*P. quatuordecimpunctata* (LINNAEUS)	+++	+++	+	++	++	+	+	+
69.	*Myzia ramosa* (FALDERMANN)					++	++	++	+
70.	*M. oblongoguttata* LINNAEUS					++	+	+	
71.	*Anatis ocellata* (LINNAEUS)				+	++	+	++	+
72.	*A. halonis* LEWIS					+	+	+	
73.	*Aiolocaria hexaspilota* (HOPE)				++	+			
74.	*Halyzia sedecimguttata* (LINNAEUS)				+	+		+	
75.	*Vibidia duodecimguttata* (PODA)	+	+		+++	++	+		
76.	*Psyllobora vigintiduopunctata* LINNAEUS	+	++						
77.	*Epilachna chinensis* WEISE		+						
78.	*Henosepilachna vigintioctomaculata* (MOTSCHULSKY)	+++	+		+	+			
79.	*Cynegetis impunctata* (LINNAEUS)		++						
80.	*Subcoccinella vigintiquatuorpunctata* (LINNAEUS)		+						
	Total:	28	47	15	33	31	20	22	15

Notes. Occurrence: +++ – very often; ++ – usual; + – rare.

spider mites and other injurious insects are eaten by lady beetles. In the southern part of the Russian Far East, there is a lady beetle (*Aiolocaria hexaspilota*) eating leaf beetle larvae and damaging *Juglans manschurica*. The lady beetles *Stethorus punctillum* and *St.* (*Allostethorus*) *amurensis* are the predators specialized on spider mites. Mealybugs and armored scales are eaten by representatives of the species of the genera *Chilocorus* LEACH, *Erochomus* REDTENBACHER, *Hyperaspis* CHEVROLAT and *Rodolia limbata*. Whiteflies and aphids are eaten by *Serangium lygaeum*.

Coccinella septempunctata, *Harmonia axyridis*, *Propylea quatuordecimpunctata* and *Hippodamia tredecimpunctata* are the abundant species in the cultural and natural landscapes of the Russian Far East. Adults and larvae of these lady beetles affect the abundance of aphids on plants tremendously.

In the southern part of the Russian Far East, adults of lady beetles appear after hibernation late in April. Females lay eggs late in May. The oviposition period lasts from 15 to 80 days. Number of eggs per female varies from 150 to 920. In Primorye, development of lady beetles at the stage of eggs lasts from 2 to 9 days, larvae from 12 to 20 days and pupae from 3 to 10 days. Development from egg to adult is completed after 19 or 35 days. Juveniles emerge from July to September. In one season, most species of lady beetles give one generation, whereas *Harmonia axyridis*, *Hippodamia tredecimpunctata* and *Propylea quatuordecimpunctata* give two generations a year. In Primorye lady beetles begin to migrate from the middle of September to the middle of October and in Kamchatka from late August to early September.

Most lady beetles hibernate alone or by small groups in litter. In Primorye and Priamurye, the beetles *Aiolocaria hexaspilota*, *Harmonia axyridis* and *Oenopia conglobata* form mass gathering in places of their hibernation on rocks. The mass gathering is observed at the same places of the southern and southwestern slopes of mountains for years. Natural mass gatherings of lady beetles are economic ally significant as the unique natural stores of entomophages. Collections of lady beetles for the biological pest control are carried out in these places of mass gathering.

Recently, lady beetles are used in the following directions: introduction and acclimatization, collection of beetles in places of mass gathering of hibernation, use of lady beetles in greenhouses and conservation of local species of lady beetles and increase in their effectiveness (KUZNETSOV, 1987).

Studies on acclimatization of the Far Eastern lady beetles were carried out in Ukraina, Caucasus, Kazakhstan and Usbekistan. At present investigations on acclimatization of *Chilocorus kuwanae* and *Ch. rubidus* into the regions of Georgia are under way to control armored scales and pests of fruit cultures. Also studies are conducted on acclimatization of *Harmonia axyridis* and *Aiolocaria hexaspilota* into Caucasus to control aphids and leaf beetles.

The Far Eastern lady beetles such as *Chilocorus rubidus*, *Ch. inornatus*, *Ch. kuwanae* and *Rodolia limbata* are used in the control against coccids; *Harmonia axyridis* against aphids and *Aiolocaria hexaspilota* against leaf beetles are promising

for acclimatization in other regions.

要　約

V. KUZNETSOV: ロシア極東地方のテントウムシ類. —— ロシアの極東地方に分布する 80 種のテントウムシ類を列挙し，害虫の天敵として果たすそれらの有効性について私見を述べた．これまでに記録された種の数は，沿海州 65 種，アムール地域 55 種，ハバロフスク地域 50 種，サハリン 35 種，マガダン地域 29 種，国後島 20 種，カムチャツカ 16 種である．

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A New Species of *Athemellus* (Coleoptera, Cantharidae) from Japan

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and

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Abstract A new cantharid beetle, *Athemellus watanabei* is described from Mie Prefecture, Central Japan. It is allied to *A. insulsus* (HAROLD).

On their collecting trip to Mie Prefecture, Professor Yasuaki WATANABE and his students collected an interesting *Athemellus* species at the Forest Research Station of Mie University. After a careful examination of the specimens, we have come to the conclusion that this cantharid beetle belongs to a new species. This species is very similar to *A. insulsus* in many external characters, but seems to be different from that species in some characters described below.

Athemellus watanabei ISHIDA et M. SATÔ, sp. nov.

(Figs. 1–5)

Male. Body almost black with reddish yellow pronotum, hypomeron, prosternum and claws, elongate and flattened; surface covered with long bristles on elytra and short recumbent bristles on pronotum in addition to the primary, grayish white, close and recumbent pubescence covering body.

Head provided with shallow convergent furrows at the bases of antennal insertions; vertex feebly depressed; clypeus hardly prominent, slightly notched at apical margin. Eyes large, globular and distinctly prominent. Antennae long, slender and filiform, extending beyond 2/3 of elytral length; approximate ratio of segments as 1.6: 1.0: 1.6: 2.9: 2.9: 2.9: 2.9: 2.9: 2.5: 2.5: 2.2; all the segments lacking in groove.

Pronotum subquadrate, as wide as head, almost as wide as long at mid-line, scarcely and finely punctate; anterior and posterior margins weakly arcuate, lateral margin ridged; anterior and posterior corners obtusely angulate; disc provided with a shallow median furrow and conspicuous and hardly convex upheavals. Scutellum triangular

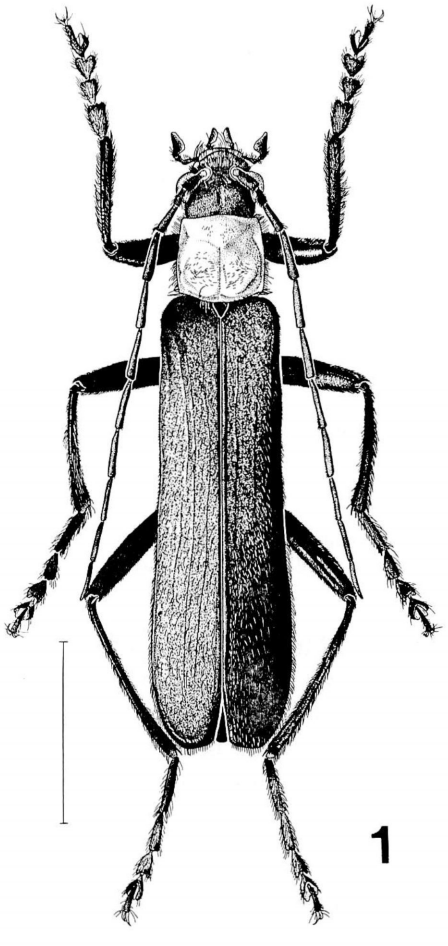


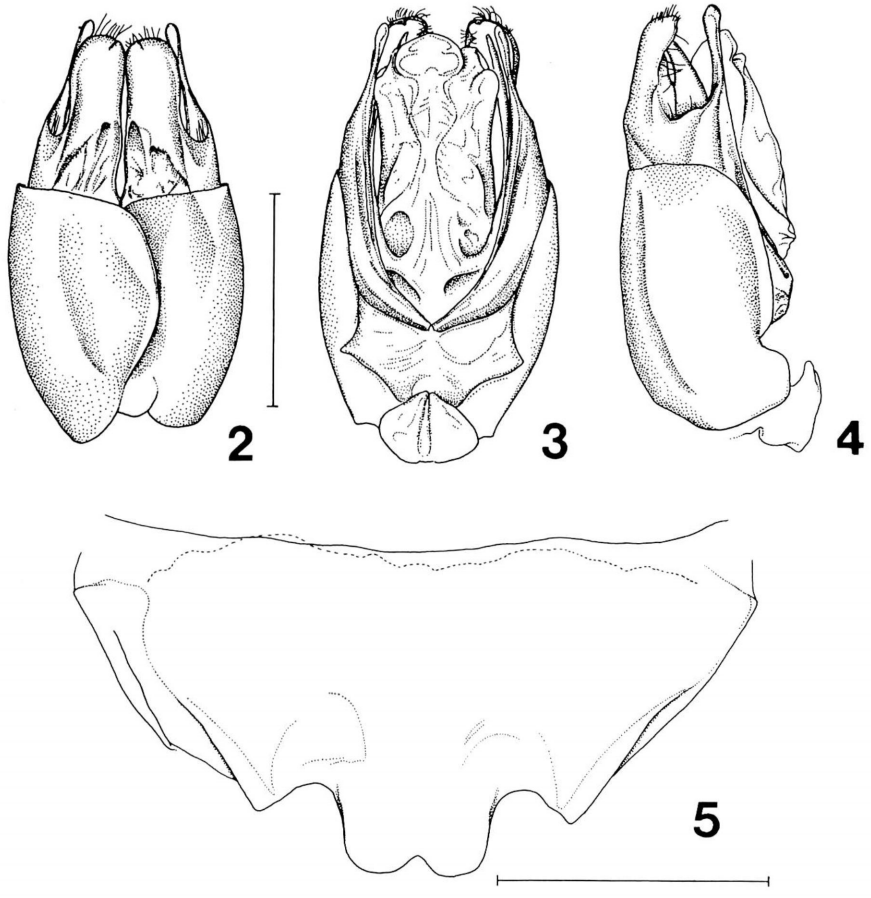
Fig. 1. *Athemellus watanabei* ISHIDA et M. SATÔ, sp. nov., male. (Scale line=5 mm.)

with rounded apex.

Elytra large and elongate, conjointly 1.4 times as wide as pronotum, about 3.3 times as long as wide, subparallel-sided, but gradually broader apicad; disc provided with three obscure longitudinal keels.

Prosternal process broad, with slightly bifurcate apex. Mesosternum flattened in middle, with conspicuous median ridge. Apical margin of 7th abdominal sternite truncate. Legs long and slender; tibiae slightly bent; all claws simple and lacking small tooth at each base.

Male genitalia oblong-oval, more or less flattened; lateral lobes provided with long dorsal plates with apices distinctly rounded and short ventral processes which are slightly longer than dorsal plates; median lobe furnished with short processes, whose apices do not reach those of dorsal plate of lateral lobe (Figs. 2–4).



Figs. 2–5. *Athemellus watanabei* ISHIDA et M. SATÔ, sp. nov. —— 2–4, Male genitalia (2, ventral view; 3, dorsal view; 4, lateral view); 5, 8th abdominal sternite in female. (Scale line=1 mm.)

Length: body 16.4–16.7 mm; hind tibia 4.4–4.5 mm.

Female. Body somewhat larger and wider than in the male. Eyes hardly prominent. Antennae a little shorter than those of male. Eighth abdominal sternite broad; apex of each lateral lobe angulate; median lobe wide with its terminal margin notched; apex of median lobe distinctly extending beyond those of lateral lobes (Fig. 5).

Holotype: ♂, Hirakura (Forest Research Station of Mie University), Mie Pref., 23–III–1992, Y. WATANABE leg. Allotype: ♀, same locality as for the holotype, 24–III–1992, K. MATSUMOTO leg. Paratypes: 1 ♂, same data as for the holotype; 7 ♂♂, same data as for the allotype.

The holo- and allotype are preserved in the collection of the Biological Laboratory, Nagoya Women's University. The paratypes will be distributed to the following

institutions and entomologists: Tokyo University of Agriculture, the National Science Museum (Nat. Hist.), Tokyo, Mr. Y. OKUSHIMA and K. ISHIDA.

Remarks. This new species is closely related to *A. insulsus* (HAROLD) and *A. oedemeroides* (KIESENWETTER) in black and reddish yellow coloration, and long flattened body, but differs from the latter in large size of body, small head, and rounded dorsal plates and short ventral processes of lateral lobes of male genitalia.

We have dedicated this species to Prof. Dr. Y. WATANABE of Tokyo University of Agriculture who is one of the discoverers of this remarkable species.

Acknowledgement

We wish to express our hearty thanks to Prof. Dr. Yasuaki WATANABE of Tokyo University of Agriculture who gave us the opportunity to examine this interesting material.

要　　約

石田勝義・佐藤正孝: 日本産クビアカジョウカイ属（ジョウカイボン科）の1新種. ―― 渡辺泰明教授（東京農業大学）のご好意で，三重県で採集されたクビアカジョウカイ属の1種を検する機会を得た．近似種ウスチャジョウカイ *Athemellus insulsus* (HAROLD) およびクビアカジョウカイ *A. oedemeroides* (KIESENWETTER) と比較検討の結果，新種と認められたので，ここにミエクビアカジョウカイ *A. watanabei* ISHIDA et M. SATÔ と命名して記載した．

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Elytra, Tokyo, **21** (1): 51–54, May 15, 1993

コメツキムシ類の大顎と上唇にある微小突起群構造について

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Some Minute Structures on Mandibles and Labrum of the Elateridae (Coleoptera)

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Abstract　The majority of elaterid species have a cluster of minute brush-like structures at the base of the upper surface of each mandible (Fig. 1 A, C, F, H, J, O), and a pair of similar structures are also found on each side of the under surface the basal area of labrum (Fig. 1 I) except for the species of the Negastriinae and Cardiophorinae which lack these minute structures (Fig. 1 K, L, P, Q).

コメツキムシ類の口器の構造は，幼虫類の研究では分類によく用いられているが，成虫については小顎肢や一部の付属器官を除いて，詳しい研究がまだなされていないように思われる．筆者は，本科の形態の研究を進めるうちに，上唇の下側面と大顎の基部上面に特殊な微細構造があることを見出したので，ここにその概要を報告する．

本文を草するにあたり，本文を校閲していただいた上野俊一博士に心からお礼を申しあげる．

大顎と上唇の微細構造

コメツキムシ類の大顎基部は，触角の着生部と小顎肢に挟まれて位置し，基部は幅広く扁平になっているが，前半部は細まって湾曲し，1歯状，2歯状，ときに3歯状を呈する．また，基部内縁には刷毛状の軟毛を叢生する (Fig. 1 Q の↗印)．

上唇は，矩形または半円形をした1枚の板で，口器の上面をおおい，下側面には多数の長い軟毛を前方に向かって生じ，基部は上咽頭に連なっている (Fig. 1 I, K, P)．

大顎基部上面の扁平部に，図示したような微細構造が見られることは今までに知られていないと思われる (Fig. 1 H, J の↗↖印)．これは，一般に微小突起群が横列状に生じたもので，突起の末端は細まって鈍く，または鋭く尖るが，突起が数個の鋸歯状に生じているもの (Fig. 1 D)，数個の不揃いの突起を生ずるもの (Fig. 1 E)，単一の突起が列状に生ずるもの (Fig. 1 N)．複数列の突起を生ずるもの (Fig. 1 B, G) など，詳しくみると種々の形態や配列が見られる．

Fig. 1 A, B はサビキコリ (*Agrypnus binodulus*) の左大顎上面の基部である．微小突起群は幅広く生じているが，内側縁には達していない (Fig. 1 A の↗印)．また，この微小突起群の一部を拡大したのが Fig. 1 B (約 3,000 倍) に示したものである．これによく似た微小突起群の配列はヒメ

サビキコリ (*Agrypnus scrofa*) にも見られるので，系統的にも類似性があるように思われる．

Fig. 1 C, D はマダラチビコメツキ (*Aeoloderma agnatum*) の左大顎である．扁平部の外側部に凹溝を生ずる大顎で (Fig. 1 C の↖↖印)，このような形態をもつ大顎はミズギワコメツキ亜科の種にもある (Fig. 1 L の↗印)．この凹溝の機能についてはまだよくわかっていない．マダラチビコメツキの微小突起群はきわめて少数で，まばらで一見痕跡的である (Fig. 1 C の↗印)．また，それを拡大したものが Fig. 1 D (約 4,000 倍) で，不揃いの微小突起が数個ずつ鋸歯状に生じている．

Fig. 1 E, F は，クロツヤハダコメツキ (*Hemicrepidius secessus*) の右大顎を示した．ツヤハダコメツキのグループでは一般に微小突起群の発達が悪いようで，密に生じているが痕跡的である (Fig. 1 F の↗印)．Fig. 1 E はそれを拡大 (約 2,000 倍) したもので，不揃いの突起はきわめてよく発達している．

Fig. 1 G, H には，チビヒサゴコメツキ (*Hypnoidus rivalis*) の左大顎の基部を示した．微小突起群は幅広くよく発達している (Fig. 1 H の↗印)．それを拡大して Fig. 1 G に示した (約 4,000 倍に拡大)．この微小突起の配列は，前述のサビキコリ (Fig. 1 B) の場合にきわめてよく類似しているが，本種の方が突起はより密に生じている．本種と同じ亜科に含められているキアシヒラタヒサゴコメツキ (*Ascoliocerus fluviatilis*) では，突起の配列が単一になっているのは興味深いことである．

Fig. 1 I, J には，カバイロコメツキ (*Ectinus sericeus*) の左大顎上面の基部と上唇の下側面を示した．大顎の微小突起群はきわめてよく発達し，内側縁まで達している (Fig. 1 J の↖印)．上唇の下側面の構造については，他の種のものも含めて後述する．一般に，ムナボソコメツキ属 (*Ectinus*) やオオナガコメツキ属 (*Elater*) やコメツキ属 (*Ampedus*) などのグループでは，大顎の微小突起群がよく発達しているようである．

Fig. 1 K, L は，クロツヤミズギワコメツキ (*Oedostethus telluris*) の右大顎基部と上唇下側面である．この仲間では，ほかにミズギワコメツキ (*Fleutiauxellus curatus*) やヘリマメコメツキ (*Yukoana carinicollis*) などでもこの微小突起群を欠如している．このことは，ミズギワコメツキ亜科の系統的な位置を推察するうえからも，たいへん興味のあることである．

Fig. 1 M, N, O は，ヒラタクシコメツキ (*Melanotus koikei*) の右大顎で，微小突起群はきわめてよく発達し，内側縁まで達している (Fig. 1 O, N)．この微小突起群の内側縁付近をさらに拡大 (約 5,000 倍) してみると，微小突起は内側縁に近づくにしたがって長さを増し，側縁毛と変わらなくなるのが観察される (Fig. 1 M)．このことから，大顎のこの微小突起群は，大顎内側縁毛が変化したものではないかと推察される。

Fig. 1 P, Q は，オオハナコメツキ (*Platynychus nothus*) の左大顎上面の基部と上唇の下側面である．この仲間は，コハナコメツキ (*Paracardiophorus pullatus*) も含めて，微小突起群を欠如している．

このように，大顎の基部上面の扁平部の表面にある微小突起群は，種または属，ときに亜科間で形態や配列などに若干の相違が見られるが，Fig. 1 M に示したように，その成因はすべて相同で，内側縁毛が変化してできたものと考えられる．大顎に微小突起群が見られる種の上唇の下側面の基部両側には，これに対応するような組織がみられる (Fig. 1 I の↖印)．大顎の微小突起群がよく発達した種の上唇の下側には，この組織も同様によく発達している．しかし，上唇のこの組織は短い鱗片状の突起群の配列で，大顎のそれとは形態に若干の相違があるように思われる．

一方，大顎に微小突起群を欠如するミズギワコメツキ亜科 (Negastriinae) やハナコメツキ亜科 (Cardiophorinae) などの種の上唇下側面は，Fig. 1 K, P に示したように，Fig. 1 I の↖印に示

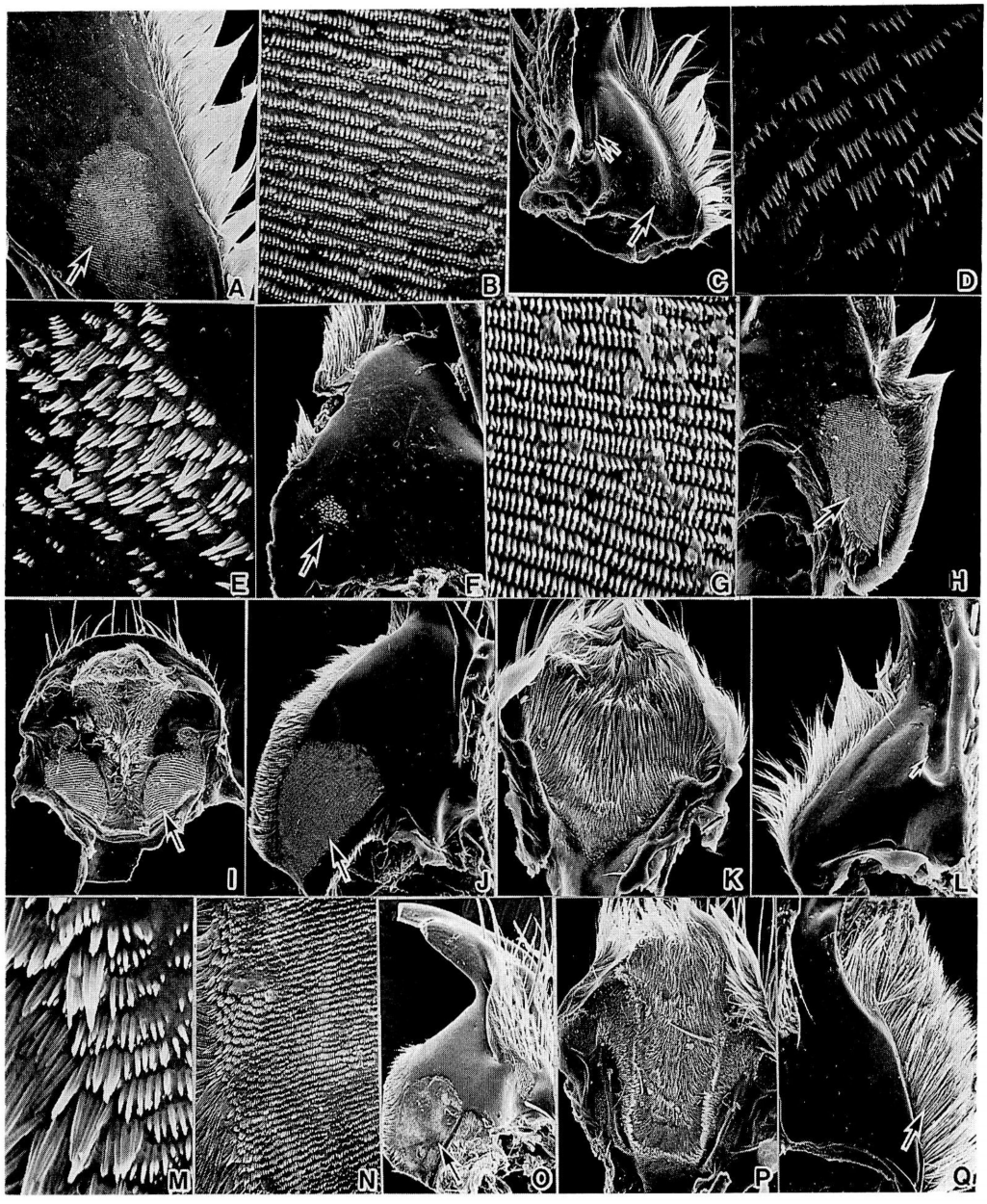

Fig. 1. Minute structures on the upper surface of mandible (A–H, J, L, M–O, Q) and the under surface of labrum (I, K, P). —— A–B, *Agrypnus binodulus*; C–D, *Aeoloderma agnatum*; E–F, *Hemicrepidius secessus*; G–H, *Hypnoidus rivalis*; I–J, *Ectinus sericeus*; K–L, *Oedostethus telluris*; M–O; *Melanotus koikei*; P–Q, *Platynychus nothus*.

したような構造をもたない．まだ推測の域を出ないが，大顎の微小突起群と上唇のこの組織があたかも挽臼のように重なり合って，食べ物を分解したり上咽頭へ送り込んだりすることを助けている器官ではないかと思われる．

MATSUDA (1965) の総説には，コガネムシ類のある種の大顎に stridulatory area と呼ばれる器官のあることが記述されているが，ここに示したコメツキムシ類の微小突起群は，これとは異質のものと考えられる．

ミズギワコメツキ類とハナコメツキ類は，ともに微小突起群を欠如し，一見，系統的な類似性があるように思われるが，上唇の下側面の構造は異なっている．ミズギワコメツキ類 (Fig. 1 K) のそれは，微小突起群のある種 (Fig. 1 I) のものに類似しているが，ハナコメツキ類 (Fig. 1 P) のそれは，内側面の軟毛が U 字状に生じた特有の形状をしている．ハナコメツキ類が，コメツキムシ科のうちでも異質な系統的地位にあることは，この形状からも示されているように思われる．

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Elytra, Tokyo, **21** (1): 54, May 15, 1993

New Name for *Philonthus formosae* CAMERON (Coleoptera, Staphylinidae)

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In 1949, CAMERON described a staphylinid beetle from Taiwan under the name of *Philonthus formosae*, which was preoccupied by *P. formosae* BERNHAUER (1922). Since CAMERON's species is doubtlessly different from BERNHAUER's, I herewith propose a replacement name for the former, as seen below.

Philonthus taiwanensis SHIBATA, nom. nov.

Philonthus formosae CAMERON, 1949, Proc. r. ent. Soc. Lond., (B), **18**: 176 [nec BERNHAUER, 1922].

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Elytra, *Tokyo*, **21** (1): 55–58, May 15, 1993

ニホンチビマメコメツキの形態について

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Notes on the Morphological Structure of *Quasimus japonicus* (Coleoptera, Elateridae) from Japan

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Abstract *Quasimus japonicus* KISHII, 1959, has been found widely on the leaves of various broadleaved trees in mountain areas of Honshu, Shikoku and Kyushu from May to June, and also appears from September to October. General structure of this small species (length about 2–2.5 mm) examined by SEM-images (Fig. 1) is described for facilitating recognition of its systematic status in the genus *Quasimus* of the Negastriinae from Japan.

ニホンチビマメコメツキ *Quasimus japonicus* KISHII, 1959 は，日本に分布する本属の代表的な種で，本州，四国，九州，対馬，五島列島の各地の山地の広葉樹林に生息するが，小型種であるために，詳しい形態や生態がまだよくわかっていない．この度，筆者の一人である白石は，愛媛県玉川町の楢原山 (標高 1,042 m) において本種を数多く採集，若干の生態も観察できたのでここに報告する．

生態について

本種の成虫は，一般にコナラやアベマキなどの落葉広葉樹林の葉上で見出されているが，馬場 (1981) によれば，「新潟県では出現は 4 月 23 日から 9 月 7 日までで，山地種のようで落葉樹を打網して得られる」と記されている．本種は春から初夏にかけて出現するが，夏期以降はもう見られなくなると思われていた．しかし，楢原山での観察では，5 月下旬ごろから 6 月にかけて成虫が出現し，夏期には見出されなくなるが，9 月から 10 月にかけてふたたび成虫がよく出現している．もっ

とも個体数が多いのは 9 月で，10 月でも見出され，1992 年でもっともおそく得られたのは 11 月 3 日であった．このうち，10 月に採集された 20 個体を分解して雌雄を調査したが，うち 13 個体は雄であった．

楢原山で打網採集によってよく落ちてくるのは，山道の日当たりのよい場所に生えているヒメウツギ，ヤブウツギなどのウツギ類，クマイチゴ，キイチゴなどのキイチゴ類，ほかにシロモジ，タラノキなどの幼木であった．また，10 月 10 日に，広葉樹の枯木の樹皮下で 3 頭が集まって入っているのを見出している．そのときの気温は 7°C であった．

このように，楢原山での観察から推察すると，本種の成虫は年 2 回出現する．第 1 回目は春から初夏にかけて現われる個体で，第 2 回目は秋に現われる個体である．春から初夏にかけて現われる個体は，おそらく前年からの越冬個体であり，秋に現われるのは夏期に新成虫になった個体で，冬期はおそらく落葉中などで越すのではないかと思われる．

成虫の一般形態

雄．体長は 2～2.5 mm．体は楕円形で，後方により強く細まる．黒色で光沢を有し，全面に淡黄灰色毛を生ずる．触角は黒色，肢は黒色～黒褐色を呈する．

頭部の前頭部は弱く膨隆し，小型の点刻をいちようにやや密に分布する．前頭横隆線は明瞭に縁取られ，前縁中央部は鈍く角ばる (Fig. 1 D)．触角は短く，末端は前胸背板の後角よりわずかに短い (Fig. 1 A)．第 2 節は円筒状で，第 3 節は第 2 節よりわずかに短く，第 4 節は第 3 節の約 1.4 倍の長さである (Fig. 1 I)．

前胸背板は矩形状で長さより幅広く，両側は中央部で外方に湾曲，後角やや前で内方へ顕著に湾曲する (Fig. 1 A の↖印)．背面は膨隆し，全面に小点刻をいちように分布，点刻と点刻のあいだの表皮面は平滑である．また，点刻は頭部のものより小型で，よりまばらに印刻される．後角は後外方へ突出するが，末端部はやや内方へ湾曲して尖る (Fig. 1 H)．小盾板は幅よりやや長く，末端は鈍く尖る．また，表面のリング状の隆線は後方にやや幅広くなる (Fig. 1 G)．前胸腹板突起は短大で，前肢基節腔を越えて後方へ直線状に伸長，末端近くで顕著にくびれ，末端は鈍く尖る (Fig. 1 E)．後胸腹板上に生ずる後胸腹板線は三角状を呈し，通常は末端は鈍くとがるか円まるが，ときに末端部で分離するものもあって変異がみられる．ここでは末端部が鈍く尖る型 (Fig. 1 C) と円まる型 (Fig. 1 B) を図示した．

交尾器の腹面からみた外形は図示したとおりで，中央突起は末端に向かって弱く湾曲しながら漸次細まり，末端は鋭く尖る (Fig. 1 K)．側突起の両側は平行であるが，外縁部は末端近くで湾曲して細まる (Fig. 1 L)．

雌．外形は雄に類似するが，体はより幅広い楕円形を呈する．触角はより短く，第 4 節は第 3 節の約 1.3 倍の長さである．

調査標本：愛媛県玉川町楢原山，4 exs., 29-V-1988；同上，7 exs., 5-VI-1988；同上，8 exs., 12-VI-1988；同上，4 exs., 30-VIII-1992；同上，30 exs., 27-IX-1992；同上，30 exs., 4～5-X-1992；同上，20 exs., 10～11-X-1992；同上，7 exs., 18-X-1992；同上，5 exs., 25-X-1992；同上，2 exs., 1-XI-1992；同上，1 ex., 3-XI-1992，白石正人採集．

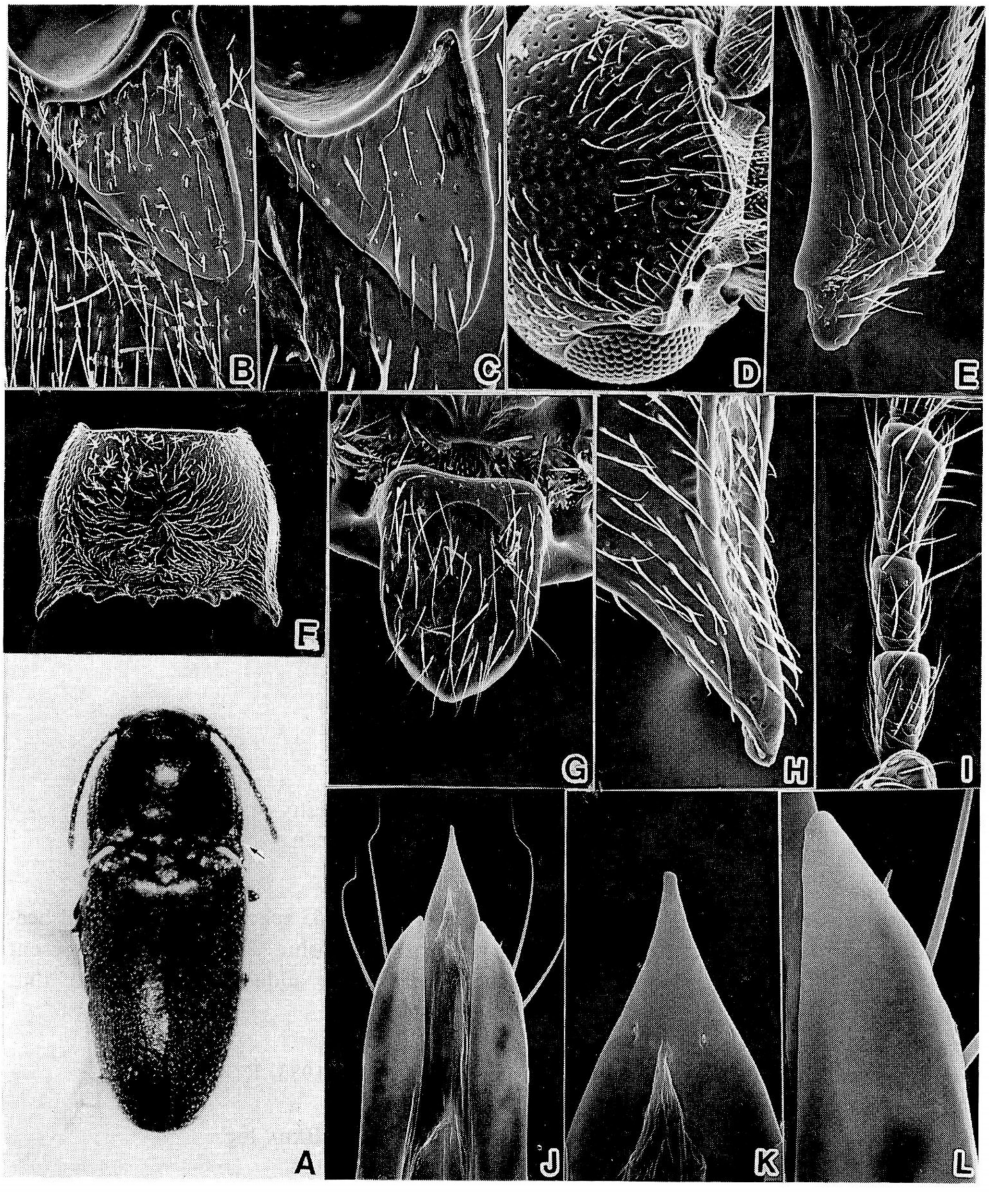

Fig. 1. *Quasimus japonicus* KISHII, 1959, male (Mt. Narahara-yama in Ehime Pref., Shikoku). —— A, Adult (length 2.5 mm); B–C, metasternal carinae; D, head and clypeal margin: E, prosternal process; F, pronotum; G, scutellum; H, right hind angle of pronotum; I, 2nd to 4th segments of antenna; J, aedeagus, ventral aspect; K, same, median lobe (enlarged); L, same, lateral lobe (enlarged).

そ の 他

本種は，前述のように分布は広いが，地域により個体変異が若干みられるようで，体毛も灰白色から淡黄灰色まで変異があるし，肢の腿節の色彩も黒色から黒褐色まで変異がみられる．成虫がどこで越冬しているかをたしかめるのも今後の研究課題である．また．卵から成虫までの経過も不明なので，今後も調査を進めていきたいと思う．

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Elytra, Tokyo, **21** (1): 58, May 15, 1993

New Record of Staphylinid Species from Sadogashima Island

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In the previous paper (WATANABE & BABA, 1981, 1986), 65 species of staphylinid beetles were recorded from Sadogashima Island off central Honshu, Japan. In the present short report, three unrecorded staphylinid species are newly added to the fauna of that island.

1. *Lesteva gracilis* Y. WATANABE

1 ♂, Shimokuchi, Ryôtsu-shi, Sadogashima Is., Japan, 25–V–1983, K. BABA leg.

2. *Philonthus numata* DVOŘÁK

1 ♂, Yoshiikongô, Sadogashima Is., Japan, 24–VIII–1985, K. BABA leg.

3. *Zyras optatus* (SHARP)

1 ♀, Mt. Myôken, Sadogashima Is., Japan, 20–VIII–1985, K. BABA leg.

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WATANABE, Y., & K. BABA, 1981. The staphylinid beetles of Sadogashima Island. *Trans. Essa ent. Soc., Kurokawa*, (52): 23–32. (In Japanese.)

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Elytra, Tokyo, **21** (1): 59–66, May 15, 1993

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

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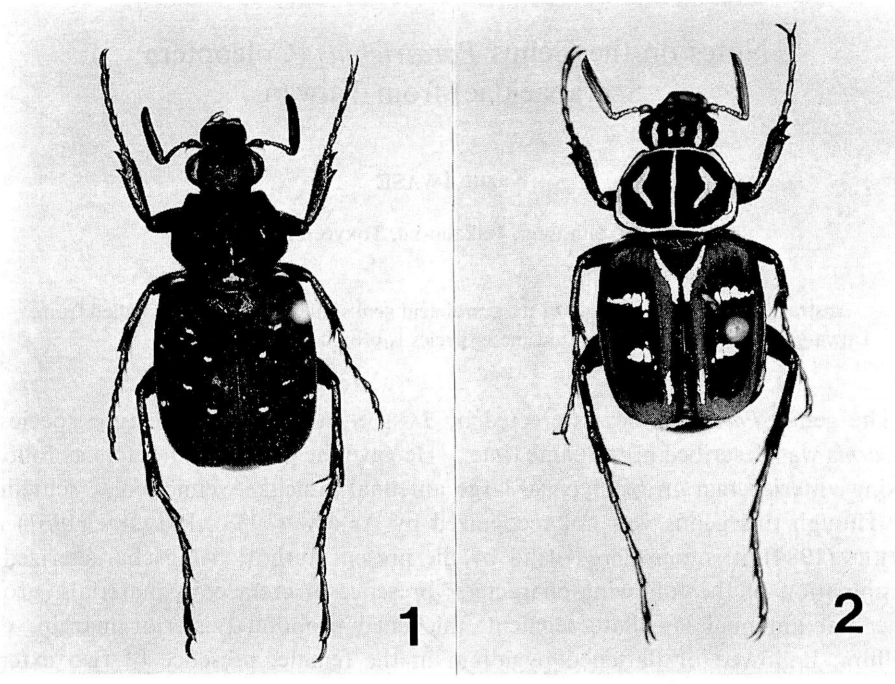
Abstract Two new species of the scarabaeid genus *Paratrichius* are described from Taiwan, and a key to the five Taiwanese species is provided.

The genus *Paratrichius* was erected by JANSON in 1881, and the type species *P. longicornis* was described at the same time. He gave the generic characters as follows: reflexing anterior margin of clypeus, large antennal lamellae, semicircular scutellum, etc. Though this genus was not recognized by ARROW (1938), PAULIAN (1961) and KRIKKEN (1984), it is considered valid by the present author, being characterized by a combination of the following characters: presence of cretaceous materials, groove of the first antennal lamellate segment, thickened pronotal posterior margin, wide scutellum, hollowed or flattened pygidium in the female, presence of two external teeth on anterior tibia in both sexes, lack of terminal spur of anterior tibia in the male, and so on.

In Taiwan, three endemic species have hitherto been recorded, and two new species are added now to the fauna.

Key to the Species of the Genus *Paratrichius* from Taiwan

1. Anterior femur with a longitudinal serrated carina on the anterior face; female: pygidium hollowed near apex.....2.
— Anterior femur without longitudinal serrated carina on the anterior face; female: pygidium without hollow, flattened in apical half .....4.
2. Male: frons opaque, simply and rather sparsely punctured medially, antennal lamellae shorter than footstalk, dorsal surface generally black with elytra decorated with red longitudinal bands, the cretaceous markings of pygidium longitudinal; female: hollow of pygidium transversely elliptical..... .....*P. vittatus* SAWADA.
— Male: frons feebly shining, reticulate medially, antennal lamellae longer than footstalk; female: hollow of pygidium more or less longitudinal.....3.
3. Male: dorsal surface black, disc of elytra densely setose, the cretaceous markings undeveloped on ventral surface; female: hollow of pygidium small and shallow, occupying about one-fifth to one-fourth of the whole length of pygidium.... .....*P. guttatus* n. sp.



Figs. 1–2. Dorsal aspect. —— 1, *P. guttatus* n. sp.; 2, *P. taiwanus* n. sp.

— Male: dorsal surface generally blood-red, rarely black, disc of elytra very sparsely setose; female: hollow of pygidium deep and long, about a half the whole length of pygidium ..... *P. diversicolor* (BOURGOIN).

4. First segment of antenna generally darkened; greater part of posterior leg black; male: anterior margin of clypeus weakly reflexed and weakly but distinctly emarginate medially, pronotum with long hairs along lateral margin, scutellum black; female: pronotum with long hairs near posterior angle, pygidium flattened at the narrow middle portion ..... *P. nomurai* TESAR.

— First segment of antenna brown; greater part of posterior leg brown; male: anterior margin of clypeus strongly reflexed and nearly straight, pronotum without long hair, scutellum with the middle part brown; female: pronotum without long hair, pygidium widely flattened ..... *P. taiwanus* n. sp.

Paratrichius vittatus SAWADA

(Figs. 3, 6)

Paratrichius vittatus SAWADA, 1939, p. 44.

Distribution. Liukuei, Kaohsiung Hsien; Puli, Nantou Hsien; Paling, Taoyuan Hsien; Lalashan, Taoyuan Hsien.

Paratrichius guttatus n. sp.

(Figs. 1, 5, 8)

Male. Black with antennal footstalk except for the first segment dark brown, decorated with white cretaceous markings as follows: a short middle line, a pair of small discal spots and a short posterior marginal line before scutellum on pronotum, seven short bars on each elytron, a pair of large transverse markings on pygidial base, each spot along the outer margin of mesothorax, metacoxa and second to fifth abdominal sternites, each middle transverse band on third to sixth sternites; feebly shining, pronotum except margins and elytra except shoulders opaque; elongate oval, legs slender.

Clypeus wider than long (L/W=0.75), widest at the middle, lateral margins arcuate, anterior angle rounded, anterior margin feebly emarginate, clypeal surface reticulate, feebly depressed at sides, raised along lateral margins, thickened along anterior margin; frons reticulate anteriorly, coarsely punctured posteriorly. Antennal club 1.5 times as long as footstalk, inner surface of first lamellate segment with a longitudinal groove.

Pronotum lightly convex, nearly circular, wider than long (L/W=0.88), widest between posterior angles, anterior angle obtuse but slightly produced anteriorly, lateral margin curved behind the middle, sinuate anteriorly, posterior angle rounded, posterior margin widely rounded, anterior and lateral margins narrowly marginate, posterior margin widely marginate and thickened before scutellum; surface rather densely and strongly punctured, bearing short grayish setae, setae becoming longer near anterior and posterior angles, median groove inconspicuous, shallowly depressed behind the middle.

Scutellum semicircular, wider than long (L/W=0.57), densely punctured laterally, impunctured medially.

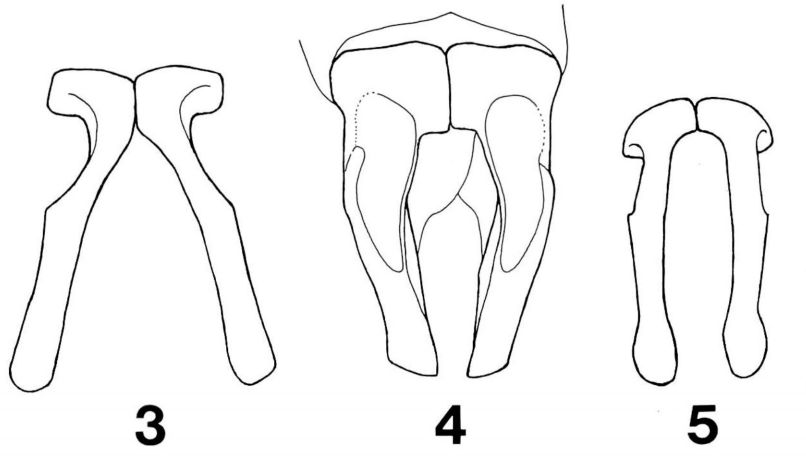
Elytra feebly convex, longer than wide (L/W=1.18), widest before the middle, lateral margin arcuate, posterior angle rounded, each elytron with posterior margin rounded; surface of elytron with five striae between suture and shoulder, densely clothed with short setae, striae with a row of horseshoe-shaped punctures, intervals feebly convex, shoulder prominent.

Pygidium wider than long (L/W=0.65), strongly convex behind the middle, concentrically aciculate, densely clothed with short setae.

Metasternum very convex but flattened medially, clothed with pale yellow long hairs, densely punctured medially, aciculate laterally. Abdomen transversely aciculate, clothed with short hairs.

Anterior femur with a longitudinal serrated carina on the anterior face; anterior tibia with two external teeth, terminal spur absent; posterior tarsus twice as long as tibia.

Female. Different from male as follows: pronotum feebly shining, lacking cretaceous marking; cretaceous markings on ventral surface almost undeveloped;



Figs. 3–5. Caudal view of male parameres. —— 3, *P. vittatus* SAWADA; 4, *P. diversicolor* (BOURGOIN); 5, *P. guttatus* n. sp. (Scale: 1 mm.)

antennal club shorter than footstalk, pronotal middle groove more distinct, pygidium with a longitudinal groove near the apex; front tibia with a strong terminal spur.

Length. Male: 10.5–13 mm, female: 11–14 mm.

Holotype: ♂, 20–VI–1990, Paling, Taoyuan Hsien; allotype: ♀, 15–V–1979, Lalashan, Taoyuan Hsien, L. F. HANG leg.; paratypes: 2 ♀♀, 12–VI–1989, Paling, Taoyuan Hsien (in IWASE coll.); 1 ♀, 12–VI–1989, Lalashan, Taoyuan Hsien (in IWASE coll.); 1 ♂ 1 ♀, 1989, Paling, Taoyuan Hsien (in IWASE coll.); 1 ♂ 1 ♀, 15–V–1979, Lalashan, Taoyuan Hsien, L. F. HANG leg. (in MIYAKE coll.); 3 ♂ 3 ♀, 21–VI–1985, Lalashan, Taoyuan Hsien, C. LO leg. (in SAKAI coll.).

The holotype and allotype will be preserved in the National Science Museum (Nat. Hist.), Tokyo (NSMT).

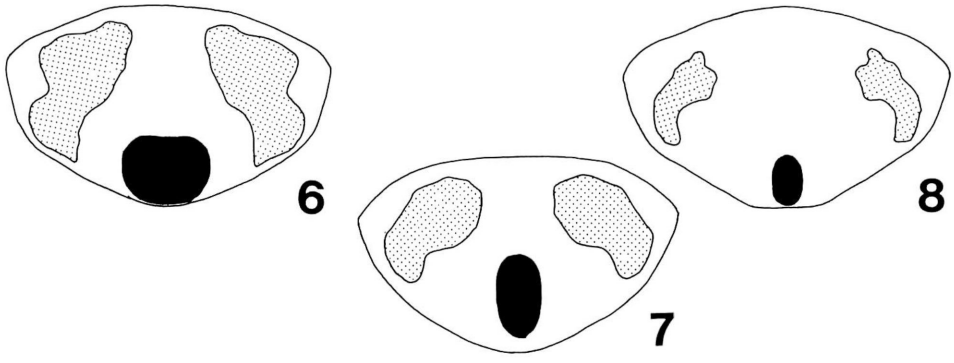
This new species is different from the allied species as follows: head almost reticulate and feebly shining; cretaceous markings of pygidium transverse; pygidial hollow small and longitudinal in the female.

Paratrichius diversicolor (BOURGOIN)

(Figs. 4, 7)

Trichius (?) *diversicolor* BOURGOIN, 1915, p. 177.
Paratrichius diversicolor: SAWADA, 1939, p. 46.

Distribution. Liukuei, Kaohsiung Hsien; Nanshanchi, Nantou Hsien; Lishan, Taichung Hsien; Paling, Taoyuan Hsien; Lalashan, Taoyuan Hsien.



Figs. 6–8. Caudal view of female pygidium (dotted: whitish cretaceous markings, darkened: apical depressed area). —— 6, *P. vittatus* SAWADA; 7, *P. diversicolor* (BOURGOIN); 8, *P. guttatus* n. sp.

Paratrichius nomurai TESAR

(Fig. 9)

Paratrichius nomurai TESAR, 1941, p. 69.
Paratrichius pilosonotus YAWATA, 1943, p. 6.
Paratrichius takasagonus YAWATA, 1943, p. 8.
Paratrichius duplicatus pilosonotus: SAWADA, 1950, p. 12.
Paratrichius duplicatus nomurai: MIYAKE, 1955, p. 19.

Distribution. Tattaka, Nantou Hsien; Kuantoushan, Nantou Hsien; Tapang, Taichung Hsien; Piluchi, Nantou Hsien.

Paratrichius taiwanus n. sp.

(Figs. 2, 10)

Closely similar in shape and colour to the males of *P. doenitzi* (LEWIS), *P. itoi* TAGAWA and *P. kyushuensis* MIYAKE, all from Japan, and moderately so to *P. nomurai* TESAR from Taiwan.

Male. Ventral surface black with seventh (distal) abdominal sternite brown, shining, almost covered with yellow opaque cretaceous materials, middle part of metasternum and seventh abdominal sternite without cretaceous material, and almost clothed with yellow hairs, hairs long on breast, short on abdomen including seventh sternite; clypeus brown and shining, frons black and opaque with two pair of cretaceous spots posteriorly, antenna brown; pronotum black and tomentose with yellow cretaceous materials as follows: middle line, a pair of discal V-shaped markings, and all margins; scutellum dark brown with margins darkened, opaque; each elytron brown with large black longitudinal band medially, and more or less darkened at suture, lateral margins and apex, opaque, decorated with cretaceous markings as fol-

lows: short longitudinal bands near base and apex along suture, two transverse bands on the large black band; pygidium brown with basal and lateral portions darkened, shining, decorated with cretaceous materials on basal and lateral portions; legs brown with ventral surface of anterior femora, dorsal surface of middle femora and tibia and that of posterior femora and tibia more or less darkened. All the cretaceous markings mentioned above variable.

Body oblong, strongly convex ventrally weakly convex dorsally; legs slender.

Clypeus wider than long (L/W=0.73), widest behind the middle, lateral margin arcuate, anterior margin rounded, surface rugose and sparsely clothed with short hairs, strongly reflexed anteriorly, sides declined externally; frons rugose, rather densely clothed with short hairs anteriorly and laterally, densely punctured posteriorly, weakly depressed anteriorly; antennal club 1.7 times as long as footstalk, proximal segment of lamellae with a longitudinal groove on the inner surface.

Pronotum lightly convex, wider than long (L/W=0.85), widest between the lateral angles, rather strongly narrowed before them, and very weakly narrowed or paralleled behind them, anterior angle either rectangular or obtuse, posterior angle rounded, posterior margin rounded, surface sparsely, rather strongly punctured, sparsely clothed with short hairs, hairs becoming denser near anterior angle, lateral margin finely marginate, anterior and posterior margins broadly marginate; yellow painted portions, middle line, a pair of discal V-shape and margination more or less depressed.

Scutellum semicircular, wider than long (L/W=0.65), smooth medially, sparsely punctured laterally.

Elytra weakly convex, longer than wide (L/W=1.14), widest before the middle, lateral margin weakly arcuate, posterior angle rounded; each elytron with five punctured striae between suture and shoulder, punctures rounded or horseshoe-shaped, intervals weakly convex, sparsely clothed with minute setae, second interval rather flattened with a few punctures near base; side of elytron with five rows of punctures, shoulder prominent, rather densely punctured.

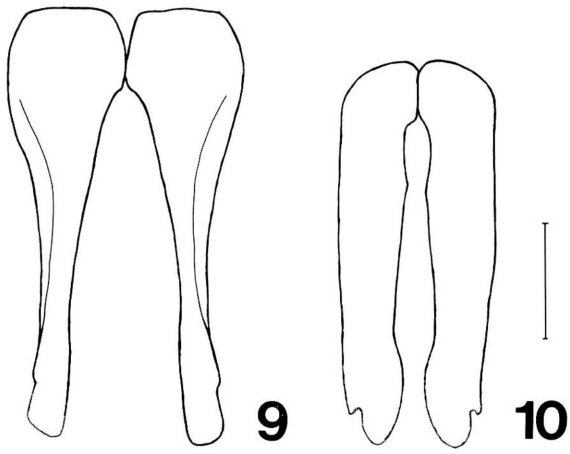
Pygidium rather strongly convex, wider than long (L/W=0.62), rather densely aciculate, densely clothed with short hairs.

Metasternum weakly depressed medially with a longitudinal line, rather strongly punctured and densely clothed with long hairs; abdomen densely clothed with short hairs, second sternite feebly raised ventrally, seventh (distal) sternite flattened medially.

Anterior tibia bidentate, without terminal spur; middle tibia weakly curved inwards, rather sparsely bearing short setae on the inner surface.

Each paramere of male genitalia with a distinct notch near apex.

Female. Coloration and cretaceous maculation similar to those of the male, but the ground colour of abdomen and pygidium is almost black; clypeus wider than long (L/W=0.67), anterior margin distinctly emarginate, antennal lamellae about as long as footstalk; pronotum broad (L/W=0.78), anterior angle obtuse; pygidium very broad (L/W=0.56), transversely aciculate, widely flattened medially; cretaceous



Figs. 9–10. Caudal view of male parameres. —— 9, *P. nomurai* TESAR; 10, *P. taiwanus* n. sp. (Scale: 1 mm.)

markings undeveloped on ventral surface, abdomen weakly convex; terminal spur of anterior tibia present.

Length. Male: 12.5–13.5 mm, female: 13–15 mm.

Holotype: ♂, Lalashan, Taoyuan Hsien, VI–1968 (in coll. NSMT); allotype: ♀, Formosa, V–1974 (in coll. NSMT); paratypes: 2 ♂♂, Formosa, V–1974 (in coll. NSMT); 2 ♂♂, Lalashan, 12–VI–1889; 1 ♂, Taiheizan, Formosa, 8–VI–1939, A. KIRA leg.; 1 ♂, Paling, 900 m, Taoyuan Hsien, 30–IV–1985, K. SAKAI leg.; 1 ♀, Lalashan, 20–VI–1941, S. HIRAYAMA leg. (in coll. NSMT).

This new species differs from the allied species by the following characteristics: first segment of antenna not darkened dorsally; posterior tibia and tarsus not darkened in both sexes; pygidium brown and free from the cretaceous materials medially in the male; parameres of male genitalia notched near apex; pygidium very broad in female.

Acknowledgement

I wish to thank Dr. S.-I. UÉNO for the permission to examine the National Science Museum collection, Dr. Y. KUROSAWA for the mediation to the Museum, and also T. AOKI, M. FUJIOKA, K. INADA, Y. MIYAKE, R. MURAMOTO and K. SAKAI for various helps given in the course of this study.

要　　約

岩瀬一男：台湾産 *Paratrichius* 属について．—— 台湾に産する *Paratrichius* 属の 2 新種を記載し，3 既知種を含む検索表を示した．新たに与えた名称は，*P. guttatus* および *P. taiwanus* である．

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Some New Sericid and Melolonthid Beetles (Coleoptera, Scarabaeidae) from Central Taiwan

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Abstract Six new sericid and melolonthid beetles are described from Taiwan. They are: *Trichomaladera yui*, *Maladera spinifemorata*, *Taiwanoserica yui*, *T. anmashana*, *Brahmina monticola* and *B. pubiventris*. Key to the Taiwanese species are provided for the genus *Trichomaladera*.

Six new sericid and melolonthid beetles are described from Mt. An-ma Shan lying in Taichung County in central Taiwan. There was little record before the present time for collecting beetles on Mt. An-ma Shan. Fortunately, the author had many specimens offered from Mr. Ching-Kin YU, all captured by himself on the mountain in July of 1992.

Before going further, the author wishes to express his sincere appreciation to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his critical reading of the original manuscript, and also to Mr. Ching-Kin YU for his kindness in entrusting those valuable specimens to the author for investigation. The holotypes designated in this study are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Other specimens are preserved in the anthor's collection.

Genus *Trichomaladera* NOMURA, 1974

This genus was established by NOMURA in 1974 for *Trichomaladera elongata* NOMURA, 1974. After that, the author added *T. rufocastanea* KOBAYASHI et NOMURA, 1979 and *T. yasutoshii* H. KOBAYASHI, 1991. Thus, three species of this genus have been known from Taiwan until now. These and the single new species may be distinguished by the following key:

1. Form elongate, ventral surface light brown, dorsal surface reddish brown, head blackish brown. Surface of body opaque. Eyes rather large and protruding, two-thirds as broad as frons between them. Antennal club 2.2 times as long as footstalk in male. ..... *T. yasutoshii* H. KOBAYASHI
— Form elongate oval, ventral surface reddish brown to yellowish brown, head of the same color as pronotum. 2
2. Lateral margins of pronotum most broadly distant at base, gradually convergent to front. Antennal club 1.8 times as long as footstalk in male. Abdominal

sternites each with a row of short hairs, 4th of them rather long at the sides. ..... *T. yui* sp. nov.

— Lateral margins of pronotum most broadly distant at base, weakly curved before the middle, gradually convergent to front, nearly straight behind.....3

3. Pronotum moderately convex. Antennal club 1.7 times as long as footstalk in male. Posterior tibia slender, 4.3 times as long as its breadth..... ..... *T. elongata* NOMURA

— Pronotum rather convex. Antennal club twice as long as footstalk in male. Posterior tibia slender, 3.6 times as long as its breadth..... ..... *T. rufofusca* KOBAYASHI et NOMURA

Trichomaladera yui H. KOBAYASHI, sp. nov.

[Japanese name: Miyama-ubuge-biroudo-kogane]

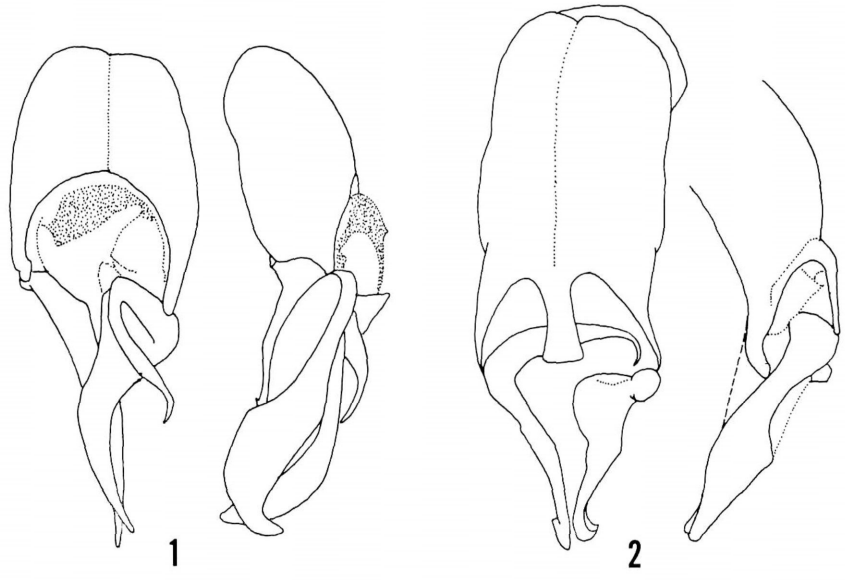
(Figs. 1, 7, 8)

Elongate oval, light reddish brown, with antennal club more reddish brown than the ventral surface, tibiae and tarsi reddish brown, dorsal surface light reddish brown or dark reddish brown. Surface of body opaque, with clypeus, antennae, tibiae and tarsi shining.

Clypeus subparallel-sided in basal half and covergent to front in male, subtrapezoidal in female, covered with erect hairs, with anterior margin reflexed and gently emarginate; fronto-clypeal suture angulate at the middle. Frons faintly, sparsely punctate, rather densely covered with erect hairs. Eyes rather small, less than one-fourth as broad as frons between them in both sexes. Antennae 10-segmented, with club 1.8 times as long as footstalk in male, a little longer than that in female.

Pronotum rather densely, finely punctate, covered with sparse erect hairs, fringed with long sparse hairs on anterior margin and along the lateral ones; lateral margins most broadly distant at base, gradually convergent to front, anterior angles protruding but not acute, posterior ones subrectangular. Scutellum of the same length as its breadth, rather densely punctate on each side, almost impunctate in the middle. Elytra bearing scattered subrecumbent and erect hairs, with sulci rather densely punctate, the punctures somewhat forming a row in each sulcus; intervals moderately convex, very sparsely and faintly punctate. Pygidium almost frattened in male, feebly convex in female, faintly and sparsely punctate, bearing rather sparse hairs, fringed with scattered erect hairs near apical margin.

Propleuron deeply sulcate behind. Abdominal sternites sparsely punctate, each with a transverse row of hairs, of which the one on the 4th is rather long. Posterior femur elliptical, 3.0 times as long as its breadth, sparsely punctate, with two transverse rows of hairs near anterior and posterior margins; posterior margin weakly sinuate near apex and finely serrate. Posterior tibia slender, 4.1 times as long as its breadth, sparsely covered with somewhat longitudinal punctures, with longer terminal spur 0.8 times as long as basal tarsal segment. Posterior tarsi punctate, without



Figs. 1–2. Male genitalia. —— 1, *Trichomaladera yui* sp. nov.; 2, *Maladera spinifemorata* sp. nov.; left, dorsal view; right, lateral view.

setae on ventral side.

Length: 13.0–13.5 mm; breadth: 7.0 mm.

Holotype: ♂, Mt. An-ma Shan, Taichung Hsien, 12–VII–1992, C. YU leg. Paratypes: 2 ♀♀, same data as for the holotype.

Maladera (*Maladera*) *spinifemorata* H. KOBAYASHI, sp. nov.

[Japanese name: Togeashi-ôbiroudo-kogane]

(Figs. 2, 9)

Oval, reddish brown to dark reddish brown, with antennal club yellowish brown, dorsal surface uniformly reddish brown. Surface of body opaque, with slight iridescence under certain light; clypeus, antennae and legs (except for posterior four-fifths of middle femur) shining, posterior femur and tibia with rather strong iridescence.

Clypeus trapezoidal, rather densely punctate in the middle, coarsely and somewhat rugosely punctate on each side, feebly elevated in the middle, with several, rather long, erect hairs on apical half, with anterior margin broadly and weakly emarginate; fronto-clypeal suture somewhat angulate in the middle. Frons faintly, sparsely punctate, bearing a few erect hairs near eyes. Antennae 10-segmented, with club 1.3 times as long as footstalk in male.

Pronotum sparsely, finely punctate, fringed with sparse hairs on each side of anterior margin and along the lateral ones; lateral margins most broadly distant at base,

weakly and roundly convergent to front, anterior angles protruding but not acute, posterior ones subrectangular but not angulate. Scutellum very sparsely punctate. Elytral intervals feebly convex, very sparsely and finely punctate. Pygidium feebly convex, rather sparsely punctate, bearing scattered erect hairs near apical margin.

Abdominal sternites sparsely punctate, each with a transverse row of setae, 4th and anal sternites with a few long hairs on each side. Posterior femur sparsely punctate, 2.8 times as broad as its length, with two transverse rows of hairs near anterior and posterior margins; anterior margin finely serrate on its posterior side, posterior margin weakly sinuate near apex, posterior angle spinose, protruding backwardly. Posterior tibia stout, somewhat dilated, 3.3 times as long as its breadth, coarsely, sparsely punctate on basal half, almost impunctate on apical half; longer terminal spur just shorter than basal tarsal segment. Posterior tarsi of normal form, 2nd tarsal segment 0.6 times as long as basal tarsal one.

Length: 12.0–12.5 mm; breadth: 9.0 mm.

Holotype: ♂, Mt. An-ma Shan, Taichung Hsien, 12–VII–1992, C. YU leg. Paratypes: 5 ♂♂, same data as for the holotype.

This species is closely allied to *Maladera secreta horaiana* NOMURA, 1974, but may be separated from the latter by the following points: long antennal club; posterior femur with spinose apex of posterior margin; punctuation of posterior tibia; 2nd tarsal segment 0.6 times as long as basal tarsal one.

Taiwanoserica yui H. KOBAYASHI, sp. nov.

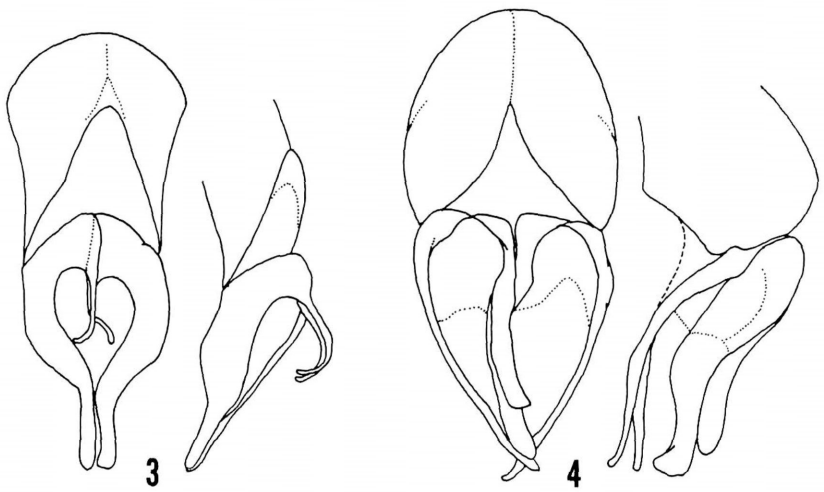
[Japanese name: Mokusei-taiwan-biroudo-kogane]

(Figs. 3, 10)

Elongate oval, light reddish brown or reddish brown, with clypeus, tibiae and tarsi reddish brown, posterior part of head blackish brown to dark reddish brown, antennae yellowish brown, dorsal surface mottled with blackish patches, metasternum and abdomen darker. Surface of body opaque, with clypeus, antennae and legs (except for middle femora) shining.

Clypeus subtrapezoidal, rather densely punctate, bearing dense erect hairs, with a feeble transverse groove just behind anterior margin, anterior margin rather deeply emarginate; fronto-clypeal suture distinct, angulate at the middle. Frons sparsely and faintly punctate, bearing scattered erect or semierect hairs. Eyes one-third as broad as frons between them in male, smaller in female. Antennae 10-segmented, with club 1.2 times as long as footstalk in male, subequal in length to that in female.

Pronotum somewhat sparsely punctate, bearing scattered slender scale-like setae and short hairs, lateral margins most widely separated near base, gradually convergent to front, anterior angles acutely protruding though rounded at the tips. Elytra bearing scattered slender scale-like setae, with intervals very feebly convex, sparsely punctate, several punctures each with a microscopic hair. Pygidium convex, somewhat coriaceous, very sparsely punctate, with a smooth median line in basal



Figs. 3–4. Male genitalia of *Taiwanoserica* spp. —— 3, *Taiwanoserica yui* sp. nov.; 4, *T. anmashana* sp. nov.; left, dorsal view; right, lateral view.

half, bearing rather long hairs near posterior margin.

Abdomen with 2nd to 4th sternites bearing a row of hairs on each side and scattered hairs at the middle. Posterior femur narrow, 3.5 times as long as its breadth, sparsely punctate. Posterior tibia slender, 5.0 times as long as its breadth, longitudinally rugose. Each segment of posterior tarsi with one or two short setae on ventral side.

Length: 10.0 mm; breadth: 5.5 mm.

Holotype: ♂, Mt. An-ma Shan, Taichung Hsien, 12–VII–1992, C. Yu leg. Paratypes: 3 ♂♂, 3 ♀♀, same data as for the holotype.

Taiwanoserica anmashana H. Kobayashi, sp. nov.

[Japanese name: Anmasan-taiwan-biroudo-kogane]

(Figs. 4, 11)

This species resembles very closely the preceding species, but differs from the latter in the following points: antennal club of the same length as the footstalk in male, shorter than that in female; pronotum broadest at basal two-thirds, lateral margins gently rounded, anterior angles produced, subrectangular; posterior femora more sparsely punctate than in the preceding species; pygidium most highly convex near apical margin, rather densely punctate, with a clear longitudinal line at the middle.

Length: 10.0 mm; beadth: 5.5 mm.

Holotype: ♂, Mt. An-ma Shan, Taichung Hsien, 12–VII–1992, C. Yu leg. Paratypes: 10 ♂♂, 8 ♀♀, same data as for the holotype.

Brahmina monticola H. KOBAYASHI, sp. nov.

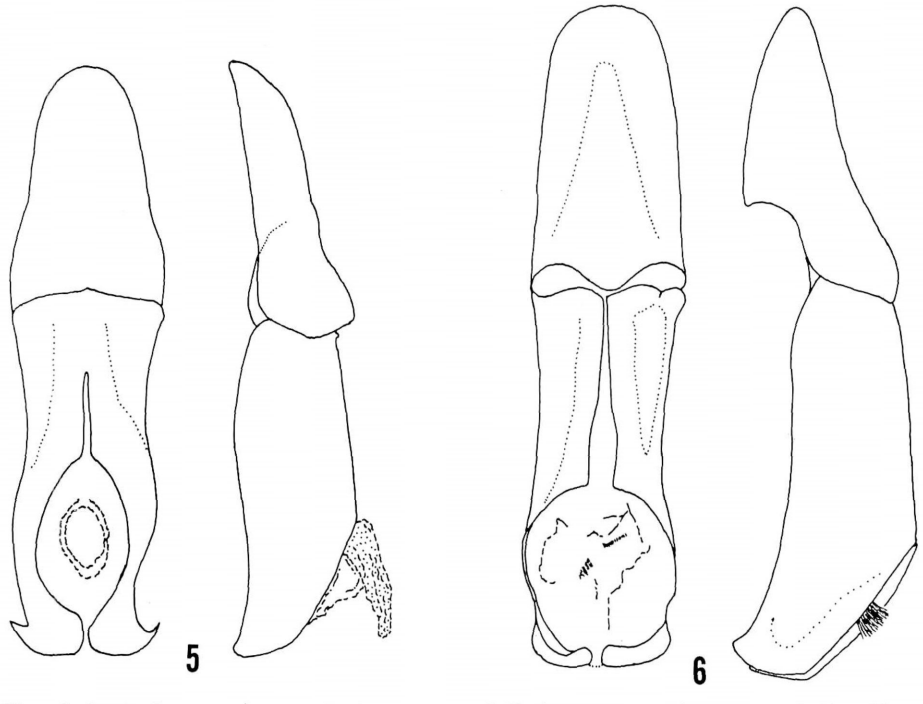
[Japanese name: Yama-akacha-kogane]

(Figs. 5, 12, 13)

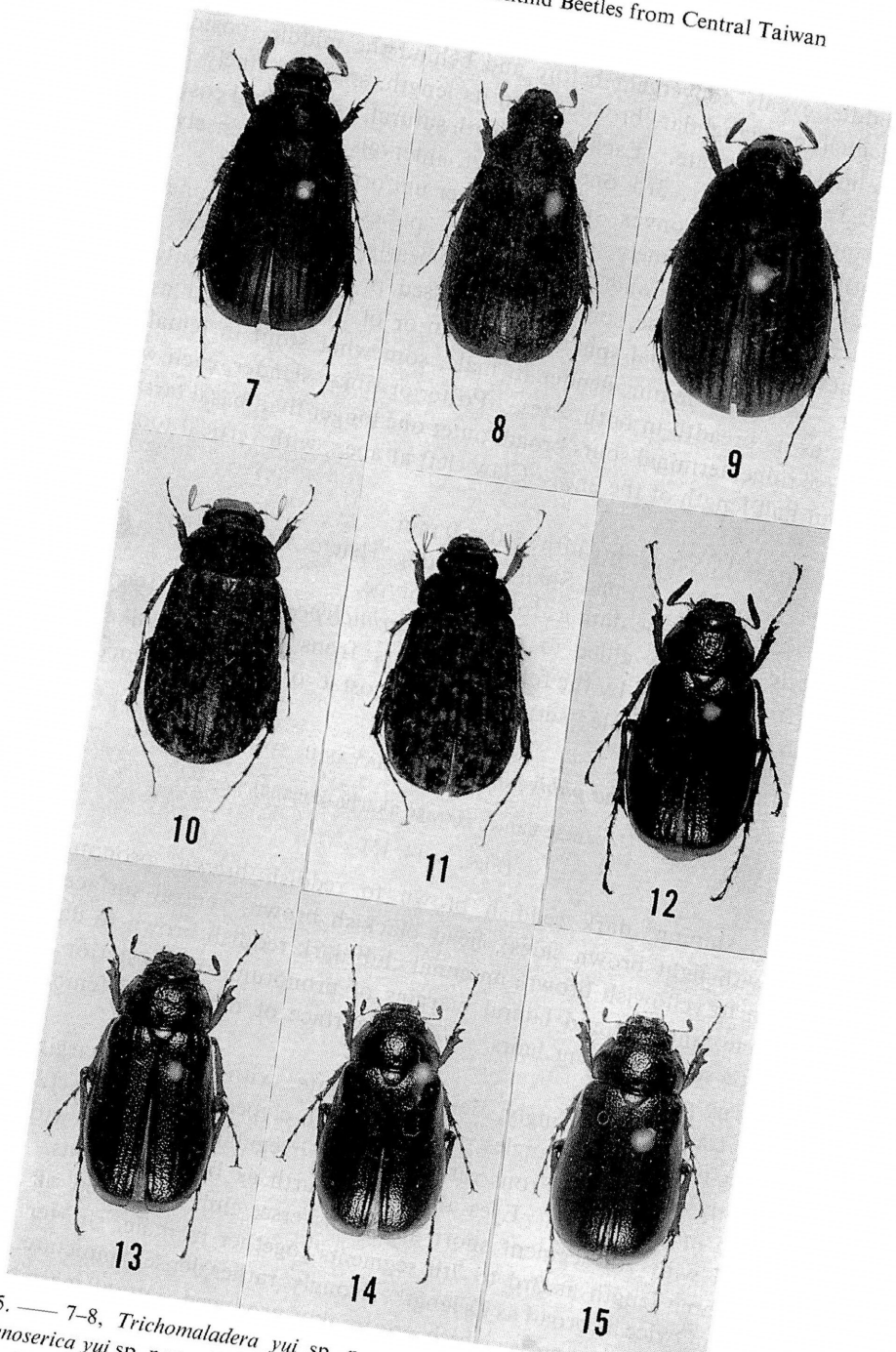
Elongate, shining, dark reddish brown to reddish brown, pronotum darker (sometimes with light brown sides), head blackish brown, ventral surface light yellowish brown, antennae light brown. Clypeus, genae, anterior and lateral margins of pronotum, sides of elytra and posterior margin of pygidium with scattered long hairs. Ventral surface of thorax and femora clothed with long tawny pubescence.

Clypeus transverse, bilobate, convergent to front, with anterior margin roundly, deeply emarginate, surface strongly, densely punctate, with a wide boss-like carina behind the middle, fronto-clypeal suture distinct, sulcate, slightly bisinuate or very weakly arcuate. Frons rather coarsely, irregularly punctate, with a longitudinal smooth line in the middle (sometimes indistinct). Eyes three-sevenths as broad as frons. Antennae 10-segmented, with 7th segment short and transverse, club composed of 3 lamellae, 1.4 times as long as footstalk and almost straight in male, 0.8 times as long as that in female.

Pronotum twice as broad as its length, strongly, rather densely punctate, somewhat flattened near anterior angles, which are obtuse, lateral margins feebly crenate, roundly



Figs. 5–6. Male genitalia of *Brahmina* spp. —— 5, *Brahmina monticola* sp. nov.; 6, *B. pubiventris* sp. nov.; left, dorsal view; right, lateral view.



Figs. 7–15. —— 7–8, *Trichomaladera yui* sp. nov.; 9, *Maladera spinifemorata* sp. nov.; 10, *Taiwanoserica yui* sp. nov.; 11, *T. anmashana* sp. nov.; 12–13, *Brahmina monticola* sp. nov.; 14–15, *B. pubiventris* sp. nov.; 7, 12 & 14, male; 8, 13 & 15, female.

curved at middle, evenly convergent before and behind the middle, posterior angles rounded. Scutellum trianglular, broader than its length, sparsely, finely punctate at the sides, or almost impunctate. Each elytron with sutural, 1st and 2nd costae sparsely punctate and feebly convex, 3rd one indistinct, intervals rather densely punctate. Pygidium triangular, feebly convex, sparsely, rather uniformly punctate.

Metasternum densely, finely punctate and pubescent. Abdominal sternites sparsely, finely punctate, 5th and anal sternites bearing scattered long hairs, anal sternite rather convex, 5th one somewhat depressed in basal half. Anterior tibiae tridentate, each with a terminal spur shorter than or of the same length as the neighbouring hair. Posterior femur slender in male, somewhat stout in female, about 3 times as long as its breadth in both sexes. Posterior tibiae slender, each with a complete transverse ridge, terminal spurs broad, outer one longer than basal tarsal segment, which is about half length of the 2nd. Claw cleft at apex, with vertical tooth oblique, not vertical.

Length: 12.5–15.5 mm; breadth: 7.0–8.0 mm.

Holotype: ♂, Mt. An-ma Shan, Taichung Hsien, 12–VII–1992, C. YU leg. Paratypes: 1 ♂, 5 ♀♀, same data as for the holotype.

This species is closely allied to *Brahmina cariniclypea* NOMURA, 1977, but may be separated from the latter by the following points: frons without boss-like elevation; antennal club shorter in male; sutural and 1st costae of elytron distinctly convex.

Brahmina pubiventris H. KOBAYASHI, sp. nov.

[Japanese name: Harage-akacha-kogane]

(Figs. 6, 14, 15)

Elongate, shining, dark reddish brown to reddish brown, pronotum darker (sometimes with light brown sides), head blackish brown, ventral surface light yellowish brown to yellowish brown, antennal club dark reddish brown to dark brown. Clypeus, genae, anterior and lateral margins of pronotum and posterior margin of pygidium with scattered long hairs. Ventral surface of thorax and femora clothed with long tawny pubescence.

Clypeus transverse, strongly, densely punctate, with anterior margin reflexed, slightly emarginate, anterior angles rounded, fronto-clypeal suture distinct, somewhat sulcate, slightly bisinuate. Frons rather densely, irregularly punctate, without boss-like elevation in the middle. Eyes about one-fourth as broad as frons. Antennae 10-segmented with 7th segment short and transverse, club composed of 3 lamellae and of the same length as 3rd to 7th segments together in male, shorter in female.

Pronotum twice as broad as its length, strongly, rather densely punctate, somewhat flattened near anterior angles, which are weakly produced, lateral margins coarsely crenate, roundly curved just behind the middle, evenly convergent before and behind the middle, posterior angles rounded. Scutellum triangular, round at apex, clearly broader than its length, sparsely, finely punctate. Each elytron with sutural and 1st

costae rather broad, sparsely punctate and rather convex, 2nd fine but evident, 3rd indistinct, intervals rather densely punctate. Pygidium triangular, feebly convex, longitudinally rugose at the middle, rather finely and sparsely so at the sides.

Metasternum densely, finely punctate and pubescent. Abdominal sternites sparsely, finely punctate, 1st and 2nd sternites rather densely bearing hairs at the sides, 5th and anal sternites bearing scattered long hairs, anal sternite rather convex. Anterior tibiae tridentate, each with a terminal spur shorter than or of the same length as the neighbouring hairs. Posterior femur slender in male, somewhat stout in female, about 3.1 times as long as its breadth in both sexes. Posterior tibiae slender, each with a complete transverse ridge, terminal spurs broad, outer one longer than basal tarsal segment, which is 0.7 times as long as the 2nd. Claw cleft at apex, with vertical tooth oblique, not vertical.

Length: 12.0–14.0 mm; breadth: 7.0–7.5 mm.

Holotype: ♂, Mt. An-ma Shan, Taichung Hsien, 12–VII–1992, C. YU leg. Paratypes: 4 ♂♂, 3 ♀♀, same data as for the holotype.

This species is very closely allied to *Brahmina shibatai* H. KOBAYASHI, 1987, but may be separeted from the latter by the following points: frons without boss-like elevation; short antennal club; 3rd costa of elytron fine but distinct; 1st and 2nd abdominal sternites rather densely bearing hairs at the sides; terminal spurs of posterior tibia broad.

要　　約

小林裕和: 中部台湾産ビロウドコガネおよびコフキコガネの数新種. —— ビロウドコガネ類およびコフキコガネ類に含まれる6種のコガネムシの新種を，台湾中部の鞍馬山から記載するとともに，台湾に分布している *Trichomaladera* 属の検索表を作成した．また，それぞれの新種を次のように命名した: *Trichomaladera yui*, *Maladera spinifemorata*, *Taiwanoserica yui*, *T. anmashana*, *Brahmina monticola*, *B. pubiventris*.

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Elytra, Tokyo, **21** (1): 76, May 15, 1993

タイワンツノコガネの異常型の記録

小 林 裕 和

Hirokazu KOBAYASHI: A Record of an Aberrant Form of *Dicranocephalus bourgoini* (Coleoptera, Scarabaeidae) from Taiwan

タイワンツノコガネ (*Dicranocephalus bourgoini* PAUILLAUDE) は，5月から7月にかけて台湾の各地で比較的普通に採集されるコガネムシである．もともと．体上面の色彩には黄土色から青灰色までの個体変異や地域ごとによる変異が認められるほか，雄の頭部にある1対の角の大きさや形状にも，大型の個体と小型の個体とでかなりの変異が見られることはよく知られている．

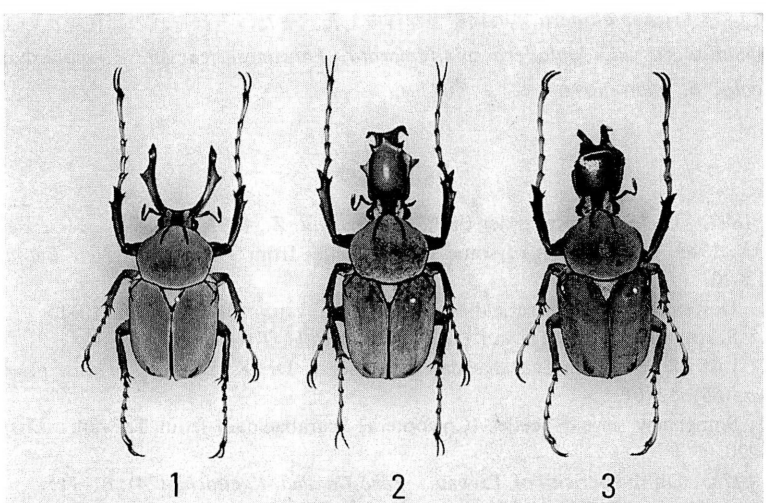
筆者は昨年，台湾の余清金氏が採集した，本種異常型の個体を検する機会を得た．個体は全部で3個体あり，その中の2個体を図示した (Figs. 2-3)．写真からもわかるように，正常な雄個体 (Fig. 1) では頭部に左右に広がったよく発達した1対の角をそなえるが，異常型では，それが中央で融合して1本の角状となっている．しかしながら，本来は先端にある2叉状の突起や，角の途中にある内側および外側を向いた小突起は，やや形を変えながらも残っている．図示できなかった残りの1個体も，同様の形状を示している．

このようにはなはだしい異常型は珍しいと考え，記録することにした．貴重な標本を提供された余清金氏にお礼を申し上げる．なお，採集データは以下のとおりである．

♂, Peishantsun, Nantou Hsien, 5-V-1983, 余 清金採集. (Fig. 2)

♂, Meiyuan, Taichung Hsien, 20-V-1978, 余 清金採集. (Fig. 3)

♂, Peishankeng, Nantou Hsien, 3-V-1981, 余 清金採集.



Figs. 1-3. *Dicranocephalus bourgoini* PAUILLAUDE. —— 1, Normal form, ♂, from Shunyang; 2, aberrant form, ♂, from Peishantsun; 3, aberrant form, ♂, from Meiyuan.

Elytra, Tokyo, **21** (1): 77–81, May 15, 1993

A New Genus and Species of Melolonthine Beetle (Coleoptera, Melolonthidae) from Borneo

Takeshi ITOH

Higashi-naruo-chô 2–1–13–212, Nishinomiya, Hyôgo, 663 Japan

Abstract A new melolonthid beetle, *Wadaia kaorui* gen. et sp. nov. is described from Borneo. It belongs to the tribe Melolonthini and is somewhat related to *Stephanopholis melolonthoides* (BRENSKE, 1892) from the Philippines.

Recently, I had an opportunity to examine an interesting melolonthine beetle from the northern and western areas of Borneo. After a careful study, I have come to the conclusion that it should belong to a new species of a new genus, though it is rather allied to *Stephanopholis melolonthoides* (BRENSKE, 1892). In this paper, I am going to describe it under the name of *Wadaia kaorui* T. ITOH, gen. et sp. nov.

Before going further, I would like to express my hearty gratitude to Prof. Masataka SATÔ for his critical advice on the manuscript of this paper, and also to Messrs. Kaoru WADA, Atsushi KATOH and Masamichi YAGI for their kindness in offering invaluable materials.

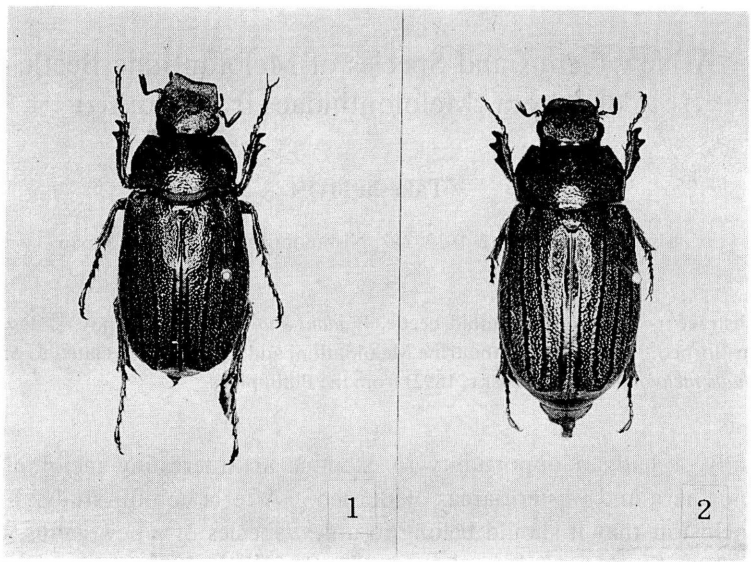
Wadaia T. ITOH, gen. nov.

Male. Body elongate oval and convex. Dorsal surface relatively densely and regularly covered with thin creamy brown scales. Clypeus strongly narrowed anteriad and remarkably reflexed like a screen in apical half. Antenna 9-segmented, the club composed of 3 segments. Men um trapezoidal, bluntly produced at the centre of anterior margin. Each elytron bearing a developed marginal membrane from lateral margin to sutural edge.

Ventral surface hairy except for abdomen. Mesosternum without a produced process. Abdomen also relatively densely and regularly covered with thin creamy brown scales except for the medio-basal area of 2nd sternite and just along sutures; lateral side generally devoid of creamy brown maculations composed of scales but rarely with obscure ones.

Legs relatively slender. Protibia tridentate, the basal denticle obtuse. Longer one of the two apical spines of metatibia much longer than the 1st tarsal segment. The 1st to 4th segments of each tarsus provided with tufts beneath. Metatarsus slender, a little longer than metatibia. Claw with an apical, an obliquely directed median and a very small basal teeth.

Parameres of male genitalia composed of a pair of outer larger and a pair of inner



Figs. 1–2. *Wadaia kaorui* gen. et sp. nov.; 1, habitus (male); 2, ditto (female).

smaller branches.

Female. Clypeus less reflexed, bilobate and clearly emarginate at the centre of anterior margin. Legs more robust, metatarsus about as long as metatibia. Claw with a more strongly bent apical and a vertical median teeth.

Type species: *Wadaia kaorui* T. ITOH, sp. nov.

This genus is distinguishable from *Stephanopholis* BRENSKE and *Rhabdopholis* BURMEISTER by the 9-segmented antenna, longer metatarsus, tridentate protibia, branched parameres of male genitalia, obliquely directed median tooth of male claw, and so on.

Wadaia kaorui T. ITOH, sp. nov.

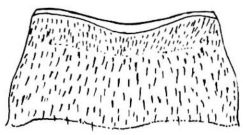
(Figs. 1–10)

Body length: 22.7–29.6 mm.

Male. Body blackish brown to rufous blackish brown.

Clypeus strongly reflexed at apex and gently emarginate at the anterior margin, fronto-clypeal suture clear and biarcuate. Frons wide and sparsely punctate. Interval between eyes 0.70–0.73 (0.72 on an average) times as broad as head width. Occipital

Figs. 3–10. *Wadaia kaorui* gen. et sp. nov. —— 3, Male clypeus; 4, mentum; 5, occipital area; 6, right maxilla in lateral view (a), and maxillary galea in dorsal view (b); 7, membrane of elytral margin (El: elytron, Pyg: pygidium); 8, left metatibia and metatarsus in male; 9, male genitalia in dorsal view (a), and lateral view (b) (scale: 1 mm); 10, claw of fore leg in male (a) and female (b).



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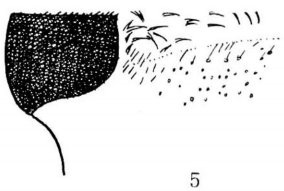

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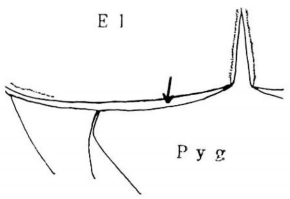

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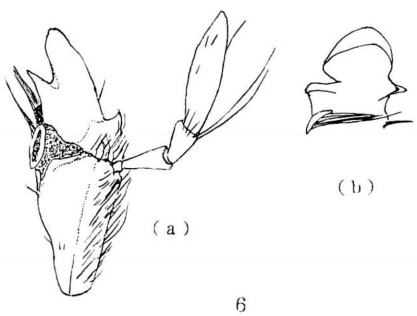

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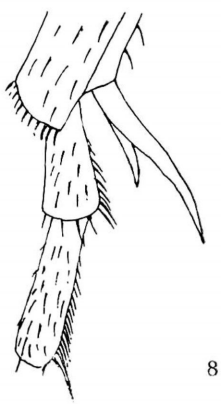

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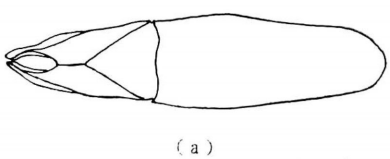

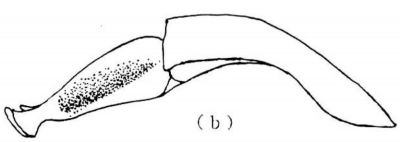

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area covered sparsely with fine punctures behind vertex. Antennal club nearly as long as footstalk and also 1.7–2.1 (1.9 on an average) times as long as 4 preceding segments combined. Maxillary galea provided with 4 denticles and the last segment of maxillary palpus spindle-shaped.

Pronotum convex, 0.59–0.62 (0.60 on an average) times as long as broad; anterior margin rimmed only near anterior angles; lateral margin very gently curved a little behind the middle, antero-lateral margin and postero-lateral one straight; anterior angle rectangular, posterior one clearly obtuse; disc sparsely punctate, with an obscure groove along the median line. Scutellum triangular in outline and rounded at the apical margin. Each elytron with 4 costae and a sutural one, 3rd one sometimes obscure.

Prosternal keel triangular and convex. Metasternum sparsely punctate in the median area and densely so at the lateral sides, and more densely hairy at the lateral sides. Metasternal median line evident. Sixth abdominal segment wholly furnished with short thinner scales than the other segments and with long brown pubescence near the apical margin. Pygidium flat and rounded at apical margin.

Metafemur convex, moderately swollen at the middle and 0.30–0.31 (0.30 on an average) times as wide as long. Metatibia moderately swollen at the apex and provided with a row of relatively long bristles along the inner margin as in mesotibia.

Female. Dorsal and ventral surfaces covered with thicker scales than in male. Interval between eyes 0.72 times as broad as head width. Antennal club shorter, 1.6 times as long as the 4 preceding segments combined. Pronotum 0.61 times as long as broad. Each elytron with 4 clear costae and a sutural one. Scales on abdominal sternites thicker than in male, each similar to a rice grain. Metafemur more swollen, 0.43 times as broad as long.

Distribution. Borneo.

Holotype: 1 ♂, Mt. Kinabalu, N. Borneo, 21–IV–1988. Allotype: 1 ♀, near Keningau, N. Borneo, 13–IV–1988. Paratypes: 1 ♂, same data as for the holotype; 1 ♂, Kimanis Road, Keningau, N. Borneo, 2–V–1988, M. YAGI leg.; 1 ♂, Crocker Range, Sabah, N. Borneo, 29–III–1989; 2 ♂♂, Mt. Bawang, West Kalimantan, Borneo, III–1990, N. NISHIKAWA leg.

The holotype and allotype are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, 2 paratypes are in the collection of the Zoological Museum (Natural History) of Humboldt University, Berlin, and the others are in my collection and in Professor SATÔ's.

Remarks. Judging from reflexed clypeus in the male, antennal club composed of 3 lamellate segments in both sexes, mesosternite without a process, abdomen without obscure maculations of scales at the sides, and so on, the present new species is rather similar to *Stephanopholis melolonthoides* (BRENSKE) from the Philippines.

The new species is dedicated to Mr. Kaoru WADA.

要　約

伊藤　武：ボルネオ島のコフキコガネ科の1新属新種. —— ボルネオ島北部と西部で得られたコフキコガネ族に属する1新属新種を記載し，*Wadaia kaorui* という新名を与えた．本種は，強く反り返った雄の頭盾，雄雌とも触角葉片節が3節からなること，中胸腹板突起が不明瞭であること，腹側部に鱗片からなる明瞭な白斑がないことなどから，*Stephanopholis* 属に近縁であると考えられ，また，アフリカの *Rhabdopholis* 属にも近似しているが，触角が9節であること，より長い後付節，前脛節に3外歯が存在すること，雄交尾器の枝分かれした側片や雄の爪の中央歯がやや斜めを向いている構造などの特徴から，別属とするのがよいと考え，新属を設定した．種名は，和田　薫氏に献名した．

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Elytra, Tokyo, **21** (1): 82, May 15, 1993

エゾヒラタコメツキの生態

大 平 仁 夫

ÔHIRA, H.: A Brief Ecological Note on *Orithales yezoensis* MIWA, 1934 (Coleoptera, Elateridae)

本種は，北海道の阿寒岳から，1928 年 7 月に採集された雄個体にもとづいて，新種として記載された寒地系の種である．体長 6 mm 内外．体は黒色で光沢を有し，触角は黒色で肢は黒褐色である．雄触角は第 4 節から櫛歯状を呈する．

本種は今まで，阿寒岳と大雪山周辺地域からわずかな個体が知られているのみであったが，このたび帯広市在住の柴多浩一氏が，足寄町喜登牛山の標高約 1,000 m 付近の永久凍土上に設置した，ピットホールベイトトラップに誘引された 3 雄個体（1992 年 6 月 14 日採集）を検した．本種がこのようなものに誘引された例は知られていないので，ここに報告することにした．雌個体は北海道からまだ記録されていない．本種の詳しい形態は別に明らかにする予定である．終わりに，標本の提供をいただいた柴多浩一氏に心からお礼を申し上げる．

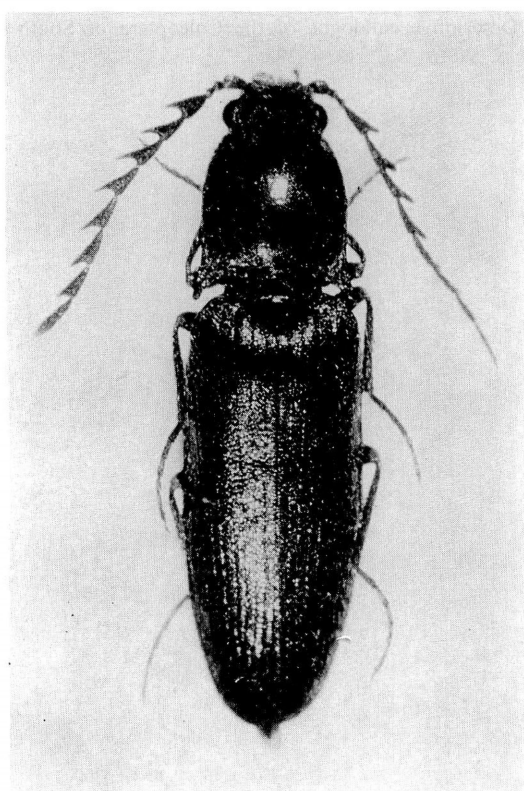

Fig. 1. *Orithales yezoensis* の雄，体長 6 mm（喜登牛山産）．

Elytra, Tokyo, **21** (1): 83–86, May 15, 1993

Small Coprophagous Scarabaeids (Coleoptera, Scarabaeidae) from Yunnan, Southern China[1)]

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Abstract Three scarabaeid beetles of small size are recorded from Yunnan, Southern China. Two of them, a *Haroldius* and a *Panelus*, seem new to science. Both were found from soil samples taken in a tropical rain forest of Xishuangbanna. The other species, originally described from northern Vietnam, seems rather widespread in Southeast Asia.

In the autumn of 1992, a Sino-Japanese joint party of entomologists made an investigation of soil animals in Yunnan, southern China. Participating in this project, Dr. S.-I. UÉNO, and Dr. Y. WATANABE collected a short series of specimens of small scarabaeid beetles at Kunming and Xishuangbanna. They were found in soil samples taken in a tropical rain forest at Menglun and a temperate mixed forest in the suburbs of Kunming.

After a close examination, it has become apparent that the collection contains three species of two different genera. One species each of these genera, from Xishuangbanna, seem new to science and are described in this paper. The remaining one, a *Panelus*, is referable to a species originally described from northern Vietnam, and is newly recorded from China.

The holotypes of the species to be described are deposited in the collection of the Shanghai Institute of Entomology, Academia Sinica.

Before going further, the authors wish to express their heartfelt thanks to Dr. Shun-Ichi UÉNO, Dr. Yasuaki WATANABE and all the other participants of the joint expedition for their kind help extended to the authors in the course of the present study. Appreciations are due to Dr. Yasuhiko HAYASHI of Kawanishi City for taking photographs inserted in this paper, and also to Mr. Teruo OCHI of Osaka Prefecture for invaluable comment.

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

Tribe Alloscelini

Haroldius (s. str.) *uenoi* sp. nov.

(Fig. 1)

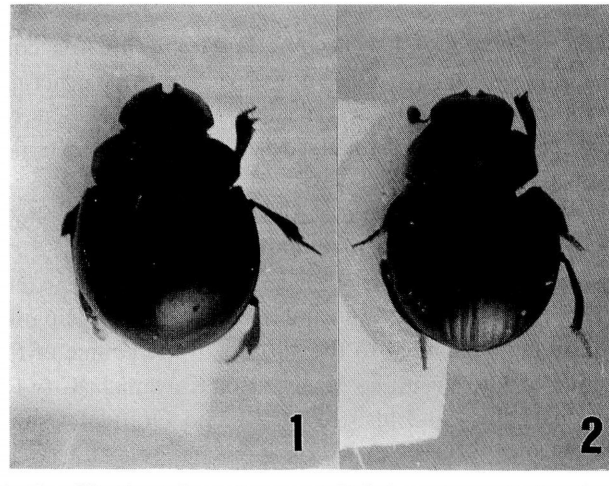
Dark reddish brown, with antennae yellowish brown; dorsal surface except for outer margins of clypeus piceous, feebly micro-shagreened and shining; ventral surface rather alutaceous and gently shining. Body hemispherical.

Head semicircular, gently raised in posterior portion, sparsely and microscopically punctate; front margin of clypeus gently produced into two lobes, deeply emarginate in the middle; fronto-clypeal border impressed on each side; genae rather abruptly narrowed before eyes with clypeo-genal border impressed in inner portion; eye small and obliquely subelliptic, with inner margin ridged.

Pronotum short and convex, finely punctate and micro-shagreened, each puncture with a fine bent hair, transversely elliptically depressed near base; apex widely emarginate though gently arcuate forwards in middle, finely rimmed on each side; base widely rounded though feebly angulate in the middle, gently truncate and finely rimmed in lateral portions; sides steeply declined to lateral margins which are obliquely, slightly arcuate and finely rimmed; front and hind angles rectangular, the former with rounded and the latter with angulate corners.

Elytra microscopically, shallowly punctato-striate, the punctures closely set one another; intervals wide and flat, sparsely, microscopically punctate and feebly micro-shagreened.

Pygidium gently convex, sparsely and microscopically punctate, each margin finely rimmed. Fore tibia tridentate, the apical tooth extremely small and the middle very large; middle and hind tibiae distinctly dilated towards each apex, with acute



Figs. 1–2. —— 1. *Haroldius* (s. str.) *uenoi* sp. nov., ♀, holotype. —— 2. *Panelus* (s. str.) *watanabei* sp. nov., ♂, holotype.

outer corner.

Body length: 2.7 mm.

Holotype: ♀, Menglun, 600 m alt., Xishuangbanna, Yunnan, S China, 30–X–1992, S.-I. UÉNO & Y. WATANABE leg.

Notes. This new species resembles *Haroldius perroti* PAULIAN, 1939, originally described from Tonkin, but can be distinguished from the latter by the larger body, the clypeus more rounded though more strongly produced into two lobes in the middle, the pronotum distinctly truncate near the hind angles, and the apices of middle and hind tibiae with acuter outer corners.

Tribe Canthonini

Panelus (s. str.) ***tonkinensis*** PAULIAN, 1939

Panelus tonkinensis PAULIAN, 1939, Bull. Soc. ent. Fr., **44**: 70. Tonkin.

Specimens examined. 3 exs., Menglun, 570 m alt., Xishuanbanna, Yunnan, S China, 28–X–1992, S.-I. UÉNO & Y. WATANABE leg.; 1 ex., Menglun, 600 m alt., Xishuangbanna, 30–X–1992, S.-I. UÉNO & Y. WATANABE leg.; 1 ex., Menglun, 570 m alt., Xishuangbanna, 9–IV–1992, ZHAO, L. leg.; 1 ex., Menglun, 570 m alt., Xishuangbanna, 18–IV–1992, ZHAO, L. leg.; 2 exs., Qiongzhu-si, 2,100–2,150 m alt., Yu'an-shan Hill, Kunming, Yunnan, S China, 5–XI–1992, S.-I. UÉNO & Y. WATANABE leg.; 4 exs., Xi-shan, 2,120 m alt., Kunming, 7–XI–1992, S.-I. UÉNO & Y. WATANABE leg.

Notes. The Yunnanese specimens recorded above are slightly different from Vietnamese specimens in certain characters. This species is, however, rather variable in the shape and coloration of the body even in the Vietnamese population. The present authors prefer to regard the Yunnanese specimens as a geographical variant of *P. tonkinensis*.

Panelus (s. str.) ***watanabei*** sp. nov.

(Fig. 2)

Dark reddish brown, with mouth parts, antennae and tarsi yellowish brown; dorsal surface piceous and vitreously shining; ventral surface coriaceous and feebly shining. Body ovate, very convex, with elytra distinctly rounded.

Head gently convex in posterior portion, rather closely and finely punctate, each puncture with a microscopic bent hair; clypeus produced into two sharp teeth, which are feebly reflexed and rather close together; gena gently arcuate laterad with the junction of clypeus minutely toothed.

Pronotum subtrapezoidal and rather closely punctate, the punctures slightly larger than those on head, each with a microscopic bent hair; apex widely emarginate though gently arcuate forwards in middle; base widely rounded, slightly punctato-marginate in lateral portions; sides rather steeply inclined, with lateral margins gently narrowed forwards in basal 2/3, abruptly so in apical 1/3; front angles rather acute and hind

angles obtuse; disc broadly convex, with a sharply defined and transversely elliptical depression free from punctures in the middle of basal portion.

Elytra shallowly punctato-striate; intervals wide and very slightly convex, rather sparsely punctate, the punctures smaller than those on head and pronotum, each with a bent hair which is longer than pronotal ones.

Pygidium strongly convex and coriaceous. Fore tibia armed with 3 outer teeth, distinctly emarginate at apex, weakly chipped in apical portion of outer margin; hind tibia armed with a tooth at apex of inner margin in male; middle and hind tarsi rather short and distinctly flattened.

Body length: 2.6 mm.

Holotype: ♂, Menglun, 600 m alt., Xishuangbanna, Yunnan, S China, S.-I. UÉNO & Y. WATANABE leg. Paratypes: 1 ex., same data as for the holotype; 1 ex., Menglun, 570 m alt., Xishuangbanna, 28–X–1992, same collectors as for the holotype.

Notes. This new species resembles *Panelus tonkinensis* PAULIAN, 1939, but is distinguishable from the latter by the larger body, larger eyes, the elytra more distinctly rounded, and the fore tibia weakly chipped in apical portion of the outer margin.

要　　約

益本仁雄・尹　文英：中国云南省産の小型食糞コガネに関する知見．——1992 年秋に，中国云南省において，日中両国の昆虫学者による土壌性動物の調査が実施された．その際に得られた小型食糞コガネのうち，2 種は西双版納の熱帯雨林の土壌から採集され，検討の結果，新種と認められたので，それぞれ *Haroldius uenoi* sp. nov. および *Panelus watanabei* sp. nov. と命名した．さらに，他の 1 種は，特徴に多少の差異はあるが，北ベトナムから記載された *Panelus tonkinensis* PAULIAN, 1939 とした．本種は，原記載の地域だけでなく，タイ北部などまでかなり広く分布する種だと考えられる．

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Elytra, Tokyo, **21** (1): 87–91, May 15, 1993

The Trogid Genus *Xizangia* ZHANG, 1988, a Junior Synonym of the Lucanid Genus *Penichrolucanus* DEYROLLE, 1863

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Abstract The trogid genus *Xizangia* ZHANG, 1988, is considered as a junior synonym of the lucanid genus *Penichrolucanus* DEYROLLE, 1863. Its type species, *X. cryptonychus* ZHANG, 1988, is regarded as a valid species of the genus *Penichrolucanus* because this species is distinct from the other members of *Penichrolucanus* in several external characters.

The trogid genus *Xizangia* was newly erected by ZHANG (1988) on the basis of the Tibetan species, *X. cryptonychus* ZHANG, which was also newly described in the same paper. After a close scrutiny of the original description and examination of the illustration of the genus *Xizangia* and its type species, we concluded that this genus was considered to be a junior synonym of the lucanid genus *Penichrolucanus* DEYROLLE, 1863, as mentioned below. Three species of the genus *Penichrolucanus* were examined for comparison (see *Specimens Examined for Comparison* for details).

According to ZHANG (1988), the genus *Xizangia* is assigned to the family Trogidae by having the abdomen with five visible sterna, antenna with ten segments and mesepisternum not connected with the mesocoxa. However, all of these character states are also shared by some members of the other lamellicorn families (Ceratocanthidae, Passalidae and Lucanidae). Thus, the genus *Xizangia* cannot necessarily be assigned to the family Trogidae solely on the basis of these character states.

ZHANG (1988) mentioned that the most important diagnostic character of the genus *Xizangia* was the "heteromerous tarsal fomula". This character state means that the tarsi of middle and hind legs are partly fused. However, this also has been considered as being diagnostic of the lucanid genus *Penichrolucanus* (DEYROLLE, 1863; ARROW, 1935, 1938, 1950; RATCLIEFE, 1984; BARTOLOZZI, 1989). In addition, other generic characters of the genus *Penichrolucanus* were present in the description of *Xizangia* as follows: body oblong, flat and small in size; head large and broad (fan-

shaped); clypeus and canthus well developed; eyes surrounded with sclerites (canthus) and divided into upper and lower portions; prothorax broad and flat; scutellum obvious; legs short and stout; meso- and metatibiae each with two minute lateral spines on the edge; tarsi short and thick, interarticle unmovable. Besides, the illustration accompanying the description (ZHANG, 1988, p. 234, figs. 2–5) clearly shows that the claws of *Xizangia cryptonychus* are hidden between the lateral plates of the last tarsal segments. This state also perfectly agrees with that of *Penichrolucanus*. Moreover, the general appearance of *X. cryptonychus* in the illustration (ZHANG, 1988, p. 234, fig. 1) closely resemble those of the members of the genus *Penichrolucanus*. Accordingly, it is concluded that the genus *Xizangia* is a junior synonym of the genus *Penichrolucanus* of the family Lucanidae, although the former genus was originally erected as a member of the family Trogidae. ZHANG (1988) mentioned some similarities in the external morphology between the genus *Xizangia* and the Neotropical trogid genus *Cryptogenius* WESTWOOD, 1846. However, according to the original description of the genus *Cryptogenius*, this genus does not share the above mentioned characters with *Xizangia* except for the depressed body shape.

Until now, five species of the genus *Penichrolucanus* have been known; *P. copricephalus* DEYROLLE 1863, from the Malay Peninsula, *P. elongatus* ARROW 1935, also from the Malay Peninsula, *P. nicobaricus* ARROW, 1935, from the Nicobar and Andaman Islands, *P. sumatrensis* ARROW, 1935, from Sumatra Island, and *P. leveri* ARROW, 1938, from Guadalcanal Island of the Solomon Group. All the known members are small in size (less than 10 mm in length) with peculiar characters, and they are considered termitophilous or myrmecophilous (RATCLIEFE, 1984; BARTOLOZZI, 1989).

ZHANG's *cryptonychus* appears to be distinct from any other members of *Penichrolucanus* in the following characters: numbers of tarsal segments in the middle and hind legs (3–3); mandibles hidden by the large fan-shaped head in dorsal view (judging from the illustrations, not mentioned in the original description). Moreover, the locality of this species is far distant from the range of the other known members of this genus, four of which have been recorded from tropical Asia and one from the Solomon Islands in the western Pacific. Thus, *cryptonychus* should be regarded as a valid species of the genus *Penichrolucanus*, tentatively.

Further detailed re-examination of the type specimens is required to elucidate the phylogenetic relationship of this species to the other members of *Penichrolucanus*. It is expected that other interesting members of this aberrant lucanid genus may be newly discovered from blank areas between the Sunda Islands and Tibet or the Sunda Islands and Solomon Islands where no species of this genus have been recorded.

Genus ***Penichrolucanus*** DEYROLLE, 1863

Type species: *Penichrolucanus copricephalus* DEYROLLE, 1863.

Penichrolucanus DEYROLLE, 1863, Annls. Soc. ent. Fr. (4), **3**, p. 485. —— PARRY, 1864, Trans. ent.

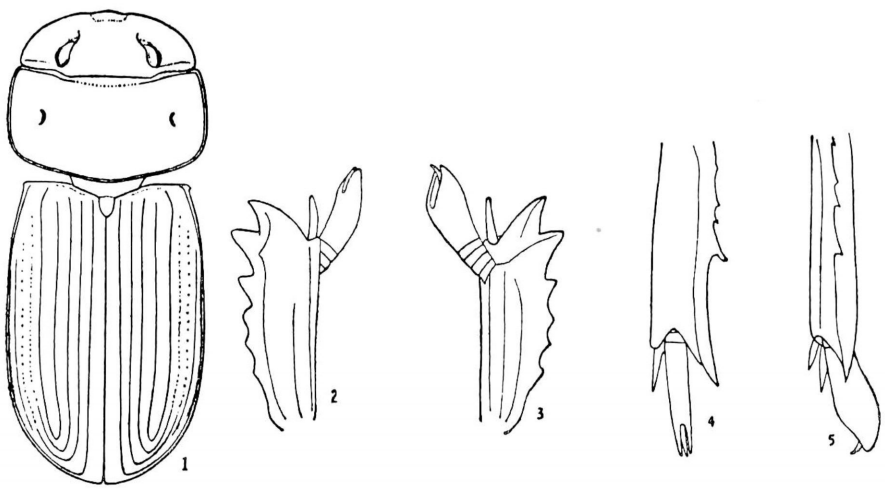

Fig. 1. *Penichrolucanus cryptonychus* (ZHANG), comb. nov.; 1, habitus; 2, left protibia and protarsus, dorsal view; 3, ditto, ventral view; 4, left metatibia and metatarsus, dorsal view; 5, ditto, lateral view. (After ZHANG, 1988.)

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Xizangia ZHANG, 1988, Insects of Mt. Namjagbarwa Region of Xizang, p. 233; type species: *Xizangia cryptonychus* ZHANG, 1988. *Syn. nov.*

Penichrolucanus cryptonychus (ZHANG, 1988), comb. nov.

Xizangia cryptonychus ZHANG, 1988, Insects of Mt. Namjagbarwa Region of Xizang, p. 234, figs. 1–5.

Type locality. Medog (1,000–1,200 m in altitude), Xizang (=Tibet), China.

Distribution. Xizang (=Tibet).

Notes. BARTOLOZZI (1989) divided the members of the genus *Penichrolucanus* into the following two groups based on the difference in number of antennal segments; "the *elongatus* group", with ten antennal segments, consisting of *P. elongatus* and *P. leveri*; "the *copricephalus* group", with eight segments, consisting of *P. copricephalus*, *P. nicobaricus* and *P. sumatrensis*. According to his grouping, *P. cryptonychus*, with ten antennal segments, is classified into the *elongatus* group. Among them, *P. cryptonychus* is similar to *P. leveri* which is regarded by RATCLIEFE (1984) as retaining

the most ancestral character states within the genus *Penichrolucanus* in some external characters such as red-brown colour, elongate and punctured elytra, and meso- and matatibiae with some teeth on the outer margin.

In closing this brief paper, we wish to express our hearty thanks to Dr. T. HIKIDA, Kyoto University, for his kind help in translation of the Chinese original description of the taxon in question and for his critical reading of an early version of the manuscript. We also thank Mr. L. JESSOP, Mr. M. D. KERLEY and Ms. S. L. SHUTE, British Museum (Natural History), London, for giving us the opportunity to examine the type specimens of *P. elongatus* deposited in the collection of the Museum, Mr. T. HATAYAMA for offering the comparative specimen and Mr. S. HOSHIZAKI, Tokyo University, for kindly providing with the necessary literature.

Specimens Examined for Comparison

Abbreviations used: BMNH, the collection of British Museum (Natural History), London; TOC, the personal collection of T. OCHI.

P. copricephalus: 1ex., Templer Park, Kuala Lumpur, Malaysia, 4–V–1987, N. NISHIKAWA leg. (TOC).

P. elongatus: 1 ♂, Malaysia, Selangor, Gombak Valley, Kuala Lumpur, H. M. PENDLEBURY leg. (holotype, BMNH); 1 ♂, 19 miles, Cameron Highlands, Malay Peninsula, 18–V–1981, T. HATAYAMA leg. (TOC).

P. sumatrensis: 1 ex., near Bukittinggi, Central Sumatra, 10–III–1991, E. MARLSI leg. (TOC); 1 ex., ditto, 20–XII–1991, E. MARLSI leg. (TOC).

要　約

荒谷邦雄・越智輝雄・常喜　豊: クワガタムシ科・ツメカクシクワガタ属 (*Penichrolucanus* DEYROLLE, 1863) の下位同物異名，コブスジコガネ科・チベットコブスジコガネ属 (*Xizangia* ZHANG, 1988). —— 章 有為によりコブスジコガネ科の新属として創設されたチベットコブスジコガネ属 (藏皮金龟属, *Xizangia* ZHANG, 1988) について，原記載およびその挿図を詳細に検討した結果，以下のような点が明らかになった．まず，本属がコブスジコガネ科に所属する根拠とされている腹板が見かけ上5節，触角は10節からなり片状節は3節，中胸前側板が中肢基節に接触しないという特徴は，いずれもコガネムシ上科に属するほかの科 (マンマルコガネ科，クロツヤムシ科，クワガタムシ科) にも見られ，かならずしも本属の所属の決め手とはならない．さらに，付節式が異節，体と脚部が非常に偏平，関節部が融合した付節が爪を覆い隠すように張り出す，発達した眼縁突起と頭盾によって頭部が扇形に見えるなどの特異な外部形態は，いずれもクワガタムシ科のツメカクシクワガタ属 (*Penichrolucanus* DEYROLLE, 1863) の特徴そのものである．これらの結果から，チベットコブスジコガネ属はツメカクシクワガタ属の下位同物異名であると結論した．前者の基準種であるツメカクシチベットコブスジコガネ (隐爪藏皮金龟，*X. cryptonychus* ZHANG, 1988) については，中肢および後肢の付節数がともに3節，頭盾に隠れて背面からは大顎が見えないと挿図から判断されることなど

の特徴と，既知種との地理的な隔離を考慮し，ツメカクシクワガタ属の有効な種であると認め分類学的変更を行った．

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Elytra, *Tokyo*, **21** (1): 92, May 15, 1993

ミズギワコメツキ雌の第8腹節背板の形態

大　平　仁　夫

ÔHIRA, H.: Structure of the Female 8th Tergite of Abdomen of *Fleutiauxellus curatus* (Coleoptera, Elateridae)

ミズギワコメツキ (*Fleutiauxellus curatus*) 雌の第8腹節背板の形態は，図示 (Fig. 1 A～B) したように矩形状であるが，中央部が三角形状に突出した特有の形態がみられる (Fig. 1 A の↖印)．このような形態は，ミズギワコメツキ亜科のすべての種に共通するものではないが，ミズギワコメツキとその近似種では同じような形状をしている．

ミズギワコメツキ類は，いずれも小型種のため，雌雄の識別が簡単ではないが，尾端からはみ出しているこの形状をみることによって簡単に識別できる．本種は水辺に生活するため，この形態は水への適応と関連があるのではないかと思って裏面 (Fig. 1 B) も調査したが，特殊な形態は見出されなかった．

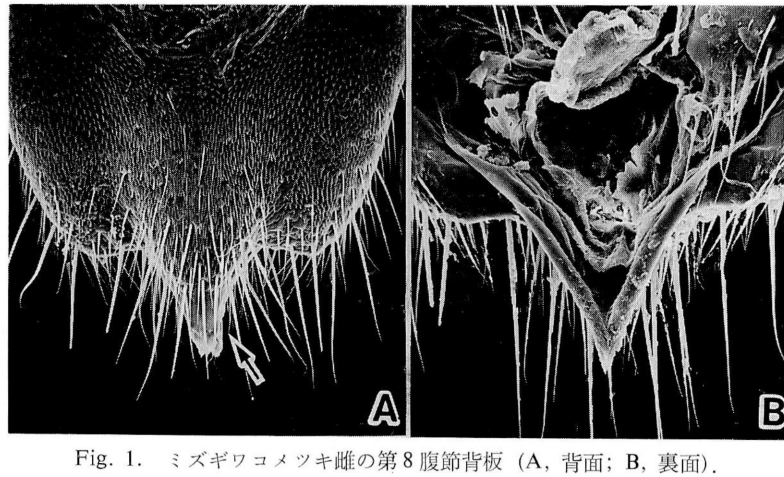

Fig. 1.　ミズギワコメツキ雌の第8腹節背板 (A，背面；B，裏面)．

Elytra, Tokyo, **21** (1): 93–107, May 15, 1993

A New Species of the Genus *Aesalus* (Coleoptera, Lucanidae) from the Malay Peninsula[1, 2)]

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Abstract A new species of the lucanid genus *Aesalus* is described from the mountain region of the Malay Peninsula under the name *A. hidakai*. This species closely resembles *A. timidus* KRIKKEN, but is readily distinguished from the latter by the following characters: abdominal sternites without sulcus; third to fifth abdominal sternites with semicircular depressions along anterior margin; anterior margin of head with a small triangular projection at middle. A key to the Old World species of the genus *Aesalus* is also provided.

The genus *Aesalus* FABRICIUS, 1801, consists of ten known species from both the Old and New Worlds. The Old World *Aesalus* includes *A. scarabaeoides* (PANZER, 1794) from central and northern Europe, *A. ulanowskii* GANGLBAUER, 1886, from Caucasus, *A. daghestanicus* DIDIER et SÉGUY, 1953, from Dagesten in Caucasus, *A. himalayicus* KUROSAWA, 1985, from Nepal and West Bengal, *A. asiaticus* LEWIS, 1883, from Japan, *A. imanishii* INAHARA et RATT, 1981, from Formosa, and *A. timidus* KRIKKEN, 1974, from the Sunda Islands and the Malay Peninsula (ARAYA & OCHI, 1992). On the other hand, three species of the genus *Aesalus* have been known from the New World: *A. trogoides* ALBERS, 1883, from Mexico; *A. smithi* BATES, 1889, also from Mexico; *A. neotropicalis* BATES, 1889, from Guatemala.

During our 1992 expedition to the Cameron Highlands, Malay Peninsula, several larvae of an *Aesalus* species were collected from a fallen log at Gunung Jasar. Through a rearing in the laboratory in Kyoto, three of them (two males and one female) have emerged to adults. Unfortunately, two of them (one male and one female) failed in emergence. Their elytra were partly deformed, but the other morphological features were normal.

In general appearance, these *Aesalus* beetles closely resembles *A. timidus*, the only

1) This study was supported in part by a Grant-in-aid for Field Research of Monbusho International Scientific Research Program, Japan (No. 02041051).

2) The import of alive specimens of lucanid beetles from Malaysia was permitted by the Ministry of Agriculture, Forestry and Fisheries, Japan (No. 4 Kobe–205).

Aesalus species known from Southeast Asia. After a careful examination, however, it has become apparent that this species is new to science. Later, we found three additional specimens of this species from Tanah Rata, Cameron Highlands, Malay Peninsula, among the specimens labelled "*Aesalus timidus*" in the entomological collection of the National Science Museum (Natural History), Tokyo. Thus, in this paper, we are going to describe the new species on the basis of these specimens.

Materials and Methods

Specimens examined. A total of six specimens of the new *Aesalus* species in question were examined. Four of them are dried specimens, and the other two (having deformed elytra) are preserved in 70% ethanol. Morphological comparisons were made with all the Old World *Aesalus* species except *A. daghestanicus*. We omitted *A. daghestanicus* from the comparisons because no specimen of this species was available for this study. The specimens compared are listed below (all dried specimens). The list includes new records for *A. timidus* and some data corrections of the type series of *A. himalayicus* and the other specimens which were erroneously reported in the original description (KUROSAWA, 1985). The acronyms for the entomological collection of the Department of Zoology, National Science Museum (Natural History), Tokyo, Department of Zoology, Kyoto University, and the personal collections of T. OCHI, T. ÔBUCHI, and the senior author, K. ARAYA, are NSMT, KUZ, TOC, TOB and KA, respectively.

A. scarabaeoides scarabaeoides: 2 ♂♂, Bois-de-Pau, France, V–1979 (TOC); 1 ♂, 1 ♀, Bohemia, Czecho-Slovakia, 2–IX–1979 (TOB); 1 ♂, Budapest, Hungary, 4–IV–1965, E. KISMARJAY leg. (NSMT); 1 ♂, Köln, Germany (no detailed data) (NSMT); 1 ♂, Raciec-B. c., VI–1968, SMRZ leg (NSMT).

A. ulanowskii: 1 ♂, Ritsa Lake, Abkhasia, Caucasus, 25–V–1981, K. GASKÓ leg. (KUZ).

A. himalayicus: 3 ♀♀ (holotype and two paratypes), Kalapokhri (alt. 3,000 m), Singalila Dara, E. Nepal, 2–X–1983 (corrected from 1984), Y. NISHIKAWA leg. (NSMT); 1 ♂ (corrected from 1 ♀), Deorali, 3,200 m – Kuldi 2,800 m, nr. basecamp of Mt. Machhapuchhale, Central Nepal, 21–X–1981 (corrected from 20–X–1981) M. SAKAI leg. (NSMT); 1 ♀, Thakham (3,350 m), Singalila Ridge, West Bengal, India, 4–X–1983, M. SAKAI leg. (NSMT).

A. asiaticus asiaticus: 1 ♂, Ôaku-dani, Hakone, Kanagawa Pref., Japan, 9–X–1982, T. ÔBUCHI leg. (TOB); 1 ♂, Mt. Narahara-yama, Ehime Pref., Japan, 4–III–1976, T. ÔBUCHI leg. (TOB); 1 ♂, Mt. Kujuh, Ohita Pref., Japan, 25–XI–1973, H. IRIE leg. (NSMT); Koganesawa, Yamanashi Pref., Japan, 30–V–1980 (NSMT); 1 ♀, Oku-Tama, Tokyo, Japan, 17–V–1955, Y. KUROSAWA leg. (NSMT); 1 ♂, Shôbu-hama, Nikko, Japan, 25–VII–1941 (NSMT); 1 ♂, Hase, Yamato, Japan, 15–VII–1958, T. SHIBATA leg. (NSMT); 1 ♂, Jin-ja-Yama, Sapporo, Japan, 14–XI–1939 (NSMT).

A. asiaticus sawaii: 1 ♂, 1 ♀, Ôko, Yakushima-Island, Kagoshima Pref., Japan, 9–V–1992 (collected as larvae; adult emergence in VIII–1992), K. ARAYA leg. (KA); 1 ♂, 1 ♀, ditto, 8–V–1992 (collected as larvae; adult emergence in VIII–1992), K. ARAYA leg. (KUZ).

A. imanishii: 1 ex., Sunkang, Taiwan, 23–III–1974, O. IMANISHI leg. (TOC); 1 ex., ditto, 23–III–1974, O. IMANISHI leg. (NSMT); 1 ex., ditto, 1–X–1986, T. OCHI leg. (TOC); 1 ex., Meifeng, Taiwan, 6–IX–1981, YU Ching-Jin leg. (NSMT).

A. timidus: 1 ex., Maxwell's Hill, Malay Peninsula, 5–III–1974, Y. KIYOYAMA leg. (NSMT); 1 ♀, ditto, 1–IV–1979, T. OCHI leg. (TOC); 1 ♂, 1 ex., Khao-chong, C. Thailand (new record), 24～27–VI–1965, K. MORIMOTO leg. (NSMT); 1 ex., Headquarters (alt. 1,500–1,700 m), Mt. Kinabalu, Sabah, Borneo (new record), 29–III–1976, S. NAGAI leg. (NSMT); 1 ♂, ditto, 4–IV–1976, S. NAGAI leg. (NSMT).

Measurements. Morphometric measurements were made for the following characters: 1) pronotum–elytra length, from anterior margin of pronotum to apices of elytra (PEL); 2) body thickness at center of metathorax (BT); 3) head length along middle line (HL); 4) head width at widest part (HW); 5) pronotum length along middle line (PL); 6) pronotum width at widest part (PW); 7) elytra length (EL); 8) elytra width at widest part (EW); 9) front tibia length (FTL); 10) front tibia width (FTW). Both sexes were dealt with together because no sexual dimorphism was evident.

Observation of genitalia. The genital organ of new *Aesalus* species was observed in 70% ethanol after treating it with weak solution of potassium hydroxide. In the description of genitalia, we adopt the terminology of HOLLOWAY (1960).

Aesalus hidakai ARAYA, KON et JOHKI, sp. nov.

(Figs. 1–21)

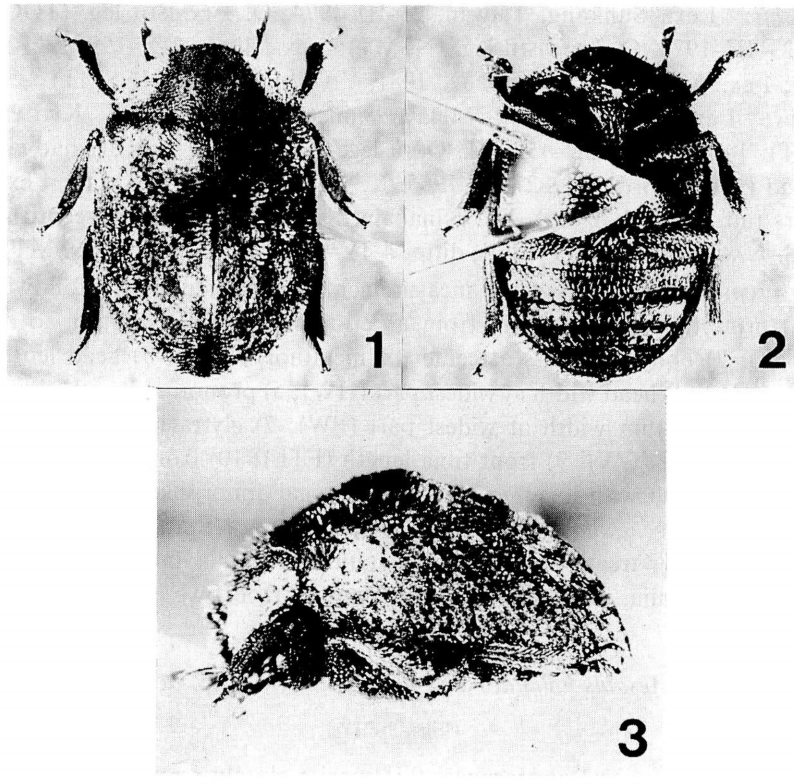
Diagnosis. In general appearance, this species closely resembles *A. timidus*, but is readily distinguished from the latter by the abdominal sternites lacking sulcus for receiving hind leg.

Description of holotype. Size small, length from anterior margin of head to apices of elyrta 5.2 mm; body outline circular in dorsal view (EW/PEL=0.68) (Figs. 1–2), thickest at middle and gradually tapering both anteriorly and posteriorly in lateral view (Fig. 3). Body integument reddish brown in color; dorsal surface largely covered with either whitish or yellowish-golden tomentum, especially densely on antero-lateral parts of pronotum and on lateral sides of elytra. Pronotum and elytra with clumps of erect scale-like bristles and scattered stick-like ones.

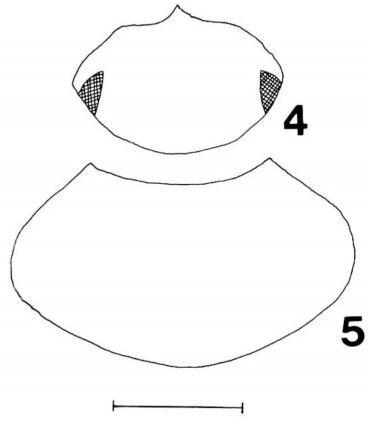
Head (Fig. 4) covered with whitish-golden tomentum and scattered stick-like bristles; anterior margin of head almost straight, with a small triangular projection at the middle. Eye with distinct canthus covering about one-third of outer margin. Antenna (Fig. 6) consisting of ten segments, partially geniculate; scape moderately curved, with setae; second segment subconical, about as long as wide; third slender, about three times as long as wide; fourth to sixth transverse; eighth to tenth forming

wholly pubescent club, weakly lamellate, eighth and ninth transverse, tenth about as long as wide.

Labrum fan-shaped, with yellowish setae especially densely on anterior margin.



Figs. 1–3. *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♂, holotype; dorsal view (1); ventral view (2); lateral view (3).



Figs. 4–5. Head and pronotum of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♂, holotype; head (4); pronotum (5). (Scale: 1.0 mm)

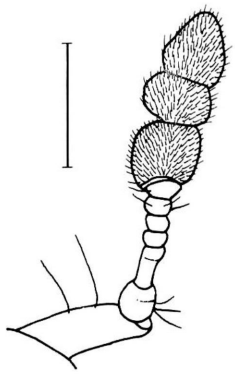


Fig. 6. Right antenna of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♂, paratype, from Gunung Jasar. (Scale: 0.25 mm)

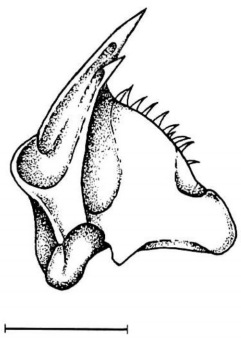


Fig. 7. Left mandible of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♂, paratype, from Gunung Jasar. (Scale: 0.25 mm)

Mandible (Fig. 7) with a sharp apical tooth and two smaller subapical teeth on dorsal and ventral sides, respectively; outer side covered with yellowish-golden scaly tomentum; inner side with setae and well developed mola at base.

Pronotum about a half as long as wide (PEL/PW=0.55), evenly convex, widest near the middle; surface covered with whitish-golden tomentum especially densely on antero-lateral parts, with erect stick-like bristles in rows, without clumps of scale-like bristles. Scutellum forming a regular triangle, covered with whitish-golden tomentum. Elytra highly convex, about 1.2 times as long as combined width (EL/EW=1.18), without striae, with scattered stick-like bristles, densely covered with whitish-golden tomentum in lateral portion, with irregularly arranged clumps of either black or yellowish-brown scale-like bristles; elytral ornaments, especially clumps of scale-like bristles, arranged asymmetrically. Hind wings fully developed as in Fig. 8.

Prosternum with isodiametric and well-defined punctures bearing short yellowish scaly seta; intercoxal process of prosternum (Fig. 9) with flat surface, expanding anteriorly; anterior margin straight, not rounded; posterior margin reaching metasternum. Mesosternum and metasternum with fine punctures bearing yellowish scaly setae. Mesocoxae separated. Metepisternum with cavity. Intercoxal process of hind leg obtusely rounded. Abdomen about four-fifths as long as wide; five abdominal segments visible (Figs. 10–11); first and second fused, with slightly elongate foveae

bearing minute setae; third to fifth with semicircular depressions along anterior margin; first to fourth with crenulated posterior margins.

Front tibia (Fig. 12) somewhat plump but not so strongly widened in distal portion (FTW/FTL=0.24), with fine punctures bearing minute setae; outer margin with three denticles and a large curved apical spine like a hook; inner margin with a small sharp spine at the apex. Front femur with cavity for reception of tibia on anterior margin,

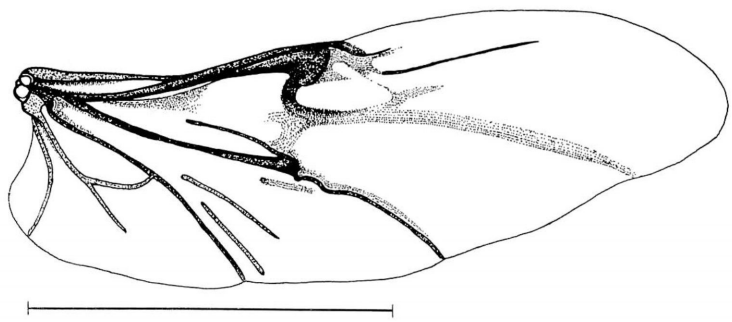


Fig. 8. Hind wing of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♂, paratype, from Tanah Rata, 7–IV–1974. (Scale: 5.0 mm)

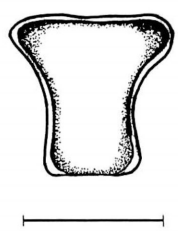
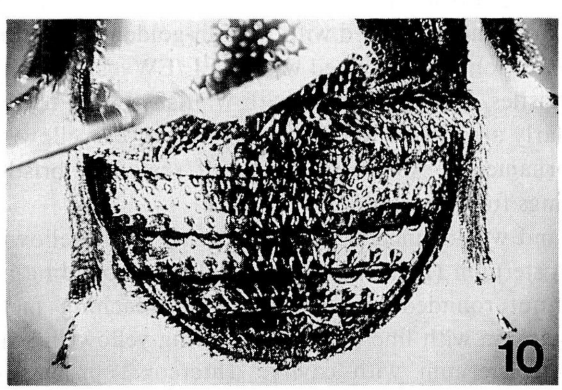
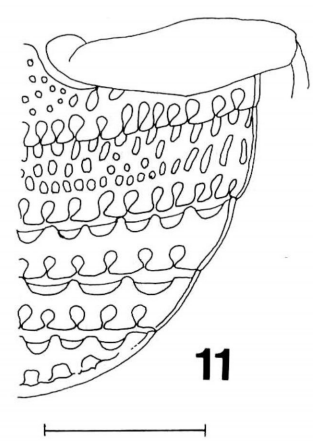


Fig. 9. Intercoxal process of prosternum of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♂, holotype. (Scale: 0.5 mm)





Figs. 10–11. Abdominal sternites of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♂, holotype. (Scale: 1.0 mm)

with punctures bearing minute setae. Middle and hind legs with fine punctures bearing semi-erect pilosity. Middle tibia with two small spines on outer margin.

Measurements of holotype (in mm). PEL 4.55; BT 2.40; HL 0.80; HW 1.25; PL 1.45; PW 2.65; EL 3.65; EW 3.10; FTL 1.05; FTW 0.25.

Male genitalia. Male genitalia of a paratype from Gunung Jasar with very short basal piece fused to both parameres and penis (Figs. 13–16). Penis cylindrical, slightly

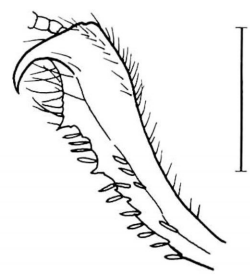
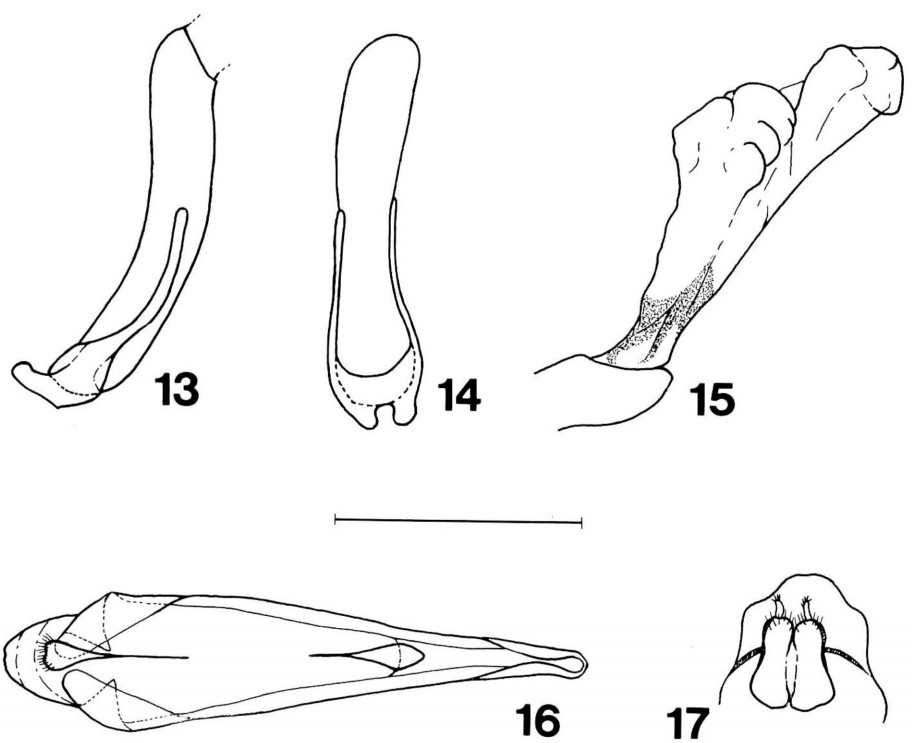


Fig. 12. Left front tibia of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♂, holotype. (Scale: 0.5 mm)



Figs. 13–17. —— 13–16. Male genital organ of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♂, paratype, from Gunung Jasar; aedeagus in lateral view (13); aedeagus in dorsal view (14); internal sac (15); ninth abdominal segment in dorsal view (16). (Scale: 1.0 mm). —— 17. Female genitalia of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov., ♀, paratype, from Gunung Jasar. (Scale: 1.0 mm)

Table 1. Morphometric characters ($\bar{x}\pm$SD, range in parenthesis; in mm) in the two *Aesalus* species from Southeast Asia. See Materials and Methods for abbreviations.

Species	PEL	BT	HL	HW	PL
A. timidus	3.82±0.398	2.04±0.159	0.74±0.074	1.08±0.098	1.20±0.055
	(3.05–4.15)	(1.75–2.20)	(0.60–0.80)	(0.90–1.15)	(1.10–1.25)
	(n=6)	(n=6)	(n=6)	(n=6)	(n=6)
A. hidakai sp. nov.	4.73±0.740*	2.59±0.409*	0.88±0.125	1.38±0.154	1.46±0.206
	(3.75–5.30)	(2.10–2.95)	(0.70–1.05)	(1.20–1.55)	(1.15–1.75)
	(n=4)	(n=4)	(n=6)	(n=6)	(n=6)

Species	PW	EL	EW	FTL	FTW
A. timidus	2.32±0.197	2.94±0.254	2.73±0.175	0.90±0.071	0.22±0.026
	(1 95–2.45)	(2.45–3.20)	(2.40–2 90)	(0.80–1 00)	(0.20–0.25)
	(n=6)	(n=6)	(n=6)	(n=6)	(n=6)
A. hidakai sp. nov.	2.85±0.354	3.61±0.673*	3.36±0.527*	1.04±0.153	0 28±0.052
	(2.25–3.20)	(2.65–4.10)	(2.75–3.85)	(0 80–1.20)	(0.20–0.35)
	(n=6)	(n=4)	(n=4)	(n=6)	(n=6)

* Not measured for the two specimens with deformed elytra.

curved upward. Internal sac slightly sclerotized at base (it is visible, but unable to be fully everted). Paired struts absent. Paramere slender, about a half as long as penis, closely appressed to penis. Ninth abdominal segment partly sclerotized, with setae on ventral side.

Female genitalia. Female genitalia of a paratype from Gunung Jasar with visible styli; hemisternite well sclerotized, with setae on posterior end (Fig. 17).

Variations. Morphometric data are summarized in Table 1 together with those for *A. timidus*. In the present samples, males (PEL 4.55–5.30, n=3; PW 2.65–3.20, n=4) are somewhat larger than females (PEL 3.75, n=1; PW 2.25–2.85, n=2), but sexual dimorphism in external morphology including the shape of mandibles is indistinct. The pattern of the ornaments on body surface is variable with individuals (Figs. 18–21). The greatest variabilities occur in the distribution of either whitish- or yellowish-golden tomenta and in the arrangement of clumps of scale-like bristles.

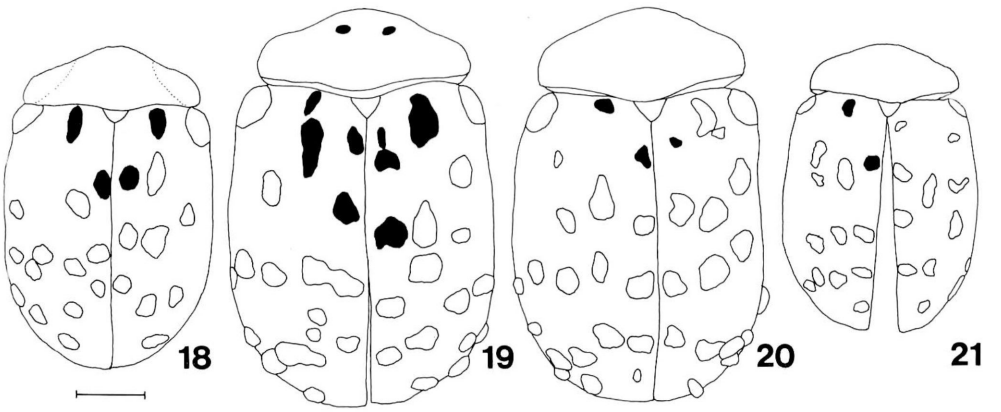
Types series. Holotype: ♂, Gunung Jasar (about 1,500 m in altitude), Cameron Highlands, Malay Peninsula, 24–III–1992 (collected as a larva, adult emergence on 12–VIII–1992), K. ARAYA leg. Paratypes: 1 ♂, 1 ♀, same data as for the holotype, (elytra partly deformed; preserved in 70% elthanol; collected as larvae, adult emergence in VI–1992); 1 ♂, Tanah Rata, Cameron Highlands, Malay Peninsula, 7–IV–1974, Y. KIYOYAMA leg.; 1 ♀, ditto, 10–IV–1975, Y. KIYOYAMA leg.; 1 ♂, ditto, 27–V–1975, Y. KIYOYAMA leg. The holotype and 3 paratypes (2 ♂♂, 1 ♀, from Tanah Rata) are deposited in the collection of the National Science Museum (Natural History), Tokyo, and two paratypes (1 ♂, 1 ♀, from Gunung Jasar) in the entomological collection of the Department of Zoology, Kyoto University.

Distribution. Known only from the Cameron Highlands, Malay Peninsula.

Table 2. Comparison of external characteristics of *A. scarabaeoides*, *A. ulanowskii*, *A. asiaticus*, *A. himalayicus*, *A. imanishii*, *A. timidus* and *A. hidakai* sp. nov. See Materials and Methods for abbreviations.

Characters	*A. scarabaeoides* (n=7)	*A. ulanowskii* (n=1)	*A. asiaticus* (n=11)	*A. himalayicus* (n=5)	*A. imanishii* (n=4)	*A. timidus* (n=6)	*A. hidakai* sp. nov. (n=6)
Canthus	absent	absent	absent	present	absent	present	present
Number of antennal segments	10	10	10	10	9	10	10
Pubescence of antennal club	partly	partly	partly	wholly	wholly	wholly	wholly
Shape of 3rd antennal segment	transverse	transverse	transverse	slender	transverse	slender	slender
Sexual dimorphism in mandibles	distinct	distinct	distinct	indistinct	indistinct	indistinct	indistinct
Intercoxal process of prosternum	convex	convex	convex	convex	convex	flat	flat
Tomentum on body surface	absent	absent	absent	absent	absent	present	present
Widest point of pronotum	posterior	posterior	posterior	posterior	posterior	middle	middle
EW/PEL	0.6 (0.57–0.62)	0.56	0.6 (0.56–0.62)	0.57 (0.56–0.58)	0.58 (0.55–0.61)	0.75 (0.68–0.79)	0.71 (0.68–0.73)
BT/PEL	0.43 (0.41–0.46)	0.37	0.43 (0.42–0.45)	0.43 (0.42–0.44)	0.35 (0.34–0.36)	0.54 (0.52–0.57)	0.55* (0.53–0.56)
FTW/FTL	0.34 (0.30–0.38)	0.21	0.25 (0.18–0.29)	0.22 (0.21–0.23)	0.32 (0.30–0.33)	0.24 (0.22–0.26)	0.27 (0.24–0.29)

* Not measured for the two specimens with deformed elytra.



Figs. 18–21. Schematic presentation of the variation in the distributional pattern of ornaments on the dorsal body surface of *Aesalus hidakai* ARAYA, KON et JOHKI, sp. nov. Closed area: clump of black scale-like bristles; open area surrounded by solid line: clump of yellowish-brown scale-like bristles; open area surrounded by dotted line: area densely covered with whitish-golden tomentum; ♂, holotype (18); ♂, paratype, from Tanah Rata, 7–IV–1974 (19); ♂, paratype, from Tanah Rata, 27–IV–1975 (20); ♀, paratype, from Tanah Rata, 10–IV–1975 (21). (Scale: 1.0 mm)

Comparison. Comparison of external characters of the Old World *Aesalus* species except for *A. daghestanicus* is presented in Table 2. *Aesalus hidakai* sp. nov., together with *A. timidus*, is clearly distinguished from the other Old World *Aesalus* by the following peculiarities: body outline circular in dorsal view, thickest at middle and gradually tapering both anteriorly and posteriorly in lateral view; pronotum widest near the middle; intercoxal process of prosternum flat, and *A. hidakai* differs from *A. timidus* in the following characteristics: abdominal sternites lacking sulcus for receiving hind leg; third to fifth abdominal sternites with semicircular depressions along anterior margins; anterior margin of head with a small triangular projection at the middle; canthus covering about one-third of outer margin of eye.

Etymology. This new species is dedicated to the emeritus Professor Toshitaka HIDAKA, a leading ethologist in Japan, who retired from Kyoto University in March, 1993. When he was in Kyoto University, he gave us the opportunity of performing our researches in Malaysia.

Biological notes. The larvae of *A. hidakai* were collected from a decayed log (a kind of oak) lying on the forest floor dominated by oak trees. The decay type of the log was brown rot, but fungal species causal to decay was not identified.

This species appears to have the habit of flying to light because one male from Tanah Rata, 7–IV–1974, was captured at light.

Discussion

Aesalus hidakai is the second peculiar member described from the Southeast Asian

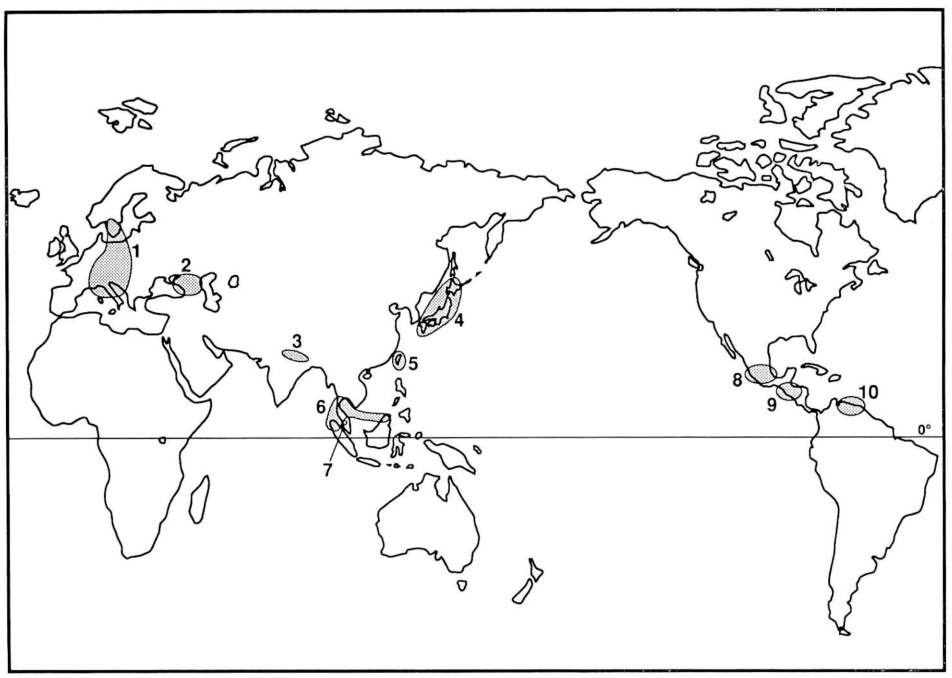


Fig. 22. Map showing the distribution of the genera *Aesalus* and *Lucanobium*; 1, *A. scarabaeoides* (PANZER); 2, *A. ulanowskii* GANGLBAUER and *A. daghestanicus* DIDIER et SÉGUY; 3, *A. himalayicus* KUROSAWA; 4, *A. asiaticus* LEWIS; 5, *A. imanishii* INAHARA et RATTI; 6, *A. timidus* KRIKKEN; 7, *A. hidakai* ARAYA, KON et JOHKI, sp. nov.; 8, *A. trogoides* ALBERS and *A. smithi* BATES; 9, *A. neotropicalis* BATES; 10, *L. squamosum* HOWDEN et LAWRENCE.

tropics within the genus *Aesalus*. *A. hidakai*, together with *A. timidus*, considerably differs from the other *Aesalus* members in general appearance. On the other hand, the structure of male genitalia of *A. hidakai* (which is characterized by the following characters: paired struts absent; penis cylindrical; basal piece very short, fused to parameres and penis; parameres slender, closely appressed to penis) agrees well with the specific structure of *Aesalus* male genitalia previously described for several species (*A. scarabaeoides*, SHARP & MUIR, 1912; HOLLOWAY, 1960; HOWDEN & LAWRENCE, 1974; BARTOLOZZI, 1989; *A. imanishii*, INAHARA & RATT, 1981; *A. asiaticus*, KIKUTA, 1984).

KUROSAWA (1985) suggested that *A. timidus* may represent a different genus from true *Aesalus*. According to his suggestion, a new genus could be established for *A. timidus* as the type species, and if so, *A. hidakai* should also be assigned to the new genus together with *A. timidus* because of the similarity between them in external morphology. However, we consider that both *A. timidus* and *A. hidakai* should be left assigned to the genus *Aesalus*, because it is difficult to assume the monophyly of the other members of the genus *Aesalus* excluding *A. timidus* and *A. hidakai*, until phylogenetic analysis can be made for the whole genus *Aesalus* including the New World members (*A. trogoides*, *A. smithi* and *A. neotropicalis*) and the most closely

allied genus *Lucanobium* from Venezuela (HOWDEN & LAWRENCE, 1974).

In addition, the present examination of external morphology of the Old World *Aesalus* also revealed that the Southeast Asian members (*A. timidus* and *A. hidakai*) shared the characters, which were not shared by the Palearctic ones (*A. scarabaeoides*, *A. ulanowskii* and *A. asiaticus*), with the Himalayan (*A. himalaycius*) and the Taiwanese (*A. imanishii*) ones, respectively (Table 2). The Himalayan species, together with the Southeast Asian ones, is separated from the Palearctic ones by the following characters: mandible showing no sexual dimorphism; third antennal segment long and slender, not transverse; antennal club wholly pubescent; eye with distinctly developing canthus. On the other hand, the Taiwanese species can also be separated from the Palearctic ones by the following characters: mandible showing no sexual dimorphism; antennal club wholly pubescent. Further, according to the original description (HOWDEN & LAWRENCE, 1974), the New World genus *Lucanobium*, containing only one species *L. squamosum*, also appears to resemble the Southeast Asian members of *Aesalus* in the following characters: body thickest at middle; mandible showing no sexual dimorphism; antennal club wholly pubescent; third antennal segment long and slender, not transverse; eye with distinctly developing canthus; front tibia with a large curved apical spine. In addition, *L. squamosum* and *A. hidakai* share the character, mandible with a distinct mola. In order to clarify their true affinities, phylogenetic analysis of the genus *Aesalus* including the New World members, together with its allied genus *Lucanobium*, is strongly desired.

Like that of *A. timidus* (KRIKKEN, 1975), the type locality (Cameron Highlands) of *A. hidakai* is at higher elevations (about 1,400–1,500 m in altitude) and rather cool (the average atmospheric temperature was less than 20°C) although the Malay Peninsula is located in the tropical region. The two pupae reared at 25°C failed in emergence with the result that the elytra of the emerged adults were deformed, whereas sound metamorphosis occurred in the single pupa reared at 20°C. This suggests that the higher temperature, 25°C, did harm to the metamorphosis.

The larvae of *A. hidakai* were collected from a brown-rotten log. Until now, it has been reported that the larvae of *A. scarabaeoides* (BARTOLOZZI, 1989), *A. imanishii* (ARAYA & OBUCHI, 1992) and *A. asiaticus* (ARAYA & OBUCHI, 1992; ARAYA, 1993) are also collected from brown-rotten logs. It is suggested that the genus *Aesalus* may be stenophagous for brown-rotten logs. We look for further information about the decay type of logs in which the other *Aesalus* larvae occur.

Key to the Species of *Aesalus* from the Old World

The diagnostic characters of measurements are summarized on the basis of the specimens examined in the present study.

Aesalus daghestanicus is omitted from this key because no specimen was available and the original description of this species (DIDIER & SÉGUY, 1953) is insufficient for showing its external morphology in detail, although this species appears to closely

resemble *A. ulanowskii*. On the other hand, *A. scarabaeoides* and *A. asiaticus* include two subspecies, respectively; *A. s. scarabaeoides*, subspecies from Central Europe, and *A. s. meridionalis* BARTOLOZZI, 1989, from Basilicata in Italy; nominotypical *A. a. asiaticus* from the main islands of Japan and *A. a. sawaii* FUJITA et ICHIKAWA, 1985, from Yaku-shima Island off southern Kyushu of Japan. These subspecies are included in this key. We refer to BARTOLOZZI (1989) for *A. s. meridionalis*, since no specimen of this subspecies was available.

1. Body outline circular in dorsal view (EW/PEL 0.68–0.79); pronotum widest near the middle; intercoxal process of proternum flat, anterior and posterior margins almost straight ..... 2.
— Body outline oval in dorsal view (EW/PEL 0.55–0.62); pronotum widest near posterior margin; intercoxal process of prosternum convex, anterior and posterior margins strongly rounded ..... 3.
2. Abdominal sternites with a deep sulcus; third to fifth abdominal sternites with foveae, without semicircular depression; anterior margin of head without projection at the middle; canthus covering about one-fifth of outer margin of eye ..... *A. timidus.*
— Abdominal sternites lacking sulcus; third to fifth abdominal sternites with semicircular depressions along anterior margins; anterior margin of head with a small triangular projection at middle; canthus convering about one-third of outer margin of eye ..... *A. hidakai* sp. nov.
3. Antenna consisting of 9 segments; body flat (BT/PEL 0.34–0.36) ..... *A. imanishii.*
— Antenna consisting of 10 segments; body relatively thick (BT/PEL 0.37–0.46) ..... 4.
4. Eye with distinct canthus; third antennal segment slender; antennal club wholly pubescent ..... *A. himalayicus.*
— Eye without distinct canthus; third antennal segment transverse; antennal club partly pubescent ..... 5.
5. Size smaller (PEL 3.90–5.70; $\bar{x}$ 4.89); elytra with irregularly arranged large clumps of scale-like bristles; front tibia with a large curved apical spine..... 6.
— Size larger (PEL 5.65–6.95; $\bar{x}$ 6.35); elytra with regularly arranged small clumps of scale-like bristles; front tibia with a large straight apical spine ..... 7.
6. Pronotum with 6 to 8 clumps of black scale-like bristles on middle portion; elytral punctures smaller and united ..... *A. asiaticus asiaticus.*
— Pronotum without clump of black scale-like bristles; elytral punctures distinct and sparser ..... *A. asiaticus sawaii.*
7. Body surface densely but shallowly punctuated; front tibia relatively slender, not so widened in distal portion (FTW/FTL 0.21) ..... *A. ulanowskii.*
— Body surface densely and deeply punctuated; front tibia plump, strongly widened in distal portion (FTW/FTL 0.30–0.38) ..... 8.
8. Yellowish setae on elytra smaller; styli of female genitalia larger, hemisternite

concave; median lobe of male genitalia longer..*A. scarabaeoides scarabaeoides.*
— Yellowish setae on elytra larger; styli of female genitalia smaller, hemisternite not concave; median lobe of male genitalia shorter ..*A. scarabaeoides meridionalis.*

Acknowledgments

We wish to express our hearty thanks to Prof. YONG Hoi-Sen, University of Malaya, for his kind support, to Dr. S.-I. UÉNO, National Science Museum (Nat. Hist.), Tokyo, for giving us the opportunity to examine the specimens of the genus *Aesalus* deposited in the collection of the Museum, and to Dr. T. HIKIDA, Kyoto University, for critically reading an early version of the manuscript. We also thank Mr. H. ASHIDA for field assistance, and Messrs. T. OCHI and T. ÔBUCHI for loaning specimens and invaluable advice. Lastly, we would like to express our sincere gratitude to emeritus Professor Toshitaka HIDAKA, Kyoto University, for giving us the opportunity of performing the present research.

要　約

荒谷邦雄・近　雅博・常喜　豊: マレー半島から採集されたマダラクワガタ属の1新種. —— マレー半島の山地からマダラクワガタ属の1新種を記載し, *Aesalus hidakai* sp. nov. と命名した. この新種は, スマトラを基準産地とする *A. timidus* KRIKKEN とよく似ているが, 1) 腹板に後肢を収納するための溝を欠く, 2) 第 3～5 腹板前縁部に半月状の凹みが並ぶ, 3) 頭部前縁部は直線的で, かつ中央部に三角形のくさび状の突起がある, 4) 眼縁突起はよく発達し, 眼の外縁の 1/3 程度を覆う, などの特徴により後者とは明確に区別できる。なお, 種名は長年マレーシアとの共同学術調査研究の代表を勤められ, 先ごろ京都大学を退官された日高敏隆京都大学名誉教授に献名したものである.

Aesalus hidakai は *A. timidus* とともに, 地理的な分布, および形態的特徴: 1) 背面から見た体形がより円形に近い, 2) 体の厚みが中央付近で最大となる, 3) 前胸背板の幅が中央付近で最大となる, 4) 前胸腹板の基節間突起は平面的で, かつ前縁・後縁部とも直線的な形状をしている, などにおいて旧世界産の同属の他種から明確に区別される. しかし一方, *A. hidakai* の雄交尾器に見られる特徴: 1) 1対の支柱突起を欠く, 2) 陰茎は筒状で, かつ細長く伸長する, 3) 側片は細長く伸長し, 陰茎に密着する, 4) 基片はいちじるしく短小化し側片と融合するなどは, いずれもこれまでに報告のあるマダラクワガタ属の他種のそれとよく一致する. マダラクワガタ属各種の系統関係に関する研究は不十分であり, *A. hidakai* および *A. timidus* の系統的な位置を確定させるためにも, 今後, 新世界に産するマダラクワガタ属はもちろん, 近縁な *Lucanobium* 属をも含めた検討が不可欠である.

なお, *A. hidakai* を含む7種の旧世界産のマダラクワガタ属の検索表を付記した.

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Elytra, Tokyo, **21** (1): 107–108, May 15, 1993

A New Record of *Aceraius lamellatus* (Coleoptera, Passalidae) from Sumatra[1)]

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In 1987–1988, one of the authors (M. KATO) had an opportunity to visit Sumatra as a member of the entomological group of the Sumatra Nature Study Project and to collect some

passalid beetles. In the present short paper, we are going to record four passalid species collected from Sumatra. Of these, *Aceraius lamellatus* GRAVELY is recorded for the first time from Sumatra.

Aceraius laevicollis (ILLIGER)

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

Specimens examined. 1 ♂, 1 ♀, Sungai Gadutagadan, Ulugadut, Padang, Sumatra, 4–XII–1987, M. KATO leg.

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

Aceraius lamellatus GRAVELY

Aceraius lamellatus GRAVELY, 1918, Mem. Ind. Mus., **3**, p. 89.

Specimen examined. 1 ♀, Pinangpinang, Ulugadut, Padang, Sumatra, 1–XII–1987, M. KATO leg.

Distribution. Malay Peninsula, Sumatra (new record), Borneo, Sulawesi.

Pelopides burmeisteri (KAUP)

Eriocnemis burmeisteri KAUP, 1868, Coleopt. Hefte, **3**, p. 22.

Specimens examined. 1 ♀, Bukit Lantik, Ulugadut, Padang, Sumatra, 27–XI–1987, M. KATO leg.; 1 ♀, Sungai Gadutgadan, Ulugadut, Padang, Sumatra, 4–XII–1987, M. KATO leg.

Distribution. Sumatra, Java, Borneo.

Leptaulax bicolor (FABRICIUS)

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

Specimens examined. 2 ♂♂, 1 ♀, Bukit Lantik, Ulugadut, Padang, Sumatra, 21–I–1988, M. KATO leg.

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

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Notes on the Scientific Names of Some Lucanid Genera (Coleoptera, Lucanidae)

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Gender and spelling of generic names of several lucanid beetles are at present in some confusion. I am going to make comments on these problems in this short report.

The genus *Odontolabis* was established by HOPE for *Odontolabis cuvera* HOPE, 1842, as its type species. This generic name has usually been used as masculine (PARRY, 1864; LEUTHNER, 1885; VAN ROON, 1910; DIDIER & SÉGUY, 1953; LACROIX, 1984, etc.), but as feminine by some authors (BENESH, 1960; NAGAI, 1986; etc.). The "*Odontolabis*" is derived from Greek "odontos (*οδντοσ*)" and "labis (*λαβισ*)" tooth and a pair of pincers, respectively (HOPE, 1843). Since the gender of "labis" is feminine, "*Odontolabis*" should be used as feminine.

Even in recent studies, the gender of the genus *Macrodorcas* MOTSCHULSKY, 1861, has been used as masculine (FUJITA, 1990; HORI, 1991; ARAYA, 1991; etc.), but MORIMOTO (1986) and HIRASHIMA (1989) pointed out that *Macrodorcas*, with "-dorcas" from Greek "dorkas (*δορκασ*)", is feminine. We, therefore, should treat the genus *Macrodorcas* as feminine.

The genus *Prosopocoilus* was established by HOPE and WESTWOOD for *Lucanus cavifrons* HOPE et WESTWOOD, 1845, as its type species. However, VAN ROON (1910) and DIDIER *et al.* (1953) credit the spelling "*Prosopocoelus*" (with "e", not "i") to these authors, and this spelling was subsequently used by other authors (LISLE, 1970; WEINREICH, 1971; LACROIX, 1988; etc.). As was indicated by BENESH (1958), we should return to the original orthography.

The genus *Rhaetulus* was erected by WESTWOOD for *Rhaetulus crenatus* WESTWOOD, 1871, as the type species. In Japan, only one species belonging to this genus, *Rhaetulus recticornis*, was described from Amami-Oshima and Tokunoshima Islands (KUROSAWA, 1964). In an encyclopedia of the Japanese Coleoptera (KUROSAWA, 1985), the name of this genus was erroneously spelled as "*Raetulus*" (without "h"). Up to date, many Japanese authors have followed it (OKAJIMA & YAMAGUCHI, 1988; FUJITA, 1990; etc.). Apparently, "*Raetulus*" is a simple *lapsus calami*.

I wish to express my appreciation to Prof. T. HIDAKA, Kyoto University, and Dr. S.-I. UÉNO, National Science Museum (Nat. Hist.), Tokyo, for useful information. I also thank Dr. M. KON and Dr. T. HIKIDA, Kyoto University, for critically reading the manuscript of this report.

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Redescription of *Ophrygonius wallacei* (KUWERT, 1898) (Coleoptera, Passalidae), with a New Synonym[1)]

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Abstract *Ophrygonius wallacei* (KUWERT, 1898) is redescribed on the basis of the type specimen. In addition, *A. perakensis* KUWERT, 1898, is regarded as a junior synonym of *O. wallacei*.

Ophrygonius wallacei was originally described by KUWERT (1898) as *Heterochilus wallacei*. Later, GRAVELY (1914) redescribed this species as *Aceraius wallacei*, regarding the genus *Heterochilus* as a junior synonym of the genus *Aceraius*, on the basis of the specimens in the collection of the Berlin Museum (the type was possibly included among the specimens examined by GRAVELY although he did not note). Thereafter, in his revisional work on the Passalidae of the world (GRAVELY, 1918), he transferred this species from *Aceraius* to *Ophrygonius* since *wallacei* had the distinct lowest terminal and anterior lower teeth of right mandible which, according to GRAVELY's (1918) definition of these two genera, were the generic characters separating *Ophrygonius* from *Aceraius*.

On the other hand, *A. perakensis* was also described by KUWERT (1898) in the same paper as for *O. wallacei*. Later, GRAVELY (1914) redescribed this species on the basis of the specimens (not the type) in the collection of the Berlin Museum. Recently, KON and JOHKI (1992) redescribed this species on the basis of the lectotype specimen and pointed out that GRAVELY'S (1914) redescription seemed to have been based on misidentified specimens and that *A. perakensis* resembled *O. wallacei* rather than any *Aceraius* species.

After the publication of our paper, we had an opportunity to re-examine the type specimen of *O. wallacei* by courtesy of Drs. M. UHLIG, J. SCHULZE and H. J. HANNEMANN. Careful examination and comparison between the type specimens of both *A. perakensis* and *O. wallacei* have made it evident that they are specifically identical with each other (see also KON & JOHKI, 1992). Thus, in the present paper, we redescribe

1) This study is supported in part by a Grant-in-Aid for Field Research of Monbusho International Scientific Research Program, Japan (Nos. 03041044, 02041051, 01041051).

O. wallacei baced on the type specimen and regard *A. perakensis* as a junior synonym of *O. wallacei* by the page priority.

In the following description, we adopt the terminology of GRAVELY (1914). The abbreviations used herein are the same as those explained in our previous paper (KON & JOHKI, 1992).

Before going further, we express our hearty thanks to Drs. M. UHLIG, J. SCHULZE and H. J. HANNEMANN, the Museum für Naturkunde der Humboldt-Universität zu Berlin, for loaning the type of *O. wallacei*, Drs. S. BOUCHER and J. J. MENIER, the Muséum national d'Histoire naturelle, Paris, for loaning the lectotype of *A. perakensis* and useful information and Dr. T. HIKIDA, Kyoto University, for critically reading an early version of manuscript.

Ophrygonius wallacei (KUWERT, 1898)

(Fig. 1)

Heterochilus wallacei KUWERT, 1898, Novit. zool., **5**, p. 334; type locality: Sarawak, Borneo. —— ZANG, 1905, Dt. ent. Z., **1905**, p. 167.

Aceraius wallacei: GRAVELY, 1914, Mem. Ind. Mus., **3**, p. 228.

Ophrygonius wallacei: GRAVELY, 1918, Mem. Ind. Mus., **7**, p. 76. —— HINCKS & DIBB, 1935, Coleopt. Cat., (142), p. 81. —— HINCKS, 1936, Ent. mon. Mag., **72**, p. 156. —— HINCKS & DIBB, 1958, Coleopt. Cat., Suppl., (142), p. 22. —— KON & JOHKI, 1992, Elytra, Tokyo, **20**, p. 59; 1992, Elytra, Tokyo, **20**, p. 209.

Heterochilus crinitus KUWERT, 1891, Dt. ent. Z., **1891**, p. 166 (no description); type locality: Nias. —— KUWERT, 1898, Novit. zool., **5**, p. 335.

Heterochilus oculitessellatus KUWERT, 1898, Novit. zool., **5**, p. 335; type locality: Nias.

Aceraius perakensis KUWERT, 1898, Novit. zool., **5**, p. 348; type locality: Perak, Malay Peninsula. —— GRAVELY, 1914, Mem. Ind. Mus., **3**, p. 229; 1918, Mem. Ind. Mus., **7**, p. 91. —— HINCKS & DIBB, 1935, Coleopt. Cat., (142), p. 84. —— KON & JOHKI, 1992, Elytra, Tokyo, **20**, p. 57. —— KON, ARAYA & JOHKI, 1992, Elytra, Tokyo, **20**, p. 203.

Length from apical margin of head to apices of elytra 35.0 mm (n=1, type; sex unknown). Body black, polished, flat; BT/EW 0.59 (n=1).

Antenna with 6 long lamellae. Labrum with setiferous hair-bearing punctures, angles rounded, anterior margin concave, left angle slightly more prominent than the right one, left lateral margin straight, right one convex. Both upper teeth distinct, pointed forward and slightly upward, left one with truncated apex in profile, right one with acute apex in profile; right lowest terminal and anterior lower teeth distinct though smaller than the left ones; anterior lower tooth distinctly divided into upper and lower portions in both mandibles. Anterior angles of head obtusely angular, not prominent forward. Canthus with distinct ridge on upper surface. Both outer tubercles broader at base, obliquely truncated at distal end, outer angle more prominent than the inner one; left outer tubercle narrow, larger than the right one; LOTW/LOTL 0.58 (n=1); ROTL/LOTL 0.83 (n=1). Inner tubercle distinct, pointed forward and slightly upward; DIT/DAS 0.28 (n=1). Anterior marginal wall of head between outer tubercles almost vertical. Ridge between inner tubercles distinct,

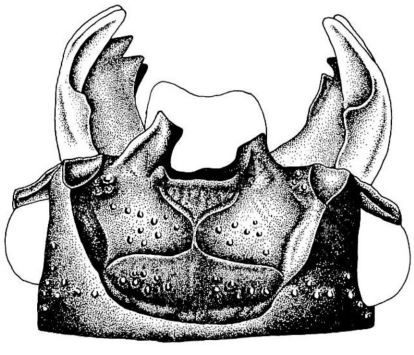

Fig. 1. *Ophrygonius wallacei* KUWERT (type); head (scale: 5 mm), setae are omitted from this figure.

slightly convex in middle; frontal ridge accompanying distinct groove anteriorly; supraorbital ridge connected with supraoccipital ridge; apical angle of supraorbital ridge obtuse; parietal ridge curved backward at distal portion, reaching near connecting point between supraorbital and supraoccipital ridges. Areas between frontal and parietal ridges, behind parietal ridge and behind eye with setiferous hair-bearing punctures; frontal area impunctate, hairless, rugose. Mentum with weak anterior depression; anterior margin of mentum almost straight at central portion.

Pronotum with a few setiferous hair-bearing punctures along lateral margin and in lateral scar, without median groove. Intercoxal process of prosternum hairy in posterior portion. Mesosternum polished, with distinct scar, mat in scar; mesothoracic episternum polished and impunctate except at anterior and dorsal portions. Ridge separating intermediate and lateral areas of metasternum distinct, impunctate, hairless; lateral area and anterior intermediate area densely punctured and hairy; posterior intermediate area hairless, with irregular dents, posterior margin punctured and hairy; central area impunctate and hairless.

Tenth rib of elytra densely punctured and hairy at anterior portion close to shoulder, impunctate and hairless in posterior portion; ninth very sparsely punctured along whole length; eighth impunctate and hairless; seventh with a few punctures in some places.

Second abdominal sternite hairy along middle transverse ridge; third to sixth hairless.

Specimen examined. 1 ex. (type; sex unknown) from Sarawak, Borneo, in the collection of the Museum für Naturkunde der Humboldt-Universität zu Berlin, labelled "Coll. Thieme"/"Sarawak Wallace"/"KUWERT det."/"Type"/"*Heterochilus wallacei* KUW"/"1"/"*Heterochilus* wallacei* KUW."/"*Aceraius wallacei* (KUWERT)."/"Zool. Mus. Berlin".

Notes. KUWERT (1898) described both *O. wallacei* (originally assigned to the genus *Heterochilus*) and *A. perakensis* as two distinct species assigned to different

genera, respectively, in the same paper (the former on p. 334, the latter on p. 348), though they are identical with each other. According to KUWERT's (1898) definition, the genus *Heterochilus* is separated from the genus *Aceraius* solely by having a crescent-shaped mentum. However, the lectotype of *A. perakensis* has a mentum apparently crescent as that of *O. wallacei*, but differing from that of the other *Aceraius* species. Thus, it is rather puzzling why KUWERT did not originally assign *perakensis* to the genus *Heterochilus*.

Ophrygonius wallacei differs from *O. birmanicus*, *O. cantori*, *O. inaequalis*, *O. javensis*, *O. minor*, *O. rajanus*, *O. singapurae* and *O. uedai* in having the tenth rib of elytra punctured and hairy in anterior portion, from *O. aequidens* in having the distinct upper tooth, and from *O. aequalis* in having the asymmetrical outer tubercles.

要　約

近　雅博・常喜　豊: クロツヤムシの一種 *Ophrygonius wallacei* の再記載と新しい下位同物異名. —— *Ophrygonius wallacei* を基準 (模式) 標本にもとづいて再記載した. また, *Aceraius perakensis* を本種の下位同物異名であるとみなした.

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

KUWERT, A., 1898. Die Passaliden dichotomisch bearbeites. *Novit. zool.*, **5**: 259–349.

Elytra, Tokyo, **21** (1): 115–122, May 15, 1993

Passalid Beetles (Coleoptera, Passalidae) Collected from Sarawak, Borneo

I. The Subfamily Passalinae, with Descripition of a New *Aceraius* Species from Mt. Mulu[1)]

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Abstract Eighteen species of the subfamily Passalinae, collected by the Kyoto University Expeditions to Sarawak (1989–1991), are recorded. In addition, a new *Aceraius* species is described from Mt. Mulu under the name *Aceraius hidakai* sp. nov. This new species resembles *A. laevimargo* ZANG in having the middle-sized body (38.4–39.0 mm) and the long antennal lamellae, but can readily be distinguished from the latter by having the anterior lower tooth of the left mandible dorso-ventrally bifid at the apex.

More than three-hundred examples of the Passalinae (Coleoptera, Passalidae) were collected by one of the authors (K. ARAYA) and the other members of the Kyoto University Expeditions to Sarawak during 1989–1991 (the collection localities are shown in Fig. 1). Nineteen species, one of which was new to science, were contained in the collection. We record herewith the materials and describe a new *Aceraius* species. We refer to HINCKS and DIBB (1935; 1958) for the distribution of each species.

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

The present new *Aceraius* species is compared with the other seventeen species of the genus. The compared specimens of *Aceraius* species other than the nine species recorded in the present study are listed below. The acronyms for the collection of the Department of Zoology, National Science Museum (Natural History), Tokyo, that of the Muséum national d'Histoire naturelle, Paris, and that of the Department of

1) This study is supported in part by a Grant-in-Aid for Field Research of Monbusho International Scientific Research Program, Japan (Nos. 03041044, 02041051, 01041051).

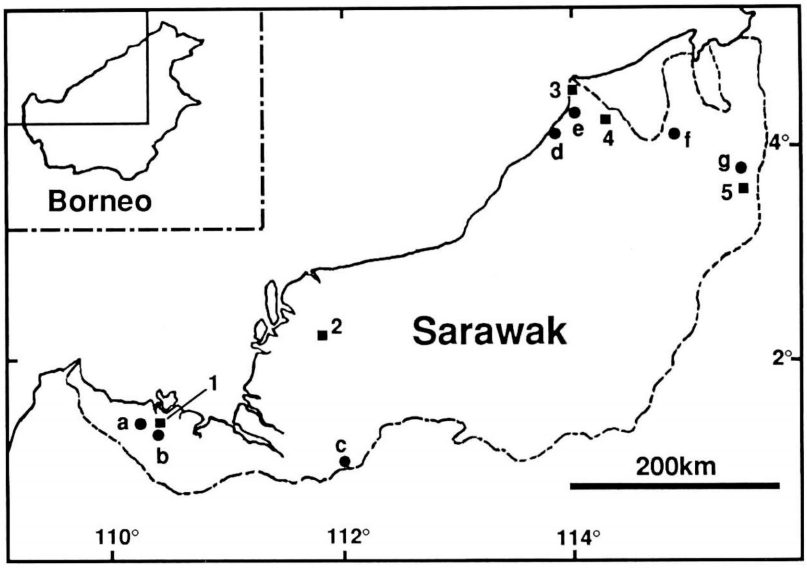


Fig. 1. Sketch map of Sarawak, Borneo. Closed squares indicate chief cities in Sarawak: 1, Kuching; 2, Sibu; 3, Miri; 4, Marudi; 5, Bareo. Closed circles indicate the collection localities: a, Mt. Serapi and Matang; b, Semangoh Forest Reserve; c, Sungai Beloh; d, Niah National Park; e, Lambir National Park; f, Mulu National Park; g, Mt. Murud.

Zoology, Kyoto University, are NSMT, MNHN and KUZ, respectively.

A. alutaceosternus KUWERT: 1 ex. (lectotype), Perak, Malay Peninsula (MNHN).

A. ashidai KON, ARAYA et JOHKI: 1 ♂ (holotype), Tanah Rata (1,500 m), Cameron Highlands, Malay Peninsula, 16–III–1992, H. ASHIDA leg. (NSMT).

A. kinabalensis KON et JOHKI: 1 ♂ (holotype), Mt. Kinabalu (1,500 m), Sabah, Borneo, 30–V–1976, T. MIZUNUMA leg. (NSMT).

A. moeschleri KUWERT: 1 ♂, Kundasang, Sabah, Borneo, 18–VII–1987, M. KON leg.; 1 ♀, ditto, 19–VII–1987, M. KON leg. (KUZ).

A. helferi KUWERT: 2 ♂♂, Doi Pui, Chiang Mai, Thailand, 20–VII–1984, T. ÔBUCHI leg. (KUZ).

A. laniger ZANG: 1 ♂, Mt. Kinabalu, Sabah, Borneo, 17–VIII–1977, M. YOSHIMURA leg. (KUZ).

A. pilifer (PERCHERON): 1 ♀, Kundasang, Sabah, Borneo, 12–VIII–1987, T. HIKIDA leg. (KUZ).

We refer to HINCKS (1938) for *A. parvulus* HINCKS because no specimen was available.

Before going further, we thank M. MATSUI, T. HIKIDA, A. MORI, T. HAYASHI, T. UÉDA, D. LABANG and A. A. HAMID for field assistance and warm companionship, S. BOUCHER and J. J. MENIER, Muséum national d'Histoire naturelle, Paris, for loaning the type specimen of *A. alutaceosternus* and Prof. T. HIDAKA, Kyoto University, for giving us the opportunity of performing the present research.

Subfamily Passalinae

Macrolinus latipennis (PERCHERON)

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

Specimens examined. 1 ex., Sungai Beloh, 9–I–1990; 1 ex., Matang, 20–XII–1990.

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

Ophrygonius singapurae GRAVELY

Ophrygonius singapurae GRAVELY, 1914, Mem. Ind. Mus., **3**, p. 226.

Specimens examined. 1 ex., Mt. Mulu, 15–XII–1989.

Distribution. Laos, Malay Peninsula, Borneo.

Ophrygonius wallacei (KUWERT)

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

Specimens examined. 1 ex., Mt. Serapi, 11–XI–1990; 1 ex., ditto, 25–XI–1990; 1 ex., ditto, 12–XII–1990; 1 ex., ditto, 13–XII–1990; 1 ex., ditto, 14–XII–1990.

Distribution. Malay Peninsula, Sumatra, Borneo.

Aceraius borneanus KAUP

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

Specimens examined. 6 exs., Mt. Mulu (100 m in alt.), 15–XII–1989; 1 ex., ditto, 16–XII–1989; 1 ex., Mt. Serapi, 11–XI–1990; 1 ex., ditto, 22–XI–1990.

Distribution. Malay Peninsula, Sumatra, Java, Borneo.

Aceraius grandis (BURMEISTER)

Passalus grandis BURMEISTER, 1847, Handb. Ent., **5**, p. 463.

Specimens examined. 1 ex., Mt. Mulu (500 m in alt.), 17–XII–1989; 1 ex., ditto, 18–XII–1989; 1 ex., Mt. Serapi, 21–XII–1990.

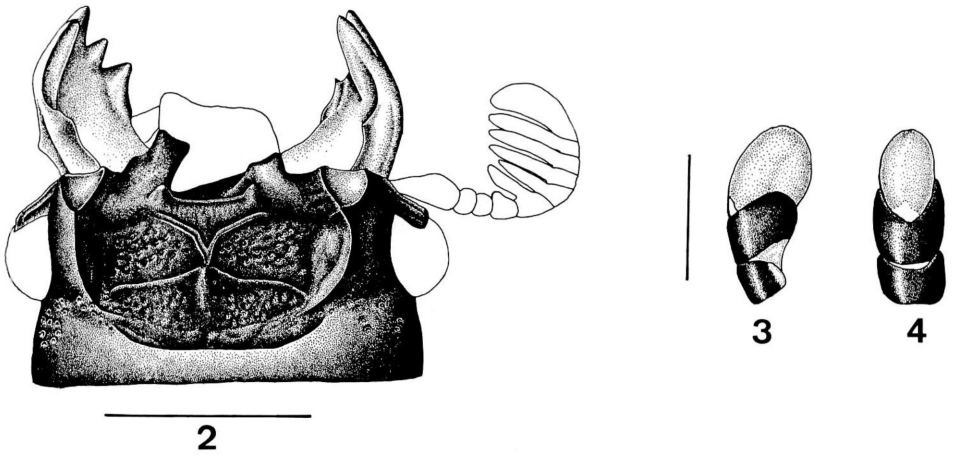
Distribution. E. Himalayas, Myanmar, Thailand, Cambodia, Vietnam, Formosa, Malay Peninsula, Sumatra, Java, Borneo, Philippines.

Aceraius hidakai sp. nov.

(Figs. 2–4)

Length from anterior margin of head to apices of elytra 38.4–39.0 mm (n=5). Body black, polished; BT/EW 0.68–0.71 (n=5).

Antenna with six long lamellae. Labrum with setiferous hair-bearing punctures,



Figs. 2–4. *Aceraius hidakai* sp. nov. (holotype); 2, head (scale: 5 mm), setae are omitted from this figure; 3–4, male genitalia (scale: 2 mm), right lateral view (3), ventral view (4).

anterior margin slightly concave, angles rounded, left angle much more prominent than the right one, left lateral margin almost straight, right one slightly convex. Upper margin of mandible without swelling behind upper tooth. Upper tooth of both mandibles simply pointed forward and slightly upward in lateral view, either truncated or weakly bifid at apex in dorsal view; upper tooth of left mandible much higher than in the right one; lowest terminal tooth of right mandible represented by a small denticle; upper portion of anterior lower tooth of right mandible represented by a low trapezoid, anterior angle acute, posterior angle rounded, upper side concave; lower portion of anterior lower tooth of right mandible represented by a small denticle, located more posteriorly than anterior angle of upper portion; anterior lower tooth of left mandible much broader than left lowest terminal tooth, bifid dorso-ventrally at apex, with horizontal groove on posterior margin. Anterior angle of head obtusely angular, not prominent forward. Canthus with distinct ridge parallel to anterior margin. Left outer tubercle larger than the right one, truncated and weakly bifid at distal end, outer margin with obtusely angular swelling at base, inner margin either straight or slightly convex; right outer tubercle truncated at distal end, outer angle pointed slightly upward and forward, more prominent than inner angle; upper surface of both outer tubercles rough; LOTW/LOTL 0.46–0.54 (n=5); ROTL/LOTL 0.67–0.77 (n=5). Inner tubercle large, pointed forward and upward; DIT/DAS 0.30–0.35 (n=5). Ridge between inner tubercles distinct, almost straight, without distinct posterior groove; frontal ridge accompanying distinct groove anteriorly; supraorbital and supraoccipital ridges separated by setiferous hair-bearing punctures; parietal ridge not swelling upward in distal portion. Areas between frontal and parietal ridges, behind parietal ridge and behind eye with setiferous hair-bearing punctures; frontal area impunctate, hairless, rough, weakly rugose. Mentum with setiferous hair-bearing

punctures in lateral portion, slightly prominent forward at middle of anterior margin, weakly sunken on each side of middle prominence.

Pronotum polished, with setiferous hair-bearing punctures in lateral scar and near both anterior and lateral margins; intercoxal process of prosternum with long hairs in posterior portion. Mesosternum hairless, frosted in posterior portion, with distinct scar; mesothoracic episternum frosted and impunctate in posterior portion, with large punctures in both anterior and dorsal portions. Ridge separating intermediate and lateral areas of metasternum distinct along whole length; lateral area and anterior intermediate area densely punctured and hairy; posterior intermediate area punctured and hairy near posterior margin, with irregular dents along posterior margin of central area; central area impunctate and hairless.

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

Second abdominal sternite hairy along middle transverse ridge; third to sixth abdominal sternites hairless.

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

Type series. Holotype: 1 ♂, Mt. Mulu, 500 m in altitude, Sarawak, Borneo, 17–XII–1989, K. ARAYA leg. Paratypes: 2 ♂♂, 2 ♀♀, same data as for the holotype. The holotype and 1 paratype (♀) are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, 1 paratype (♂) in the collection of the Muséum national d'Histoire naturelle, Paris, 1 paratype (♂) in the collection of the Institute de Ecologia, México, and 1 paratype (♀) in the collection of the Forest Department, Sarawak, Malaysia.

Etymology. This species is named in honor of Prof. T. HIDAKA, Kyoto University, who gave us the opportunity of performing the researches on the Bornean passalid beetles.

Notes. *Aceraius hidakai* sp. nov. differs from *A. grandis*, *A. illegalis*, *A. laevicollis* and *A. oculidens* in having the anterior angle of head not prominent forward, from *A. kinabalensis*, *A. kuwerti*, *A. moeschleri* and *A. tricornis* in having the tenth rib of elytra hairy in the anterior portion, from *A. alutaceosternus*, *A. borneanus* and *A. helferi* in having the mandible without swelling on the upper margin behind the upper tooth, from *A. laniger* in having the fifth tarsus of middle and hind legs rounded on the upper and lateral margins of the distal end, from *A. lamellatus* in having the hairless mesosternum, from *A. pilifer* and *A. parvulus* in having the much larger body (38.4–39.0 mm) and the long antennal lamellae, from *A. ashidai* in having the parietal ridge not swelling upward in the distal portion and from *A. laevimargo* in having the anterior lower tooth of the left mandible dorso-ventrally bifid at the apex.

Aceraius illegalis KUWERT

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

Specimen examined. 1 ex., Mt. Serapi, 20–I–1990.
Distribution. Malay Peninsula, Borneo.

Aceraius kuwerti ZANG

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

Specimens examined. 4 exs., Bareo, 12–I–1991; 8 exs., Mt. Murud, 15–I–1991; 22 exs., ditto, 16–I–1991; 3 exs., ditto, 19–I–1991; 10 exs., ditto, 20–I–1991.
Distribution. Borneo.

Aceraius laevicollis (ILLIGER)

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

Specimens examined. 6 exs., Mt. Mulu (100 m in alt.), 14–XII–1989; 12 exs., ditto, 15–XII–1989; 2 exs., ditto, 16–XII–1989; 7 exs., ditto, 27–XII–1989; 1 ex., Mt. Serapi, 13–XI–1990; 1 ex., ditto, 13–XII–1990; 1 ex., ditto, 20–XII–1990; 1 ex., ditto, 27–XII–1990; 1 ex., Matang, 20–XII–1990; 7 exs., Niah National Park, 27–XII–1990; 12 exs., Mt. Murud, 15–I–1991; 14 exs., ditto, 16–I–1991; 2 exs., ditto, 20–I–1991; 3 exs., Bareo, 12–I–1991; 12 exs., ditto, 24–I–1991.
Distribution. Malay Peninsula, Sumatra, Java, Borneo, Philippines, ?Sulawesi.

Aceraius laevimargo ZANG

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

Specimens examined. 4 exs., Mt. Murud, 20–I–1991.
Distribution. Malay Peninsula, Sumatra, Borneo.

Aceraius lamellatus GRAVELY

Aceraius lamellatus GRAVELY, 1918, Mem. Ind. Mus., **3**, p. 89.

Specimens examined. 3 exs., Mt. Serapi, 12–XI–1990; 1 ex., ditto, 13–XI–1990; 1 ex., ditto, 17–XI–1990; 1 ex., ditto, 18–XI–1990; 1 ex., ditto, 20–XI–1990; 1 ex., ditto, 21–XI–1990; 1 ex., ditto, 25–XI–1990; 1 ex., ditto, 14–XII–1990; 1 ex., ditto, 15–XII–1990.
Distribution. Malay Peninsula, Borneo, Sulawesi.

Aceraius oculidens ZANG

Aceraius oculidens ZANG, 1905, Dt. ent. Z., **1905**, p. 190.

Specimens examined. 1 ex., Mt. Mulu, 17–XII–1989; 4 exs., Mt. Murud, 19–I–1991.

Distribution. Malay Peninsula, Sumatra, Borneo.

Aceraius tricornis ZANG

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

Specimen examined. 1 ex., Mt. Murud, 16–I–1991.
Distribution. Borneo.

Pelopides monticulosus (SMITH)

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

Specimens examined. 5 exs., Bareo, 12–I–1991; 1 ex., ditto, 19–I–1991; 1 ex., ditto, 24–I–1991; 18 exs., Mt. Murud, 15–I–1991; 14 exs., ditto, 16–I–1991; 2 exs., ditto, 20–I–1991; 2 exs., ditto, 23–I–1991; 1 ex., ditto, 24–I–1991.
Distribution. Thailand, Malay Peninsula, Sumatra, Borneo.

Leptaulax bicolor (FABRICIUS)

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

Specimens examined. 1 ex., Mt. Mulu, 12–XII–1989; 1 ex., Mt. Serapi, 12–XI–1990; 1 ex., ditto, 25–XI–1990; 1 ex., ditto, 11–XII–1990; 8 exs., Matang, 20–XII–1990; 3 exs., Niah National Park, 24–XII–1990; 1 ex., Bareo, 13–I–1991; 1 ex., ditto, 25–I–1991; 50 exs., Mt. Murud, 15–I–1991; 59 exs., ditto, 16–I–1991; 2 exs., ditto, 19–I–1991; 1 ex., ditto, 20–I–1991; 3 exs., ditto, 21–I–1991; 3 exs., ditto, 23–I–1991.
Distribution. India, Sri Lanka, E. Himalayas, Myanmar, Thailand, Vietnam, Cambodia, Formosa, Malay Peninsula, Sumatra, Java, Borneo, Philippines, Sulawesi, Moluccas, New Guinea, Australia.

Leptaulax cyclotaenius KUWERT

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

Specimens examined. 1 ex., Mt. Mulu (100 m in alt.), 16–XII–1989; 1 ex., ditto, 17–XII–1989; 1 ex., ditto (600 m in alt.), 21–XII–1989; 2 exs., ditto (200 m in alt.), 23–XII–1989; 1 ex., Mt. Serapi, 17–XI–1990.
Distribution. E. Himalayas, Myanmar, Thailand, Vietnam, Cambodia, Malay Peninsula, Sumatra, Borneo, Sulawesi.

Leptaulax dentatus (FABRICIUS)

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

Specimens examined. 1 ex., Mt. Mulu, 26–XII–1989; 1 ex., ditto, 27–XII–1989; 1 ex., Mt. Serapi, 12–XI–1990; 1 ex., ditto, 29–XII–1990; 1 ex., ditto, 21–XII–1990.

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

Leptaulax humerosus KUWERT

Leptaulax humerosus KUWERT, 1891, Dt. ent. Z., **1891**, p. 189.

Specimens examined. 1 ex., Mt. Serapi, 17–XI–1990; 1 ex., ditto, 22–XI–1990; 1 ex., ditto, 9–XII–1990; 1 ex., ditto, 24–XII–1990.

Distribution. Malay Peninsula, Sumatra, Java, Borneo.

Leptaulax planus (ILLIGER)

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

Specimens examined. 1 ex., Marudi, 12–XII–1989; 1 ex., Mt. Mulu (100 m in alt.), 28–XII–1989.

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

要　　約

近　雅博・荒谷邦雄・常喜　豊：ボルネオ，サラワク州で採集されたクロツヤムシ．I. クロツヤムシ亜科，およびムル山よりえられたオオクロツヤムシ属の1新種．—— ボルネオのサラワク州への京都大学の学術調査 (1989–1991) において採集された，クロツヤムシ亜科のクロツヤムシ 18 種を記録した．それに加えて，オオクロツヤムシ属の1新種，*Aceraius hidakai* sp. nov. をムル山より記載した．この種は，中くらいの体長 (38.4–39.0 mm) と長い触角の lamellae をもつ点において *A. laevimargo* ZANG に似ているが，左の大顎の anterior lower tooth の先端が上下に二叉状となる点において容易に区別できる．

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Elytra, Tokyo, **21** (1): 123–128, May 15, 1993

Occurrence of a New Apterous Species of *Ptomaphagus* (Coleoptera, Cholevidae) in Taiwan

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Abstract A new apterous species of the cholevid genus *Ptomaphagus* is described from Taiwan, under the name of *P.* (s. str.) *yasutoshii* sp. nov. It is a second species of the genus known from the Oriental Region, and is characterized mainly by the elytral sculpture and configuration of male genital organ. The new species seems to be an inhabitant of animal-burrows or an edaphophilic species.

Mr. Yasutoshi SHIBATA kindly offered me Taiwanese cholevid beetles collected by himself several years ago, in which were found a pair of specimens of a strange ptomaphagine cholevid beetle. Recently, a female specimen seemingly belonging to the same species was received from Mr. Yasuhiko HAYASHI for comparison. As the result of my study, it became apparent that the species was new to science.

Up to the present, no species belonging to the genus *Ptomaphagus* has been known from Taiwan. Only a single species, *P.* (s. str.) *kuntzeni* SOKOLOWSKI, has been known from Kambaiti in northeastern Burma at the periphery of the Oriental Region (SZYMCZAKOWSKI, 1964). Thus, the present new species is not only the first representative of the genus known from Taiwan, but also the first one found in the Oriental Region. In the following lines, I am going to describe this interesting new species. The abbreviations used herein are already explained in my previous papers.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kindness in critically reading the original manuscript of this paper. My cordial thanks are also due to Messrs. Yasutoshi SHIBATA of Tokyo, Yasuhiko HAYASHI and Noboru ITO of Kawanishi City who gave me the opportunity to study on the interesting materials or useful information.

Ptomaphagus (s. str.) ***yasutoshii*** M. NISHIKAWA, sp. nov.

(Figs. 1–8)

Male. Length 3.80 mm (in normal condition), width 1.88 mm. Body elongate-oval, rather flat, uniformly clothed with relatively long, golden, adpressed pubescence. Forehead to vertex dark reddish brown, occiput blackish brown, with margins darker though occipital carina bears golden luster; gena reddish brown with margins darker; maxillary palpus clear reddish brown; eyes and epipleura reddish brown; antennal

segments I to VIII dark reddish brown, IX to XI reddish brown; pronotum, scutellum and elytra dark reddish brown, with margins darker; ventral surface reddish brown, thoracic segments with margins darker; legs with femur reddish brown, tibia dark reddish brown with apical comb of short spines basally blackish, protarsus clear reddish brown, the remaining tarsi darker.

Head gently convex, with relatively regular, shallowly strigate punctuations, widest at the level of occipital carina (length: width=ca. 2 : 3); labrum trapezoidal, front margin almost straight, with gentle punctuations; maxillary palpus with last segment about 4/7 as long as the preceding segment; eyes reduced though completely faceted, slightly prominent, horizontal diameter about 1/2 as wide as the distance between antennal socket and occipital carina across eye; a ridge present from antennal socket to top of eye. Antenna slender, extending to behind pronotal base, segment I the longest, II as long as VII or X, then as wide as III or IV, III to IX loosely articulated, III 2.3× longer than wide, IV to X cylindrical, slightly depressed, V and VI slightly wider than long, VII to XI equal in width, VIII strongly transverse, 2.5× as wide as long, IX as wide as long, X longer than wide, XI subconical, slightly depressed, 1.8× as long as wide. Segmental measurements (length followed by width) as follows: I, 0.3, 0.1; II, 0.15, 0.075; III, 0.175, 0.075; IV, 0.1, 0.075; V, 0.075, 0.0875; VI, 0.0875, 0.1; VII, 0.15, 0.125; VIII, 0.05, 0.125; IX, 0.125, 0.125; X, 0.15, 0.125; XI, 0.225, 0.125.

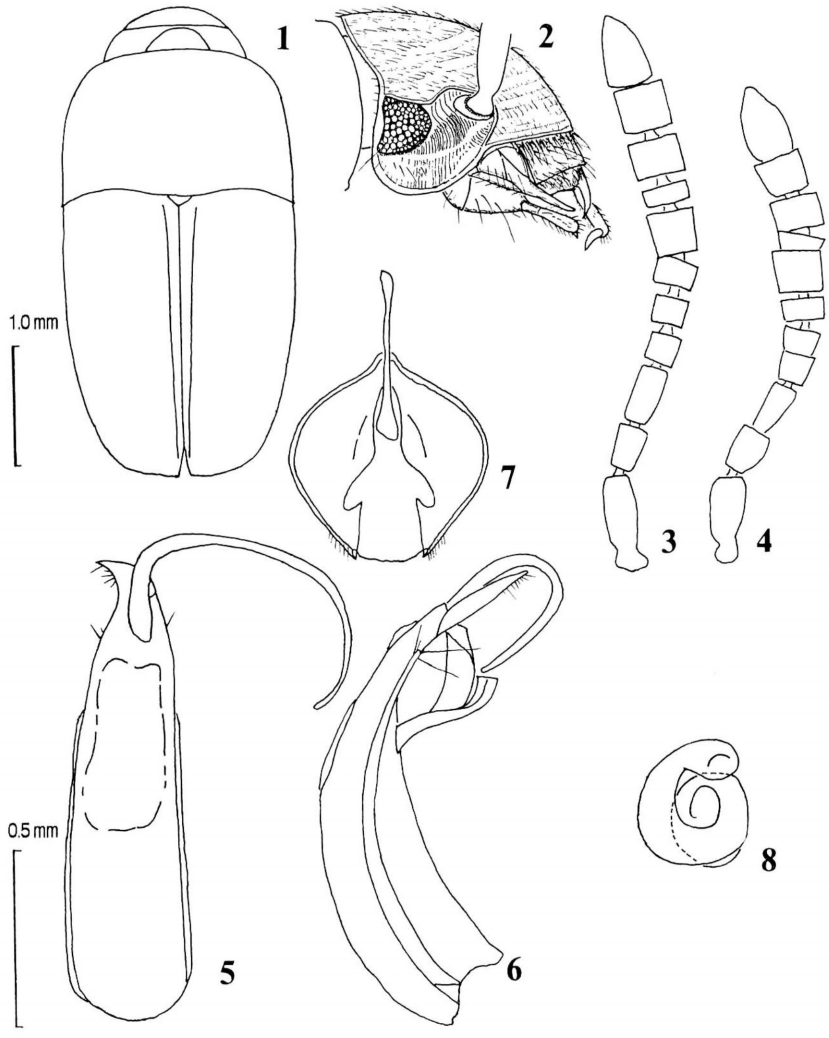
Pronotum transverse, trapezoidal, widest at base, which is nearly as wide as elytral base, PW/HW 1.60, PW/PL 1.50; front margin almost straight, front angles rounded, sides arcuate in apical halves, well sinuate near hind angles in oblique view, basal margin bisinuate with hind angles projected, pointed at the tips; surface with distinct strigations, forming irregular wavy lines. Scutellum triangular.

Apterous. Elytra incompletely fused with each other, oblong, slightly convex, widest at basal 1/3, EW/PW 1.04, EL/PL 2.08, EL/EW 1.33; sides subparallel in basal portions, though gently arcuate in posterior 2/3, apices separately subtruncate; epipleura ending at apical 1/7; disc with suture entire, sutural stria almost straight in basal half, surface strigulate, the striga transverse or partly oblique to sutural stria. Pygidium moderately punctured.

Ventral surface moderately punctured. Mesosternum with a carina along midline, the carina with the free edge slightly rounded, basal notch conspicuous.

Legs relatively slender, with protibia dilated at inner side, though almost straight at outer side, widest at the apex. Protarsus well dilated, though the segment I is narrower than the apex of protibia.

Aedeagus asymmetrical, long, becoming narrower apically, apical portion strongly arcuate to the right, apex pointed; apical orifice situated on the dorsal surface, deeply cut inwards on the left edge near apex. Parameres developed in basal portions, reaching apical 1/5 of aedeagus. Genital segment with spiculum gastrale moderately long, slightly swollen in apical portions, enclosed for about 1/2 by genital plates, which are gently bordered.



Figs. 1–8. *Ptomaphagus* (s. str.) *yasutoshii* M. NISHIKAWA, sp. nov., from near Tsuifeng in central Taiwan. —— 1, Outline of body, ♂; 2, head in lateral view, showing reduction of eyes, ♂; 3, antenna, ♂; 4, same, ♀; 5, male genitalia in dorsal view; 6, same in lateral view; 7, genital plate, ♂; 8, spermatheca. (Scales: 1 mm for Fig. 1 and 0.5 mm for Figs. 3–8. Fig. 2 is a freehand drawing.)

Female. Length 3.85 mm (from apex of labrum to apices of elytra), width 1.90 mm. Similar in general appearance to male, but differing from it in the following points: body reddish brown; antennal segments I and II clear reddish brown, III to XI reddish brown, apical half of the last segment paler, segments VII, IX and X slightly wider than long. Segmental measurements of antenna (length followed by width) as follows: I, 0.225, 0.1; II, 0.15, 0.075; III, 0.15, 0.075; IV, 0.075, 0.075; V, 0.075, 0.1;

VI, 0.075, 0.125; VII, 0.125; 0.1375; VIII, 0.0375, 0.125; IX, 0.1125, 0.15; X, 0.1, 0.125; XI, 0.2, 0.125.

Pronotum slightly shorter than in male, PW/HW 1.59, PW/PL 1.67, EW/PW 1.09; pronotal sides slightly sinuate before hind angles; elytra with apices separately rounded; EL/PL 2.33, EL/EW 1.29. Legs with protibia and protarsi normal.

Spermatheca spiral-shaped, broadly flattened, with central shaft thick, strongly curved, tapering posteriorly, posterior end forming a knob, weakly notched at the inner side just before the knob, orifice situated laterad, anterior end discoidal, thick.

Type series. Holotype: ♂, near Tsuifeng, 2,200 m in alt., Nantou Hsien, Taiwan, 25–VIII–1974, Y. SHIBATA leg. Allotype: ♀, same locality and altitude as the holotype, 27–VII–1974, Y. SHIBATA leg.

Other specimen examined. 1 ♀, Mt. Yüshan, Taiwan, 20–V–1981, N. ITO leg.

The left antennal segments II–XI and the left protarsal segments IV–V are missing in the holotype. It will be deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, the allotype is preserved in the collection of mine. The other specimen examined is returned to Mr. HAYASHI.

Notes. The Yüshan specimen is somewhat different from the allotype in the body size (length 4.30 mm, width 1.98 mm) and in the ratios of antennal segments. In the former, the antennal segment III is distinctly longer than II, and each of IV and V is slightly longer than wide; in the latter, the segments II and III are equal in length, and 1/2 as wide as long, IV as wide as long, and V slightly wider than long. Segmental measurements (length followed by width) in the Yüshan specimen are as follows: I, 0.275, 0.1; II, 0.0875, 0.075; III, 0.2, 0.075; IV, 0.1, 0.075; V, 0.0875, 0.1; VI, 0.0875, 0.1125; VII, 0.125, 0.1375; VIII, 0.05, 0.125; IX, 0.1, 0.125; X, 0.1125, 0.1375; XI, 0.2, 0.15. Measurements of body parts are nearer than those of the holotype, except for EL/PL and EL/EW, i.e., PW/HW 1.60, PW/PL 1.48, EW/PW 1.03, EL/PL 1.92, EL/EW 1.27. However, the spermathecal configuration of this specimen is identical with that of *yasutoshii*. It can be regarded as a geographical variant of the same species.

So far as I know, twenty-three species of the subgenus *Ptomaphagus* have hitherto been known in the world. The present new species, *yasutoshii*, is similar to *P.* (s. str.) *circassicus* (REITTER) from western Caucasus and Crimea (SZYMCZAKOWSKI, 1970) in the straight elytral strigations, though they are distinct from each other. In this point, it is also similar to *P.* (*Adelops*) *schwarzi* HATCH and *P.* (*A.*) *nevadicus* HORN from California in North America, but subgeneric characters indicate that it belongs to the subgenus *Ptomaphagus* s. str. It can be distinguished from all the other members of the subgenus by the shape of antennal segments (Figs. 3–4), reduced but faceted eyes (Fig. 2), absence of hind wings, and particularly, by the strongly right-curved apex of the aedeagus of male genitalia (Figs. 5–6). Such characteristic configuration of the aedeagal apical part is unique among the congeneric species. In female, it may also be characterized by the shape of the spermatheca. PECK (1973) studied on North American *Ptomaphagus* (*Adelops*), and distinguished three phylogenetic groups among

them based on the characters of spermatheca. In the Old World species belonging to the subgenus *Ptomaphagus*, however, only six species have been described or figured on their spermatheca by KEVAN (1963), SZYMCZAKOWSKI (1976) and PERREAU (1988). As is shown in Fig. 8, *P. yasutoshii* has a flat spiral-shaped spermatheca. It somewhat resembles those of several species of the subgenus *Adelops*, but a similar conformation is unknown in the Old World species for the present.

Elytral strigations are similar in the four species as mentioned before. No ecological information is available about one of them, *P.* (s. str.) *circassicus*. It is available about *P.* (*A.*) *schwarzi* and *P.* (*A.*) *nevadicus*, which are said to inhabit frequently in nests and burrows of small mammals (HATCH, 1957; PECK, 1973). According to personal communication from Mr. SHIBATA, the first collector of the new species from Tsuifeng, his specimens were probably sorted out from leaf litter near a small stream in a forest. Mr. ITO informed me that his specimen had probably been taken from under stone or moss or leaf litter at 2,800 to 3,997 m in altitude on Mt. Yüshan. Thus, nothing is certainly known on the microhabitat of *P. yasutoshii* with the exception of the collecting data. Judging from the appearance of *P. yasutoshii*, however, it seems to be an inhabitant of animal-burrows as in the case of Californian congeners or an edaphophilic species, at least not an epigean form.

要　約

西川正明：台湾に産するニセチビシデムシ属の1新種．―― 東洋区に属する地域からこれまでに記録されたニセチビシデムシ属 *Ptomaphagus* の種としては，ハギニセチビシデムシ *P.* (s. str.) *kuntzeni* SOKOLOWSKI の雌個体ただ1頭が，北東ビルマから知られているにすぎなかった．しかし，台湾の山地帯に本属の新種の分布することが判明したので，これを *Ptomaphagus* (s. str.) *yasutoshii* M. NISHIKAWA, sp. nov. と命名して記載した．この新種は，触角の形状，雄交尾器の形態などで，同属の他種と区別できるが，とくに先端が強く右曲する陰茎の形状は，他に類をみない．残念ながら，旧世界に産するほとんどの種について，雌の受精嚢の形状が明らかになっていないので，詳しい比較検討はできないが，本種のそれはらせん形を呈し，北米産の別亜属 *Adelops* のいくつかの種のものに類似している．

いっぽう，複眼の縮小，いくぶん細長い触角，そして後翅を欠くという特徴は，本種が地表性の種ではないことを示唆している．また興味深いことに，本属の大部分の種では，上翅の会合条線に対し，斜の横細条をもつが，本種は，ほぼ直線的な細条をそなえている．こうした横細条をもつものは，コーカサスから記載され，クリミア半島からも近年になって記録された *P.* (s. str.) *circassicus* REITTER と，別亜属でカリフォルニア産の *P.* (*Adelops*) *shwarzi* HATCH, *P.* (*A.*) *nevadicus* HORN の3種があるが，前者についての生態的知見は見つからなかった．しかし，あとの2種については，小型哺乳動物の巣穴の住人であることが報告されている．これら4種の上翅横細条の形態的同一性は，どのように考えたらよいのだろうか．

本種の採集者である柴田泰利氏ならびに伊藤　昇氏は，筆者の照会に対して，採集地の環境やその時の採集法を連絡してくださったが，問題の個体を具体的にどう採集したかは記憶にないようであった．しかし，先に記した特徴に基づいて想像をたくましくすれば，北米産の種と同様に小型哺乳類の

巣穴に生息する種か，あるいは土壌中に生息する種で，少なくとも地表性のものではないように思われる．

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Elytra, Tokyo, **21** (1): 129–133, May 15, 1993

A New Species of the Genus *Nazeris* (Coleoptera, Staphylinidae) from Yunnan Province, South China

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Abstract A new staphylinid beetle of the genus *Nazeris* is described and illustrated under the name of *Nazeris zhangi*. It was found in the litter zone of temperate forests on Yu'an-shan near Kunming City of Yunnan Province, South China.

Six staphylinid species belonging to the genus *Nazeris* FAUVEL have hitherto been known from China; of these, two species were reported from Tienmuschan by KOCH (1939, pp. 159–161) and the remaining four from Sichuan Province by ZHENG (1992, pp. 87–91). During a Sino-Japanese cooperative study on the soil fauna of tropical forest in China made from the end of October to the middle of November in 1992, the authors collected an interesting species belonging to this genus. After a careful examination, it has become clear that it is new to science on account of different configuration of genital organ in the male. It will be described in the present paper as the seventh species of the Chinese *Nazeris*. The holo- and allotypes of the new species to be described are deposited in the collection of the Shanghai Institute of Entomology, Academia Sinica, China, and the paratypes are distributed to the collections of the Kunming Institute of Zoology, Academia Sinica, China, and of the Laboratory of Entomology, Tokyo University of Agriculture.

Before going further, the authors wish to express their hearty thanks to Professor YIN Wen-ying of the Shanghai Institute of Entomology, Academia Sinica, and Professor Gentaro IMADATÉ of Tokyo Medical and Dental University for their kind help through the Sino-Japanese cooperative study. Deep gratitude is also due to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, and Dr. Shûhei NOMURA of the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka, for their advice on the present study, and to Professor Hiroshi TAMURA of

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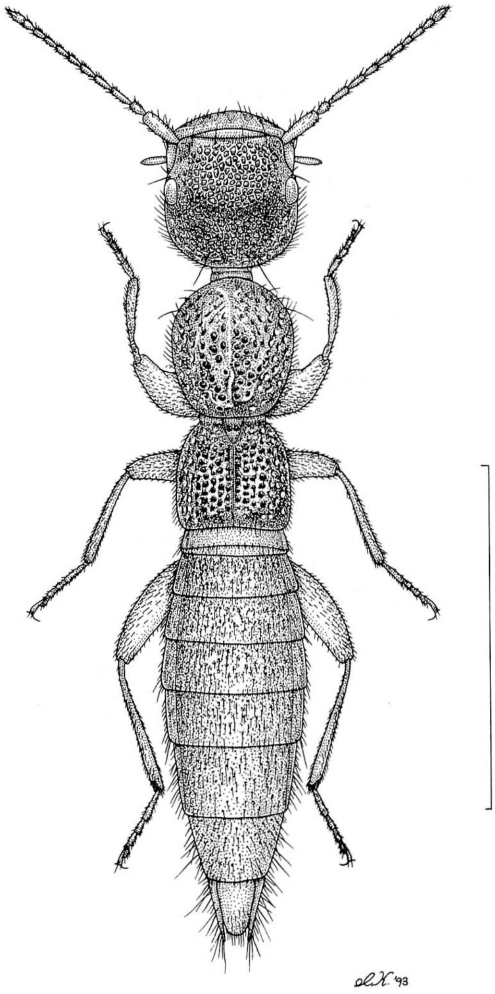


Fig. 1. *Nazeris zhangi* sp. nov., ♂.
Scale: 2.0 mm.

Ibaraki University, Mito, and the members of the Sino-Japanese cooperative study for their kind collaboration in searching for this new species in the field.

Nazeris zhangi sp. nov.

(Figs. 1–5)

Body length: 4.1–4.4 mm (from front margin of head to anal end); 2.3–2.4 mm (from front margin of head to elytral apices).

Body elongate, nearly parallel-sided and subdepressed above. Colour reddish brown to reddish black and moderately shining, with abdomen blackish; labrum and mandibles yellowish brown, palpi, antennae except for yellowish brown basal segment, and legs yellow.

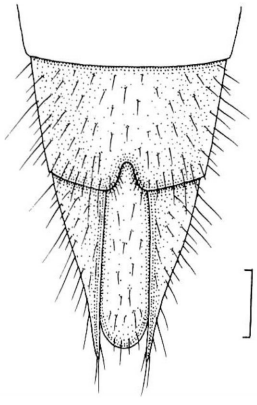
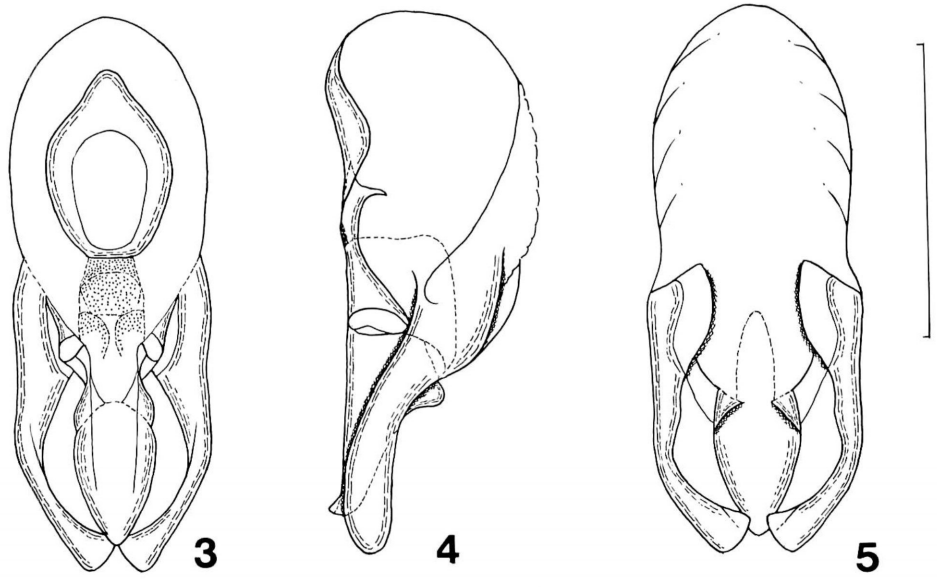


Fig. 2. Last two abdominal sternites in male of *Nazeris zhangi* sp. nov. Scale: 1.0 mm.

Head suborbicular, gently convex medially, as long as broad or slightly transverse (width/length=1.02), feebly narrowed posteriad and well constricted at neck; lateral sides gently arcuate, with a groove for the reception of 1st antennal segment in front of each eye; surface reticulately covered with coarse setiferous punctures, the setae blackish and decumbent forwards; eyes somewhat prominent, the longitudinal diameter of each eye nearly a half as long as postocular part. Antennae slender, extending to the middle of pronotum and not thickened apicad, with basal segment polished, the remainings becoming gradually opaque towards the apicalmost segment, 1st cylindrical and robust, more than three times as long as broad, 2nd distinctly longer than broad (length/width=1.82) but apparently shorter (2nd/1st=0.40) and a little narrower (2nd/1st=0.73) than 1st, 3rd to 9th equal in width to one another and gradually decreasing in length, though each segment is distinctly longer than broad, 10th hardly shorter (10th/9th=0.94) but slightly broader (10th/9th=1.11) than 9th, apicalmost fusiform, more than twice as long as broad and apparently longer (apicalmost/10th=1.61) and slightly broader (apicalmost/10th=1.10) than 10th.

Pronotum gently convex and semioval, somewhat longer than broad (length/width=1.07), almost as long as but somewhat narrower (pronotum/head=0.92) than head, widest at about anterior third and more strongly narrowed posteriad than anteriad; lateral sides arcuate in anterior third and almost straight in posterior two-thirds as seen from dorsal side; anterior margin rounded, posterior margin feebly emarginate at the middle, anterior and posterior angles rounded, though the former is not visible from above; surface rather densely and very coarsely punctured and covered with similar setae to those on head, bearing a short indefinite longitudinal carina at the middle before posterior margin and slightly depressed on each side of the carina. Scutellum relatively small and subtriangular, uneven on the surface. Elytra subtrapezoidal, dilated posteriad and subdepressed above, a little transverse (width/length



Figs. 3–5. Male genital organ of *Nazeris zhangi* sp. nov.; ventral view (3), lateral view (4), and dorsal view (5). Scale: 0.5 mm.

1.17), distinctly shorter (elytra/pronotum=0.75) and somewhat narrower (elytra/pronotum=0.93) than pronotum; lateral sides gently arcuate, posterior margin emarginate at the middle, posterior angles rounded; surface setiferously punctured, the punctures denser but less coarse than those on pronotum, the setae brownish and decumbent posteriad. Legs moderately long; profemur thickened, but abruptly constricted in apical fourth; protibia somewhat dilated apicad, hollowed in basal half on the inner margin and closely settled with short yellowish setae on basal part of the hollow, and also provided with four or so blackish setae within the hollow; meso- and metatibiae simple; protarsal segments of male more slightly widened than those in female.

Abdomen elongate, widest at the fourth visible segment, then narrowed both anteriad and posteriad, all the tergites covered with fine brownish pubescence; basal four visible tergites each shallowly and transversely depressed along the base, and densely covered with coarse but much smaller punctures than those on elytra, fifth visible tergite less densely and less coarsely punctured than on the preceding tergites; preapical sternite in male subtriangularly excised at the middle of posterior margin.

Male genital organ well sclerotized with the exception of dorsal side of median lobe, elliptical, almost symmetrical. Median lobe spoon-shaped, broadest near the middle, then narrowed towards apex, which is narrowly rounded, apical part somewhat projected ventrad in profile; ventral surface provided with a fine longitudinal keel on each side of the middle, but the keel is obscure in apical third. Parameres a little longer than median lobe, each curved inwards in apical half, gently constricted before the middle and less strongly widened apicad than basad.

Type series. Holotype: ♂, allotype: ♀, Yu'an-shan near Kunming City, Yunnan Province, South China, 5–XI–1992, Y. WATANABE leg. Paratypes: 12 ♂♂, 10 ♀♀, same data as for the holotype; 13 ♂♂, 5 ♀♀, same locality and collector as for the holotype, 6–XI–1992.

Distribution. South China (Yunnan Prov.).

The present new species is similar in general appearance to *N. taiwanus* ITO from Taiwan, but differs from the latter in the punctures on the pronotum, the narrower elytra and different configuration of genital organ in the male.

Notes. All the specimens of the type series of this new species were found in the litter zone of a temperate forest on Yu'an-shan at an altitude of about 2,130 m.

The specific name is given in honour of Professor ZHANG Hanyun, Vice Director of Kunming Branch, Academia Sinica, who helped the authors in searching for soil-living staphylinid beetles in tropical forests of Yunnan Province in South China.

要　　約

渡辺泰明・蕭　宇年：中国云南省昆明市郊外で採集された *Nazeris* 属の 1 新種．—— 1992 年に実施された中日共同学術調査によって，中国云南省昆明市郊外の玉案山の林床に堆積した腐葉層から採集された *Nazeris* 属の 1 種を検した結果，新種と判定されたので下記のとおり命名記載した．

Nazeris zhangi Y. WATANABE et XIAO

本種は，雄交尾器の形状からみて，台湾の玉山および合歓山から記載された *N. taiwanus* 種群に近縁の種と考えられるが，前胸背板はやや密に，粗く点刻され，網目状構造が認められず，上翅は前胸背板より明らかに幅狭く，また雄交尾器中葉はスプーン型を呈し，末端が腹方に上反しているので区別できる．

新種名は，今回の云南省での調査に種々のご配慮をいただいた弦 汉云中国科学院昆明分院副院長に献名したものである．

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Elytra, Tokyo, **21** (1): 134, May 15, 1993

The Staphylinid Beetles Newly Recorded from Sarushima Island on Tokyo Bay

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No staphylinid beetles have hitherto been recorded from Sarushima Island, which lies on Tokyo Bay about 2 km east of the centre of Yokosuka City in Kanagawa Prefecture.

Through the courtesy of Mr. K. EMOTO, a small collection of staphylinids collected on Sarushima Island is given to me. It contains eight species, all of which are new to the fauna of the island, as recorded below. All the specimens were collected by Ken'ichi EMOTO himself. I thank him for his kindness in providing me with the specimens.

Anotylus mimulus (SHARP)
2 ♀♀, 5-V-1986.

Stenus (*Parastenus*) *rugipennis* SHARP
2 ♂♂, 5-V-1986.

Achenomorphus lithocharoides (SHARP)
3 ♂♂, 3 ♀♀, 5-V-1986; 2 ♂♂, 4 ♀♀, 18-X-1986.

Cafius alganum SHARP
1 ♂, 24-VIII-1986.

Cafius rufescens SHARP
10 ♂♂, 5 ♀♀, 24-VIII-1986.

Cafius mimulus SHARP
1 ♂, 24-VIII-1986.

Cafius vestitus (SHARP)
1 ♂, 24-VIII-1986.

Heterothops cognatus SHARP
1 ♂, 18-X-1986; 1 ♀, 5-V-1986.

Elytra, Tokyo, **21** (1): 135–150, May 15, 1993

A Revision of the Japanese Species of the Genus *Atholus* (Coleoptera, Histeridae), Part 2[1)]

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Abstract In this part of the paper, *Atholus duodecimstriatus quatuordecimstriatus* and *A. pirithous* are redescribed. Male genitalia and some taxonomic features are illustrated.

Atholus duodecimstriatus quatuordecimstriatus (GYLLENHAL, 1808)

[Japanese name: Ko-tsuya-emma-mushi]

(Figs. 9 D, I & 10–12)

Hister quatuordecimstriatus GYLLENHAL, 1808, 83 [Sweden]; MARSEUL, 1854, 248, t. 9, f. 56 [3e groupe]; 1873, 220 [Nangasaki (Kyushu)]; LEWIS, 1874, 174 [Japan, common in all the Isls.].
Hister duodecimstriatus var. *quatuordecimstriatus*: SCHMIDT, 1885, 295 [VIII Gruppe].
Hister (*Atholus*) *duodecimstriatus* var. *quatuordecimstriatus*: AUZAT, 1924, 95; BICKHARDT, 1917, 193 [catalogued].
Hister (*Atholus*) *duodecimstriatus* var. *quattuordecimstriatus* [sic]: BICKHARDT, 1910, 193 [catalogued].
Hister (*Atholus*) *duodecimstriatus*: KAMIYA & TAKAGI, 1938, 31 [listed].
Hister quinquestriatus MOTSCHULSKY, 1860, 13, synonymized by LEWIS, 1895, 188.
Hister (*Atholus*) *quinquestriatus*: NAKANE, 1951, 1040.
Atholus (*Euatholus*) *duodecimstriatus quatuordecimstriatus*: KRYZHANOVSKIJ & REICHARDT, 1976, 338; HISAMATSU & KUSUI, 1984, 17 [key; noted]; HISAMATSU, 1985, 228, pl. 41, f. 20 [key; noted; photo].
Atholus duodecimstriatus quatuordecimstriatus: MAZUR, 1984, 213 [catalogued].
Atholus duodecimstriatus quinquestriatus: THEROND, 1962, 65; NAKANE, 1981, 10 [listed].
Atholus duodecimstriatus var. *beta*: PAYKULL, 1811, 37, synonymized by GYLLENHAL, 1827, 263.
Atholus quinquestriatus: LEWIS, 1906, 402.
Atholus duodecimstriatus var. *quatuordecimstriatus*: BAUDE À SELVE, 1864, 232.
Atholus quatuordecimstriatus: THOMSON, 1862, 230.
Hister bimaculatus var. *quattuordecimstriatus* [sic]: AUZAT, 1925, 75.

Description. Male and female. Body length, PPL: male, 3.81–4.86 mm, female, 4.28–5.00 mm, PEL: male, 3.33–3.90 mm, female, 3.62–4.14 mm. Width: male, 2.81–3.38 mm, female, 3.00–3.47 mm. Biometric data are given in Table 4. Body oblong-oval and black; tibiae, tarsi and antennae rufo-piceous.

Frontal stria of head (Fig. 10 A) deeply and broadly impressed, complete, feebly and inwardly arcuate at middle. Disk shallowly, evenly and finely punctate, the punctures separated from one another by twice their diameter.

Marginal pronotal stria abbreviated on basal half laterally, and broadly inter-

1) Part 1: Elytra, Tokyo, **20**: 167–182 (1992).

rupted behind head. Lateral pronotal (Fig. 10 B) stria complete and densely crenate; disk evenly clothed with fine punctures which are separated by about twice their diameter, the punctures becoming sparser laterally; area within the anterior angles of lateral stria densely covered with coarse punctures which are separated by one to two times their diameter; ante-scutellar area with a short longitudinal puncture.

Epipleural fossette with alutaceous ground sculpture and sparsely with coarse punctures. Marginal epipleural stria absent. Marginal elytral stria complete and carinate, the basal portion deeply impressed. External subhumeral stria absent (Fig. 10 B). Internal subhumeral stria present medially, the basal end a little before the middle of elytron and the apical end at the apical fourth. Oblique humeral stria represented in basal half. Dorsal striae coarsely and sparsely crenate, 1st–5th and sutural striae complete, the basal ends of 5th and sutural usually united in an arc; sometimes sutural stria reduced to basal half. Disk of elytra with coriaceous ground sculpture.

Pygidia with alutaceous ground sculpture. Propygidium (Fig. 9 D) sparsely covered with coarse and round punctures on basal half, which are separated by one to four times their diameter, the punctures becoming sparser apically on apical half; interspace among the coarse ones sparsely clothed with fine punctures which are separated by four to five times their diameter. Punctation of pygidium (Fig. 9 I) similar to that of propygidium, but the coarse one is much smaller and both the punctures are denser than on propygidium, the punctures becoming finer and denser toward apex.

Anterior margin of prosternal lobe (Fig. 10 C) round; marginal stria complete and deeply impressed; disk sparsely and coarsely punctate, the punctures separated by one to three times their diameter; interspace among the coarse ones with alutaceous ground sculpture. Prosternal keel narrow; carinal stria wanting; lateral stria deeply and broadly impressed and complete.

Anterior margin of mesosternum (Fig. 10 D) regularly and outwardly arcuate, its marginal stria complete and densely crenate; a short stria present behind antero-lateral angles; disk sparsely and finely punctate, the punctures separated by five to seven times their diameter. Meso-metasternal suture clearly impressed and angulate at middle. Punctation of intercoxal disk of metasternum similar to that of mesosternum. Lateral metasternal stria extending obliquely and posteriorly, and usually not united with the oblique stria which extends inwardly from the middle of metasterno-metepisternal suture (sometimes united). Lateral disk of metasternum densely covered with large, shallow, deep and round punctures and without hair. Post-mesocoxal stria extending posteriorly and strongly curved along the posterior margin of mesocoxa, and attaining to the middle of metasterno-mesepimeral suture.

Punctation of intercoxal disk of 1st abdominal sternum (Fig. 10 D) similar to that of metasternum; lateral stria nearly complete, the apical end shortly reduced.

Protibia (Fig. 10 E & F) with 4 large denticles on outer margin, two of them being on the antero-lateral angle (tooth); 3 small denticles on apical margin. Ventral surface

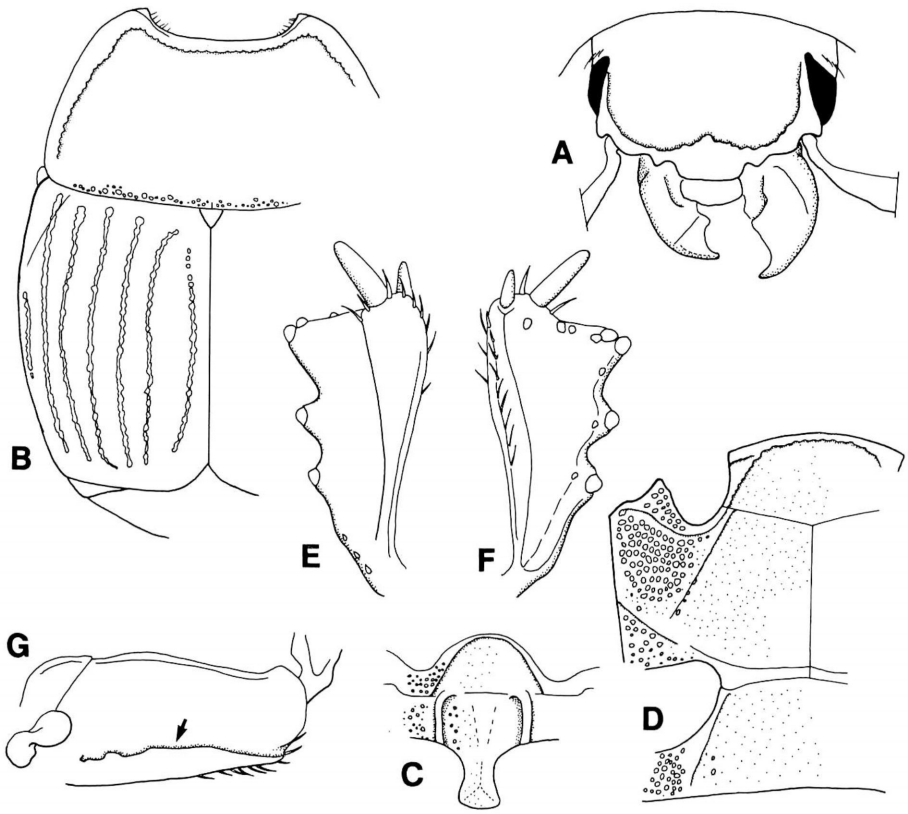

Fig. 10. *Atholus duodecimstriatus quatuordecimstriatus* (GYLLENHAL). A, Head, frontal view; B, pronotum and left elytron, dorsal view; C, prosternum; D, meso-, metasterna and 1st abdominal sternum; E, protibia, dorsal view; F, ditto, ventral view; G, profemur, ventral view.

Table 4. Biometric data for *Atholus duodecimstriatus quatuordecimstriatus* (GYLLENHAL).

Part measured	Male	Female
APW	1.14–1.36 (1.23±0.01) 20	1.19–1.40 (1.29±0.01) 20
PPW	2.52–2.95 (2.72±0 03) 20	2.62–3.09 (2.86±0.03) 20
PL	1.09–1.38 (1.25±0.02) 20	1.21–1.48 (1.35±0.02) 20
EL	1.86–2.28 (2.08±0.02) 20	2.05–2.33 (2.22±0.02) 20
EW	2.81–3.38 (3.04±0.04) 20	3.00–3.47 (3.23±0.03) 20
ProW	1.62–1.90 (1.78±0.02) 20	1.67–2.05 (1.88±0.02) 20
ProL	0.67–0.86 (0.76±0.02) 20	0.67–0.88 (0.77±0.01) 20
PyL	0.79–1.00 (0.89±0.01) 20	0.83–1.02 (0.94±0.01) 20
PTL	0.86–1.05 (0.95±0.01) 20	0.90–1.12 (0.99±0.01) 20
MSTL	0.76–1.00 (0.87±0.01) 20	0.81–1.05 (0.90±0.01) 20
MTTL	0.95–1.19 (1.09±0.02) 20	1.05–1.24 (1.15±0.01) 20

of protibia with 3 small denticles along outer margin. Profemoral stria (Fig. 10 G) deeply impressed and nearly complete, shortly reduced basally, the median portion broadly distant from posterior margin of profemur.

Male genitalia: subspecies *quatuordecimstriatus* (Fig. 11 A–F).

Female genitalia: Fig. 11 G.

Specimens examined. 20 ♂♂, 20 ♀♀ and 289 exs.

[Hokkaido] 1 ex., Okushibetsu, Kamikawa, Teshio, 13–VII–1948, T. HASEGAWA leg.; 1 ex., Teshio, 11, 14–VII–1931, K. IGARASHI leg. (EIHU); 3 exs., Maruseppu, 7–VIII–1987, M. ÔHARA leg.; 1 ex., Kamihoro, Kushiro, 31–V–1947, K. KOZIMA leg.; 3 exs., Ashoro, 7–VII–1990, M. ÔHARA leg.; 8 ♂♂, 6 ♀♀, 21 exs., Shimizu, Taisetsu, 28–VII–1985, M. ÔHARA leg.; 1 ex., Toyohara, Kamikawa, 22–V–1975, N. YASUDA leg.; 3 exs., Memuro, 24–VI–1986, M. ÔHARA leg.; 5 exs., Kamishihoro, 7–VII–1990, M. ÔHARA leg.; 4 exs., Obihiro, 23–VI–1991, M. ÔHARA leg.; 13 exs., Hakkenzan, Sapporo, 20–VI, 13–VII–1985, M. ÔHARA leg.; 29 exs., Toyotaki, 10–V, 3, 18, 28–VI–1987, M. ÔHARA leg.; 2 exs., ditto, 20–V–1990, S. SHIYAKE leg.; 5 ♂♂, 4 ♀♀, 25 exs., Jôzankei, 29–VI, 27–VIII, 14–IX–1985, 14–VII–1986, 16–VII–1988, 18–VI–1990, M. ÔHARA leg.; 2 ♂♂, 5 ♀♀, 16 exs., Sapporo, 7, 14–VI, 10–VII, 9–VIII–1985, M. ÔHARA leg.; 3 exs., Kitaku, Sapporo, 7–VI–1987, M. SUWA leg.; 1 ex., Shinkawa, Sapporo, 20–IV–1973, S. KUDÔ leg.; 1 ex., Hitsujigaoka, Sapporo, 20–VII–1985, M. ÔHARA leg.; 1 ex., Zenibako, Otaru, 19–VI–1979, N. NISHIKAWA leg.; 1 ex., ditto, 24–VI–1954, T. KUMATA leg. (EIHU); 2 exs., Asari, Otaru, 25–VI, 7–VIII–1978, T. FUJISAWA leg. (EIHU); 3 exs., Bibi, 28–VI–1987, M. ÔHARA leg.; 1 ♂, 1 ex., Iwanai, 9, 10–VII–1990, M. ÔHARA leg.; 13 exs., Kuromatsunai, 8–VIII–1988, M. ÔHARA leg.; 12 exs., Mt. Kariba, Shimamaki, 6, 8–VIII–1988, M. ÔHARA, T. TANABE & K. SAYAMA leg.; 3 exs., Kitahiyama, 28–V–1988, M. ÔHARA leg.; 7 exs., Akaigawa, Ônuma, 13–VII–1990, M. ÔHARA leg.; 3 exs., Hakodate, 1–VIII–1942, no collector's name (NSMT); 1 ex., ditto, 15–VII–1952, K. HOMMA leg. (EIHU). 〈Okushiri Is.〉 1 ♀, Aonae, 28–VI–1986, Y. KUSUI leg.

[Honshu] 〈Aomori-ken〉 2 exs., Ôma, 12–V–1987, H. SAITÔ leg.; 1 ex., Towada, 3–VIII–1954, A. ABE leg. (NA); 1 ex., Kokidaira, Takedate, Minami-tsugaru, 17–VII–1948, K. SHIMOYAMA leg. (NA). 〈Yamagata-ken〉 2 exs., Sakata, 1–VIII–1947, T. NAKANE leg. (NA); 1 ex., Dewa, Sakata, 19–VII–1949, K. SHIRAHATA leg. (NA); 1 ex., Yonezawa, 3–V–1944, A. SUZUKI leg. (NSMT). 〈Fukushima-ken〉 1 ex., Aizu, no date, K. NAGAYAMA leg. (NA); 1 ex., Wakamatsu, 13–VI–1946, K. NAGAYAMA leg. (NA); 1 ex., ditto (NSMT); 2 exs., Tsuirunuma, Arai, Wakamatsu, 26–IV–1947, M. WATANABE leg. (NA); 1 ex., Yugawa, Wakamatsu, 28–III–1949, Y. KUROSAWA leg. (NA); 1 ex., Odayama, Monden, Kita-aizu, 29–IV–1948, K. NAGAYAMA leg. (NA); 1 ex., Oyama, Monden, Kita-aizu, 21–V–1949, Y. KUROSAWA leg. (NSMT). 〈Saitama-ken〉 1 ex., Urawa, 10–V–1953, H. KAJIMURA leg. (NA). 〈Tokyo-to〉 1 ex., Tokyo, V–1913, F. MUIR leg. (BSM); 1 ex., Aoyama, Tokyo, 25–V–1968, T. NAKANE leg. (NA); 1 ♂, 3, exs., Nôkô Univ., Fuchû, 11–VI–1968, M. ISHIDA leg.; 1 ex., Takaosan,

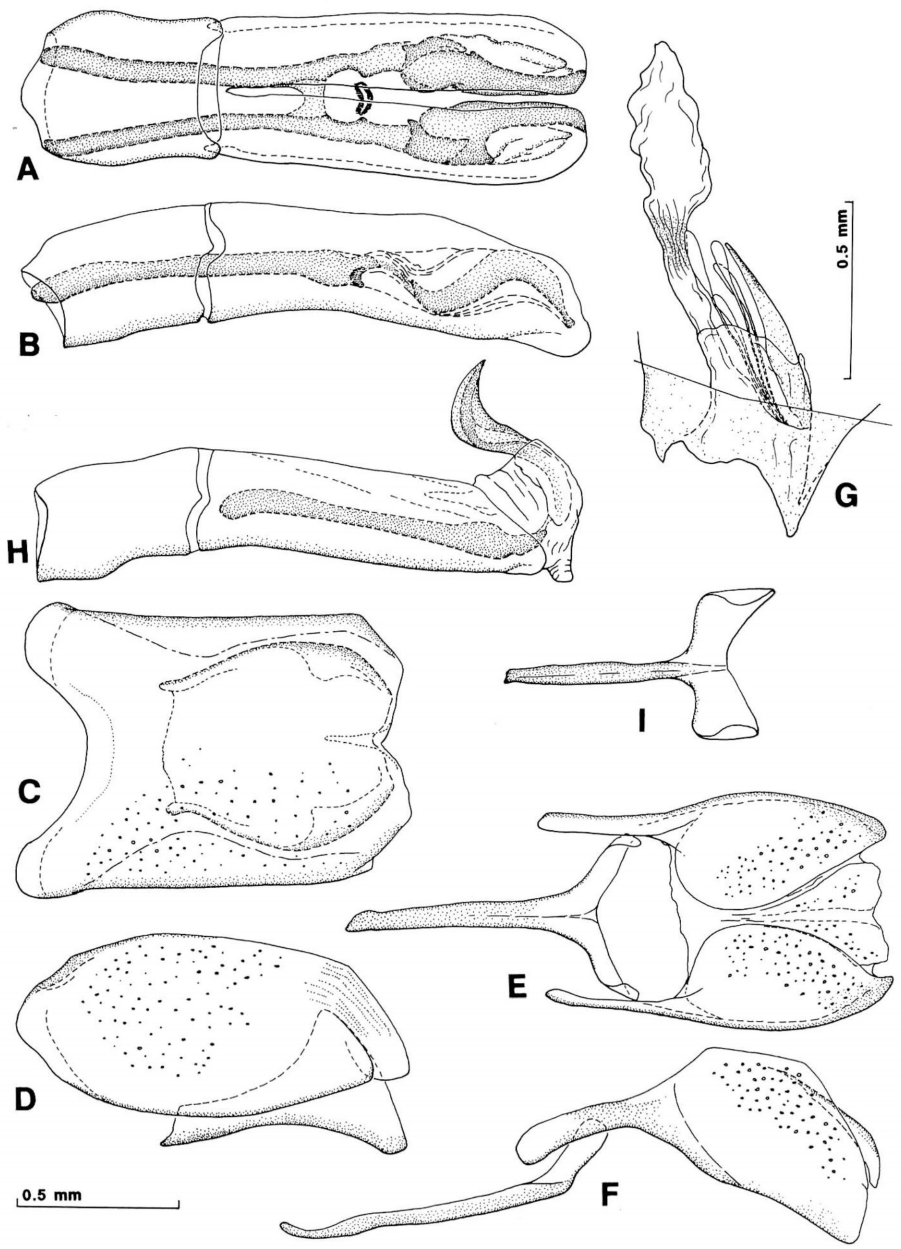

Fig. 11. A–G. *Atholus duodecimstriatus quatuordecimstriatus* (GYLLENHAL). A, Aedeagus, dorsal view; B, ditto, lateral view; C, 8th tergite and sternum, dorsal view; D, ditto, lateral view; E, 9th and 10th tergites and 9th sternum (spicules), dorsal view; F, ditto, lateral view; G, female genitalia, spermatheca and bursa copulatrix, lateral view (left side). —— H–I. *A. d. duodecimstriatus* (SCHRANK) [Czechoslovakia]. H, Aedeagus, median lobe extruded, lateral view; I, spicules, dorsal view.

23–IV–1969, H. TAKIZAWA leg.; 1 ex., Ueno, Tokyo, 2–II–1959, K. SUGA leg. (NSMT); 1 ex., Maruko-tamagawa, Tokyo, 11, 12–V–1952, Y. KUROSAWA leg. (NSMT); 1 ex., Ogikubo, Tokyo, 6–IV–1935, S. YAMAMOTO leg. (NSMT); 1 ex., Nakano, Tokyo, 9–V–1921, no collector's name. (NSMT). 〈Kanagawa-ken〉 1 ex., Sagamihara, 22–III–1990, H. TAKIZAWA leg.; 1 ex., Hatano, 22–V–1989, H. TAKIZAWA leg. 〈Yamanashi-ken〉 3 exs., Masutomi, 3–V–1980, M. ÔHARA leg. 〈Niigata-ken〉 1 ♂, Kurokawa, Echigo, 21–XI–1960, K. BABA leg. 〈Nagano-ken〉 1 ex., Kamikôchi, 21, 28–VII–1947, S. ÔSAWA leg. (NA); 1 ex., Nojiri, 7–VII–1941, T. NAKANE leg. (NA); 9 exs., Sanjirô, Utsukushigahara, 20, 21–VI–1990, S. SHIYAKE leg. 〈Gifu-ken〉 6 exs., Ôgaki, Mino, 21–IV–1946, 13–IV–1947, Y. MORIYA leg. 〈Shizuoka-ken〉 1 ex., Ryûsô-zan, 1–X–2599(=1939), Y. SAITÔ leg. (BSM); 1 ex., Shizuoka-ken, 24–VIII–1912, N. TAKABAYASHI leg. (EIHU). 〈Aichi-ken〉 16 exs., Shikatsu-mura, Owari, 14–VIII–1945, 4, 12, 27–IV–1946, 14–IV–1947, S. ÔSAWA leg. (NA); 1 ♀, Nagoya, 11–VIII–1947, S. TABUCHI leg. (NA); 1 ex., ditto, 27–IV–1935, H. HATTORI leg. (NA); 1 ♀, 14 exs., Higashiyama, Nagoya, VI–1948, S. ÔSAWA leg. (NA); 1 ex., ditto, VI–1947, T. NAKANE leg. (NA); 1 ex., Mizuho, Nagoya, 3–VIII–1947, S. TABUCHI leg. (NA); 1 ex., Obata, Owari, 15–VI–1941, S. ÔSAWA leg. (NA); 1 ex., Ryûzen, X–1943, S. ÔSAWA leg. (NA); 1 ex., Mikawa-hôraiji, 21 & 23–V–1947, T. NAKANE leg. (NA). 〈Fukui-ken〉 3 exs., Inumi, Ôi-gun, 2–VI–1987, T. ITÔ leg. 〈Kyoto-fu〉 2 exs., Kitashirakawa, 5–V–1942, K. SAKAGUCHI leg. (NA); 1 ex., ditto, 1–VI–1954, T. NAKANE leg. (NA). 〈Osaka-fu〉 1 ♀, 1 ex., Nishinari-ku, Osaka, 12–VI–1945, K. SAWADA leg. (NA). 〈Hyôgo-ken〉 1 ex., Uchida-hama, 8–III–1942, K. SAKAGUCHI leg. (NA); 1 ex., Higashiyuyama-mura, 11–II–1936, K. SAKAGUCHI leg. (NA); 1 ex., Mt. Rokkô, 1–VI–1947, N. YATÔ leg. (NA); 1 ex., Taizan-ji, Nishi-ku, Kôbe, 5–V–1987, T. ITÔ leg. 〈Okayama-ken〉 1 ex., Komizue, Kurashiki, 21–VII–1975, T. AONO leg. (NA).

[Kyushu] 〈Fukuoka-ken〉 1 ♂, Mt. Tachibana, 1–VII–1984, S. NOMURA leg.; 1 ex., ditto, 29–IV–1978, H. MAKIHARA leg.; 1 ex., Mt. Adachi, 19–IX–1962, S. NAKAO leg. (NA). 〈Kumamoto-ken〉 1 ex., Uemura, Kuma-gun, 20–IV–1986, E. MATSUI leg. 〈Kagoshima-ken〉 1 ♂, Iriki, 20–V–1984, M. ÔHARA leg.

[Izu Isls.] 〈Hachijô Is.〉 1 ex., Hachijô-jima, 7–VIII–1948, K. UMEYA leg. (EIHU).

[Nansei Isls.] 〈Miyako Is.〉 1 ♀, Nobarukoshi, 30–III–1983, K. WADA leg.

[Kuril Isls.] 〈Shikotan Is.〉 1 ex., Shakotan, 23 & 27–VI–1935, Y. SUGIHARA leg. (EIHU).

[Continental China] 1 ex., Dashiqiao, Yingkou, Liaoning, 26–VI–1988, J. LI leg.; 1 ex., Kaigen, Manchoukuo, 5–V–1938, I. OKADA leg. (EIHU).

[Europe] 〈Bulgaria〉 2 exs., Stara plania, Dolao, Sachrane, 4–V–1985, WARSE leg. 〈Sweden〉 1 ex., Göteborg, 23–V–1987, J. LINDQUEST leg.

Distribution (Fig. 12). Japan (Hokkaido; Honshu; Shikoku; Kyushu; Izu Isls.; Nansei Isls.); North Europe and high elevations in Central Europe; Siberia; Mongolia; China; Taiwan. New to the Nansei Isls.

Remarks. This species is very common in Japan, and has been found under pig and cow dung and decaying vegetable matter. This species is similar to *Atholus*

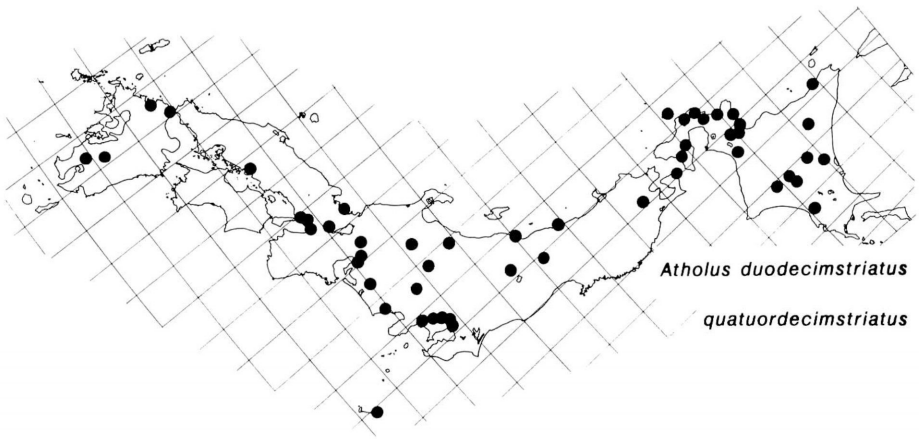

Fig. 12. Collection sites of *Atholus duodecimstriatus quatuordecimstriatus* (GYLLENHAL).

depistor (see under *A. depistor*).

The subspecies *duodecimstriatus* is distributed in Europe (lowland), North Africa, Crimea, and Afghanistan, and is distinguished from the subspecies *quatuordecimstriatus* by the absence of subhumeral stria on elytra. No differences have been found in the male genitalia of these subspecies, except for the shape of apical part of spicules (Fig. 11 E & I). Male genitalia as shown in Fig. 11 H & I.

Specimens examined of subsp. *duodecimstriatus*: 10 exs.

[Europe] 〈France〉 4 exs., Dorodogne, Savignac-ledrier, 3–IX–1985, M. SECQ leg. 〈Germany〉 1 ex., NSG, Schildow, Berlin–Pankow, 19–IV–1981, M. SCHÜLKE leg. 〈Czechoslovakia〉 2 exs., Bohemia, Cherveny, Cherveny ujezd, 15–VIII–1986, S. BEČVÁŘ leg. 〈Ukraina〉 3 exs., Crimea, 15 km E., Bakhchisaray, 29–VII–1987, S. SALUK leg.

Atholus pirithous (MĄRSEUL, 1873)

[Japanese name: Tsuya-maru-emma-mushi]

(Figs. 9 E, J & 13–15)

Hister pirithous MARSEUL, 1873, 224 [Japan: Hiogo (Honshu) et Nangasaki (Kyushu)].

Hister (*Atholus*) *pirithous*: BICKHARDT, 1910, 54 [catalogued]; 1913, 173; 1917, 194 [catalogued]; DESBORDES, 1919, 400 [Tonkin]; 1921, 10; KAMIYA & TAKAGI, 1938, 31 [listed]; ÔSAWA & NAKANE, 1951, 7.

Atholus pirithous: LEWIS, 1906, 402; LEWIS, 1915, 55 [Formosa]; NAKANE, 1981, 10; MAZUR, 1984, 215 [catalogued].

Atholus (*Euatholus*) *pirithous*: KRYZHANOVSKIJ & REICHARDT, 1976, 390; HISAMATSU & KUSUI, 1984, 23; HISAMATSU, 1985, 223, pl. 41, fig. 19 [key; noted; photo].

Hister reitteri BICKHARDT, 1918, 231 [Japan] by REICHARDT, 1930, 48; KAMIYA & TAKAGI, 1938, 31 [listed].

Hister pirithous ab. *reitteri*: REICHARDT, 1930, 48.

Description. Male and female. Body length, PPL: male, 3.47–4.33 mm, female,

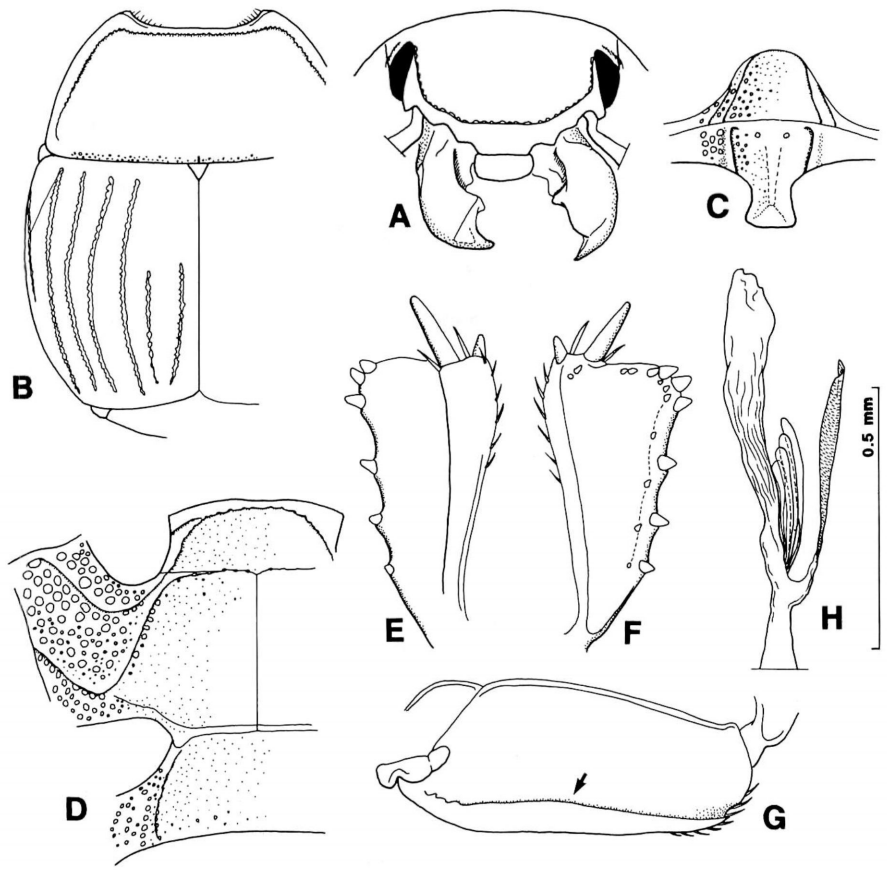

Fig. 13. *Atholus pirithous* (MARSEUL). A, Head, frontal view; B, pronotum and left elytron, dorsal view; C, prosternum; D, meso-, metasterna and 1st abdominal sternum; E, protibia, dorsal view; F, ditto, ventral view; G, profemur, ventral view; H, female genitalia, spermatheca and bursa copulatrix, lateral view (left side).

3.57–4.76 mm, PEL: male, 2.86–3.47 mm, female, 2.83–3.95 mm. Width: male, 2.52–3.24 mm, female, 2.52–3.45 mm. Biometric data are shown in Table 5. Body oval, feebly depressed, black and shining; apical narrow band of elytra, tibiae, tarsi, antennae and mouth parts dark brown.

Frontal stria of head (Fig. 13 A) complete, coarsely crenate and deeply impressed. Disk sparsely clothed with fine punctures which are separated from one another by two to three times their diameter, and wholly with coriaceous ground sculpture. Labrum transversely oblong.

Pronotal sides (Fig. 13 B) arcuate and strongly convergent anteriorly. Apical angles acute. Marginal pronotal stria laterally complete and broadly interrupted behind head. Lateral pronotal stria deeply impressed, crenate, and complete, the lateral portion rather distant from the margin and its basal end not reaching the pos-

Table 5. Biometric data for *Atholus pirithous* (MARSEUL).

Part measured	Male	Female
APW	1.00–1.24 (1.13±0.01) 20	1.05–1.33 (1.20±0.02) 20
PPW	2.28–2.86 (2.54±0.03) 20	2.19–3.02 (2.27±0.04) 20
PL	0.93–1.29 (1.14±0.02) 20	1.00–1.38 (1.21±0.02) 20
EL	1.76–2.14 (1.91±0.02) 20	1.67–2.28 (2.09±0.03) 20
EW	2.52–3.24 (2.88±0.03) 20	2.52–3.45 (3.12±0.05) 20
ProW	1.48–1.90 (1.63±0.02) 20	1.57–2.09 (1.79±0.03) 20
ProL	0.52–0.86 (0.64±0.02) 20	0.55–0.79 (0.70±0.01) 20
PyL	0.69–0.90 (0.81±0.01) 20	0.69–1.00 (0.87±0.02) 20
PTL	0.81–0.95 (0.89±0.01) 20	0.76–1.05 (0.92±0.01) 20
MSTL	0.74–0.95 (0.89±0.01) 20	0.76–1.05 (0.88±0.02) 20
MTTL	1.00–1.24 (1.09±0.02) 20	0.95–1.38 (1.17±0.03) 20

terior margin. Disk of pronotum evenly covered with fine punctures which are separated by two to five times their diameter, and wholly clothed with coriaceous ground sculpture; the narrow posterior band represented by large and round punctures. Area within the antero-lateral angles of pronotal stria slightly excavated. Ante-scutellar area with a short longitudinal puncture.

Epipleural fossette of elytra with alutaceous ground sculpture, and densely covered with coarse punctures on apical half. Marginal epipleural stria present on apical half, but the apical portion is often shortened. Elytral marginal stria complete and carinate. External subhumeral stria (Fig. 13 B) present on middle, a half as long as elytron. Internal subhumeral stria sinuate and impressed on apical half. Oblique humeral stria lightly impressed on basal third. First to 4th dorsal striae complete, and densely and coarsely crenate. Fifth dorsal stria present on apical third to a half. Sutural stria abbreviated on basal third to a half. Disk evenly clothed with fine punctures which are separated by about three times their diameter, the punctures finer and sparser medio-basally.

Pygidia with alutaceous ground sculpture. Propygidium (Fig. 9 E) irregularly covered with large, round and shallow punctures, which are separated by a half to one their diameter; interspace among the large punctures densely covered with moderate punctures which are separated by their diameter. Pygidium (Fig. 9 J) coarsely punctate, the punctures similar to the large punctures of propygidium and present on basal third; other fine punctures occurring over and dense, which are separated by about one to two times their diameter.

Anterior margin of prosternal lobe (Fig. 13 C) round, its marginal stria complete, deeply impressed and crenate, the anterior portion running along anterior margin of lobe; disk evenly covered with fine punctures which are separated by about twice their diameter. Prosternal keel narrow and without carinal striae; disk of keel irregularly clothed with fine punctures which are separated by two to five times their diameter, the punctures becoming sparser and coarser laterally; the basal half of disk even on top in a triangle. Descending lateral stria deeply impressed and complete.

Anterior margin of mesosternum (Fig. 13 D) smoothly, slightly and outwardly arcuate; marginal stria clearly impressed, crenate and complete; a short stria present behind antero-lateral angle on each side. Disk of mesosternum sparsely and finely punctulate, the punctures separated by three to six times their diameter. Meso-metasternal suture clearly and lightly impressed, and obtusely angulate at middle. Lateral metasternal stria deeply impressed and carinate, extending obliquely and posteriorly, the basal portion running along meso-metasternal suture and coarsely crenate, the apical end united with the oblique stria which inwardly extends from the middle of metasterno-metepisternal suture. Intercoxal disk of metasternum sparsely and finely punctate, the punctures separated by about five times their diameter and becoming coarser laterally. Inside of lateral stria with deep and coarse punctures forming a row. Post-mesocoxal stria running along the posterior margin of coxa, and becoming further from the margin laterally, the outer lateral end attaining to the middle of metasterno-mesepimeral suture. Lateral disk of metasternum densely covered with large, round, shallow and setiferous punctures; half of the punctures becoming finer apically, but the rest still keep their size; area along the lateral meta-sternal stria sparsely and finely punctate.

Intercoxal disk of 1st abdominal sternum (Fig. 13 D) sparsely and finely punctate, the punctures coarser along 1st abdominal stria; the stria completely present on each side of the disk.

Protibia (Fig. 13 E & F) with 6 large denticles on outer margin, three of them being on anterolateral angle, and 3 small denticles on apical margin. Ventral surface of protibia with a row of 5 or 6 small denticles along outer margin. Femoral stria of profemur (Fig. 13 H) nearly complete, shortly abbreviated on basal sixth.

Male genitalia as shown in Fig. 14.

Female genitalia as shown in Fig. 13 G.

Specimens examined. 20 ♂♂, 20 ♀♀ and 201 exs.

[Hokkaido] 1 ex., Wakkanai, 1–VIII–1974, Y. KUSUI leg.; 1 ex., Sakanoshita, Wakkanai, 10–VIII–1974, Y. KUSUI leg.; 1 ex., Nakatonbetsu, Kamitonbetsu, 27–VII–1987, K. HAGA leg.; 1 ex., Kenebetsu, Nemuro, 2–VIII–1973, T. KUMATA leg. (EIHU); 1 ex., Shari, Teppanbetsu, 2–VIII–1989, K. HAGA leg.; 2 exs., Shotoshibetsu, Kumanosawa, Rikubetsu, 9–VII–1989, K. HAGA leg.; 1 ex., Teshio, 11, 14–VII–1931, K. IGARASHI leg. (EIHU); 1 ex., Sôunkyô, 27–VII–1952, H. ISHIDA leg.; 3 exs., Shimizu, Taisetsu, 28–VII–1985, M. ÔHARA leg.; 1 ♂, Kami-shihoro, 7–VII–1990, M. ÔHARA leg.; 6 exs., Obihiro, 25–VI–1985, M. ÔHARA leg.; 3 exs., Ashoro, 7–VII–1990, M. ÔHARA leg.; 1 ex., Taiki-chô, 26–VI–1988, Y. ISHIHAMA leg.; 1 ex., Kimontou-mura, Taiki, 19–VIII–1990, K. HAGA leg.; 1 ex., Sapporo, 9–VII–1985, M. ÔHARA leg.; 2 exs., Kitaku, Sapporo, 7–VI–1987, M. SUWA leg.; 1 ♂, Sapporo, 7–VI–1952, K. HOMMA leg. (EIHU); 5 exs., ditto, 13–V, 30–V, 20–VI–1975, M. KIUCHI leg.; 1 ex., Mt. Teine, Sapporo, 6–VI–1954, K. HOMMA leg. (EIHU); 1 ex., Maruyama, Sapporo, 23–V–1954, K. HOMMA leg. (EIHU); 2 ♂♂, 1 ex., Toyotaki, Sapporo, 23–VI–1985, M.

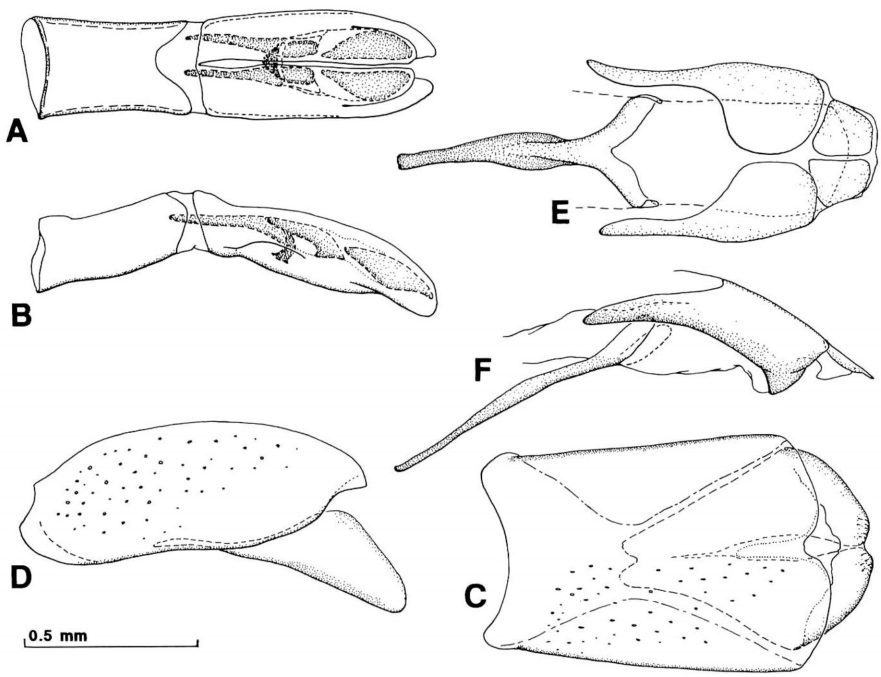

Fig. 14. *Atholus pirithous* (MARSEUL). Male genitalia. A, Aedeagus, dorsal view; B, ditto, lateral view; C, 8th tergite and sternum, dorsal view; D, ditto, lateral view; E, 9th and 10th tergites and 9th sternum (spicules), dorsal view; F, ditto, lateral view.

ÔHARA leg.; 1 ex., Jôzankei, 14–VII–1986, M. ÔHARA leg.; 2 ♂♂, 1 ♀, 9 exs., Bibi, 8–VI–1986, M. MORI leg.; 1 ex., ditto, 28–VI–1987, M. ÔHARA leg.; 1 ex., Hama-atsuma, 3–IX–1987, T. KOMATSU leg.; 1 ex., Tomakomai, 8–VI–1986, M. MORI leg.; 2 ♀♀, 3 exs., Otobe, 15–IX–1985, M. MORI leg.; 1 ♀, 8 exs., Iwanai, 9, 10–VII–1990, M. ÔHARA leg.; 1 ex., Suttsu, 27–V–1988, M. ÔHARA & S. KUDÔ leg.; 5 exs., Kuromatsunai, 8–VIII–1988, M. ÔHARA leg.; 2 exs., ditto, 25–VI–1986, M. MORI leg.; 1 ♂, 2 exs., Mt. Kariba, Shimamaki, 28–V, 6, 8–VII–1988, M. ÔHARA, T. TANABE & K. SAYAMA leg.; 1 ♀, 5 exs., Toyohama, Shimamaki, 8–VIII–1988, M. ÔHARA, M. SATÔ & N. ISHIHAMA leg.; 1 ex., Kaminokuni, Oshima Pen., 25–VI–1974, M. KIUCHI leg.; 1 ex., Hakodate, 18–VII–1954, K. SAWADA leg. (NA). 〈Rishiri Is.〉 2 exs., Oshidomari, 2–VI–1974, Y. KUSUI leg. 〈Okushiri Is.〉 1 ♀, 2 exs., Inaho, 12–VIII–1985, Y. KUSUI leg.

[Honshu] 〈Aomori-ken〉 3 exs., Higashidôri, Shiriyazaki, 6–VI–1987, H. SAITÔ leg.; 1 ex., Towada, 13, 14–VII–1954, S. TAKAGI leg. (EIHU). 〈Fukushima-ken〉 1 ex., Wakamatsu, 28–VI–1949, T. YONEYAMA leg. (NSMT); 1 ex., ditto, 9–IX–1948, Y. KUROSAWA leg. (NSMT); 1 ex., Futamatazawa, Yumoto, Iwase, 16–VII–1949, K. NAGAYAMA leg. (NA); 1 ex., Nagurazawa, Asahida, Minami-aizu, 1–VIII–1944, K. NAGAYAMA leg. (NA); 1 ex., Tsurunuma, Arai, Aizu, 26–IV–1947, Y. KUROSAWA leg.

(NA). 〈Ibaraki-ken〉 1 ex., Mikunibashi, Watarasegawa, 13–IX–1987, K. HAGA leg. 〈Tochigi-ken〉 1 ex., Nishinasuno, 30–IX–1975, T. KUMATA leg. (EIHU). 〈Gumma-ken〉 1 ex., Gumma, no date, T. TAKEI leg., MATSUMURA coll. (EIHU); 1 ex., Gumma, 22–VII–1913, S. MATSUMURA leg. (EIHU). 〈Chiba-ken〉 1 ex., Futtsu, 11–VI–1961, H. YAMAZAKI leg. (NA). 〈Tokyo-to〉 3 exs., Futatsuyama-bokujô, Okuchichibu, 2–IX–1939, K. KOJIMA leg. (NA); 1 ex., Tokyo, V–1913, F. MUIR leg. (BSM); 1 ex., Koremasa, 16–VII–1967, H. TAKIZAWA leg.; 1 ♂, Ogikubo, 26–V–1963, M. ISHIDA leg.; 1 ex., Shakujii, 11–III–1943, A. KIRA leg. (NA); 1 ex., Komaba, Tokyo, 24–VI–1914, S. HIRAYAMA leg. (EIHU). 〈Kanagawa-ken〉 1 ex., Hatano, 6–V–1972, H. TAKIZAWA leg. 〈Nagano-ken〉 1 ex., Fujimi, 20–VI–1956, S. NOMURA leg. (NA); 2 exs., Kita-karuizawa, 21–VII–1938, K. SAKAGUCHI leg. (NA); 1 ex., Nojiri, 27–VII–1930, T. IIDA leg. (NA); 1 ex., Komagatake, Kiso, 4, 5–VIII–1946, S. ÔSAWA leg. (NA). 〈Niigata-ken〉 1 ex., Ozeguchi, Ginzan-ko, 27, 29–VII–1972, Y. KUROSAWA leg. (NA); 2 exs., Itoigawa, southern Echigo, 9–X–1956, K. BABA leg.; 1 ♂, 1 ♀, 2 exs., Kurokawa, 22–VIII–1934, 29–IV–1957, 2–VII–1961, K. BABA leg.; 1 ex., Sasaguchi-hama, 8–V–1957, K. BABA leg. 〈Aichi-ken〉 1 ♂, 2 ♀♀, Shikatsu-mura, 19–VIII–1945, VI–1948, S. ÔSAWA leg. (NA); 2 ♀♀, Mizuho, Nagoya, 3–VIII–1947, S. TABUCHI leg. (NA); 1 ex., Higashiyama, Nagoya, VI–1948, S. ÔSAWA leg. (NA); 1 ♂, Nagoya, 11–VIII–1947, S. TABUCHI leg. (NA). 〈Mie-ken〉 1 ex., Ôsugi Valley, 12–VI–1952, T. HORIO leg. (NA). 〈Shiga-ken〉 1 ex., Hieizan, Ôtsu, 10–X–1989, T. ITÔ leg. 〈Kyoto-fu〉 1 ex., Mt. Daihi, 15–VI–1941, K. SAKAGUCHI leg. (NA). 〈Osaka-fu〉 1 ex., Senriyama, 9–X–1949, K. SAWADA leg. (NA). 〈Hyôgo-ken〉 1 ex., Motoyamamura, Kôbe, 17–XI–1949, K. SAKAGUCHI leg. (NA); 1 ex., Harada, Kôbe, 27–XII–1913, no collector's name. (BSM); 5 exs., Mitani-bokujô, Taka, 16–IX–1984, T. ITÔ leg. 〈Wakayama-ken〉 1 ex., Kii-oshima, 21, 24–V–1964, T. KUMATA leg. (EIHU). 〈Sado Is.〉 1 ex., Ogura-tôge, 26–V–1983, K. BABA leg.

[Shikoku] 〈Tokushima-ken〉 2 exs., Nishiyama, 28–VII–1966, N. HIRAI leg. (NA); 1 ex., Awa, Besshi à Takeda (Nakamura), 20–VII–1913, E. GALLOIS leg. (EIHU); 5 exs., Awa, Koyadaira, 31–VII, 3–VIII–1913, E. GALLOIS leg. (EIHU).

[Kyushu] 〈Fukuoka-ken〉 1 ex., Nakahara-bokujô, 8–X–1950, Y. MIYAKE leg. (NA); 2 exs., Nakahara, 12–III, 12–V–1952, Y. MIYAKE leg. (NA); 1 ex., Mt. Adachi, 21–VI–1969, S. NAKAO leg. (NA). 〈Kumamoto-ken〉 4 exs., Komezuka, Aso, 7–VI–1981, M. ÔHARA leg.; 8 exs., Kumamoto, 18–IV, 14–V, 2–X–1907, H. KAWAMURA leg. (EIHU); 12 exs., Ue-mura, Kuma-gun, 20–IV–1986, E. MATSUI leg. 〈Ôita-ken〉 1 ex., Kujû, 6–VI–1981, K. SAKAI leg. 〈Kagoshima-ken〉 6 exs., Kurino, Kirishima, 8–V–1983, 3–IX–1990, M. ÔHARA leg.; 1 ♀, ditto, 11–V–1984, S. MASUDA leg.; 1 ♀, 5 exs., Toso, Kagoshima City, 20–IV–1984, M. ÔHARA leg.; 9 ♂♂, 7 ♀♀, 20 exs., Iriki, 20–V–1984, M. ÔHARA leg.; 1 ex, Meinô-bokujô, Takakuma, 23–XI–1981, T. KINODA leg.; 1 ex., Nishi-shibushi, Soo, 11–III–1951, H. FUKUDA leg. (NSMT).

[Nansei Isls.] 〈Yakushima Is.〉 1 ex., Nagata, 30–IV–1982, K. TOMIYAMA leg.; 1 ex., Yakushima, 2–IV–1985, M. KIUCHI leg.

[Taiwan] 2 exs., Nanshanshi, 10–VI–1973, K. MASUMOTO leg.; 1 ex., Kenting,

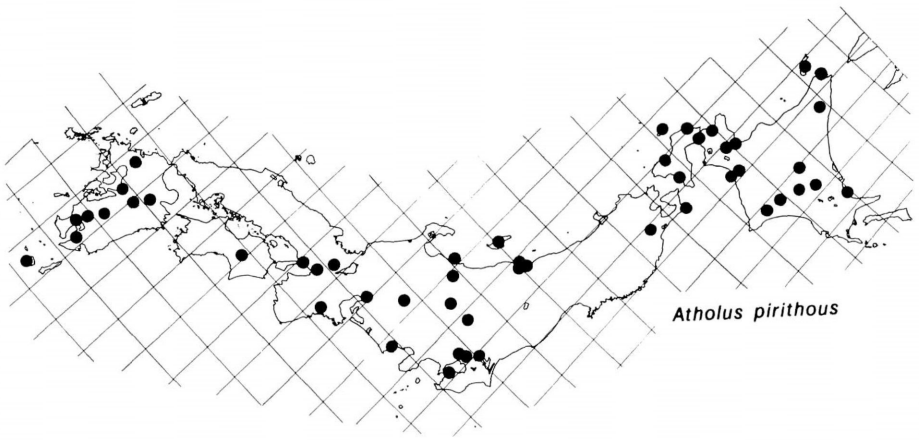

Fig. 15. Collection sites of *Atholus pirithous* (MARSEUL).

10–V–1973, K. MASUMOTO leg.

Distribution (Fig. 15). Japan (Hokkaido; Honshu; Shikoku; Kyushu; Nansei Isls.); Taiwan; Primorskij Kray; China; Korea; Viet-Nam.

Remarks. This species closely resembles *Margarinotus* (*Grammostethus*) *niponicus* in striation, but can be separated from the latter by the body more depressed, the absence of the rudiment of the 5th dorsal stria on basal third of elytron and the external subhumeral stria not complete.

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I would like to express my deep gratitude to Dr. Takehiko NAKANE, Chiba, for his continuous encourgement to my study and allowing me to examine his valuable collection. I am also much indebted to the following entomologists for their gift or loan of specimens: Dr. K. BABA, Mr. K. HAGA, Mr. T. ITÔ, Mr. M. ISHIDA, Mr. J. LINDQUEST, Dr. P. KANAAR, Dr. O. KAPLER, Mr. T. KINODA, Dr. M. KIUCHI, Mr. S. KUDÔ, Dr. Y. KUSUI, Mr. H. MAKIHARA, Mr. E. MATSUI, Mr. S. MASUDA, Dr. K. MASUMOTO, Mr. M. MORI, Mr. K. NAKAMINE, Mr. N. NISHIKAWA, Dr. S. NOMURA, Mr. H. TAKIZAWA, Mr. H. TANAKA, Dr. A. TISHECHKIN, Dr. K. TOMIYAMA, Mr. H. SAITÔ, Dr. G. A. SAMUELSON, Dr. M. SECQ, Mr. S. SHIYAKE, Dr. M. SUWA, Mr. K. WADA. Last but not least, I wish to convey my hearty thanks to Professor Sadao TAKAGI, Entomological Institute, Hokkaido University, Sapporo, and Dr. Shun-Ichi UÉNO, National Science Museum (Nat. Hist.), Tokyo, for their critical reading of the manuscript.

Addition to Part 1

To the references to *Atholus bimaculatus* (p. 169), "NAKANE, 1963, 70 [new to Japan]"

should be added after *Peranus bimaculatus*.

I thank Dr. T. NAKANE of Chiba for kindly informing of the missing record.

要　約

大原昌宏：日本産ムナクボエンマムシ属の再検討，2. ―― 日本産ムナクボエンマムシ属にふくまれる2種，コツヤエンマムシ *Atholus duodecimstriatus quatuordecimstriatus*，ツヤマルエンマムシ *A. pirithous* の再記載をおこない，雌雄交尾器，および種の区別に役立つ特徴を図示した．

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*: Original not seen.

Elytra, Tokyo, **21** (1): 151–159, May 15, 1993

Notes on the Japanese Species of the Genus *Coelostoma* BRULLÉ (Coleoptera, Hydrophilidae)

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Abstract *Coelostoma fallaciosum* d'ORCHYMONT is added to our fauna on the basis of specimens collected from the Ryukyu Islands. The male genitalia and male ninth abdominal segments are morphologically examined and illustrated in detail for the following species: *C. stultum* (WALKER), *C. orbiculare* (FABRICIUS) and *C. fallaciosum*. A key to the Japanese species of this genus is given.

The genus *Coelostoma* BRULLÉ has hitherto been represented in Japan only by *C.* (*Holocoelostoma*) *stultum* (WALKER, 1858) and *C.* (*Coelostoma* s. str.) *orbiculare* (FABRICIUS, 1775) (SHARP, 1874, 1884; KNISCH, 1924; NAKANE, 1950, 1963; SATÔ, 1960, 1985; and others). The former species is primarily Oriental, very widely distributed, and has been recorded from Honshu to the Ryukyus in Japan; the latter, a Palearctic species of extensive distribution, from Hokkaido to Honshu.

During the examination of material before me, amounting to about 1,200 specimens, it has been found that a third species of the genus occurs in the Ryukyus: *C.* (*C.* s. str.) *fallaciosum* d'ORCHYMONT.

In this paper I intend to characterize precisely the male genital organ and male ninth abdominal segment for these interesting species of semi-aquatic habits to provide a base for further phylogenetic analyses as well as to enumerate diagnostic characters.

Genus ***Coelostoma*** BRULLÉ, 1835

Coelostoma BRULLÉ, 1835, Hist. nat. Ins., (5), **2**: 293.

Subgenus ***Holocoelostoma*** MOUCHAMPS, 1958

Holocoelostoma MOUCHAMPS, 1958, Bull. Inst. r. Sci. nat. Belg., **34**: 3.

Coelostoma* (*Holocoelostoma*) *stultum (WALKER, 1858)

(Figs. 1–9)

Hydrobius stultus WALKER, 1858, Ann. Mag. nat. Hist., (3), **2**: 209.
Cyclonotum simplex SHARP, 1874, Trans. ent. Soc. Lond., **1874**: 419 (Japan, China).

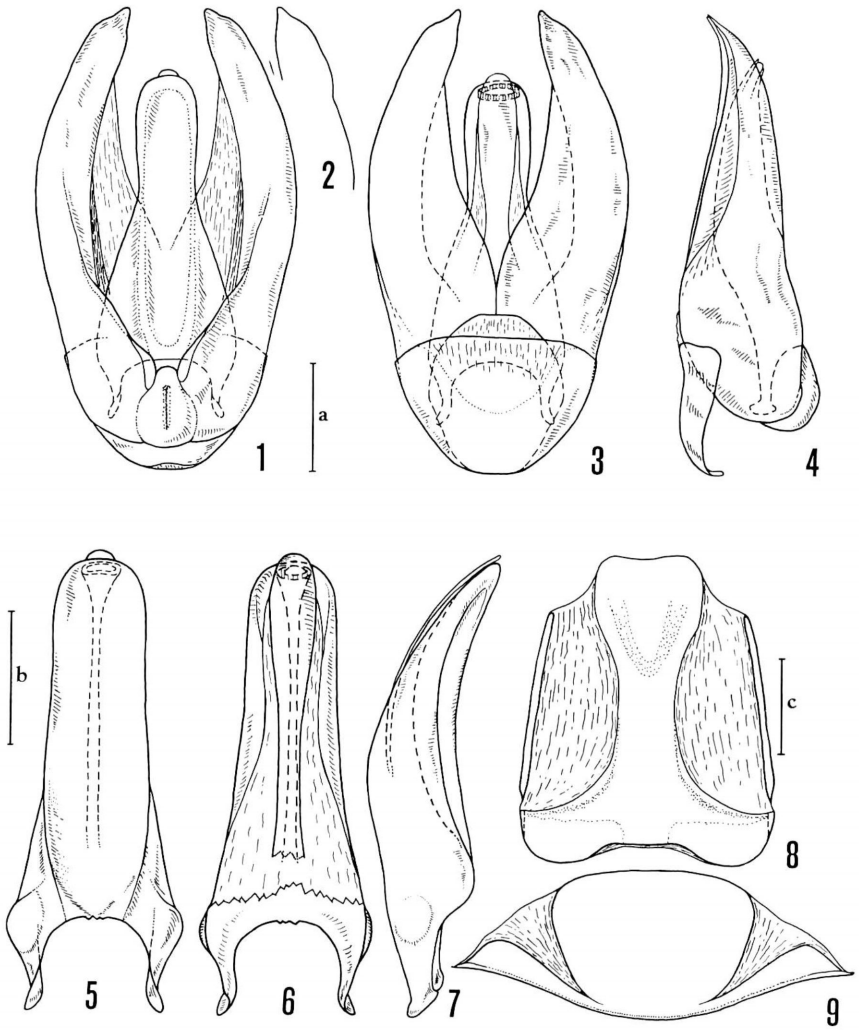
Aedeagus (Figs. 1–4) rather longitudinal. Penis (median lobe) (Figs. 5–7) almost parallel-sided in posterior half, becoming gradually widened toward anterior end,

strongly curved with ventral convexity; dorsal surface highly sclerotized, distinctly widely concave at middle; ventral surface widely membranous, medially having a spatulate plate, the posterior end of which covers the apical ostium. Parameres curved with dorsal convexity, becoming gradually thickened toward base, each with the posterior end acutely rounded and internal, external edge sometimes distinctly sinuate near posterior end (Fig. 2); in dorsal aspect, each narrowly sclerotized, sclerotized area strongly curved with external convexity, having almost even width in posterior 2/3, clearly widened near base which is strongly gibbose at middle; ventral surface lightly sclerotized. Basal piece transverse, with a short tip, semicircularly membranous in posterior half.

Male abdominal sternite 9 (Fig. 8) somewhat longitudinal, widely membranous laterally. Male abdominal tergite 9 (Fig. 9) medially with a wide sclerotized area almost ellipsoidal.

Length: ♂, 4.0–5.4 mm; ♀, 3.7–5.5 mm. Width: ♂, 2.6–3.3 mm; ♀, 2.4–3.5 mm.

Specimens examined. JAPAN [Honshu] 〈Yamagata-ken〉 1 ♀, Mt. Gassan, 29–VIII–1963, S. TACHIKAWA leg. 〈Saitama-ken〉 1 ♂, 2 ♀♀, Riv. Ara-kawa, Kuge, Kumagaya-shi, 26–VI–1978, N. WATANABE leg. 〈Chiba-ken〉 1 ♂, 2 ♀♀, Nr. Lake Inba-numa, Hiraka, Inba-mura, Inba-gun, 3–VI–1989, N. WATANABE leg.; 1 ♂, do., 13–VI–1989, N. WATANABE; 4 ♂♂, 8 ♀♀, do., 31–VIII–1989, N. WATANABE leg.; 1 ♂, 3 ♀♀, do., 7–IX–1989, N. WATANABE leg.; 47 ♂♂, 63 ♀♀, do., 13–IX–1989, N. WATANABE leg.; 24 ♂♂, 19 ♀♀, do., 25–IV–1990, N. WATANABE leg.; 4 ♂♂, 4 ♀♀, do., 10–V–1990, N. WATANABE leg.; 1 ♀, Nr. Lake Inba-numa, Kitasuka, Narita-shi, 30–V–1989, N. WATANABE leg.; 24 ♂♂, 18 ♀♀, do., 3–VI–1989, N. WATANABE leg.; 28 ♂♂, 33 ♀♀, do., 13–IX–1989, N. WATANABE leg.; 7 ♂♂, 10 ♀♀, do., 10–V–1990, N. WATANABE leg.; 1 ♂, Riv. Edo-gawa, Sekiyado-machi, Higashikatsushika-gun, 19–IV–1990, N. WATANABE leg.; 1 ♂, Riv. Tone-gawa, Sekiyado-machi, do. 〈Tokyo〉 1 ♂, Irima-chô, Chôfu-shi, 15–IV–1962, S. TSUKAGUCHI leg.; 1 ♀, do., 22–IV–1962, S. TSUKAGUCHI leg. 〈Kanagawa-ken〉 2 ♂♂, 5 ♀♀, Atsugi, 10–VI–1963, N. WATANABE leg.; 3 ♂♂, 2 ♀♀, Sagamihara, 16–VI–1962, K. MIZUSAWA leg.; 2 ♂♂, 4 ♀♀, Sodegahama, Hiratsuka-shi, 11–X–1961, N. WATANABE leg. 〈Kyoto〉 1 ♀, Ômiya, 5–VIII–1961, H. TAKAIE leg. [Kyushu] 〈Nagasaki-ken〉 12 ♂♂, 17 ♀♀, Reservoir Urakami-suigenchi, Urakami, Nagasaki-shi, 7–VI–1964, N. WATANABE leg. [Tokunoshima Is. 〈Kagoshima-ken〉] 2 ♂♂, Kamezu, 20–IV–1964, K. ARICHI leg. [Amamiôshima Is. 〈do.〉] 4 ♀♀, Nishinakama, Sumiyô-son, Ôshima-gun, 28～30–VI–1968, K. SAKAI leg.; 1 ♂, 3 ♀♀, do., 9～10–VII–1973, N. WATANABE leg.; 1 ♀, Pass Asato-tôge, 20–VI–1964, M. NISHIKAWA leg.; 1 ♂, do., 23–VI–1964, M. NISHIKAWA leg.; 1 ♀, Hatsuno, Setouchi-chô, 26–IV–1964, K. ARICHI leg.; 1 ♂, do., 11～12–VII–1973, N. WATANABE leg. [Okinawa Is. 〈Okinawa-ken〉] 1 ♀, Hentona, Kunigami-son, 5–VII–1979, S. SAITO leg.; 26 ♂♂, 19 ♀♀, Okuma, do., 4～6–VII–1973, N. WATANABE leg. [Ishigaki-jima Is. 〈do.〉] 1 ♀, Hirae, Ishigaki-shi, 12–VI–1973, N. WATANABE leg. [Iriomote-jima Is. 〈do.〉] 36 ♂♂, 39 ♀♀, Sonai, Taketomi-chô, Yaeyama-gun, 19～24–VI–1973, N. WATANABE leg.



Figs. 1–9. *Coelostoma stultum* (WALKER). —— 1, Aedeagus in dorsal view; 2, paramere, showing a sinuation near the posterior end; 3, aedeagus in ventral view; 4, same in lateral view; 5, penis (median lobe) in dorsal view; 6, same in ventral view; 7, same in lateral view; 8, male abdominal sternite 9; 9, male abdominal tergite 9. Scales: 0.2 mm (a for Figs. 1–4; b for Figs. 5–7; c for Figs. 8, 9).

TAIWAN 2 ♂♂, 4 ♀♀, Hotso, Jenai-hsiang, Nantou-hsien, 5～6–VIII–1974, N. WATANABE leg.; 2 ♂♂, 1 ♀, Hengchun, Hengchun-hsiang, Pingtung-hsien, 14–VIII–1974, N. WATANABE leg.; 1 ♂, 1 ♀, Hungyeh, Wanjung-hsiang, Hualien-hsien, 21–VIII–1974, N. WATANABE leg.; 1 ♂, Changliang, Changliang-li, Hualien-hsien, 19–VIII–1974, H. NAKAJIMA leg.; 8 ♂♂, 9 ♀♀, Antung, Yuli-hsiang, Hualien-hsien, 19–VIII–1974, N. WATANABE leg.

THAILAND 1 ♂, 2 ♀♀, San Sai, Chiang Mai, 22–IV–1973, Y. YOSHIYASU leg.; 1 ♂, 2 ♀♀, Botanical Garden, Saraburi Prov., 23–III–1982, K. SUGIYAMA leg.; 1 ♂, 1 ♀, Sainoi, Nonthaburi Prov., 19–III–1982, K. SUGIYAMA leg.; 1 ♀, National Park, Saraburi Prov., 23–III–1982, K. SUGIYAMA leg.

MALAYSIA [Borneo] 1 ♂, 1 ♀, Kota Kinabaru, Sabah, 27–III–1981, K. SUGIYAMA leg.; 1 ♂, 2 ♀♀, Sandakan, Sabah, 5–IV–1981, K. SUGIYAMA leg.

INDONESIA [Sulawesi] 2 ♂♂, 3 ♀♀, Rantepao, S. Sulawesi, 22～24–III–1983, H. YAMAMOTO leg.

Distribution. Japan (Honshu, Shikoku, Kyusyu, Ryukyus); China, Taiwan, SE. Asia, India, Sri Lanka.

Subgenus ***Coelostoma*** (s. str.) BRULLÉ, 1835

Coelostoma BRULLÉ, 1835, Hist. nat. Ins., **5**(2): 293.

Coelostoma* (*Coelostoma*) *orbiculare (FABRICIUS, 1775)

(Figs. 10–18)

Hydrophilus orbicularis FABRICIUS, 1775, Syst. ent., p. 229.

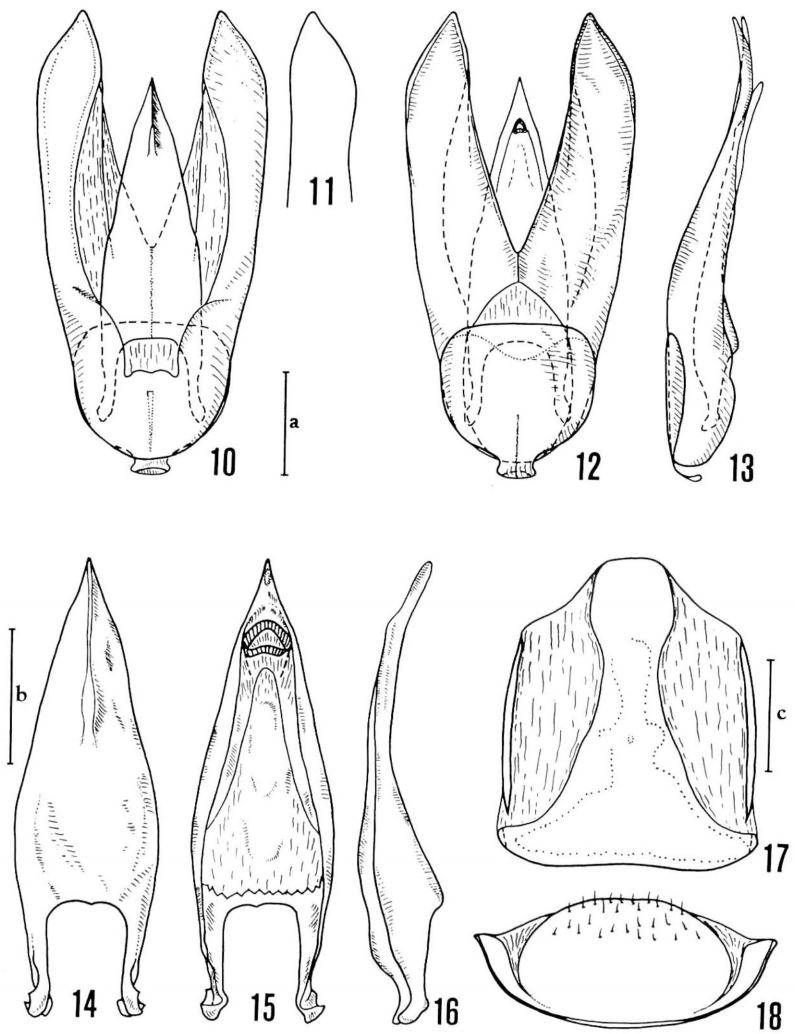
Cyclonotum breve SHARP, 1874, Trans. ent. Soc. Lond., **1874**: 419 (Japan).

Aedeagus (Figs. 10–13) rather longitudinal, flattened. Penis (Figs. 14–16) almost triangular, with the posterior end acutely pointed, curved with ventral convexity, having almost even thickness in apical half, then becoming gradually thickened toward base; dorsal surface strongly sclerotized, narrowly ridged longitudinally at middle in posterior half, widely clearly concave at middle in anterior half; ventral surface broadly membranous, with an elongate sclerotized area shortly before subapical ostium. Parameres thin, becoming gradually thickened toward base, clearly curved with dorsal convexity in posterior 1/3, each with the posterior end acutely rounded and somewhat internal; external edge sometimes lightly sinuate near apex (Fig. 11); in dorsal aspect, each narrowly sclerotized, sclerotized area becoming gradually widened toward both ends, lightly reflexed apically, clearly gibbose shortly after base; in ventral aspect, each lightly sclerotized, feebly widely concave at middle. Basal piece almost as long as wide, with a short tip; surface feebly sclerotized.

Male abdominal sternite 9 (Fig. 17) somewhat longitudinal, widely membranous laterally. Male abdominal tergite 9 (Fig. 18) medially with a sclerotized area ellipsoidal.

Length: ♂, 3.2–4.6 mm; ♀, 3.3–4.7 mm. Width: ♂, 2.1–2.7 mm; ♀, 2.2–2.8 mm.

Specimens examined. JAPAN [Hokkaido] 26 ♂♂, 25 ♀♀, Lake Tanji-numa nr. Uenae, Tomakomai-shi, 28–VII–1982, N. WATANABE leg.; 1 ♂, Unnamed lake nr. Yûfutsu, Tomakomai-shi, 16–VII–1982, N. WATANABE leg.; 10 ♂♂, 8 ♀♀, Nr. Satsunai, Toyokoro-chô, Nakagawa-gun, 19–VII–1982, N. WATANABE leg.; 1 ♂, 1 ♀, Tabikorai～Ankotsu, Toyokoro-chô, do., 19–VII–1982, N. WATANABE leg.; 2 ♂♂, Taura, Mukawa-chô, Yûfutsu-gun, 16～17–VII–1982, N. WATANABE leg. [Honshu]



Figs. 10–18. *Coelostoma orbiculare* (FABRICIUS). —— 10, Aedeagus in dorsal view; 11, paramere, showing a sinuation near the posterior end; 12, aedeagus in ventral view; 13, same in lateral view; 14, penis in dorsal view; 15, same in ventral view; 16, same in lateral view; 17, male abdominal sternite 9; 18, male abdominal tergite 9. Scales: 0.2 mm (a for Figs. 10–13; b for Figs. 14–16; c for Figs. 17, 18).

〈Iwate-ken〉 5 ♂♂, 1 ♀, Genbi-kei, Ichinoseki-shi, 21～22–VII–1971, N. WATANABE leg. 〈Fukushima-ken〉 1 ♀, Lake Shigi-numa, Tajima-machi, Minamiaizu-gun, 28–V–1987, N. WATANABE leg. 〈Gunma-ken〉 21 ♂♂, 13 ♀♀, Hanetsuku, Tatebayashi-shi, 4–VI–1987, N. WATANABE leg. 〈Saitama-ken〉 19 ♂♂, 13 ♀♀, Hasuda-shi, 10–V–1987, N. WATANABE leg.; 177 ♂♂, 143 ♀♀, do., 12–V–1987, N. WATANABE leg.; 2 ♂♂, 1 ♀, Iwatsuki, Iwatsuki-shi, 24–V–1987, N. WATANABE leg.; 1 ♀, Riv. Ara-

kawa, Kuge, 17–IX–1981, N. WATANABE leg. 〈Chiba-ken〉 1 ♂, Ichikawa-shi nr. Hongyôtoku-machi, 22–IV–1980, S. SAITO leg.; 1 ♂, 2 ♀♀, do., 16～17–VI–1980, S. SAITO leg.; 1 ♂, Nr. Lake Inba-numa, Hiraka, Inba-mura, 7–IX–1989, N. WATANABE leg.; 2 ♂♂, do., 25–IV–1990, N. WATANABE leg.; 1 ♀, do., 10–V–1990, N. WATANABE leg.; 3 ♂♂, 1 ♀, Nr. Lake Inba-numa, Kitasuka, Narita-shi, 3–VI–1989, N. WATANABE leg.; 7 ♂♂, 7 ♀♀, do., 13–IX–1989, N. WATANABE leg.; 1 ♂, 6 ♀♀, do., 10–V–1990, N. WATANABE leg.; 1 ♀, Riv. Tone-gawa, Sekiyado-machi, 19–IV–1990, N. WATANABE leg.

Distribution. Japan (Hokkaido, Honshu); most parts of the Palearctic Region.

Coelostoma (*Coelostoma*) *fallaciosum* d'ORCHYMONT, 1936

[Japanese name: Nise-semaru-gamushi]

(Figs. 19–26)

Coelostoma Fabriciusi: d'ORCHYMONT, 1925, Bull. Annls. Soc. ent. Belg., **65**: 270 (cf. *Coelostoma* sp. B: d'ORCHYMONT, 1919, Ibid., **59**: 73) (ex p.).
Coelostoma (s. str.) *fallaciosum* d'ORCHYMONT, 1936, Mém. Mus. r. Hist. nat. Belg., (2), **7**: 19.

Aedeagus (Figs. 19–21) fairly longitudinal. Penis (Figs. 22–24) almost triangular, with the posterior end obtusely rounded; dorsal surface strongly sclerotized, lightly convex except for antero-lateral areas hollowed; ventral surface entirely membranous without sclerotized area, with an ostium subapical. Parameres curved with dorsal convexity in posterior half, becoming gradually thickened toward base, with the posterior end acutely rounded and internal; dorsal surface narrowly sclerotized, sclerotized area becoming gradually widened toward both ends, base very wide; ventral surface weakly sclerotized, underside internally with rows of hairs. Basal piece somewhat transverse, with a short tip.

Male abdominal sternite 9 (Fig. 25) as long as wide, broadly membranous laterally. Male abdominal tergite 9 (Fig. 26) with a wide sclerotized area ellipsoidal.

Length: ♂, 4.6–5.4 mm; ♀, 4.5–5.7 mm. Width: ♂, 2.9–3.3 mm; ♀, 3.0–3.3 mm.

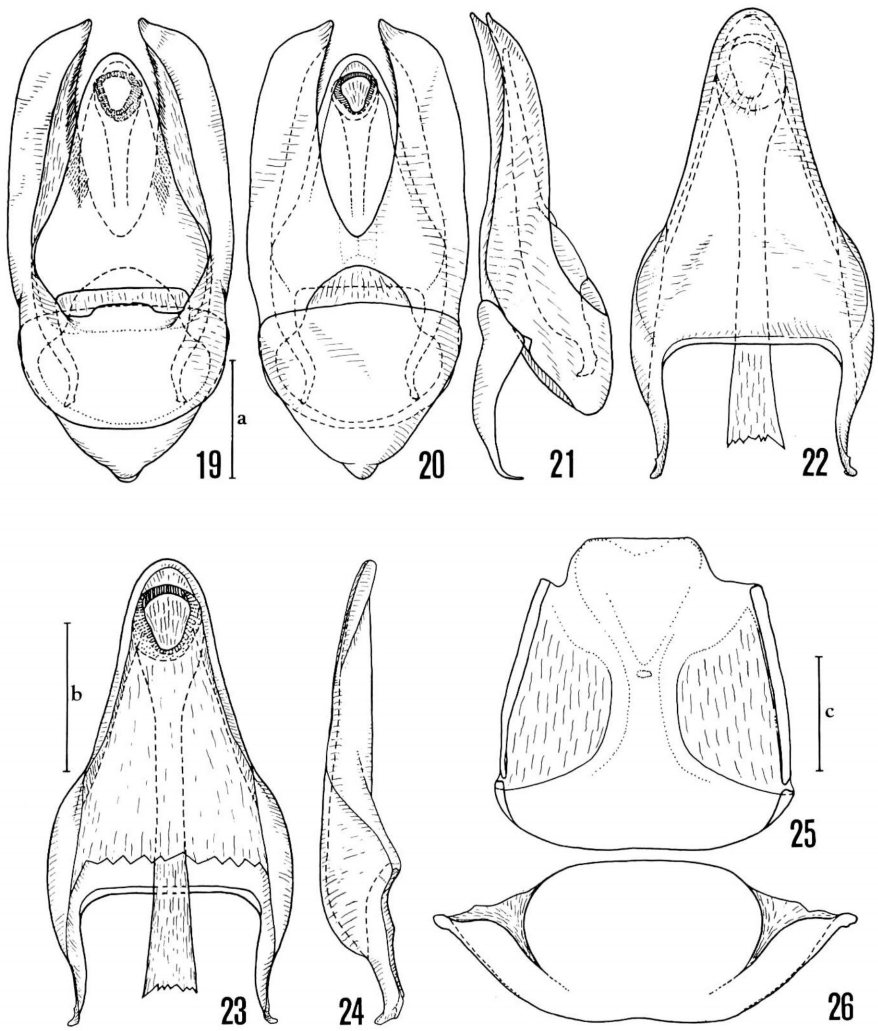
Specimens examined. JAPAN [Ishigaki-jima Is.] 22 ♂♂, 17 ♀♀, Yonehara, 14～15–VI–1973, N. WATANABE leg.; 2 ♂♂, 5 ♀♀, Hirae, 12–VI–1973, N. WATANABE leg. [Iriomote-jima Is.] 9 ♂♂, 8 ♀♀, Sonai, 19～23–VI–1973, N. WATANABE leg.

Distribution. Japan (Ryukyus); China, Indo-China, Sumatra, Borneo.

I identify the specimens with this species at present, because the structure of the aedeagus agrees closely with the figure of the organ given by d'ORCHYMONT (1936). This species was originally described from China, Indo-China, Sumatra and Borneo, appearing not to have previously been recorded from our territory.

Morphological Notes

The presence of the spatulate plate on the penis in *stultum* is noteworthy: it is considered to be a result of adaptation for water pressure, because a similar structure



Figs. 19–26. *Coelostoma fallaciosum* d'ORCHYMONT. —— 19, Aedeagus in dorsal view; 20, same in ventral view; 21, same in lateral view; 22, penis in dorsal view; 23, same in ventral view; 24, same in lateral view; 25, male abdominal sternite 9; 26, male abdominal tergite 9. Scales: 0.2 mm (a for Figs. 19–21; b for Figs. 22–24; c for Figs. 25, 26).

is found in some dryopoids ("Ventralleiste des Membransackes") (STEFFAN, 1961) as well as in some truly aquatic hydrophilids (*e.g.*, *Enochrus*, *Hydrocassis*). Also in *orbiculare* a sclerotized area is discerned on the ventral surface of the peins, but the posterior end of the area never extends over the ostium.

The male abdominal sternite 9 and the aedeagus of *Coelostoma* are dissimilar to those of *Sphaeridium* belonging to the same tribe in the traditional classification, in which they are more reduced as in the Cercyonini and Megasternini.

Furthermore, an apomorphic character found in *Sphaeridium* (at least in *scarabaeoides* (LINNAEUS), *dimidiatum* GORY and *quinquemaculatum* FABRICIUS) or the sucker-shaped plate on the ventral surface of the male maxillae is shared with *Cercyon*, *Megasternum*, *Cryptopleurum*, *Pachysternum*, etc. HANSEN (1990) has enumerated *Sphaeridium* as one of some genera more closely related to Cercyonini – Megasternini (and perhaps also Omicrini) in his discussion on the phylogeny of the Sphaeridiinae.

Key to Japanese Species of *Coelostoma*

1. Posterior margin of last visible abdominal sternite medially with a semicircular notch which is fringed with reddish brown bristles (Subgenus *Holocoelostoma* MOUCHAMPS). (Maxillary palpi uniformly yellowish brown; mentum with a transverse ridge higher than in *orbiculare* along anterior margin, intervals of punctures highly polished; metafemur strongly widened near the middle, underside sparingly pubescent); aedeagus with penis parallel-sided in posterior half. ..... *C. stultum* (WALKER).
— Last sternite without any notch, posterior margin being fringed with fine hairs (Subgenus *Coelostoma* s. str.). Aedeagus with penis triangular. ..... 2.
2. Body size smaller, form less rounded; scutellum narrower; mentum with a transverse ridge lower and narrower along anterior margin, intervals of punctures highly polished; maxillary palpi blackish brown, partially paler; metafemur gradually widened near the middle, underside sparingly pubescent; penis with the apex acutely pointed. ..... *C. orbiculare* (FABRICIUS).
— Body size larger, form more rounded; scutellum nearly as long as wide; mentum with a ridge higher and wider, intervals somewhat opaque; maxillary palpi yellowish brown; metafemur more strongly widened near the middle, underside more sparingly pubescent; penis with the apex obtusely rounded. ..... *C. fallaciosum* d'ORCHYMONT.

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I wish to express my hearty thanks to Prof. Emeritus Toyohi OKADA of Tokyo Metropolitan University for his constant encouragement. My thanks are also due to Mr. K. ARICHI, Dr. K. KUROSA, Mr. K. MIZUSAWA, Mr. H. NAKAJIMA, Dr. M. NISHIKAWA, Dr. S. SAITO, Mr. K. SAKAI, Dr. S. TACHIKAWA, Dr. O. TADAUCHI, Dr. H. TAKAIE and Dr. S. TSUKAGUCHI, for providing me with material.

要　約

渡辺信敬：セマルガムシ属の日本産種. —— 手元にあるセマルガムシ属 (*Coelostoma*) の標本を検討した結果，従来から記録のある2種，セマルガムシ (*C. stultum*)，ヒメセマルガムシ (*C. orbiculare*) に加え，琉球にはニセセマルガムシ (*C. fallaciosum*) の分布することがわかった．これは，d'ORCHY-

MONT (1936) によって，中国，インドシナ半島，スマトラ，ボルネオより記載された種であり，いままで日本産種としては記録されてこなかったように思われる．前2種とは，雄交尾器官の中央片が幅の広い三角形状になっていることにより，よく識別できる．

雄交尾器官および雄第9腹節を形態学的に詳細に調べた結果，とくに，セマルガムシの雄交尾器官の中央片腹面に位置するスプーン状節片は注目に値することがわかった．これに類似する節片は，ドロムシ類，真性の水生ガムシ類にも見られ，水圧に対する適応の一つとみなせる．セマルガムシ属の雄交尾器官と雄第9腹節の構造は，同族のハバビロガムシ属 (*Sphaeridium*) のものには似ず，別族のケシガムシ族 (Cercyonini)，マグソガムシ族 (Megasternini) のそれに似る．

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Elytra, Tokyo, **21** (1): 160, May 15, 1993

新 刊 紹 介

Mesozoic Coleoptera. By L. V. ARNOL'DI, V. V. ZHERIKHIN, L. M. NIKRITIN & A. G. PONOMARENKO. Translated from the Russian by V. S. KOTHEKAR. xii+255 pp., 14 pls. 1992. Smithsonian Institution Libraries & The National Science Foundation, Washington, D. C.

中生代の甲虫相を知るうえでもっとも重要な，そしてあまり手に入れやすくない文献が，英語で手軽に読めるようになった．甲虫類の系統や分化の過程に興味をもつ者には，たいへんな福音である．

本書は，有名な "Mezozoiskie Zhestkokrylye" (*Trud. paleont. Inst., Moskva,* **161**: 1–204 [incl. 14 pls.], 1977) を，英語に訳出したものである．旧ソ連で発見され，モスクワの古生物学研究所に所蔵されている，15,000 点を超える甲虫化石のうちから，オサムシ亜目，ハネカクシ下目，コガネムシ下目，コメツキムシ下目，ヒラタムシ上科，ゾウムシ群などに属するものを取りあげて，新しい科，亜科，族，属，種の記載をするとともに，それらの類縁関係ないしは分類学的な位置について検討を加えている．たとえば，ARNOL'DI と ZHERIKHIN が担当したゾウムシ群については，ヒラタムシ下目のうちのもっとも若くてもっとも進んだ一群だ，とする一般的な見解に反対し，カブトムシ亜目のうちではもっとも古い甲虫群であろうと考えて，その所属や地位に関する決定を保留している．

このような論議の多くは，本誌第 20 巻 234 ページでちょっと紹介した KIREJTSHUK の論文に要領よくまとめられているので，ここで詳しくは触れない．それよりも本書を手にして驚かされるのは，原始的な水生肉食類(絶滅した科のもの)やムカシゴミムシ科の豊富さで，後者のうちには体長 19 mm に達するものがあり，ちょうど現生のオサムシ科のような分化を遂げていたことが推察される．巻末にまとめられている写真も良質で，原書のものに勝るとも劣らない．

本書の大きい欠点は，「中生代の甲虫類」という標題であるにもかかわらず，それ以前に発表された重要な論文の内容が，まったく再録されていないことである．そのために，ナガヒラタムシ亜目のような，中生代ではもっとも重要な甲虫群や，真正のハネカクシ類，ハムシとカミキリムシとの合の子のような奇妙な甲虫類などが，すべて欠落する結果になった．中生代の甲虫相に関する現在の知見を，本書だけで通覧できないのははなはだ不便だが，もともとが単行本としてまとめられたものではないのだから，やむをえなかったのかもしれない．翻訳に際して，"Yurskie Nasekomye Karatau" (1968) の甲虫類に関する部分や，PONOMARENKO (1969) による "Istoricheskoe razvitie zhestkokrylykh-arkhostemat" (*Trud. paleont. Inst., Moskva,* **125**: 1–240, 14 pls.) などの概要だけでもつけ加えてあれば，よりすばらしい標題どおりの書物になったことだろうと惜しまれる．

なお，ロシアの場合に限った話ではないが，ローマ字以外の文字が使われている国の研究者名は，本人の好みによって，かならずしも翻字の規則どおりには綴られていない．たとえば，有名な「北アジアのカミキリムシ類」の翻訳では，著者名が翻字の規則どおりに CHEREPANOV と綴られたが，本来の著者の綴りは TSHEREPANOV である．本書の著者の場合にも，ARNOL'DI は原書では ARNOLDI, ZHERIKHIN は ZHERICHIN と綴られている．将来の混乱を避けるためにも，著者名だけは本人の慣用に従って欲しかった．

(上野俊一)

Elytra, Tokyo, **21** (1): 161–164, May 15, 1993

A Note on *Chlaenius noguchii formosanus* HABU (Coleoptera, Carabidae)

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Abstract The Taiwanese callistine carabid beetle, *Chlaenius noguchii formosanus* HABU, is regarded as an independent species, because of peculiarity of its male genitalia.

In 1965, HABU described *Chlaenius noguchii formosanus* based on two female specimens from Urai, Taiwan. Since then, its true taxonomic status has not been recognized for a long time. Very recently, I was given an opportunity to examine a single male of this Taiwanese form through the courtesy of Dr. NAKAMURA. Examining its male genital organ, I was thoroughly convinced of its specific independency. I am, therefore, going to redescribe the Taiwanese form in this paper.

Chlaenius* (*Lithochlaenius*) *formosanus HABU, stat. nov.

(Figs. 1–2)

Chlaenius (subg. ?) *noguchii formosanus* HABU, 1965, Spec. Bull. Lep. Soc. Japan, (1): 86; type locality: Urai, Taiwan.

Hemichlaenius noguchii: KASAHARA, 1985, Coleopt. Japan Col., Osaka, **2**: 159, pl. 29, fig. 21 [*partim*].

Specimen examined. 1 ♂, Urai, 12–VI–1971, K. KOJIMA leg.

Range. Known so far only from the type locality.

Description of male genital organ. Male genital organ very large and heavily sclerotized. Aedeagus stout and rather elongate, strongly bent at basal third, high at about middle, and then gradually tapered towards the apex, though abruptly curved ventrad at the terminus; viewed dorsally, left wall produced at about middle, apical lobe rather wide, parallel-sided, and widely rounded at the extremity; ventral surface with longitudinal sulci at the apical part and with transverse sulci at basal third; left paramere wide, more or less straight at apex; right paramere shorter and narrower than the left one.

Notes. HABU's original account of this form goes as follows: "head almost flat, with a few punctures on both sides of vertex near posterior margin of eyes; pronotum almost impunctate and less rugose, so smoother than in nominate subspecies." Besides, I found the following features peculiar to the Taiwanese form:— 1) colour darker, 2) basal foveae shallower and narrower, 3) ratio of lengths of antennal segments $3/4 \fallingdotseq 1.42$, 4) all tarsal segments almost smooth on the dorsal surface,[1] and

1) Unfortunately, only a single specimen available for this study is in bad condition: the hairs and spines on the surface and the appendages are partially lacking or worn out. I believe, however, that the tarsal structure furnishes a reliable difference between Japanese and Taiwanese forms.

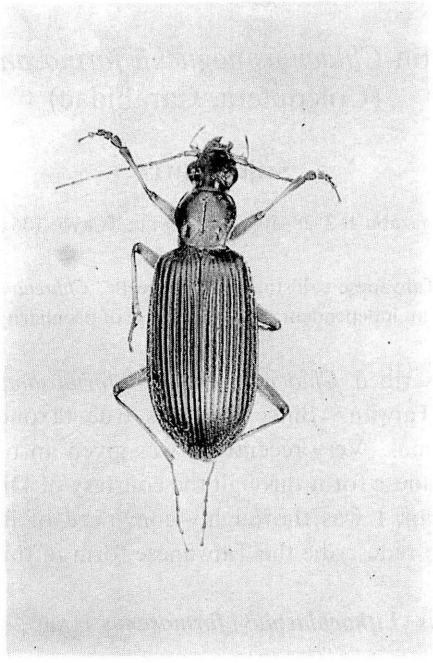
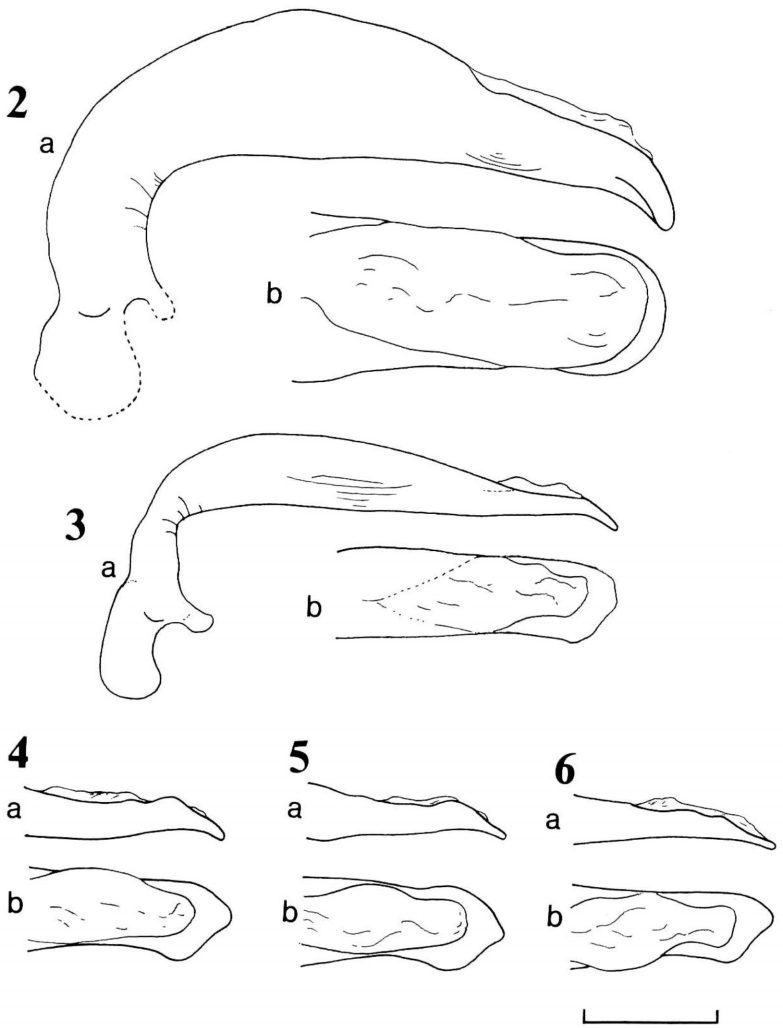


Fig. 1. *Chlaenius* (*Lithochlaenius*) *formosanus* HABU, from Urai, Taiwan.

5) aedeagus as mentioned above and as shown in fig. 2.

According to HABU, the type series of this species was deposited in SHIRÔZU's collection. I asked Dr. SHIRÔZU for a loan of the type series, but he was unable to find it in his collection. Although the specimens were searched also in the collection of the National Institute of Environmental Sciences, Tsukuba, and of the Entomological Laboratory, Kyushu University, by myself and by Mr. YAHIRO, respectively, we were unfortunately unable to find them. Further tracing of the type series is needed.

In his revision of the callistine carabids of the Far East, KRYZHANOVSKIJ (1976) regarded "*Lithochlaenius*" as a subgenus of *Chlaenius* based upon external features. After that, it was treated by KASAHARA (1985, p. 12) as an independent genus without comment. On the other hand, an attempt to classify the Japanese species of *Chlaenius* into species-groups was made by HABU in 1987, who divided the genus into 19 groups, including "*noguchii* group" (=*Lithochlaenius*) which was equivalent to a subgenus. He placed in this group two species, *C. noguchii* from Japan, *C. noguchii formosanus* from Taiwan, and *C. agilis* CHAUDOIR from India and Nepal. It is most probable that the female genital organ can provide key characters for the classification of higher categories of Japanese callistine species. A more balanced attempt to split *Chlaenius* into smaller genera seems necessary if *Lithochlaenius* is regarded as an independent genus. Though the known members of *Lithochlaenius* look unique in their peculiar facies, I prefer to follow the treatment given by the Russian and Japanese specialists



Figs. 2–6. Aedeagi of *Chlaenius* (*Lithochlaenius*) spp. —— 2, *C.* (*L.*) *formosanus* HABU from Urai, Taiwan; 3, *C.* (*L.*) *noguchii* BATES from Hirase, Itsuki-mura, Kumamoto Pref.; 4, same species from Kamiakui, Tokushima Pref.; 5, same species from Kamikôchi in Nagano Pref.; 6, same species from Sôunkyô, Hokkaido; a, left lateral view; b, dorsal view. (Scale: 1.00 mm.)

of carabid beetles, KRYZHANOVSKIJ and HABU, at least for the time being.

Like *C. noguchii* BATES, *C. formosanus* HABU is found at lower places under stones on river banks (personal communication from Mr. ITO).

I wish to thank Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kindness in reading the manuscript of this paper. My thanks

are also due to Dr. Shingo NAKAMURA (Shôbara-shi) and Mr. Isao OHTSUKA (Kumamoto-shi) for offering invaluable material for this study, and to Prof. Takashi SHIRÔZU (Fukuoka-shi), Dr. Takeshi MATSUMURA and Dr. Shin-ichi YOSHIMATSU (National Institute of Agro-environmental Sciences, Tsukuba), Mr. Katsuro YAHIRO (Kyushu University), and Mr. Noboru ITO (Kawanishi-shi) for their kind help.

要　約

森田誠司: *Chlaenius noguchii formosanus* HABU について. —— 台湾から記載されたノグチアオゴミムシの亜種 *Chlaenius noguchii formosanus* HABU の雄の交尾器が，日本産ノグチアオゴミムシ *C. noguchii* BATES のものといちじるしく異なることから，独立種と認めた．両種の所属する *Lithochlaenius* を亜属とみなしたが，もしひとつの属とみなすならば，日本産のほとんどの種が所属する *Chlaenius* を分割する試みが必要かもしれない．土生 (1987) のおこなつた雌交尾器の研究がそのことを暗示している．

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Elytra, Tokyo, **21** (1): 165–172, May 15, 1993

Two New Pterostichine Carabids (Coleoptera, Carabidae) from Okayama Prefecture, Western Honshu, Japan

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Abstract Two new pterostichine carabid beetles, *Pterostichus* (*Pterostichus**) *yamajii* sp. nov. and *P.* (*P.*) *nasui* sp. nov., are described from Okayama Prefecture, West Japan. The former belongs to the *kyushuensis* group, while the latter is a member of the *sphodriformis* group. Both the new species seem restricted to the Chûgoku District of western Honshu.

Through the courtesy of Mr. Osamu YAMAJI of Okayama City, I had an opportunity to examine many examples of apterous pterostichine carabid beetles chiefly collected by himself in Okayama Prefecture, western Honshu, Japan. The collection contains two unnamed forms of interest. One of them closely resembles *Pterostichus* (*Pterostichus*) *masidai* ISHIDA in general appearance and is found in coexistence with the latter. The other one may be related to *P.* (*P.*) *sphodriformis* BATES. Both the species are, however, clearly distinguished from their relatives by having several conspicuous features and must be new to science. In this article, I will describe the former under the name of *Pterostichus* (*Pterostichus*) *yamajii* sp. nov. and the latter under that of *P.* (*P.*) *nasui* sp. nov. The abbreviations used herein are the same as those explained in other papers of mine. All 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.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reading the original manuscript of this paper. Thanks are also due to Messrs. Satoshi NASU, Kôichi NOJIMA and Osamu YAMAJI for their kindness in supplying with the materials.

Pterostichus* (*Pterostichus*) *yamajii sp. nov.

[Japanese name: Yamaji-nagagomimushi]

(Figs. 1–2, 4)

Description. Length (measured from apex of labrum to apices of elytra) 13.6–14.7 mm. Width 4.5–5.1 mm. Black, shiny; labrum, mandibles, antennae and femora dark reddish brown; palpi, tibiae and tarsi reddish brown.

Head moderately convex, shiny; labrum and mandibles normal; eyes convex;

* *Sensu* TANAKA, 1985, p. 113.

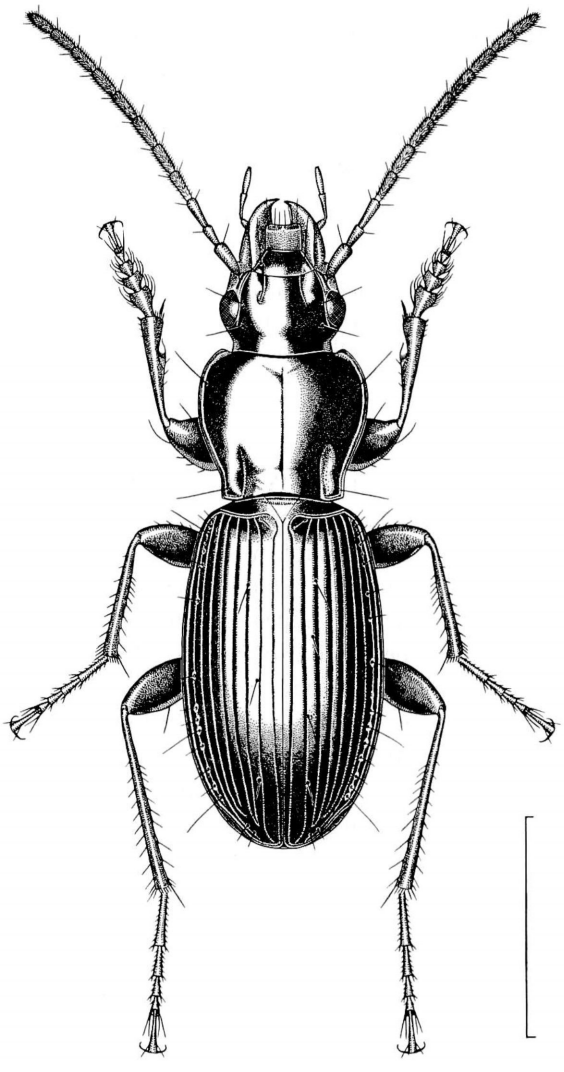
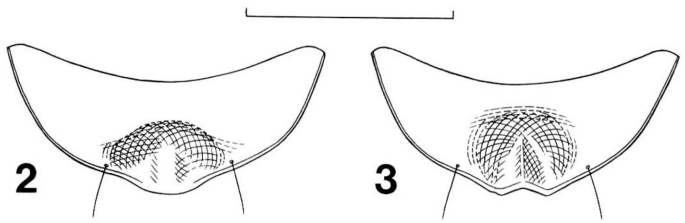


Fig. 1. *Pterostichus* (*Pterostichus*) *yamajii* sp. nov., ♂, from Mt. Yamanori-sen, Chûka-son, Okayama Pref. Scale 5 mm.

temporae strongly contracted behind, hardly tumid; genae almost smooth, though finely rugose near buccal fissure; frontal furrows distinct and wide, divergent in posterior halves; supraorbital areas convex in front; clypeal suture fine, though distinct; lateral grooves deep, extending to a little behind the post-eye level; surface minutely and sparsely punctate; microsculpture slightly visible, formed by fine isodiametric meshes; both maxillary and labial palpi normal; antennae normal, reaching basal third of elytra, segment 2 unisetose ventrad.



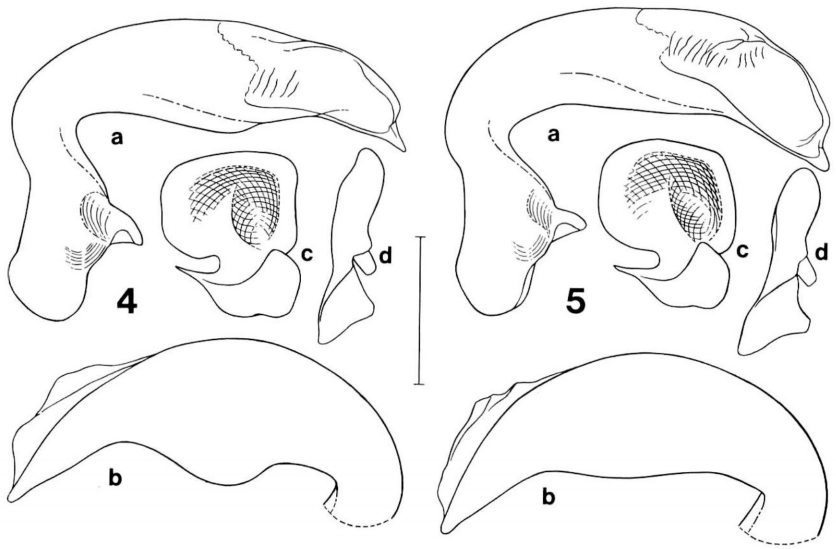
Figs. 2–3. Terminal sternite in the male of *Pterostichus* (*Pterostichus*) spp. —— 2, *P.* (*P.*) *yamajii* sp. nov., from Mt. Yamanori-sen, Chûka-son, Okayama Pref.; 3, *P.* (*P.*) *masidai* ISHIDA, same locality. Scale 2 mm.

Pronotum cordate, moderately convex, shiny, widest at apical third, ca. 1.36 times as wide as head (PW/HW 1.33–1.40, mean 1.36), ca. 1.24 times as wide as long (PW/PL 1.20–1.29, mean 1.24), about a half as wide again as base (PW/PBW 1.45–1.53, mean 1.49); lateral margins evenly arcuate in apical two-thirds, then distinctly convergent posteriad and gently sinuate before base; lateral reflexed borders narrow; apical margin gently emarginate, unbordered, apical angles produced, rounded at the tips; basal margin almost as wide as or a little narrower than the apical, gently emarginate at the median part and more or less oblique on each side, which is bordered; basal angles nearly rectangular, though blunt at the tips; basal foveae distinct, linearly impressed at the bottoms, almost smooth, though sometimes vaguely punctate; median line deeply impressed; both apical and basal transverse impressions obsolete; surface impunctate, microsculpture slightly visible, formed by fine transverse meshes.

Apterous. Elytra oblong-ovate, moderately convex, shiny in both sexes, fused with each other at the suture, widest at the middle, about a fifth as wide again as pronotum (EW/PW 1.15–1.19, mean 1.18), ca. 2.4 times as long as pronotum (EL/PL 2.29–2.49, mean 2.42), ca. 1.7 times as long as wide (EL/EW 1.60–1.71, mean 1.66); basal border complete, gently curved; shoulders widely rounded; lateral margins gently and evenly arcuate from behind shoulders to preapical emarginations, which are relatively distinct, apices rounded, though sometimes obtusely angulate at the suture; scutellar striole very short, lying on interval 2; striae deep, almost smooth, though weakly notched at the bottoms; intervals convex; interval 3 with generally three, rarely four dorsal pores, anterior one adjoining stria 3 at basal fourth, while posterior two adjoining stria 2 behind middle and apical fourth, respectively; marginal series of pores 17–18 in number, widely spaced at middle; microsculpture more distinct in the female than the male, though formed by transverse meshes in both sexes.

Basal three segments of meso- and metatarsi externally sulcate. Ventral surface shiny; pro- and mesepisterna, and sternites 3–4 partially punctate; prosternal process unbordered, shallowly furrowed at middle; in the male, terminal sternite deeply concave at middle of apical half, the concavity longitudinally raised at middle, apex somewhat produced and warped downwards.

Aedeagus strongly bent at basal third, gently tumid ventrad behind middle in



Figs. 4–5. Male genitalia of *Pterostichus* (*Pterostichus*) spp. —— 4, *P.* (*P.*) *yamajii* sp. nov., from Mt. Yamanori-sen, Chûka-son, Okayama Pref.; 5, *P.* (*P.*) *masidai* ISHIDA, same locality; a–b, aedeagus —— a, left lateral view; b, right latero-dorsal view, basal part omitted; c, left paramere; d, right paramere. Scale 1 mm.

lateral view, distinctly, widely and obliquely lamellate to the right; apical lobe relatively pointed, though rounded at the apex; left paramere square; right one thick, more or less pointed, though rounded at the apex.

Type series. Holotype: ♂; allotype: ♀, Mt. Yamanori-sen, Chûka-son, Okayama Pref., 21–VI–1992, O. YAMAJI leg. Paratypes: 1 ♂, 1 ♀, same data as for the holo- and allotypes; 4 ♂♂, same locality as for the holo- and allotypes, 15–VI–1991, O. YAMAJI leg.; 4 ♂♂, same locality, 7–VI–1992, O. YAMAJI leg.; 2 ♀♀, Kurami, Kamochô, Okayama Pref., 3–VII–1991, K. NOJIMA leg.; 1 ♀, same locality, 9–VIII–1990, K. NOJIMA leg.; 1 ♂, Mt. Taki-yama, Nagi-chô, Okayama Pref., 13–VI–1987, O. YAMAJI leg.; 1 ♂, Mt. Sanjô-san, near Sangajô, Kamisaibara-son, Okayama Pref., 10–VI–1990, K. NOJIMA leg.; 1 ♂, Yoshikawa, Kayô-chô, Okayama Pref., 10–IX–1990, K. NOJIMA leg.; 3 ♂♂, 1 ♀, Hiruzen–Daisen Highway, Kawakami-son, Okayama Pref., 1–VIII–1992, O. YAMAJI leg.

Notes. The present new species is very similar to *P. masidai* ISHIDA in general appearance, and may have probably been confused with the latter. It is, however, easily discriminated from that species by having the following points: pronotum almost smooth on the basal part, while that of *P. masidai* is clearly punctate; elytra shiny in both sexes, while those of *P. masidai* are less shiny in the female because of more strongly impressed microsculpture; terminal sternite in the male somewhat produced at the apex, not emarginate as that of *P. masidai*; aedeagus distinctly and

widely lamellate latero-ventrad to the right side of apical third, while the same part is nearly flat in *P. masidai*.

Pterostichus* (*Pterostichus*) *nasui sp. nov.

[Japanese name: Okayama-nagagomimushi]

(Figs. 6–8)

Description. Length (measured as in the preceding species) 15.6–17.8 mm. Width 5.3–6.4 mm. Black, shiny; labrum, mandibles, antennae, femora and tibiae dark reddish brown; palpi and tarsi reddish brown.

Head moderately convex, shiny; labrum and mandibles normal; eyes convex; temporae a half as long as eyes, strongly contracted behind, gently tumid; genae finely rugose near buccal fissure; frontal furrows deep, parallel, though divergent posteriad at the extremities; supraorbital areas convex; clypeal suture fine; lateral grooves deep, extending to a little behind the post-eye level; surface very minutely and sparsely punctate; microsculpture slightly visible, formed by fine isodiametric meshes; antennae normal, reaching the basal fourth of elytra, segment 2 unisetose ventrad at apex.

Pronotum cordate, moderately convex, shiny, widest at about apical third, ca. 1.3 times as wide as head (PW/HW 1.25–1.32, mean 1.30), as wide as long in almost the same proportion (PW/PL 1.23–1.38, mean 1.30), about a half as wide again as base (PW/PBW 1.47–1.57, mean 1.50); lateral margins evenly well arcuate in apical two-thirds, then strongly convergent posteriad and sinuate before base, basal part parallel or somewhat convergent posteriad, and with irregular notches; lateral reflexed borders narrow; apical margin gently emarginate, unbordered, apical angles produced, rounded at the tips; basal margin narrower than the apical, gently emarginate at the median part, oblique and obscurely bordered on each side; basal angles obtuse, dull at the tips; basal foveae rather deep, divergent anteriad, weakly or sometimes clearly punctate; median line deep; both apical and basal transverse impressions weak or obsolete; surface smooth, microsculpture slightly visible, formed by fine transverse meshes.

Apterous. Elytra oblong, moderately convex, shiny in both sexes, widest a little behind middle, about a fourth as wide again as pronotum (EW/PW 1.22–1.26, mean 1.25), ca. 2.7 times as long as pronotum (EL/PL 2.48–2.78, mean 2.65), ca. 1.6 times as long as wide (EL/EW 1.57–1.68, mean 1.63); basal border complete, gently curved, and obliquely extending to shoulders, which are widely rounded; lateral margins gently divergent posteriad from behind shoulders to the widest part, then roundly convergent to preapical emarginations, which are shallow, though more distinct in the female than in the male, apices rounded, sutural angles dull; scutellar striole short, lying on interval 2; striae deep and smooth, though sometimes minutely crenulate at the bottoms; intervals gently convex, interval 3 with four to six dorsal pores, anterior one or two adjoining stria 3, the remainings adjoining stria 2, all more or less

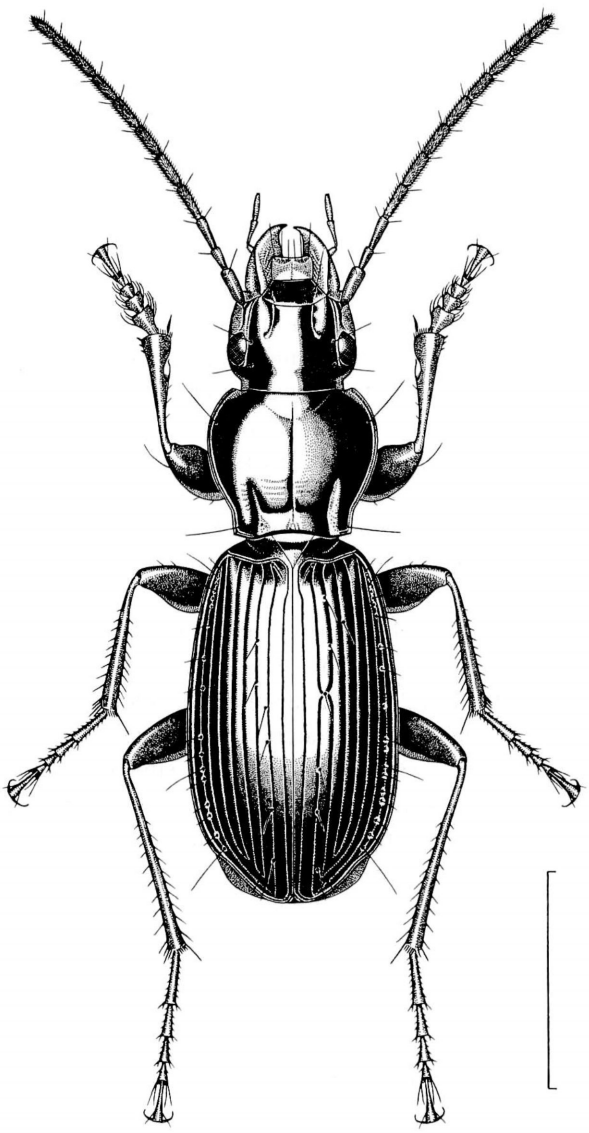


Fig. 6. *Pterostichus* (*Pterostichus*) *nasui* sp. nov., ♂, from Mt. Taki-yama, Nagi-chô, Okayama Pref. Scale 6 mm.

irregular in arrangement; interval 5 often with a pore adjoining stria 5 at the anterior part; marginal series of pores 19–23 in number, widely spaced at middle; microsculpture formed by transverse meshes in both sexes, though rather clearer in the female than in the male.

Basal three segments of meso- and metatarsi externally sulcate. Ventral surface almost smooth, though mesosternum and mesepisterna are weakly punctate; pro-

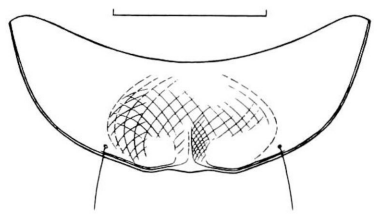


Fig. 7. Terminal sternite in the male of *Pterostichus* (*Pterostichus*) *nasui* sp. nov., from Mt. Taki-yama, Nagi-chô, Okayama Pref. Scale 2 mm.

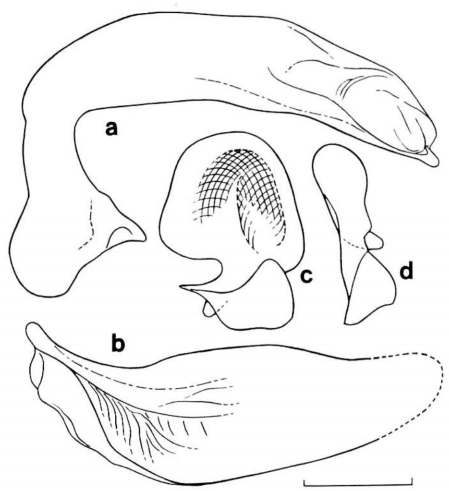


Fig. 8. Male genitalia of *Pterostichus* (*Pterostichus*) *nasui* sp. nov., from Mt. Taki-yama, Nagi-chô, Okayama Pref.; a–b, aedeagus — a, left lateral view; b, ventral view, basal part omitted; c, left paramere; d, right paramere. Scale 1 mm.

sternal process unbordered, furrowed at middle; terminal sternite in the male shallowly and widely depressed, longitudinally and narrowly raised at middle, apex slightly sinuate.

Aedeagus strongly bent at basal third, relatively slender in apical two-thirds, apical part gently curved rightwards in dorsal view, apical lobe produced, rounded at the apex; ventral side longitudinally raised from beneath apical lobe to apical third, and distinctly wrinkled on the left side of the ridge; left paramere subtrapezoidal, though arcuate at the apex; right one thick, rounded at the apex.

Type series. Holotype: ♂; allotype: ♀, Mt. Ushiro-yama, Aida-gun, Okayama Pref., 28–VI–1987, S. NASU leg. Paratypes: 1 ♀, same data as for the holo- and allotypes; 1 ♂, Mt. Taki-yama, Nagi-chô, Okayama Pref., 27–V–1990, O. YAMAJI leg.; 1 ♀, Mt. Yamanori-sen, Chûka-son, Okayama Pref., 21–VI–1992, O. YAMAJI leg.; 1 ♀, Kurami, Kamo-chô, Okayama Pref., 26–IX–1992, O. YAMAJI leg.; 1 ♂,

Yakô-dani, Chizu-chô, Tottori Pref., 28–VI–1992, O. YAMAJI leg.

Notes. The present new species somewhat resembles *P. sphodriformis* BATES in general appearance, but is clearly distinguished from the latter by shorter elytra with numerous dorsal pores and different configuration of genitalia in the male. It is often found with a local form of *P. pseudopachinus* NAKANE, but is easily discriminated from the latter by smaller body and different shape of terminal sternite and genitalia in the male (especially the elytra are quite opaque in the female of the latter).

要　約

笠原須磨生：岡山県産オサムシ科ナガゴミムシ属の2新種．—— 岡山県に産するナガゴミムシ属 *Pterostichus* のうち，広義のナガゴミムシ亜属 *Pterostichus* s. lat. に属する2新種を記載した．

1) ヤマジナガゴミムシ *P.* (*P.*) *yamajii* は，外観がマシダナガゴミムシ *P.* (*P.*) *masidai* ISHIDA によく似ていて，しばしば同時に得られるので紛らわしいが，前胸背板や雄の腹板末端節，交尾器などの形態的特徴が明らかに異なるので識別は容易である．

2) オカヤマナガゴミムシ *P.* (*P.*) *nasui* は，ヒョウゴナガゴミムシ *P.* (*P.*) *sphodriformis* BATES と類縁関係をもつ種に相違ないが，後者より体が短かく，上翅に多数の孔点をもち，雄交尾器の形態もかなり異なる．また本種は，キイオオナガゴミムシ *P.* (*P.*) *pseudopachinus* NAKANE の地方型と思われる種と同時に採集されることがあるが，後者はより大型で，上翅の微細印刻が異なり，とくに雌は上翅に光沢がないので一見して区別できる．

これら2新種は，本州の中国地方東部の山地に固有のものと考えられる．

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Elytra, Tokyo, **21** (1): 173–177, May 15, 1993

A New Patrobine Carabid Beetle from Kyushu, West Japan

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Abstract A new patrobine carabid beetle is described from the central mountains of Kyushu, Japan, under the name of *Apatrobus ohtsukai*. It is related to *A. hikosanus* (HABU), but differs from it mainly in the structure of male genitalia.

Ten years ago, an apterous patrobine carabid beetle was obtained by Mr. Isao OHTSUKA on Mt. Yamaingiri in central Kyushu, Japan, and was submitted to me for identification. I was, however, unable at that time to determine with confidence its true systematic position. Very fortunately, I made a collecting trip to the mountain with him, and was able to obtain many additional specimens of the same species. An examination of male genital organ, especially aedeagal structure, proved that though closely related to *Apatrobus hikosanus* (HABU) (1953, p. 47), it was no doubt new to science. In this paper, I am going to describe it under the name of *A. ohtsukai*. The abbreviations used herein are the same as those explained in my previous papers.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critical reading of the original manuscript of this paper. My thanks are also due to Messrs. Isao OHTSUKA, Hideto ARAMAKI, Takuya KURITA and Yûji TOMISHIMA for their kind help.

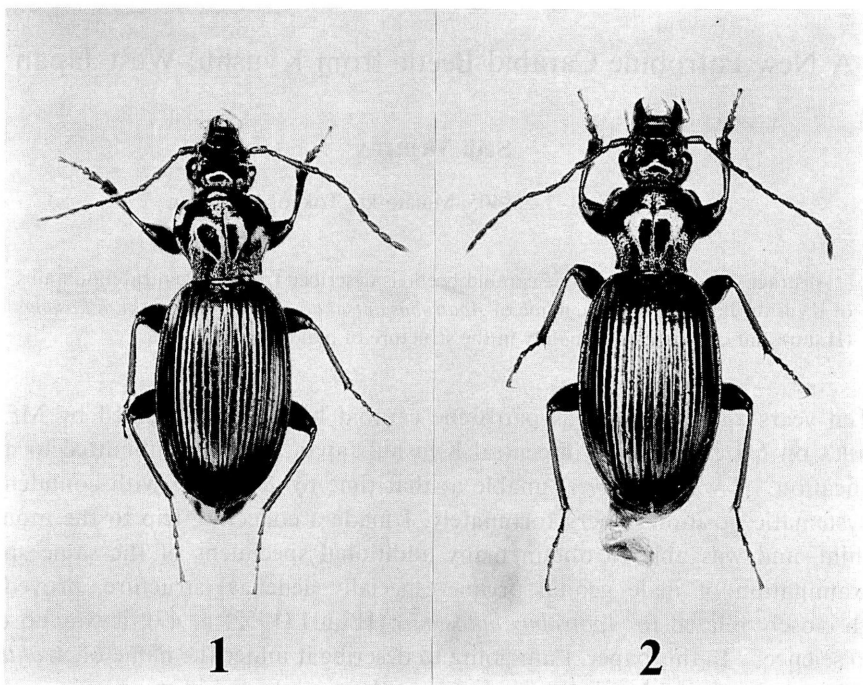
Apatrobus ohtsukai MORITA, sp. nov.

[Japanese name: Ohtsuka-nurechi-gomimushi]

(Figs. 1, 3–8)

Length: 9.72–11.00 mm (from apical margin of clypeus to apices of elytra).

Colour as in *A. hikosanus*; head large and more convex than in *A. hikosanus*; PW/HW 1.31–1.43 (M 1.35) in 6 ♂♂, 1.30–1.39 (M 1.35) in 4 ♀♀; frontal furrows moderately deep and wide, diverging behind and usually arcuate inwards at the posterior parts, with fine punctures; lateral grooves very deep, rather wide, and reaching the mid-level or apical third of genae; eyes more convex than in *A. hikosanus*; genae strongly tumid; anterior supraorbital pore situated a little before the mid-eye level or at about that level; posterior supraorbital pore situated a little before neck constriction, which bears fine punctures; mandibles stout and rather short; apical margin of labrum almost straight, rarely a little advanced; mentum tooth bifid; microsculpture almost vanished; antennae rather long, segment 2 with four setae (rarely three); relative lengths of antennal segments as follows:— I: II: III: IV: V: VI: XI≒

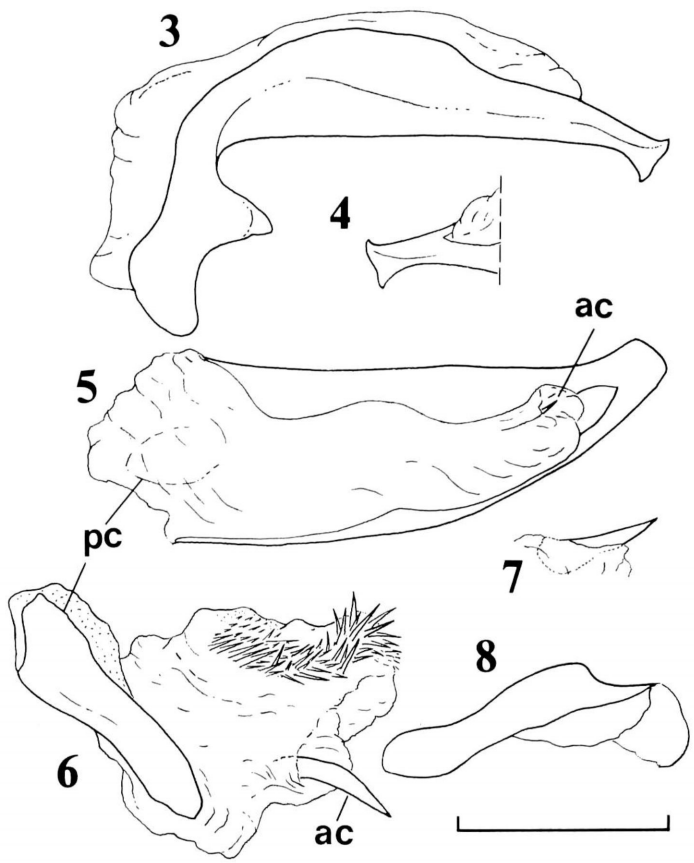


Figs. 1–2. —— 1, *Apatrobus ohtsukai* sp. nov., from Mt. Yamaingiri, Kumamoto Prefecture; 2, *A. hikosanus* (HABU) from Mt. Hiko-san, Fukuoka Prefecture.

1 : 0.44 : 1.53 : 1.02 : 0.95 : 0.97 : 1.14.

Pronotum rather quadrate, moderately convex, widest at about 7/10 from base, usually without small depression between anterior marginal seta and median line; PW/PL 1.18–1.25 (M 1.23) in 6 ♂♂, 1.22–1.28 (M 1.24) in 4 ♀♀, PW/PA 1.41–1.50 (M 1.45) in 6 ♂♂, 1.40–1.45 (M 1.42) in 4 ♀♀, PW/PB 1.36–1.49 (M 1.41) in 6 ♂♂, 1.39–1.43 (M 1.41) in 4 ♀♀ : apex almost straight, usually a little narrower than base, PA/PB 0.94–1.05 (M 0.98) in 6 ♂♂, 0.96–1.02 (M 1.00) in 4 ♀♀; sides moderately arcuate in front, rather strongly sinuate behind and slightly divergent towards hind angles; reflexed lateral borders very narrow; apical angles produced and widely rounded, hind ones usually a little sharp or rarely rectangular, without carina; anterior marginal setae situated at the widest part; posterior ones situated a little before and inside hind angles; anterior transverse impression shallow, with fine punctures; median line deep, not reaching apex, but deeply and widely impressed in basal area; basal fovea deep and rather large, with coarse punctures and transverse wrinkles; base almost straight, and with coarse punctures and longitudinal wrinkles; microsculpture irregular, largely consisting of transverse meshes but partially obliterated.

Elytra elongated ovate, widest at about middle or a little before middle; EW/PW 1.30–1.37 (M 1.35) in 6 ♂♂, 1.38–1.43 (M 1.40) in 4 ♀♀; EL/EW 1.61–1.64 (M 1.63) in 6 ♂♂, 1.54–1.61 (M 1.58) in 4 ♀♀; sides gently arcuate, very slightly sinuate before



Figs. 3–8. Male genitalia of *Apatrobus ohtsukai* sp. nov. —— 3, Aedeagus, left lateral view; 4, apical part of aedeagus, right lateral view; 5, aedeagus, dorsal view; 6, separated and everted inner sac, showing sclerotized armature (ac: apical copulatory piece, pc: proximal copulatory piece); 7, apical copulatory piece, dorsal view; 8, proximal copulatory piece, dorsal view. (Scale: 1.00 mm.)

apices; intervals slightly convex near bases but flat at apices, and with microscopic punctures; striae rather deep near bases, with fine punctures, and becoming shallower near apices; scutellar striole distinct, with fine punctures; three dorsal pores on interval 3, situated at 1/5–1/4 from base, at about middle, and 7/10–4/5 from base respectively; apices separately rounded in general, forming a small re-entrant angle; microsculpture irregular, largely consisting of wide meshes, but partially disordered.

Anal sternite shallowly emarginate on each side; in ♀, anal sternite widely and rather deeply depressed along margin near outer seta, and with two pair of setae which are on a shallow arc open anteriorly.

Aedeagus elongate and moderately sclerotized; viewed dorsally, apical part strongly turned to the right as in *A. hikosanus*, right corner ventrally produced and the

left one dorsally produced, with apical margin almost straight or slightly emarginate; inner sac armed with two copulatory pieces and a patch of sclerotized teeth; apical copulatory piece (ac) heavily sclerotized, elongate and gently curved, lying at the dorsal position, and with pointed apex; proximal copulatory piece (pc) elongate and twisted from left dorso-proximal to right apico-ventral, and with the apical part wide and lamellar; a teeth patch elongate and lying near apical copulatory piece; styles fairly broad, left style wider than the right; right style with two long setae and a short seta at apex, left one with two long setae and a short seta at apical part.

Type series. Holotype: ♂, allotype: ♀, 13–IX–1992, S. MORITA leg. Paratypes: 1 ♂, 30–VII–1983, I. OHTSUKA leg.; 12 ♂♂, 3 ♀♀, 13–IX–1992, S. MORITA leg.; 1 ♂, 1 ♀, 27–IX–1992, T. KURITA & Y. TOMISHIMA leg.

Type locality. Mt. Yamaingiri, 1,400 m in altitude, Izumi-mura, Kumamoto Prefecture, central Kyushu, Japan.

The holo- and allotypes are preserved in the National Science Museum (Nat. Hist.), Tokyo. The paratypes are preserved in the private collection of the author.

Notes. It is possible that the species recorded by HABU (1960) under the name of *Patrobus* (*Apatrobus*) *hikosanus* from Shiiba actually belongs to this new species. Judging from his accounts and illustrations, his observation concerning aedeagal structure seems unsatisfactory, so that his record may be based on misidentification.

This new species is very closely allied to *A. hikosanus*. It is, however, distinguished from it by the smaller body and the differently shaped pronotum. The only definite differences between the two are in the shape of aedeagal apical part and in the shape of the proximal copulatory piece: in *A. ohtsukai*, apex of aedeagus without a denticle at the middle; proximal copulatory piece elongate and twisted; in *A. hikosanus*, apex of aedeagus with a denticle at the middle; proximal copulatory piece spatulate and twisted (cf. HABU, 1960, p. 9, fig. 7; MORITA, 1986, p. 146).

This new patrobine carabid is dedicated to Mr. Isao OHTSUKA, the discoverer of the beetle.

要　約

森田誠司: 九州産ヒメヌレチゴミムシの1新種. —— 熊本県山犬切で採集された，ヒメヌレチゴミムシ属の1新種，オオツカヌレチゴミムシ *Apatrobus ohtsukai* を記載した．本種は，ヒコサンヌレチゴミムシ *A. hikosanus* (HABU) に似ているが，陰茎の先端部中央が歯状とならないこと，基部骨片が細長いことなどの点で区別される．

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Elytra, Tokyo, **21** (1): 177–178, May 15, 1993

Collecting Records of *Encyclops viridipennis* MAKIHARA (Coleoptera, Cerambycidae, Lepturinae)

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Encyclops viridipennis MAKIHARA, 1978, was described on a male specimen collected at Hohuanchi—Sungchuangkang, about 2,500 m in altitude, Nantou Pref., Taiwan. Later, SHIMOMURA and SAITO (1979) reported that this species was collected at Pilu-shenmu, Hualien Pref., Taiwan, without the collecting date. YU and NARA (1988) also recorded a female specimen (most probably a male judged from plate 3, no. 5 of their paper) of this species collected at the same locality. The altitude of the two localities is about 2,200–2,500 m and these specimens were collected from May to June. However, I collected this species in March near Ssuling, ca. 900 m in altitude, Taoyuan Pref., northern Taiwan. The following three localities of this species are herewith reported from specimens preserved in my collection.

Nr. Sungchuangkang, ca. 2,400 m, Nantou Pref., Taiwan: 1 ♀, 5–VII–1982, T. SHIMOMURA leg. (on the flowers of *Quercus* sp.).

Pilu-shenmu, ca. 2,200–2,300 m, Hualien Pref., Taiwan: 4 ♂♂, 8–V–1977, S. SAITO leg.; 8 ♂♂, 1 ♀, 16–V–1978, T. SHIMOMURA leg.; 7 ♂♂, 17–V–1978, T. SHIMOMURA leg.; 4 ♂♂, 3 ♀♀, 18–V–1978, T. SHIMOMURA & S. SAITO leg. (on the flowers of *Trochodendron aralioides*).

Nr. Ssuling, ca. 900 m, Taoyuan Pref., Taiwan: 7 ♂♂, 2 ♀♀, 19～22–III–1982, T. SHIMOMURA leg. (on the flowers of *Quercus* sp.).

Notes. The females of this species are similar to the males in coloration, but differ from the latter in the following characters: antennae with the apex of 11th segment reaching basal three-fourths of elytra, elytral sides almost parallel. The abdominal sternites

of this species is variable in coloration; in males, they are usually black with 3rd to 5th sternites dark brown to yellowish brown, though entirely black or dark brown to yellowish brown in some specimens, and usually yellowish brown in females. This species has two forms in the coloration of the antennae and legs. Of the 37 specimens recorded above, 9 males and 1 female are blackish brown to black in the antennae and legs. Twenty-one males and 6 females are almost yellowish brown in 1st to apical half of 5th antennal segments and legs. Body length: ♂♀, 7.5–11.5 mm (measured from tips of mandibles from elytral apices).

I express my deep gratitude to Mr. Shusei SAITO (Japan Wildlife Research Center, Tokyo) for his cooperation, and to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for reading the original manuscript of this short report.

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Elytra, Tokyo, **21** (1): 179–186, May 15, 1993

Two New Endogean Trechines (Coleoptera, Trechinae) from the Shirakami Mountains, Northeast Japan[1)]

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Abstract Two new endogean species of trechine beetles are described from the Shirakami Mountains in northeastern Honshu, Japan. One of them is related to *Oroblemus caecus* and is named *O. yamauchii*. The other is a member of the genus *Kurasawatrechus* (s. lat.), but is widely isolated from all the other congeners previously described from Japan. It is named *K. nishikawai*.

The Shirakami Mountains (also called Shiragami Mountains) are a non-volcanic range stretching latitudinally on the borders of Aomori and Akita Prefectures on the Japan Sea side near the northern end of Honshu, Northeast Japan. The mountain range is not particularly high, only attaining to 1,243 m at the highest point, but is extensively covered with primeval beech forests now not common in the Japanese Islands. For this reason, the greater part of the mountain range is protected as a national nature conservation area and is selected as a candidate of the world cultural and natural heritage.

The insect fauna of this mountain range has not been intensively investigated as yet. However, recent field surveys made by myself and my friends have revealed that at least three new species of trechine beetles occur there, an oculate species of *Trechiama* belonging to the group of *T. oreas*, an endogean species of *Oroblemus* related to *O. caecus*, and an endogean species of *Kurasawatrechus* of uncertain affinity. The latter two species have so far been known from single localities respectively, whereas the *Trechiama* is widespread over the mountain range and is variable to some extent both individually and geographically. In any case, they are specifically different from their relatives occurring on Mt. Iwaki-san, a recent volcano that stands at the northern side of the Shirakamis. This fact poses an interesting problem to the origin of colonization by trechine beetles on recent — mostly Postglacial — volcanoes. However, it is not the subject of the present paper to analyse the process of trechine colonization of recent volcanoes. Its purpose is to introduce into science the new species of *Oroblemus* and *Kurasawatrechus* apparently endemic to the Shirakamis. The other species, an oculate *Trechiama*, will be described in a separate paper to be published in near future.

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

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

Before going further, I wish to express my deep appreciation to Professor Yoshiaki NISHIKAWA, Messrs. Azuma ABE, Satoshi YAMAUCHI and Seiji MORITA for their kindness either in helping me in the field works or in supplying me with the materials.

Oroblemus yamauchii S. UÉNO, sp. nov.

(Figs. 1–2)

Length: 3.15–3.55 mm (from apical margin of clypeus to apices of elytra).

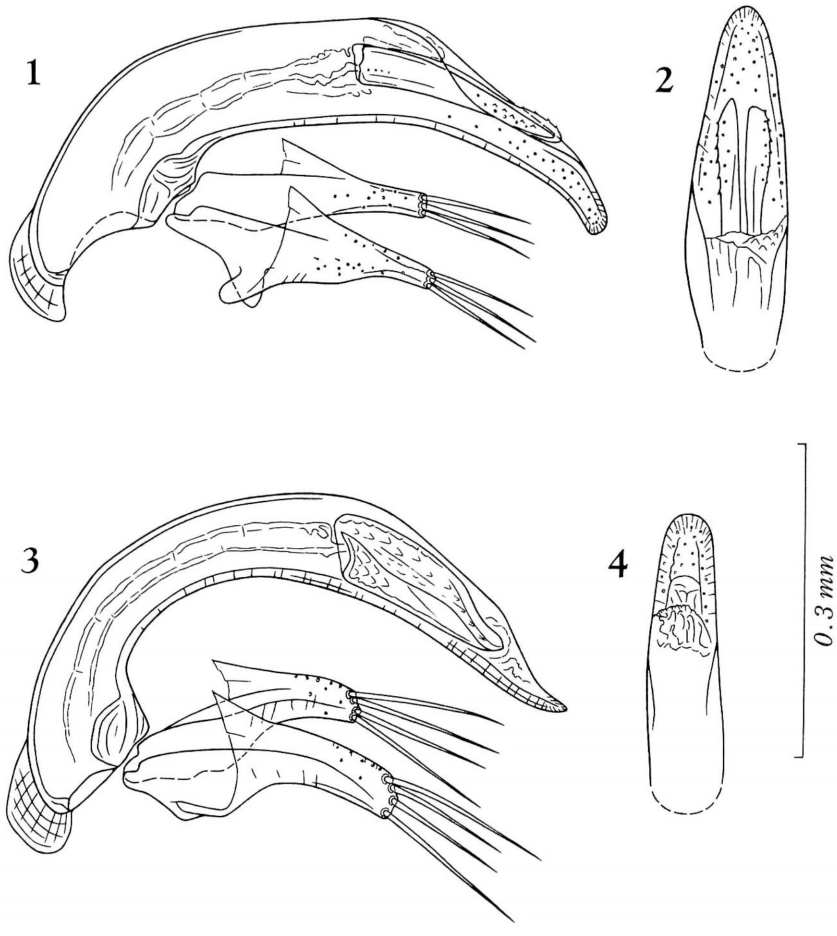
Closely allied to *O. caecus* S. UÉNO et A. YOSHIDA (1966, p. 80, figs. 1–2; UÉNO, 1983, p. 159, 1985, p. 85, pl. 16, fig. 7) and externally similar to the latter in every detail, with the exception of smaller fore-body. Colour as in *O. caecus*. Head and pronotum similar to those in *O. caecus*; antennae reaching basal third of elytra in ♂, basal two-sevenths of elytra in ♀; pronotum widest at about seven-tenths from base, with the sides distinctly sinuate at a level between basal seventh and sixth; PW/HW 1.25–1.31 (M 1.27), PW/PL 1.21–1.32 (M 1.27), PW/PA 1.34–1.39 (M 1.37), PW/PB 1.32–1.42 (M 1.37), PA/PB 0.97–1.04 (M 0.99) [PB/PA 0.96–1.03 (M 1.01)]. Elytra larger than in *O. caecus* though similar in conformation to those of the latter, with the sides a little more distinctly arcuate; EW/PW 1.46–1.53 (M 1.50), EL/EW 1.54–1.62 (M 1.58). Ventral surface and legs as in *O. caecus*.

Male genital organ small and lightly sclerotized, evidently differing from that of *O. caecus* in being more elongate and ventrally curved at the aedagal apex. Aedeagus about two-sevenths as long as elytra, moderately compressed in basal half, moderately curved ventrad in both basal and apical thirds, and hardly arcuate at median third; apical orifice somewhat asymmetrical, with more reduced left wall; basal part elongate, with fairly large basal orifice whose sides are shallowly emarginate; sagittal aileron well developed though rather narrow; viewed dorsally, apical lobe symmetrical, gradually narrowed towards narrowly rounded apex; viewed laterally, apical lobe narrow, curved ventrad, and blunt at the extremity; ventral margin nearly straight at middle but widely emarginate at apical third in profile. Inner sac armed with two slender copulatory pieces, the right one of which is smaller than in *O. caecus* though still longer than the left piece. Styles rather small, with narrow apical parts, left style a little longer than the right, each bearing three apical setae.

Type series. Holotype: ♂, allotype: ♀, paratypes: 5 ♂♂, 1 ♀, 29–VII–1992, S. YAMAUCHI leg. The holo- and allotypes are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes are distributed to the above collection and the collection of the Aomori Prefectural Museum.

Type locality. Mt. Shirakami-daké, 1,220 m in altitude, in Iwasaki-mura of Aomori Prefecture, on the western side of northeastern Honshu, Northeast Japan.

Notes. Though closely allied to *O. caecus* of Mt. Iwaki-san, the Shirakami-daké



Figs. 1–4. Male genitalia of endogean trechine beetles from the Shirakami Mountains; left lateral view (1, 3), and apical part of aedeagus, dorso-apical view (2, 4). —— 1–2. *Oroblemus yamauchii* S. UÉNO, sp. nov., from Mt. Shirakami-daké. —— 3–4. *Kurasawatrechus nishikawai* S. UÉNO, sp. nov., from Towada-yama in Ohwani-machi.

population of *Oroblemus* is specifically different from the Iwaki-san population beyond all doubt. When the Shirakami-daké specimens came to my hand, however, I had only three specimens of *O. caecus*, which were not sufficient to determine the range of individual variation. I therefore visited Mt. Iwaki-san again on September 24, 1992, and with the aid of NISHIKAWA and YAMAUCHI, succeeded in obtaining five additional specimens (3 ♂♂, 2 ♀♀) exactly at the same spot that the type material had been discovered. This collection enabled me to make a comparative study on a sounder basis, and to draw a final conclusion that the two populations represent two different species.

The type specimens of *O. yamauchii* were found in a gully only twelve metres

below the summit of Mt. Shirakami-daké, the second highest point of the Shirakamis, lying near the western end of the mountain range, together with a new oculate species of *Trechiama*. The distance from Mt. Iwaki-san to Mt. Shirakami-daké is about 29 km in a southwestward direction. Like *O. caecus*, it dwells under stones embedded in moist clayey ground in the subalpine zone. Judging from the fact that the two localities are close to each other both geographically and topographically, it seems possible that *O. caecus*, which is confined to the alpine zone of a very recent volcano, is derived from the ancestor of *O. yamauchii*, an inhabitant of an old, non-volcanic mountain.

Kurasawatrechus nishikawai S. UÉNO, sp. nov.

(Figs. 3–5)

Length: 3.90–4.20 mm (from apical margin of clypeus to apices of elytra).

A very remarkable species of uncertain affinity distinguished at first sight from all the other congeners hitherto described from Japan by a combination of glabrous dorsum of head, extremely short pubescence on pronotum and elytra, externally grooved protibiae whose anterior faces are almost glabrous, and strongly arcuate aedeagus whose apical lobe is distinctly reflexed and pointed at the extremity in lateral view.

Body short and broad, more or less covered with pubescence except on head; anophthalmic and apterous. Colour reddish brown to dark reddish brown, shiny, hardly iridescent even on elytra; palpi, antennae, ventral surface and legs more or less lighter than dorsum, usually dark yellowish brown.

Head subquadrate, wider than long, and depressed above, with the sides moderately convex; frontal furrows entire, distinctly impressed throughout, rather feebly arcuate in front, not angulate at middle, and curved round behind towards neck constriction; frons and supraorbital areas gently convex, the latter with two pair of supraorbital setae on lines slightly convergent posteriad, the anterior pair of them arising from distinct foveoles; genae moderately and evenly convex, covered with short pubescence; neck very wide, with the anterior constriction distinct at the sides though not deep; labrum deeply emarginate at the apex; mandibles stout though sharply hooked at the apices; mentum widely concave, with the tooth in apical emargination rather narrow, either simple or slightly truncated at the tip; palpi short and fairly stout, with subconical apical segments and distally dilated penultimate ones; antennae short but not so stout, subfiliform, reaching basal fourth of elytra in ♀, slightly longer than that in ♂, segment 2 about three-fourths as long as segment 3, segments 4 and 5 subequal in length to each other and slightly shorter than segment 3, segments 6–10 still shorter and subequal in length to one another, each more than twice as long as wide, terminal segment the longest though slightly narrower than scape.

Pronotum transverse subcordate, widest at about two-thirds from base, and a little more gradually narrowed towards apex than towards base, with the sides rather

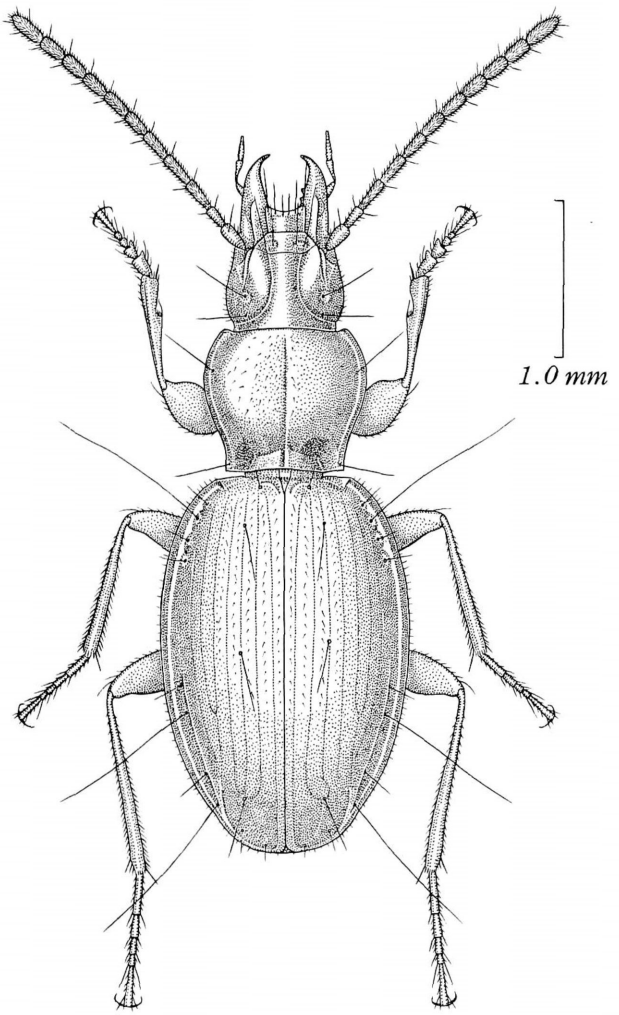


Fig. 5. *Kurasawatrechus nishikawai* S. UÉNO, sp. nov., ♂, from Towada-yama in Ohwani-machi.

widely reflexed throughout and vestigially ciliated; PW/HW 1.36–1.45 (M 1.39), PW/PL 1.14–1.21 (M 1.19), PW/PA 1.36–1.41 (M 1.39), PW/PB 1.34–1.43 (M 1.39); sides rather strongly and almost evenly arcuate in front, deeply sinuate at a level between basal sixth and fifth, and then either subparallel or slightly divergent towards hind angles, which are either rectangular or somewhat obtuse, with two pair of marginal setae, the posterior one of which is slightly removed forwards; apex about as wide as base, PB/PA 0.98–1.01 (M 0.99), slightly bisinuate, with front angles produced forwards though obtuse; base either slightly bisinuate or straight at middle, usually somewhat oblique on each side inside hind angle; surface rather strongly convex, sparsely

covered with very short pubescence; median line clearly impressed, deepened posteriorly; apical transverse impression obsolete though the apical area is longitudinally wrinkled; basal transverse impression broad and continuous though not sharply defined, laterally merging into large basal foveae, which are deep and somewhat uneven at the bottom; postangular carinae very obtuse; basal area longitudinally strigose. Scutellum visible though largely concealed by the basal part of pronotum.

Elytra subovate, much wider than prothorax, widest at about three-sevenths from bases, and more gradually narrowed towards apices than towards bases; EW/PW 1.54–1.59 (M 1.56), EL/EW 1.45–1.55 (M 1.49); shoulders effaced, with prehumeral borders oblique and feebly arcuate; sides rather widely reflexed and microscopically ciliated, gently arcuate from bases to the middle, more feebly so behind, and almost conjointly rounded at apices, without appreciable preapical emargination; surface moderately convex, especially at the sides, with fairly steep apical declivity; striae entire, lightly crenulate, clearly impressed on the disc but becoming shallower at the side, stria 8 deepened in apical two-fifths; scutellar striole short but distinct; apical striole deep, moderately curved, and usually merging into stria 7, sometimes free at the anterior end and directed to stria 5; intervals slightly convex on the disc, flat at the side, each bearing an irregular row of very short pubescence; apical carina distinct though obtuse; stria 3 with two setiferous dorsal pores at 1/8–1/7 and 3/8–1/2 from base, respectively; preapical pore situated at the apical anastomosis of striae 2 and 3 near the level of the terminus of apical striole, more distant from apex than from suture, and nearer to apical striole than to suture; marginal umbilicate pores aggregated and regular.

Microsculpture distinct throughout, mostly consisting of polygonal meshes on head, irregular transverse meshes on pronotum, and fine transverse lines on elytra.

Ventral surface sparsely pubescent except at the sides; anal sternite provided with a pair of marginal setae in ♂, with two pair of them in ♀. Legs short but rather thin; protibiae slightly arcuate in apical parts and dilated towards apices, each with a deep longitudinal groove on the external face and almost glabrous on the anterior face, though a few vestigial hairs are sometimes observed under high magnification; tarsi fairly stout, segment 1 about as long as segments 2–3 together in mesotarsus, longer than that in metatarsus; in ♂, two proximal segments of each protarsus widely dilated, stoutly produced inwards at apices, and furnished beneath with sexual adhesive appendages.

Male genital organ very small and lightly sclerotized. Aedeagus only two-ninths as long as elytra, tubular, highest behind middle, and strongly arcuate from base to near apex, especially in basal half, with the dorsal margin semicircularly rounded in profile; basal part small, with small basal orifice whose sides are hardly emarginate; sagittal aileron large and prominent; viewed dorsally, apical lobe nearly parallel-sided and rounded at the apex; viewed laterally, apical lobe narrowly produced, gently but distinctly reflexed, and pointed at the extremity; ventral margin deeply emarginate in basal half in profile, but only slightly so behind middle. Inner sac armed with a large

spatulate copulatory piece almost two-fifths as long as aedeagus, its apex being pointed in dorsal view. Styles large and broad, left style obviously larger than the right, each bearing four long setae at the apex.

Type series. Holotype: ♂, allotype: ♀, paratypes: 1 ♂, 3 ♀♀, 25–IX–1992, Y. NISHIKAWA leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

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

Notes. It was most unexpected that a *Kurasawatrechus* did occur on the Shirakami Mountains at the western side of northeastern Honshu, or within the distributional range of *Oroblemus*. The northernmost records of *Kurasawatrechus* hitherto published are from the central Abukumas (*K. zenbai* S. UÉNO, 1990) and the northern Yamizos (*K. yamizonis* S. UÉNO, 1988). They belong to the typical species-groups of the genus and are radically different from the present species. In many respects, *K. nishikawai* seems closer to Korean species (cf. UÉNO & NAMKUNG, 1968) than to Central Japanese, especially in view of the externally grooved protibiae and the reflexed apical lobe of aedeagus, although none of the described species from Korean caves seem directly related to it. Several undescribed species of *Kurasawatrechus* in a broad sense have been collected in northeastern Honshu, mostly from the Kitakami Mountains at the eastern side and partly from the Ôu Mountains at the central part. They may have certain relationship with *K. nishikawai*, as can be expected from geographical proximity. In any case, generic or subgeneric classification of *Kurasawatrechus* (s. lat.) should be revised when these undescribed species are properly introduced into science.

The type locality of *K. nishikawai* is situated near the eastern end of the Shirakami Mountains, about 41 km east by south of Mt. Shirakami-daké, about 27 km southeast of Mt. Iwaki-san, and more than 370 km north of that of *K. zenbai*. It lies in the Mitsumenai-gawa Valley and at the northwestern foot of Towada-yama (664 m in height). The type specimens of the trechine beetle were dug out from a colluvium deposited at the right side of the Mitsumenai-gawa River at an elevation of 220 m, together with a new oculate species of *Trechiama* to be described in a forthcoming paper. It may be regarded as an upper hypogean inhabitant, but the mode of its occurrence suggests that the species is actually endogean rather than upper hypogean. This can be surmised also from its short-legged facies, which are typically endogean.

要　　約

上野俊一：白神山地に産する地中性チビゴミムシ類の2新種. —— 青森県と秋田県との県境に位置する白神山地からは，盲目のチビゴミムシ類がこれまで知られていなかった．昨年になって，山脈東部の十和田山と西部の白神岳から，西川喜朗，山内　智の両氏により，それぞれ新種と判定される地中性のメクラチビゴミムシ類が発見されたので，これらにオオワニメクラチビゴミムシ *Kurasawatrechus nishikawai* S. UÉNO およびシラカミメクラチビゴミムシ *Oroblemus yamauchii* S. UÉNO とい

う新名を与えて記載した．後者は，隣接する岩木山に固有のイワキメクラチビゴミムシ *O. caecus* に近縁であるが，前者は日本からこれまでに記載された同属のどの種とも系統が異なり，むしろ朝鮮半島産の種群に似ている点が多い．

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Elytra, Tokyo, **21** (1): 187–197, May 15, 1993

Descriptions de quelques nouveaux *Carabus* (*Apotomopterus*, *Pagocarabus*, *Eocechenus*, *Calocarabus*) et *Cychrus* (Coleoptera, Carabidae) des Montagnes du Sud-Est de l'Asie (Chine, Viêt-Nam)

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Abstract Two new species and three new subspecies of the genus *Carabus* (s. lat.) and a new species of the genus *Cychrus* are described from the mountainous regions of Southwest Asia: *Carabus* (*Apotomopterus*) *vitalisi mourzinei* n. subsp. from North Vietnam, *C.* (*Pagocarabus*) *wagae alboequus* n. subsp. from Northwest Yunnan, *C.* (*Eocechenus*) *takashimai* n. sp. from East Tibet, *C.* (*E.*) *micromentum* n. sp. from West Sichuan, *C.* (*Calocarabus*) *gratus nishidai* n. subsp. from East Qinghai, and *Cychrus koiwayai* n. sp. from West Sichuan.

Les six taxons dont nous donnons les descriptions ci-après ont été récemment découverts au cours de voyages individuels ou d'expéditions dans les régions montagneuses des parties méridionales de l'Asie orientale. Le plus remarquable est sans doute la reconnaissance de deux nouvelles espèces du sous-genre *Eocechenus* SEMENOV et ZNOJKO. En effet, ce groupe systématique, très discrètement décrit en 1932 par les deux auteurs russes et échappant du seul fait de cette date à la "Monographie der Gattung *Carabus*" de S. von BREUNING (1932–1937), est resté longtemps méconnu, personne n'ayant vu jusqu'à une date récente les deux espèces, *Carabus kaznakovi* SEMENOV et ZNOJKO (1932) et *C. kozloviellus* SEMENOV et ZNOJKO (1932), sur lesquelles il était fondé. Depuis, c'est seulement au cours de ces toutes dernières années que plusieurs autres espèces ont été découvertes et décrites et que l'on acquiert quelque idée sur la caractérisation et la distribution de ce remarquable sous-genre. Les *Eocechenus* se reconnaissent à la différenciation des mandibules, dont le champ térébral est dilaté et tend à recouvrir dorsalement le rétinacle. En cela, ils diffèrent bien des autres espèces de la même région (sous-genres *Aristocarabus*, *Eccoptolabrus*, *Calocarabus*, *Calocechenus*, *Cryptocechenus*, etc.) dont les mandibules sont spécialisées d'une toute autre façon par hypertrophie de la dent térébrale gauche qui fusionne avec le rétinacle. Ce sont là deux évolutions divergentes des mandibules, qui permettent

d'isoler les véritables *Eocechenus* dans un groupement naturel caractérisé par cette importante autapomorphie de l'organe masticateur.

Les neuf espèces qui composent aujourd'hui ce sous-genre sont toutes localisées dans la partie orientale du plateau Tibétain, depuis la région de Markam au sud, jusqu'aux environs de Yushu au nord. Cette aire de très hautes montagnes étant encore mal connue, plusieurs espèces restent certainement à recenser et il n'est pas douteux que d'autres *Eocechenus* seront découverts dans un futur proche.

Pour leur aide à des titres divers, très appréciée, nous tenons à remercier chaleureusement MM. et Mme L. et R. BUSINSKY, J. KALAB, S. KOIWAYA, S. MOURZINE, T. NISHIDA et A. TAKASHIMA. Le Dr. Shun-Ichi UÉNO voudra bien trouver ici l'expression de notre gratitude pour l'acceptation de ce manuscrit dans la revue Elytra.

1. *Carabus (Apotomopterus) vitalisi mourzinei* DEUVE et IMURA, n. subsp.

(Figs. 1, 7)

Holotype: 1 ♂, Viêt-Nam septentrional, environs de Shonla (S. MOURZINE, 15 mai 1991), *in* coll. National Science Museum (Nat. Hist.), Tokyo (NSMT).

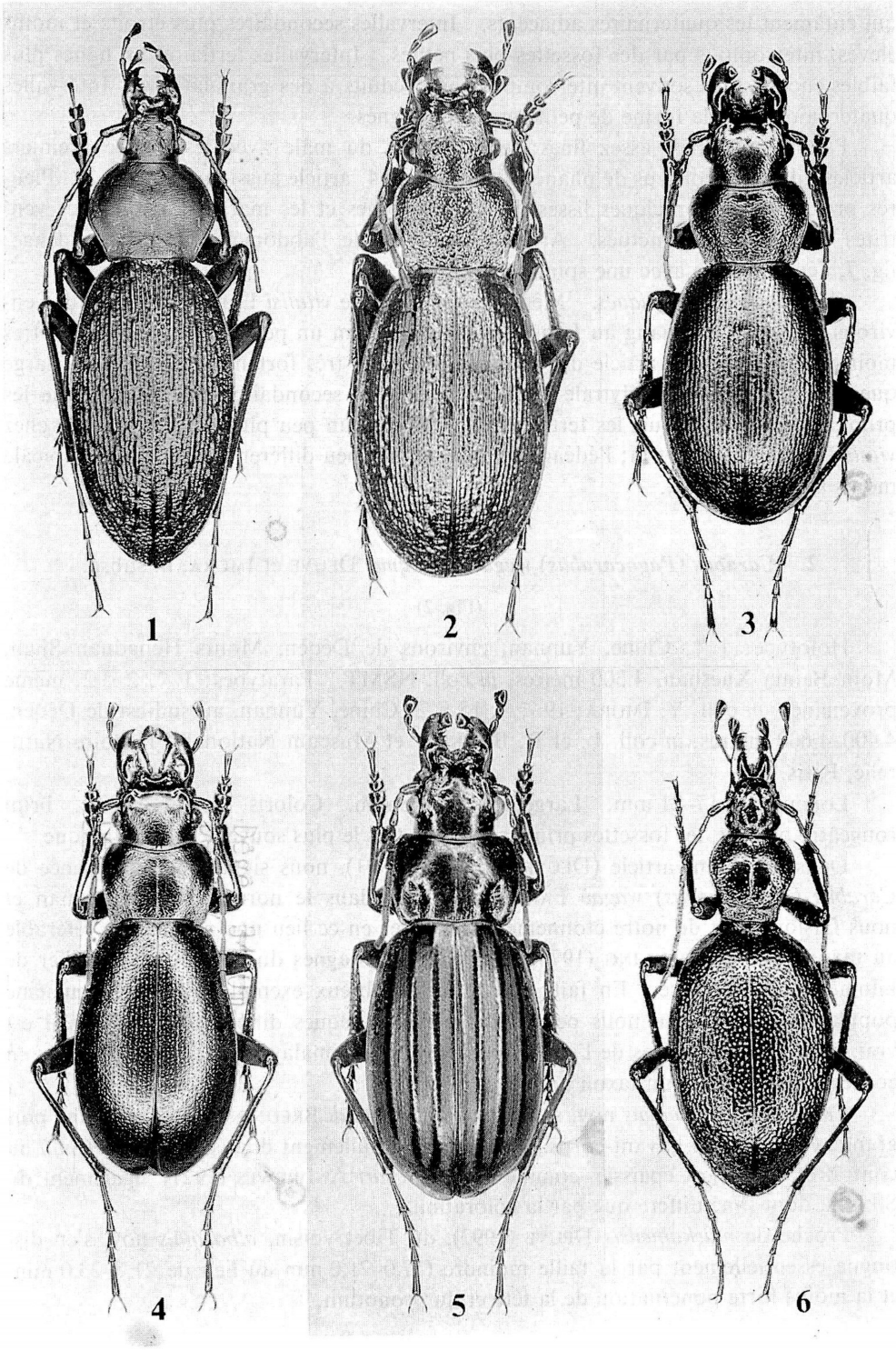
Longueur: 35 mm. Largeur: 11,7 mm. Noir concolore assez mat, les appendices noirs.

Tête moyenne, les yeux petits, saillants, le front et le vertex modérément convexes, densément ridulés, les fossettes assez peu marquées. Labre à bord antérieur peu incurvé. Mandibules moyennes, sans particularités. Palpes longs et fins; l'avant-dernier article des palpes maxillaires sensiblement de même longueur que le dernier; l'avant-dernier labial avec deux soies situées près de la base, parfois une troisième plus apicale. Dent médiane du mentum fine et aiguë, plus courte cependant que les lobes latéraux. Submentum bisétulé. Antennes fines, dépassant en arrière d'un peu plus de cinq articles la base du pronotum; le 3° article très allongé, deux fois plus long que le 2°; celui-ci à peine plus court que le 4°.

Pronotum 1,30 fois plus large que long, rétréci tant en avant qu'en arrière, la plus grande largeur un peu après le milieu, les côtés arqués, puis sinués en arrière avant les angles basaux qui sont petitement lobés. Disque modérément convexe, densément mais très finement et transversalement ridulé, chaque ridule microruguleuse; le sillon médian fin mais distinct, les gouttières étroites, les marges ourlées, à peine relevées en arrière. Fossettes superficielles.

Elytres peu convexes, en ovale allongé, la plus grande largeur vers le milieu, les épaules étroites et peu marquées, le sommet à peine sinué chez le male. Sculpture hétérodyname, rêche, les intervalles saillants et plutôt étroits. Intervalles primaires prédominants, interrompus en assez longs chaînons par des fossettes ponctiformes

Figs. 1–6. Habitus des taxons nouveaux, vue dorsale. —— 1, *Carabus (Apotomopterus) vitalisi mourzinei* n. subsp., ♂, holotype; 2, *C. (Pagocarabus) wagae alboequus* n. subsp., ♂, holotype; 3, *C. (Eocechenus) takashimai* n. sp., ♂, holotype; 4, *C. (E.) micromentum* n. sp., ♂, holotype; 5, *C. (Calocarabus) gratus nishidai* n. subsp., ♂; 6, *Cychrus koiwayai* n. sp., ♀, holotype.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qui entament les quaternaires adjacents. Intervalles secondaires plus étroits et moins élevés, interrompus par des fossettes plus petites. Intervalles tertiaires en lignes plus faibles encore, plus souvent interrompus voire réduits à des granulations. Intervalles quaternaires sous la forme de petits granules alignés.

Pattes moyennes, assez fines; les protarses du mâle avec les quatre premiers articles dilatés et pourvus de phanères adhésifs, le 4° article aussi large que le 3°. Pleures pro- et mésothoraciques lisses, les métépisternes et les marges latérales des ventrites abdominaux ponctués. Arceaux ventraux de l'abdomen sillonnés. Edéage: fig. 7, l'endophallus avec une spinula très courte.

Caractères diagnostiques. Mêmes caractères que *vitalisi* LAPOUGE (1918), des environs de Xieng Khouang au Laos, mais le pronotum un peu plus large et les élytres moins convexes; le 4° article des protarses du mâle très fortement dilaté, aussi large que le 3°; la sculpture élytrale avec les intervalles secondaires plus faibles que les primaires, et discontinus, les tertiaires au contraire un peu plus développés que chez *vitalisi*, apparents çà et là; l'édéage du mâle est un peu différent, avec la lame apicale moins infléchie (fig. 7).

2. *Carabus (Pagocarabus) wagae alboequus* DEUVE et IMURA, n. subsp.

(Fig. 2)

Holotype: 1 ♂, Chine, Yunnan, environs de Dêqên, Monts Hengduan Shan, Mont Baima Xueshan, 4.300 mètres, *in* coll. NSMT. Paratypes: 1 ♂, 2 ♀♀, même provenance, *in* coll. Y. IMURA; 19 ♂♂, 15 ♀♀, Chine, Yunnan, au sud-est de Dêqên, 4.400–4.600 mètres, *in* coll. L. et R. BUSINSKY et Muséum National d'Histoire Naturelle, Paris.

Longueur: 17–21 mm. Largeur: 6,2–7,8 mm. Coloris dorsal cuivré, brun rougeâtre ou vert, les fossettes primaires des élytres le plus souvent vert métallique.

Dans un récent article (DEUVE et IMURA, 1991), nous signalions la présence de *Carabus* (*Pagocarabus*) *wagae* FAIRMAIRE (1882) dans le nord-ouest du Yunnan et nous faisions part de notre étonnement à trouver en ce lieu une population référable au taxon *schmidi* BREUNING (1973), décrit des montagnes du Sikkim à un millier de kilomètres de distance. En fait, l'étude de nombreux exemplaires d'une deuxième population du Yunnan nous permet de relever quelques différences, minimes il est vrai, avec les exemplaires de l'ancien petit royaume himalayen, et nous proposons en conséquence de créer un taxon nouveau.

Carabus. w. alboequus nov. se distingue de *schmidi* BREUNING (1973) par une plus grande étroitesse de l'avant-corps, la tête n'étant nullement dilatée. Chez *schmidi* au contraire, la tête est épaissie, comme chez *sanchari* ANDREWES (1921), également du Sikkim, dont il ne diffère que par la coloration.

Proche de *markamensis* DEUVE (1992), du Tibet voisin, *alboequus* nov. s'en distingue essentiellement par la taille moindre (17,0–21,0 mm au lieu de 21,5–23,0 mm) et la moins forte ponctuation de la tête et du pronotum.

3. *Carabus* (*Eocechenus*) *takashimai* DEUVE et IMURA, n. sp.

(Figs. 3, 8)

Holotype: 1 ♂, Chine, Tibet, Jomda Xian, entre Dêgê et Jomda, env. 3.000 mètres, *in* coll. NSMT. Paratypes: 4 ♀♀, Chine, Tibet, Qamdo Xian, col de Kaqi La, 4.500–4.600 mètres, *in* coll. Y. IMURA.

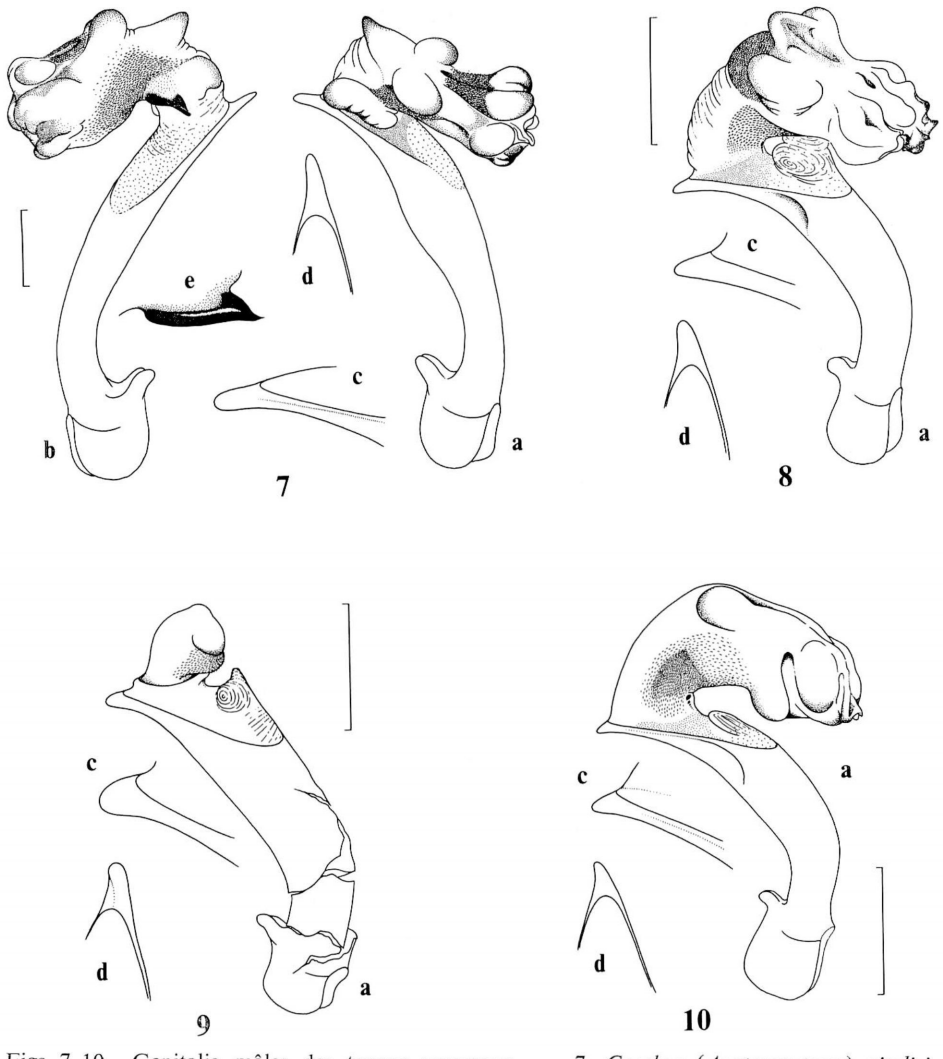
Longueur: 18,0–21,5 mm. Largeur: 6,0–7,7 mm. Coloris dorsal variable: la tête noire, le pronotum et les élytres rouge lilas plus ou moins violacé, ou rouge-orangé cuivré, ou vert-jaune cuivré, les zones marginales souvent davantage colorées. Appendices noirs.

Macrocéphale, la tête dilatée, la région collaire nullement rétrécie, les yeux cependant saillants, mais modérément, petits. Vertex convexe, faiblement ridulé-ponctué, presque lisse. Fossettes superficielles, à peine distinctes, entraînant parfois une dépression de l'aire frontale. Clypéus bisétulé, à bord antérieur un peu incurvé. Labre plus étroit que le clypéus, la paire de soies latérales aussi proche ou plus proche du bord postérieur que de la marge antérieure, celle-ci nettement incurvée. Mandibules robustes, à surface dorsale microponctuée, l'aire de la dent térébrale fortement dilatée et recouvrant partiellement le rétinacle qui est non ou à peine visible en vue dorsale. Palpes assez courts, le dernier article modérément dilaté, les palpes labiaux dichètes. Dent médiane du mentum vive et aiguë, mais deux fois plus courte que les lobes latéraux. Submentum achète. Antennes assez courtes, n'atteignant pas chez le mâle le quart antérieur des élytres et dépassant en arrière de deux (femelles) ou trois (mâle) articles la base du pronotum; les premiers articles courts, le 2° un peu globuleux, de même longueur mais plus large que le 4°, le 3° moins de deux fois plus long, l'extrémité apicale du 4° pubescente. Antennomères moyens du mâle normaux, entièrement pubescents et nullement excavés.

Pronotum assez petit, transverse, 1,55 fois plus large que long, la plus grande largeur au tiers antérieur, puis rétréci en arrière, les côtés faiblement mais distinctement sinués avant les angles postérieurs qui sont à peine lobés, émoussés. Disque modérément convexe mais fortement ponctué, le sillon médian profond, les marges étroites mais fortement rebordées, ourlées, le bord avec quelques entailles caractéristiques. Trois ou quatre soies médianes ou antéro-médianes; une soie basale.

Elytres courts, ovalaires, peu rétrécis en avant et en arrière, la plus grande largeur au tiers postérieur, les épaules marquées mais arrondies, la marge apicale non ou à peine subsinuée. Disque peu convexe, un peu déprimé, la sculpture de type triploïde homodyname, modérément saillante, les stries plus ou moins ponctuées, les intervalles un peu ruguleux. Intervalles primaires par endroits interrompus par de discrètes fossettes ponctiformes généralement peu distinctes, parfois de ce fait sous la forme de chaînons courts.

Pattes assez courtes, fines, les protarses du mâle avec les trois premiers articles dilatés et pourvus de phanères adhésifs. Pleures thoraciques lisses. Ventrites abdominaux non sillonnés. Edéage du mâle (fig. 8) avec combe latérale modérément



Figs. 7–10. Genitalia mâles des taxons nouveaux. — 7, *Carabus* (*Apotomopterus*) *vitalisi mourzinei* n. subsp.; 8, *C.* (*Eocechenus*) *takashimai* n. sp.; 9, *C.* (*E.*) *micromentum* n. sp. (ce spécimen est immature, de sorte que l'édéage représenté ici a subi une faible déformation et a été brisé); 10, *C.* (*Calocarabus*) *gratus nishidai* n. subsp.; a, face latérale droite; b, face latérale gauche; c, vue latérale droite du sommet; d, vue frontale du sommet; e, détail de la spinula, vue dorsale. Echelle: 2 mm pour a et b, 1 mm pour c, d et e.

marquée, la lame apicale fortement incurvée, l'apex court, aigu mais émoussé. Lobe ostial présent. Endophallus typique des Multistriati, avec un ligulum réduit mais densément pubescent.

Caractères diagnostiques. Espèce proche de *C.* (*E.*) *leptoplesioides* DEUVE (1992), mais bien distincte de prime abord par sa forme générale plus large, avec le pronotum

plus transverse, et par son revêtement dorsal coloré. La tête est notablement plus large, le pronotum plus étroit, avec le sillon médian plus profond et plusieurs soies marginales médianes ou antéro-médianes (une seule soie médiane chez *leptoplesioides*), les élytres sont plus courts, les pattes moins longues.

4. *Carabus (Eocechenus) micromentum* DEUVE et IMURA, n. sp.

(Figs. 4, 9)

Holotype: 1 ♂, Chine, Sichuan, Dêgê, 3.100 mètres, *in* coll. NSMT.

Longueur: 19,5 mm. Largeur: 6,8 mm. Entièrement noir luisant concolore; les appendices noirs.

Tête grosse, les yeux modérément saillants, le vertex convexe, finement et faiblement ridulé, le front peu convexe, lisse, les fossettes indistinctes. Clypéus bisétulé, à bord antérieur incurvé. Labre plus étroit que le clypéus, les soies externes plus proches du bord postérieur que de la marge antérieure; celle-ci nettement incurvée. Mandibules robustes, la dent térébrale fortement dilatée et recouvrant partiellement le rétinacle, dont seule la dent basilaire est visible en vue dorsale. Palpes à dernier article modérément dilaté, les palpes labiaux dichètes. Mentum assez petit, à dent médiane large à sa base mais à sommet vif, nettement plus courte que les lobes latéraux. Submentum bisétulé. Antennes moyennes, atteignant presque le tiers antérieur des élytres et dépassant en arrière de 3,5 articles la base du pronotum; le 3° article moins de deux fois plus long que le 4°, celui-ci un peu plus long que le 2°.

Pronotum assez petit, cependant transverse, 1,60 fois plus large que long, la plus grande largeur vers le quart ou le tiers antérieur, puis les côtés à peine subsinués avant les angles postérieurs qui sont à peine lobés, le sommet émoussé. Disque modérément convexe, faiblement mais assez densément ridulé-vermiculé, ponctué vers la base, le sillon médian bien distinct, les marges latérales non relevées, finement rebordées. Fossettes basales quasi indistinctes. Pas de soie médiane visible sur l'holotype; une soie basale.

Elytres en ovale allongé, rétrécis davantage en avant qu'en arrière, la plus grande largeur vers le milieu mais les épaules étroites, cependant marquées, arrondies. Disque assez convexe, la sculpture triploïde mais effacée, les stries marquées seulement par des alignements de points serrés, réguliers, qui délimitent des intervalles plans, nullement saillants. Pas de fossettes primaires distinctes.

Pattes moyennes, les protarses du mâle avec les trois premiers articles dilatés et pourvus de phanères adhésifs. Pleures thoraciques lisses. Ventrites abdominaux non sillonnés. Edéage (fig. 9).

Caractères diagnostiques. Comme *C. (E.) noctivagus* DEUVE (1992), qui vit dans la même région, sinon dans la même localité, mais le coloris noir luisant, les mandibules plus courtes, le vertex moins dilaté, les antennes plus longues, dépassant en arrière de 3,5 articles la base du pronotum, mais les premiers articles au contraire plus courts, le 4° article moins de deux fois plus long que large, le pronotum moins rétréci en arrière,

les côtés à peine subsinués, les angles basaux à peine lobés, l'édéage du mâle différent, sans combe latérale, l'apex plus régulier, non brusquement infléchi.

5. *Carabus (Calocarabus) gratus nishidai* DEUVE et IMURA, n. subsp.

(Figs. 5, 10)

Holotype: 1 ♂, Chine, Qinghai, Zhubgyügoin, 4.200 mètres, *in* coll. J. KALAB. Paratypes: 17 ♂♂, 17 ♀♀, même provenance, *in* coll. J. KALAB, K. MIZUSAWA, diverses collections privées et Muséum National d'Histoire Naturelle, Paris; 1 ♂, 1 ♀, Chine, Qinghai, Yushu Zangzu Zizhizhou, entre Qingshuihe et Zhenqin, 4.200 mètres, *in* coll. Y. IMURA.

Longueur: 17–19 mm. Largeur: 6,0–6,5 mm. Coloris dorsal gris ou bleu-gris sombre, presque noir, les tibias, fémurs et les quatre premiers articles antennaires testacé-rougeâtre, les tarses et les articles 5 à 11 des antennes noirs, les palpes brunâtres ou noirâtres, les mandibules brun-rougeâtre à la base.

Tête grosse, large, les yeux cependant saillants, le front et le vertex convexes, lisses, les fossettes modérément marquées, larges. Labre petit, plus étroit que le clypéus et à bord antérieur très fortement incurvé. Mandibules longues et fortes; la mandibule gauche marquée par le développement de la dent térébrale qui fusionne avec le rétinacle pour former un processus saillant; la mandibule droite peu différenciée, la dent térébrale au contraire effacée, le rétinacle normalement bifide, la dent apicale parfois seulement un peu plus forte que la dent basilaire. Palpes courts et épais, le dernier article dilaté davantage chez le mâle, les palpes labiaux dichètes. Dent médiane du mentum peu aiguë mais vive, assez courte, plus courte que les lobes latéraux. Antennes assez brèves, ne dépassant en arrière que de 2 à 2,5 articles la base du pronotum; le 4° article sensiblement de même longueur que le 2°, le 3° moins du double plus long.

Pronotum très transverse, 1,60 fois plus large que long, la plus grande largeur au tiers antérieur, puis peu rétréci en arrière, les côtés à peine subsinués avant les angles postérieurs qui sont très courtement lobés, leur sommet arrondi. Disque convexe, le sillon médian distinct, les gouttières à peine marquées, les marges non ou à peine relevées, mais finement rebordées. Fossettes profondes. Une ou deux soies médianes, une soie basale.

Elytres ovalaires, la plus grande largeur vers le milieu, les épaules modérément marquées. Disque assez convexe, les intervalles primaires sous la forme de larges côtes modérément saillantes, continues et régulières, lisses et luisantes; les espaces intermédiaires mats, les intervalles secondaires et tertiaires indistincts sinon sous la forme de granulations alignées à peine perceptibles.

Pattes courtes, les protarses du mâle avec les trois premiers articles dilatés et pourvus de phanères adhésifs sur la sole du 4° article. Pleures lisses, les ventrites abdominaux nullement sillonnés. Edéage: fig. 10.

Caractères diagnostiques. Morphologiquement proche de *gratus* SÉMÉNOW (1887), mais la taille à peine plus grande et le coloris bien différent, plus sombre, gris bleuté

ou gris presque noir.

La coloration de cette espèce semble variable selon la localité géographique. Ainsi, au sud-ouest d'Heka, 4.700 mètres, tous les exemplaires capturés sont invariablement vert-cuivré, avec les marges et le pronotum plus ou moins rouge-cuivré (14 ♂♂, 17 ♀♀); à Qingshuihe, 4.200 mètres, le coloris est beaucoup plus inconstant, du bleu au vert, en passant par des cuivré-doré ou brun-cuivré (37 ♂♂, 52 ♀♀); enfin à Zhubgyügoin, 4.200 mètres, et dans les environs de Zhenqin, 4.200 mètres, tous les spécimens sont bleugris ou gris-noir (subsp. *nishidai* nov.). Toutes ces localités sont situées dans la partie orientale de la province du Qinghai, où l'espèce semble exclusivement localisée.

6. *Cychrus koiwayai* Deuve et Imura, n. sp.

(Fig. 6)

Holotype: 1 ♀, Chine, Sichuan, Dêgê, 3.420 mètres, *in* coll. NSMT. Paratypes: 3 ♀♀, même provenance, *in* coll. Y. Imura; 1 ♂, 7 ♀♀, même provenance, 4.200 mètres, *in* coll. L. et R. Businsky et Muséum National d'Histoire Naturelle, Paris.

Longueur: 17,5–18,5 mm. Largeur: 6,0 mm. Noir profond, assez luisant, les appendices noirs.

Tête normalement allongée pour le genre; les yeux modérément saillants; le front convexe, bombé, à peu près lisse, marqué en arrière par un sillon transversal curviligne, à peu près effacé en son milieu, mais associé à une ponctuation éparse. Fossettes frontales modérées, n'affectant pas le clypéus. Labre bilobé, normalement quadrisétulé. Palpes longs et fins, le dernier article dilaté, l'avant-dernier article maxillaire près de deux fois plus court que le dernier, l'avant-dernier labial dichète. Mentum sans dent médiane, le submentum achète. Antennes moyennes, n'atteignant pas le milieu des élytres et dépassant en arrière de cinq articles la base du pronotum; le 4° article non pubescent, avec seulement les quelques soies coronaires à son extrémité, presque deux fois plus court que le 2° article; le 3° article moins de deux fois plus long que le 2°.

Pronotum assez allongé, aussi long que large, la plus grande largeur avant le milieu, les côtés arrondis, sans angulation, puis longuement sinués en arrière avant les angles postérieurs qui sont un peu aigus mais émoussés. Disque très convexe, avec une ponctuation marquée mais éparse, clairsemée, le sillon médian profond, les marges étroites, nullement relevées, seulement discrètement rebordées. Fossettes basales transversales. Une soie médiane; pas de soie basale.

Elytres en ovale allongé, le disque peu convexe, un peu déprimé, les épaules peu marquées. Sculpture marquée surtout par une forte et dense ponctuation, les primaires, en chaînons courts, plus ou moins distincts, les intermédiaires indistincts, sous la forme d'une dense granulation plus ou moins alignée.

Caractères diagnostiques. Proche de *Cychrus kozlovi* Semenov et Znojko (1934), connu des massifs plus occidentaux du Qinghai, mais les antennes plus longues, le pronotum davantage élargi, la sculpture élytrale plus profonde, nullement effacée.

要　約

Thierry DEUVE・井村有希: 中国と北ベトナムから発見されたオサムシの2新種，3新亜種とセダカオサムシの1新種. —— 中国（青海省，四川省，云南省，西蔵自治区）と北ベトナムから得られたオサムシ亜科の甲虫を検し，以下のものを記載した: 1) 北ベトナム中部の Shonla から，*Carabus* (*Apotomopterus*) *vitalisi mourzinei* subsp. nov. を記載した．本種はこれまで，ラオス北部の Xien Khouang から得られた数頭の標本が知られるのみであったが，このほど，ラオス国境に近い北ベトナム領内から記録されたものである．基亜種よりも前胸背板がやや幅広く，上翅のふくらみが弱いほか，♂前付節の第4節がつよく拡がるので，識別はやさしく，上翅彫刻と陰茎の形態もやや異なっている．2) 云南省北西部の白马雪山に産する *C.* (*Pagocarabus*) *wagae* の集団は，筆者ら (1991, p. 148) により，シッキムに産する亜種 *schmidi* BREUNING に属するものとして記録されたが，その後，被検個体数を増やして検討した結果，シッキムの亜種とは体形が異なり，頭部の巨大化がそれほど顕著ではないという安定した相違が認められたので，*alboequus* subsp. nov. という名を与えてあらたに記載した．本新亜種は，さいきんチベットから記載された亜種 *markamensis* DEUVE にも近いが，より小型で，頭部と前胸背板の点刻が弱い．3) みっつめは，*Eocechenus* 亜属に属する新種で，*C.* (*E.*) *takashimai* sp. nov. と命名した．本亜属は東チベットの高山帯に分布していて，さいきん記載されたものも含め，これまでに9種ほどが知られている．新種 *takashimai* は，西蔵自治区東部の江达近郊と昌都東方のカチ拉から得られたもので，*C.* (*E.*) *leptoplesioides* DEUVE に近いが，より大型，有色で，頭部はいちじるしく巨大化し，複数の前胸背板側縁剛毛をもつ．4) 四川省北西端の徳格で得られた黒色の種も *Eocechenus* 亜属に属する新種で，*C.* (*E.*) *micromentum* sp. nov. と命名記載した．同じく徳格からごくさいきん記載された *C.* (*E.*) *noctivagus* DEUVE にきわめて近いが，大顎は短く，頭頂はあまり拡がらず，触角はやや長く，前胸背板と陰茎の形態が異なるので，別の種に属するものと思われる．5) 青海省南東部から，*C.* (*Calocarabus*) *gratus nishidai* subsp. nov. を記載した．チベットから記載された基亜種に近いが，より大型で，色調も異なる．6) さいごに，四川省北西の徳格から得られた，比較的大型のセダカオサムシ属の1種を新種と認め，*Cychrus koiwayai* sp. nov. として記載した．青海省から知られる *C. kozlovi* SEMENOV に近いが，触角がより長く，前胸背板はよりつよく拡がり，上翅彫刻はよりつよく刻まれる．

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New Records and Taxonomic Accounts of Three Carabid Beetles from the Southernmost Part of the Korean Peninsula

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Early in the summer of 1992, I made a short collecting trip for carabid beetles to the southernmost part of the Korean Peninsula including some adjacent islands, whose carabid fauna has not satisfactorily been investigated until now. In this short article, I am going to give the new distributional records and taxonomic accounts of the following three species, which are the commonest and the most widely distributed in South Korea: *Carabus* (*Eucarabus*) *sternbergi*, *C.* (*Coptolabrus*) *jankowskii*, and *C.* (*C.*) *smaragdinus*. All the specimens were obtained by using bait traps, and are preserved in my collection.

I wish to thank Dr. Shun-Ichi UÉNO for reading the manuscript of this paper.

1. *Carabus* (*Eucarabus*) *sternbergi* ROESCHKE

Specimens examined. 1 ♂, 1 ♀, near the Ch'on-gwan-sa Temple, ca. 400 m alt. on the northern slope of Mt. Ch'on-gwan-san, Changhŭng-gun, Chŏllanam-do, 11–VI–1992; 3 ♂♂, 10 ♀♀, near the Kumt'ap-sa Temple, ca. 300 m alt., Kohŭng Peninsula, Kohŭng-gun, Chŏllanam-do, 12–VI–1992, all collected by Y. IMURA.

Notes. Both the Ch'on-gwan-sa and the Kumt'ap-sa specimens are almost identical in aedeagal features with subsp. *honamensis* KWON et LEE described from Mt. Chogye-san, though the Kumt'ap-sa one seems to be a little larger and robuster on an average than in the topotypical specimens (body length measured including mandibles: ♂, 28.3–28.8 mm; ♀, 27.2–30.8 mm).

2. *Carabus* (*Coptolabrus*) *jankowskii* (OBERTHÜR)

Specimens examined. 4 ♂♂, 4 ♀♀, near Jukch'ŏn, Is. Wan-do, Wando-gun, Chŏllanam-do, 11–VI–1992; 10 ♂♂, 12 ♀♀, near the Ch'on-gwan-sa Temple, ca. 400 m alt. on

the northern slope of Mt. Ch'on-gwan-san, Changhŭng-gun, Chŏllanam-do, 11–VI–1992; 12 ♂♂, 15 ♀♀, near the Kumt'ap-sa Temple, ca. 300 m alt., Kohŭng Peninsula, Kohŭng-gun, Chŏllanam-do, 12–VI–1992; 19 ♂♂, 20 ♀♀, SEE of Kohŭng, Kohŭng Peninsula, Kohŭng-gun, Chŏllanam-do, 12–VI–1992; 21 ♂♂, 21 ♀♀, near the Hŭngguk-sa Temple, ca. 200 m alt., Yŏsu Peninsula, Yŏch'ŏn-shi, Chŏllanam-do, 12–VI–1992; 45 ♂♂, 33 ♀♀, near Sŏdŏk, Is. Tolsan-do, Yŏch'ŏn-gun, Chŏllanam-do, 12–VI–1992; 65 ♂♂, 47 ♀♀, Tonam-dong, Is. Mirŭk-to, Ch'ungmu-shi, Kyŏngsangnam-do, 13–VI–1992, all collected by Y. IMURA.

Notes. Although considered to be identical with subsp. *chindoensis* KWON et PARK distributed in Is. Chin-do, all the specimens from Is. Wan-do are rather peculiar in the coloration: head and pronotum coppery-reddish with the central part of the latter more or less purplish; elytra dark purplish blue with the margins metallic green. The specimens from Ch'on-gwan-sa, Kumt'ap-sa, and Kohŭng are not so remarkably different in any features from the nominotypical subspecies widely distributed in the Korean Peninsula. The Mirŭk-to specimen agrees with the subspecific characters of subsp. *kojensis* KUROSAWA et KUDO, as was expected from the propinquity of this island to Is. Kŏje-do, the type locality of the latter subspecies. Both the Hŭngguk-sa and the Tolsan-do specimens also seem to be determined as *kojensis*, but the coloration of the former is very similar to that of subsp. *obtusipennis* ISHIKAWA et KIM distributed on the Chiri-san Mountains.

3. *Carabus* (*Coptolabrus*) *smaragdinus* FISCHER

Specimens examined. 7 ♂♂, 7 ♀♀, near the Kumt'ap-sa Temple, ca. 300 m alt., Kohŭng Peninsula, Kohŭng-gun, Chŏllanam-do, 12–VI–1992; 1 ♂, SEE of Kohŭng, Kohŭng Peninsula, Kohŭng-gun, Chŏllanam-do, 12–VI–1992; 1 ♂, 6 ♀♀, near the Hŭngguk-sa Temple, ca. 200 m alt., Yŏsu Peninsula, Yŏch'ŏn-shi, Chŏllanam-do, 12–VI–1992; 1 ♂, 2 ♀♀, near Sŏdŏk, Is. Tolsan-do, Yŏch'ŏn-gun, Chŏllanam-do, 12–VI–1992; 2 ♂♂, 3 ♀♀, Tonam-dong, Is. Mirŭk-to, Ch'ungmu-shi, Kyŏngsangnam-do, 13–VI–1992, all collected by Y. IMURA.

Notes. All the specimens seem to belong to subsp. *branickii* TACZANOWSKI (sensu IMURA et KEZUKA, 1992), with the coloration of the dorsal surface reddish coppery. The Tolsan-do specimen is considerably small in size (♂, 33.7 m; ♀, 36.6–38.2 mm), though I was able to examine only three specimens.

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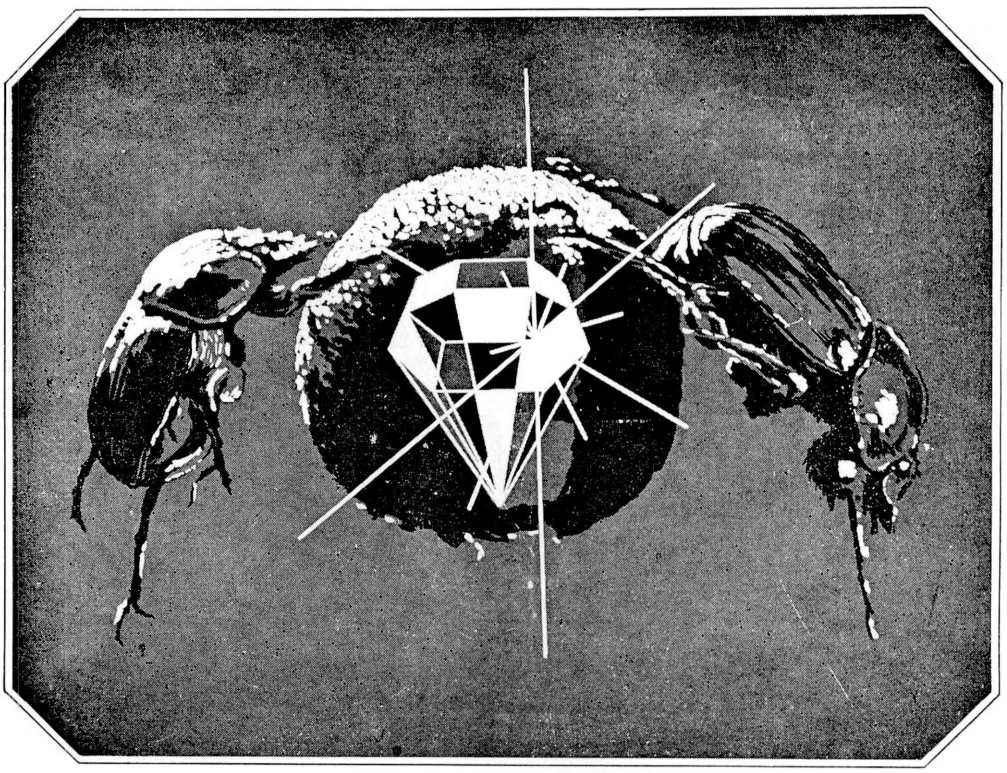

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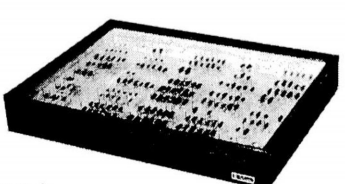

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