

A New Genus and Species of Lebiine Carabid Beetle (Coleoptera, Carabidae) from Kyushu, Japan

Koji ARAI

Musashidai 3–22–13, Ranzan, Saitama, 355–0216 Japan

and

Seiji MORITA

Higashi-gotanda 5–19–7, Shinagawa-ku, Tokyo, 141–0022 Japan

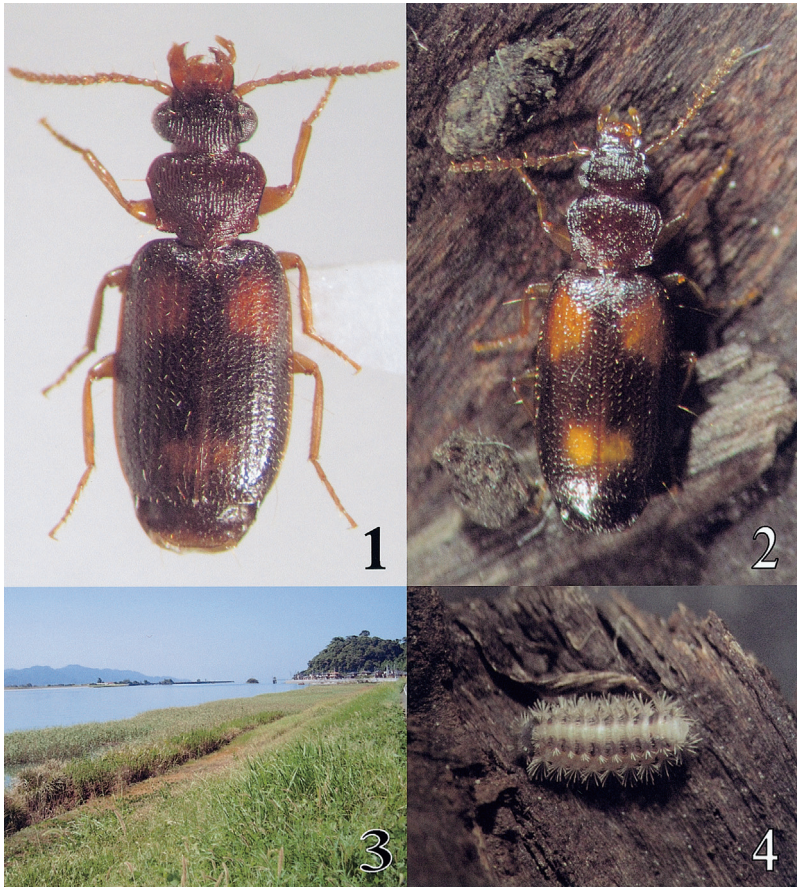
Abstract A new genus and species of lebiine carabid beetle is described from Kyushu, Japan under the name of *Imasakaia kidoi* gen. et sp. nov. It belongs to the subtribe Dromiina, and is distinguished from other genera by the coarsely rugose head and pronotum, the elytra with rows of minute hairs, and the stylus in female bearing many minute spines, a long hair and two spines.

Through the courtesy of Mr. Shôichi IMASAKA, we were able to examine a strange lebiine carabid beetle found near the riverbed of the Kuma-gawa River in central Kyushu, Japan. At a glance, they look like certain species of the genus *Philorhizus* (HOPE, 1838), but doubtless belong to a different genus. However, we soon found out that to erect a new genus for the species is not an easy task to do, for the species under consideration did not seem to have the necessary combination of characters to participate in the most recent key available to the lebiine genera of Japan (HABU, 1982, p. 111).

In order to obtain more material, the first author made a collecting trip to the riverbed last year, and succeeded in obtaining a long series of specimens of the beetle. At the same time, a very interesting observation was made on their habit, since the beetle usually coexists with the soft millipede, *Eudigraphis nigricans* (Diplopoda, Polyxenida).

Very recently, the same species was found from under the bark of a zelkova tree, *Zelkova serrata*, by Mr. Katsuya KIDO, who submitted his collection to us for taxonomic study. Attempt to solve the problem led us to the study presented in the following pages.

The abbreviations used herein are as follows: L – body length, measured from apical margin of clypeus to apices of elytra; HW – greatest width of head; PW – greatest width of pronotum; PL – length of pronotum, measured along the mid-line; PA – width



Figs. 1–4. *Imasakaia kidoi* ARAI et MORITA, gen. et sp. nov. — 1. Holotype (♂); 2. *Imasakaia kidoi* ARAI et MORITA, gen. et sp. nov., living beetle at Sozō-machi; 3. Habitat (Sozō-machi); 4. *Eudigraphis nigricans* (MIYOSHI) (Diplopoda, Polyxenida).

of pronotal apex; PB – width of pronotal base; EW – greatest width of elytra; EL – greatest length of elytra; FL – length of metafemur; ML – length of metatrochanter; TLI – length of segment 1 of metatarsus; TLV – length of claw segment of metatarsus; M – arithmetic mean; NSMT – National Museum of Nature and Science, Tokyo.

Before going further, we wish to express our deep indebtedness to Dr. Shun-Ichi UENO of the National Museum of Nature and Science, Tokyo, for critically reading the original manuscript of this paper. Hearty thanks are also due to Mrs. Shoichi IMASAKA and Katsuya KIDO for supplying us with important material.

Our thanks are also due to Dr. Martin BAEHR of Germany for giving advice.

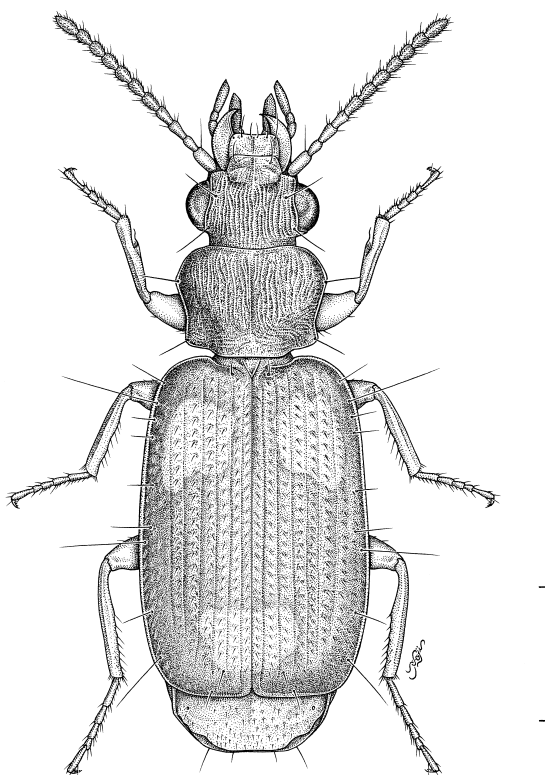


Fig. 5. *Imasakaia kidoi* ARAI et MORITA, gen. et sp. nov. (Scale: 1.00 mm.)

Genus *Imasakaia* nov.

[Japanese name: Shiwa-atokiri-gomimushi Zoku]

Type species: *Imasakaia kidoi* sp. nov.

Description. Body small and rather flat; body brown; elytra with spots.

Head rather flat; genae short and strongly convergent posteriad; neck short and wide (not constricted); surface coarsely and longitudinally rugose; frontal furrows indistinguishable; two pair of supraorbital pores present; posterior supraorbital pores situated near eyes; mentum tooth weakly porrect at the tip or almost lacking; clypeus with a longitudinal keel at middle; ligula wide, moderately emarginate at apex, and with a pair of setae; paraglossae smooth and extending beyond ligula; labrum with three pair of setae at apex; antennae short and moniliform; antennal segments from apex of IV to XI covered with pubescence; mandibles with narrow scrobe; apical segment of labial palpus fusiform; apical segment of maxillary palpus obliquely truncate.

Pronotum transverse; widest part obtusely angulate, with anterior marginal seta on

each side; hind angles with a postangular seta on each side; base widely and shortly pedunculate; surface densely covered with minute hairs, and strongly and longitudinally rugose.

Elytra elongate and gently convex; scutellar striole lacking; basal pore present on each side; intervals irregularly or transversely rugose and with longitudinal rows of minute hairs; interval III without dorsal pore; apical part with two pores (apical and subapical) on each side; apical three pores of marginal series on an almost straight line.

Hind wings fully developed.

Ventral surface almost smooth; sternites (I–V) with a pair of setae; anal sternite (VI) with two pair of setae in ♂ and ♀.

Legs rather short and thin; basal three segments of protarsus with adhesive hairs beneath in ♂; basal 3 or 4 segments of protarsus slightly wider in ♂ than in ♀; tibiae with short spines and apical spurs; segment 4 of tarsi not bilobed; claw serrate.

Aedeagus poorly sclerotized, short, not arcuate, and with very narrow basal part; apical orifice open at the dorsal side. Inner sac partially armed with many spines. Left paramere larger than the right one.

Apical styli in ♀ robust, straight and rather short; a long hair situated at apical 1/3; two short spines situated at apical 1/3; area of apical 1/3 covered with many minute spines.

Notes. This new genus is recognized on the following points: 1) head and pronotum coarsely rugose, 2) clypeus with a longitudinal keel at middle, 3) elytral intervals irregularly or transversely rugose and with rows of minute hairs, and 4) stylus in female with many minute spines, a long seta and two spines.

The generic name is given after Mr. Shôichi IMASAKA, who collected this interesting beetle.

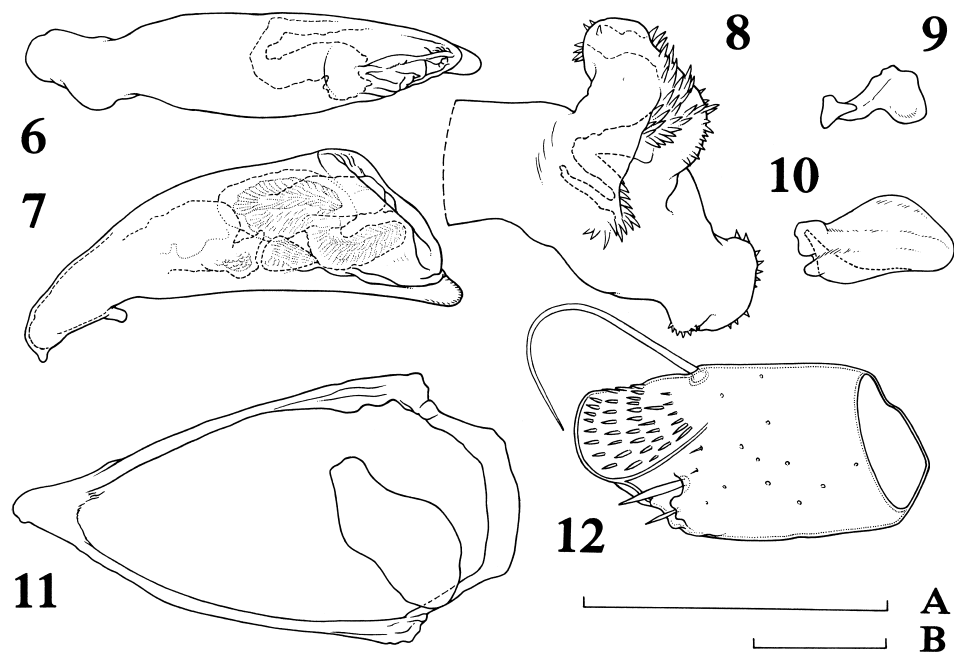
Imasakaia kidoi ARAI et MORITA, sp. nov.

[Japanese name: Mitsumon-shiwa-atokiri-gomimushi]

(Figs. 1–12)

Description. L: 3.70–4.11 mm. Body small and rather flat. Head and pronotum brown; elytra brown to dark brown, with three reddish brown spots; a pair of anterior spots situated at basal 1/10–2/5 and on intervals III–VII or VIII on each side; posterior spot situated at middle and at basal 7/10–9/10; ventral side brown; epipleuron usually brown, rarely partially dark brown; labrum and mandibles reddish brown; antennae, palpi and legs yellowish brown.

Head rather flat with prominent eyes; surface strongly and longitudinally rugose; anterior supraorbital pores situated at the level of basal 2/3 of eyes; posterior supraorbital pores situated at the post-eye level; microsculpture not sharply impressed; genae very short and oblique; labrum usually with longitudinal and very weak keel at middle, or rarely almost flat; apex of labrum variable in shape, usually weakly emarginate, rarely



Figs. 6–12. *Imasakaia kidoi* ARAI et MORITA, gen. et sp. nov. — 6, Aedeagus, dorsal view; 7, same, left lateral view; 8, everted inner sac of aedeagus, dorsal view; 9, right paramere, left lateral view; 10, left paramere, left lateral view; 11, genital segment, ventral view; 12, apical stylus. (Scale: A, 0.5 mm for 6–11; B, 0.05 mm for 12.)

almost straight or weakly produced, and with three pair of setae at apex; antennae moniliform, short and reaching the basal part of elytra; antennal segment I with a long seta; segment II without seta; segment III with four or five setae; apex of segment IV to XI covered with pubescence; relative lengths of antennal segments as follows:— I : II : III : IV : V : VI : XI \approx 1 : 0.45 : 0.75 : 0.70 : 0.65 : 0.65 : 0.85.

Pronotum transverse, weakly convex and widest at about basal 3/5; sides very weakly arcuate from apical angles to the level of apical 1/8, almost straight or very weakly arcuate from that level to the widest part, almost straight behind, moderately sinuate at basal 1/4, and then very weakly divergent towards hind angles; apical angles not produced and widely rounded at the tips; apex almost straight and not bordered; median line vaguely impressed, reaching neither apex nor base; anterior transverse impression usually not clear; basal fovea very shallow; hind angles rectangular, and with obtusely rounded tip; base not bordered; PW/HW 1.10–1.15 (M 1.13) in ♂, 1.10–1.19 (M 1.15) in ♀; PW/PL 1.33–1.41 (M 1.36) in ♂, 1.32–1.41 (M 1.37) in ♀; PW/PA 1.39–1.55 (M 1.50) in ♂, 1.34–1.58 (M 1.49) in ♀; PW/PB 1.16–1.22 (M 1.20) in ♂, 1.16–1.21 (M 1.18) in ♀; PA/PB 0.75–0.88 (M 0.80) in ♂, 0.74–0.87 (M 0.80) in ♀; surface densely covered with minute hairs; disc strongly and longitudinally rugose, but

apical and basal parts disordered; microsculpture practically vanished.

Elytra elongate; EW/PW 1.51–1.75 (M 1.60) in ♂, 1.40–1.58 (M 1.51) in ♀; EL/EW 1.31–1.53 (M 1.43) in ♂, 1.44–1.64 (M 1.55) in ♀, widest at about middle; shoulders widely rounded; sides usually very feebly arcuate throughout; outer angles of apices widely rounded; suture slightly separated from each other at apex, with sutural angle rounded; striae shallowly and vaguely impressed and impunctate; basal pore situated on base of stria 1 or 2; microsculpture practically vanished though consisting of polygonal meshes; intervals weakly convex; marginal series of umbilicate pores nine in number; apical pore situated on apex of stria 3; subapical pore situated on the apical part of interval III.

Anal sternite (VI) trapezoidal, with moderately arcuate apex.

Legs rather short and thin; metatrochanter short, with rounded apex and a seta; ML/FL 0.49–0.55 (M 0.52) in ♂ and ♀; TLI/TLV 1.00–1.10 (M 1.05) in ♂, 1.00–1.10 (M 1.07) in ♀; claw segment of metatarsus with a pair of setae on ventro-lateral sides.

Genital segment triangular with short and narrow handle.

Aedeagus high at apical 1/3 of aedeagus in lateral view; basal part very narrow; viewed laterally, ventral side almost straight; apical lobe rather short, and with simply rounded apex. Inner sac partially armed with many spines. Right paramere small, with elongate basal part; left paramere with large basal part and arcuate apical part.

Apical styli in ♀ as described under the genus.

Type series. Holotype: ♂, Sozô-machi, Yatsushiro-shi, Kumamoto Prefecture, 20–IX–2009, K. ARAI leg. (NSMT). Paratypes: 1 ♂, 1 ♀, Kongo, Yatsushiro-shi, Kumamoto Prefecture, 29–VIII–2005, S. IMASAKA leg.; 4 ♂♂, 8 ♀♀, Sozô-machi, Yatsushiro-shi, Kumamoto Prefecture, 20–IX–2009, K. ARAI leg.; 2 ♂♂, 11 ♀♀, Eta, Nagomimachi, Kumamoto Prefecture, 6–II–2010, K. KIDO leg.

Range. Kyushu, Japan.

Notes. As was already mentioned in the introduction of this paper, the collector observed that the beetles usually coexisted with a soft millipede, *Eudigraphis nigricans* (Diplopoda, Polyxenida) under the drift wood and stones. We considered that this beetle fed on the above millipede. In order to confirm this, alimentary canal of this beetle was dissected. After a careful examination, it was found out that the alimentary canal of this beetle contained characteristic hairs of the millipede.

The standard ratios of body parts shown in the descriptive part are those of 5 males and 9 females from Sozô-machi.

要 約

新井浩二・森田誠司: 九州産アトキリゴミムシの新属新種(コウチュウ目オサムシ科). —— 熊本県から発見されたアトキリゴミムシ類の新属新種 *Imasakaia kidoi* シワアトキリゴミムシ属ミツモンシワアトキリゴミムシ(新称)を記載した. 本種は, 小型で, 頭部と前胸背板の表面に縦皺を密にそなえ, 上翅の間室に細毛列と, 基部および先端近くに斑紋を有するなどの特徴をもつ.

第一著者の観察ならびに採集者の一人、城戸克弥氏からの情報をもとに、解剖を行った結果、本種は、軟体のヤスデ類イソフサヤスデを食べているという特異な性質が、明らかになった。

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Records of Some Nanophyid Weevils (Coleoptera, Nanophyidae) New to Laos, Part 2

Junnosuke KANTOH and Hiroaki KOJIMA

Laboratory of Entomology, Tokyo University of Agriculture,
1737 Funako, Atsugi, Kanagawa, 243-0034 Japan

The nanophyid weevil fauna of Laos has poorly been studied and merely a total of two genera and three species are known from the country (KANTOH & KOJIMA, 2009 b). In this paper, two genera and four species are newly added to the fauna based on the recent survey conducted at rice paddy and its adjacent areas.

We thank Mr. H. WAKAHARA and his family for their arrangement of our trip. Thanks are due to Dr. S. OKAJIMA for his encouragement, and Ms. M. WATANABE, Messrs. T. BAN and G. OISHI for their help in the field. This study is supported by the KAKENHI (21405019, head investigator: S. OKAJIMA).

1. *Alonsiellus pubescens* (ROELOFS, 1874)
Specimen examined. 1 female, Ban Don (alt. ca. 1,100 m, rice paddy), Houapan Prov., 25–VIII–2009, G. OISHI leg.
Distribution. Japan, E. Siberia, Korea, Laos. New to Laos.
Weevils are associated with *Ludwigia epilobioides* (Onagraceae) inhabiting humid places and

make the stem gall in Japan (Y. SAWADA, pers. comm.).

2. *Nanophyes albovittatus* ROELOFS, 1874

Specimens examined. 1 male, Ban Don (alt. ca. 1,100 m, rice paddy), Houapan Prov., 16–VI–2009, T. BAN leg. 3 males and 1 female, Muang Kham Hot Spring (alt. 626 m), N 19°33′/E 103°26′, Xieng Khouang Prov., 20–VIII–2009, H. KOJIMA leg.

Distribution. Japan, Korea, Laos. New to Laos.

Weevils are associated with *Ludwigia epilobioides* and make the fruit gall in Japan.

3. *Nanophyes pallipes* ROELOFS, 1874

Specimens examined. Houapan Prov.: 2 males and 5 females, Ban Nasala (alt. ca. 1,300 m, rice paddy), 15–VI–2009, H. KOJIMA leg. 1 female, Ban Don, (alt. ca. 1,100 m, rice paddy), 25–VIII–2009, H. KOJIMA leg. Khammouan Prov.: 1 male, 7 km east from Thakhek (alt. 169 m), 18–II–2010, H. KOJIMA leg. 2 males and 1 female, 13 km east from Thakhek (alt. 188 m), 18–II–2010, H. KOJIMA leg.

Distribution. Japan (incl. Ryukyus), Laos. New to Laos.

Weevils are associated with *Rotala indica* (Lythraceae) and make the stem gall.

4. *Shiva trispinosus* PAJNI et BHATEJA, 1982

Specimens examined. Khammouan Prov.: 6 males and 6 females, Thakhek (alt. 185 m), 19–IX–2009, G. OISHI leg. (on flower of *Lagerstroemia* sp.). 2 males and 1 female, 7 km east from Thakhek (alt. 169 m), 18–II–2010, T. BAN, H. KOJIMA, M. WATANABE & J. KANTOH leg. Vientiane Dist.: 1 female, Tha Ngon (alt. 254 m), 29–IX–2009, H. WAKAHARA leg. Salavanh Prov.: 1 male, 94 km north from Pakse (alt. 182 m), 12–II–2010, H. KOJIMA leg.

Distribution. India, Indonesia (Bali), Laos. New to Laos.

Weevils are associated with crape myrtle, *Lagerstroemia* spp. (Lythraceae) (KANTOH & KOJIMA, 2009 a).

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