

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.

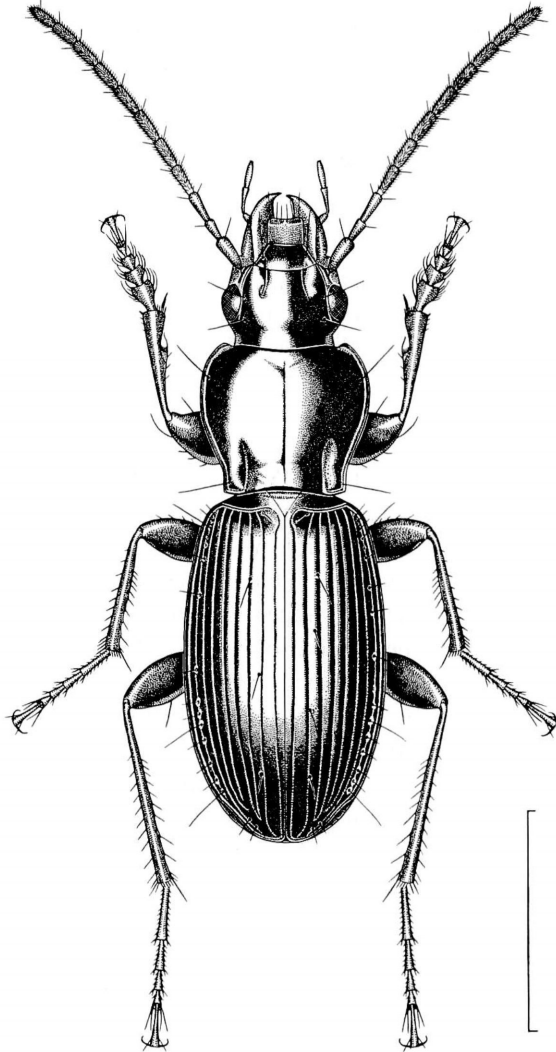
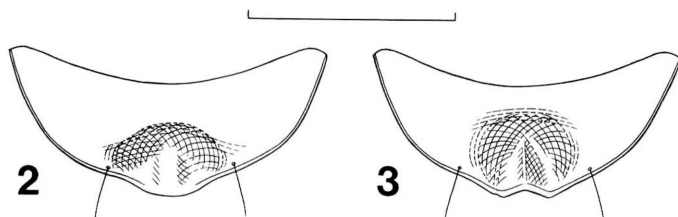


Fig. 1. *Pterostichus (Pterostichus) yamajii* sp. nov., ♂, from Mt. Yamanori-sen, Chûka-son, Okayama Pref. Scale 5 mm.

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.



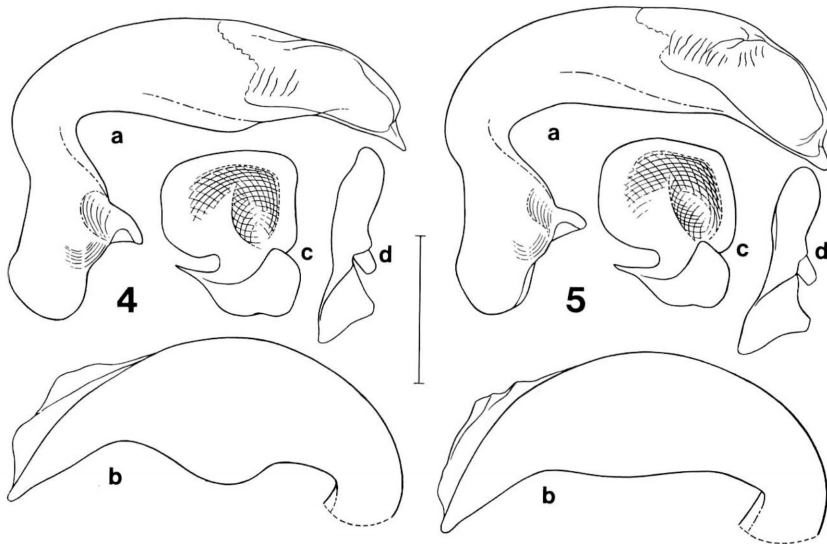
Figs. 2–3. Terminal sternite in the male of *Pterostichus* (*Pterostichus*) spp. — 2, *P. (P.) yamajii* sp. nov., from Mt. Yamanori-sen, Chûka-son, Okayama Pref.; 3, *P. (P.) masidai* ISHIDA, same locality. Scale 2 mm.

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, Kamo-chô, 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

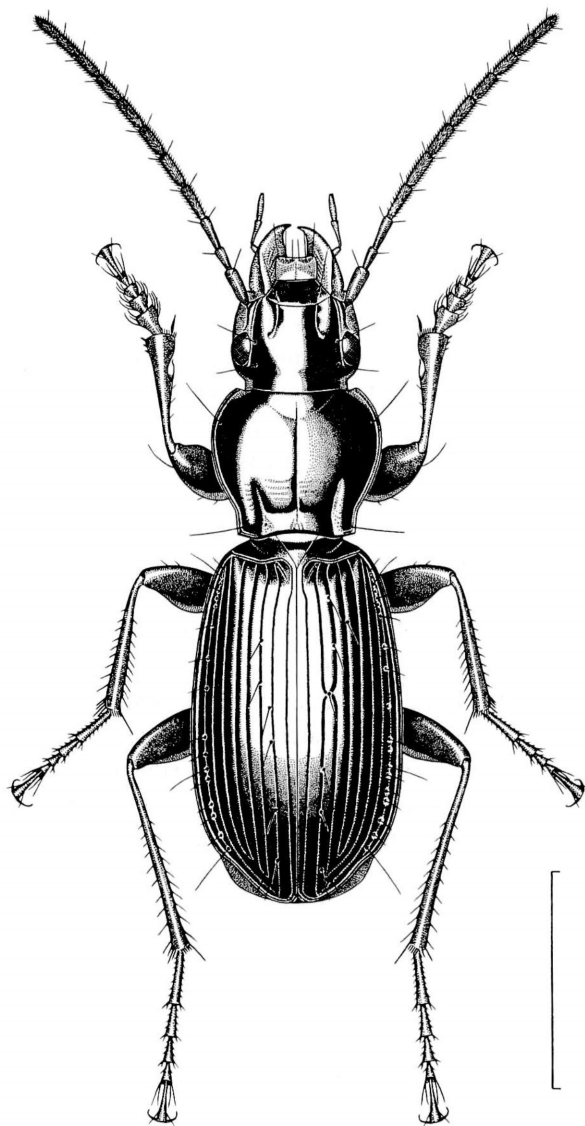


Fig. 6. *Pterostichus (Pterostichus) nasui* sp. nov., ♂, from Mt. Taki-yama, Nagi-chô, Okayama Pref. Scale 6 mm.

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-

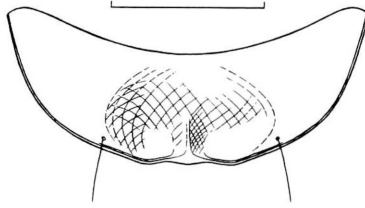


Fig. 7. Terminal sternite in the male of *Pterostichus (Pterostichus) nasui* sp. nov., from Mt. Taki-yama, Nagi-chô, Okayama Pref. Scale 2 mm.

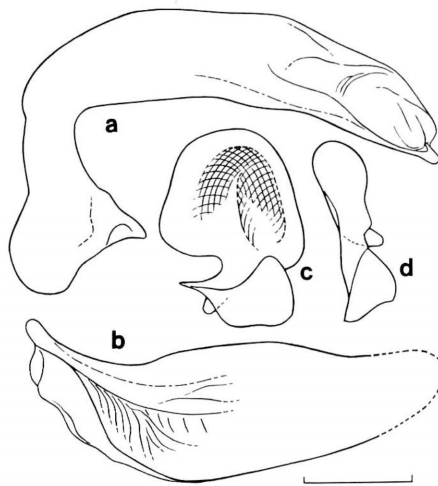


Fig. 8. Male genitalia of *Pterostichus (Pterostichus) nasui* sp. nov., from Mt. Taki-yama, Nagi-chô, Okayama Pref.; a–b, aedeagus — a, left lateral view; b, ventral view, basal part omitted; c, left paramere; d, right paramere. Scale 1 mm.

sternal process unborded, 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. sphodriiformis* 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.) sphodriiformis* 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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