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## Two New *Pterostichus* (Coleoptera, Carabidae) from the Island of Kyushu, Southwest Japan

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**Abstract** Two new pterostichine carabids are described from the northwestern part of the Island of Kyushu, Southwest Japan: *Pterostichus* (*Pterostichus*\*) *imasakai* sp. nov. and *P. (P.) taradakensis* sp. nov. Both the new species belong to the *sphodriiformis* group, and coexist at the type locality.

The pterostichine carabid fauna of the Island of Kyushu has been rather poorly known. Most of the species belonging to the subgenus *Pterostichus*\* are distributed in the mountainous area extending from north to south on the watershed of the island. At the northwestern part, there occur two unnamed forms isolated on a volcano.

Both the species doubtless belong to the *sphodriiformis* group, an assemblage of closely resembling forms most difficult to classify among the Japanese pterostichines. The two species in question are, however, readily distinguished from any other members of the species-group by the configuration of aedeagi besides several external characteristics, and seem to be new to science.

In this paper, we will describe them under the names of *Pterostichus* (*Pterostichus*) *imasakai* sp. nov. and *P. (P.) taradakensis* sp. nov. They coexist on Mt. Tara-dake on the borders between Saga and Nagasaki Prefectures. The former species is also known from Mt. Unzen-dake lying on the Shimabara Peninsula in Nagasaki Prefecture, and the latter has recently been found on the Saga side of Mt. Sefuri-san. The abbreviations used herein are the same as those explained in other papers by the senior author.

Before going further, we wish to express our deep gratitude to Dr. Shun-Ichi UENO of the National Science Museum (Nat. Hist.), Tokyo, for his advice and for reading through the manuscript of this paper. Thanks are also due to Messrs. Fuminori HIROKAWA, Shôichi IMASAKA, Seiji MORITA, Hiroshi NISHIDA, Mitsuyasu NISHIDA and Takeshi OGATA for their kind supplying with the materials.

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\* *Sensu* TANAKA (1985, p. 113).

*Pterostichus (Pterostichus) imasakai* sp. nov.

[Japanese name: Imasaka-nagagomimushi]

(Figs. 1-4)

*Description.* Length (measured from apex of labrum to apices of elytra) 15.6–17.0 mm. Width 5.0–5.4 mm. Elongate, black, shiny; labrum and mandibles dark reddish brown; palpi, antennae and legs reddish brown; venter dark reddish brown, though becoming lighter towards apex.

Head moderately convex, shiny; labrum and mandibles normal; eyes convex; temporae shorter than eyes, strongly contracted behind, slightly tumid; genae finely and feebly rugose near buccal fissures; frontal furrows distinct and wide, almost parallel, though more or less divergent behind in posterior extremities, which reach the level of anterior supraorbital setae; supraorbital areas convex in front; clypeal suture fine; lateral grooves deep, extending a little beyond the post-eye level; surface sparsely and minutely punctate, microsculpture slightly visible, forming isodiametric meshes; both maxillary and labial palpi normal; antennae long, reaching the middle of elytra; relative lengths of scape and segments 2–6 as follows: — 1: 0.55: 0.83: 0.98: 0.98: 0.98; segment 2 ventrally unisetose at apex.

Pronotum quadrate-cordate, moderately convex and shiny, widest at apical third, ca. 1.3–1.4 times as wide as head (PW/HW 1.31–1.38, mean 1.35), ca. 1.3 times as wide as long (PW/PL 1.24–1.30, mean 1.27), ca. 1.4 times as wide as base (PW/PBW 1.35–1.47, mean 1.42); lateral margins evenly and gently arcuate in apical halves, then fully convergent posteriad and sinuate before base, with usually smooth basal portions; lateral reflexed borders narrow, though becoming wider towards apices; marginal grooves vaguely punctate on basal halves; anterior marginal setae inserted a little before the widest level; apical margin weakly emarginate, bordered on each side, apical angles produced, rounded at the tips; basal margin almost as wide as the apical, gently and widely emarginate at the median part, and almost straight or somewhat oblique on each side, which is vaguely bordered, basal angles nearly rectangular, though distinctly rounded at the tips; basal foveae distinct, with linear impressions at the bottoms, coarsely and vaguely punctate; median line moderately impressed; apical crescent depression weak; basal transverse depression usually weak, though often distinct; surface impunctate, though often with vague transverse wrinkles; microsculpture slightly visible, forming fine transverse meshes.

Apterous. Elytra oblong-subovate, moderately convex, shiny in both sexes, widest at the middle, ca. 1.2 times as wide as pronotum (EW/PW 1.16–1.22, mean 1.19), ca. 2.7 times as long as pronotum (EL/PL 2.57–2.73, mean 2.65), ca. 1.7 times as long as wide (EL/EW 1.70–1.76, mean 1.73); basal border complete, curved at the base of interval 4, thence obliquely extending to shoulder, and joining lateral border at an obtuse but distinct angle; shoulders widely rounded; lateral margins evenly and gently arcuate from behind shoulders to preapical emarginations, which

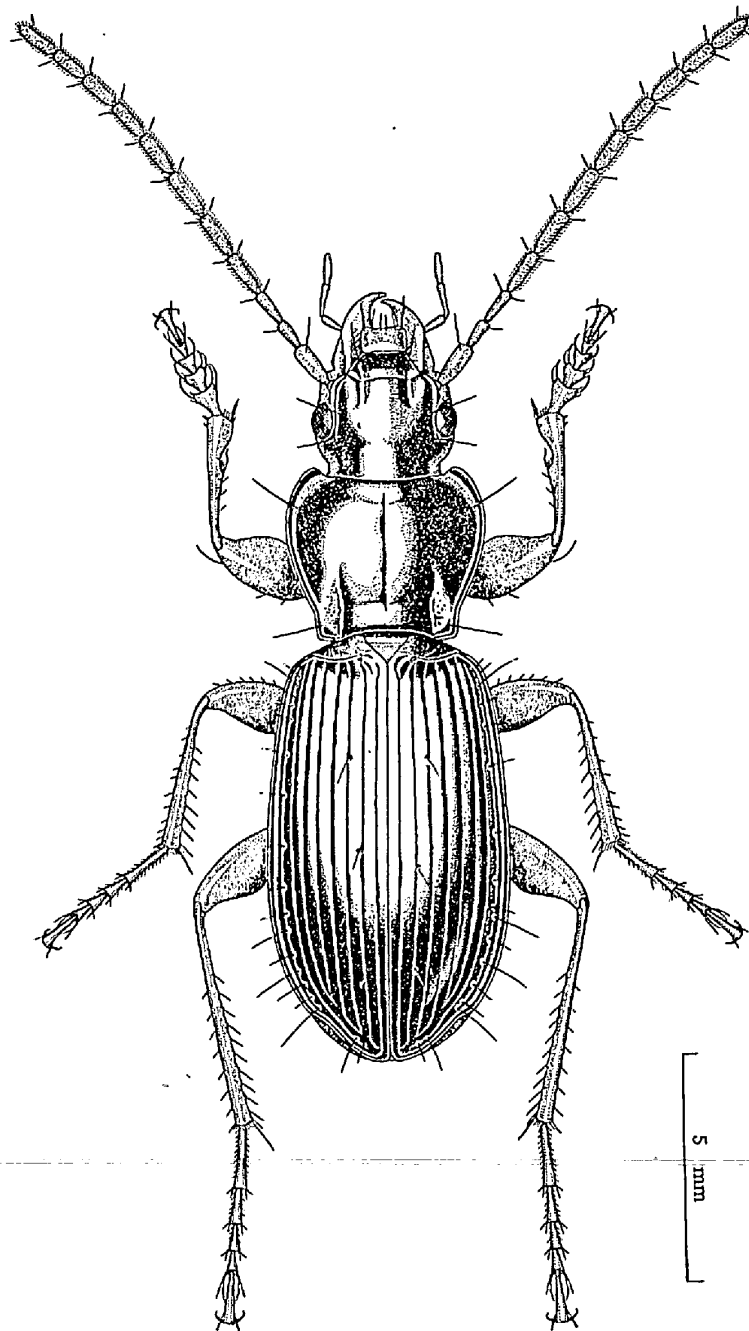
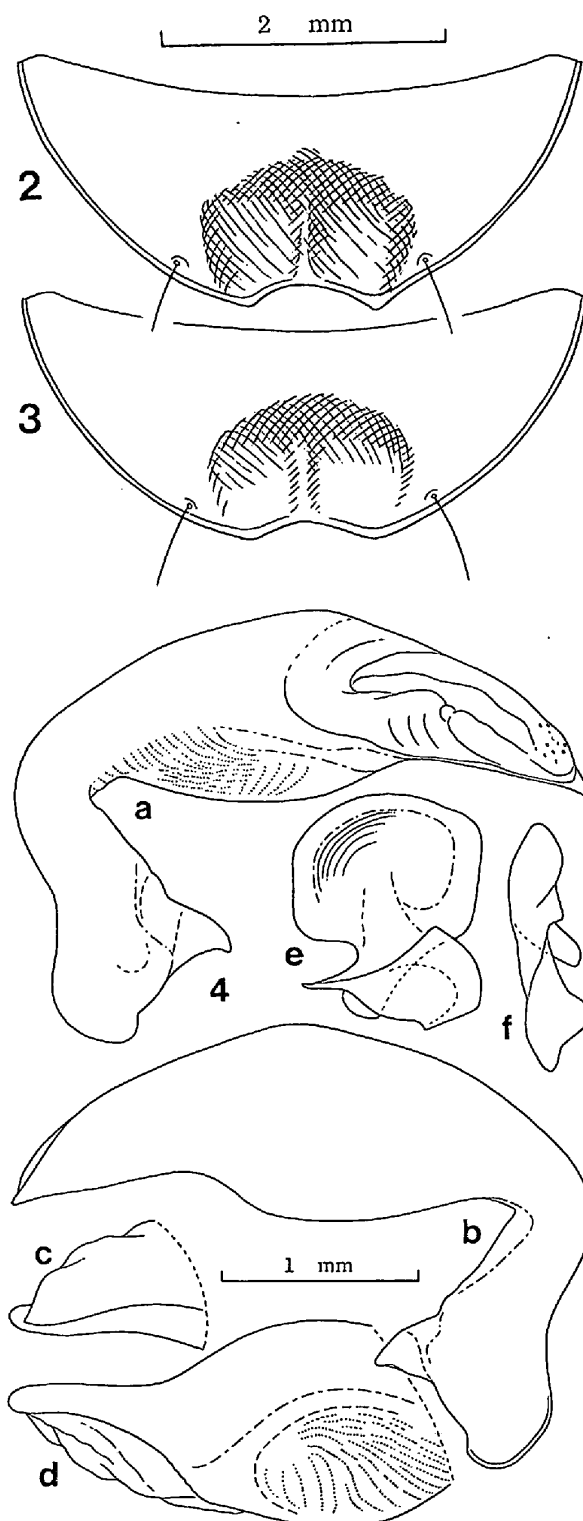


Fig. 1. *Pterostichus* (*Pterostichus*) *imasakai* sp. nov., ♂, from Mt. Tara-dake in Saga Prefecture.

are shallow but distinct; apices more widely rounded in the female than in the male, sutural angles more or less distinctly angulate; inner plica slightly visible in lateral view; scutellar striole short or rudimentary, lying on interval 2; striae moderately impressed throughout, almost smooth; intervals somewhat convex, interval 3 with three dorsal pores, anterior one at about basal fourth and adjoining stria 3, while



Figs. 2-4. *Pterostichus* (*Pterostichus*) *imasakai* sp. nov. — 2-3. Terminal sternites in the males: 2, from Mt. Tara-dake in Saga Prefecture; 3, from Mt. Unzen-dake in Nagasaki Prefecture. — 4. Male genitalia: a-d, aedeagus; a, left lateral view; b, right lateral view; c, apical part in dorsal view; d, apical half in ventral view; e, left paramere; f, right paramere.

the posterior two adjoin stria 2 at about middle and apical fifth, respectively; marginal series of pores 17–18 in number, widely spaced at middle; microsculpture relatively weak in both sexes, forming transverse meshes.

Basal three segments of meso- and metatarsi externally sulcate.

Ventral side moderately shiny, almost smooth; prosternal process furrowed at middle, vaguely bordered at apex; in the male, terminal sternite distinctly concave in apical half, the concavity longitudinally raised at middle, rather asymmetrically and distinctly emarginate at apex, each edge of the emargination rather produced, especially at the left side.

Aedeagus strongly bent at more than 90 degrees at basal third, widely tumid latero-ventrad at the right side of the middle, apical lobe small, narrowly rounded at apex; ventral side depressed and rugose at middle on left half; left paramere wide, square; right one thick, blunt at the apex.

*Type series.* Holotype: ♂, Mt. Tara-dake, Saga Pref., 2–VI–1969, N. OHTANI leg.; allotype: ♀, Mt. Tara-dake, Saga Pref., 30–V–1982, N. OHTANI leg.; paratypes: 1 ♀, Konsenji, Mt. Tara-dake, Nagasaki Pref., 14–16–IX–1981, S. MORITA leg.; 1 ♂, Konsenji, Mt. Tara-dake, Nagasaki Pref., 15–IX–1981, S. MORITA leg.; 1 ♀, Mt. Tara-dake, Saga Pref., 30–V–1982, N. OHTANI leg.; 2 ♂♂, 1 ♀, Mt. Tara-dake, Saga Pref., 5–VI–1983, T. OGATA leg.; 1 ♂, 2 ♀♀, Mt. Tara-dake, Saga Pref., 27–VIII–1983, T. OGATA & H. NISHIDA leg.; 1 ♀, Mt. Gokahara-dake, Mts. Tara, Nagasaki Pref., 19–VII–1983, S. IMASAKA leg.; 1 ♂ (teneral), Kuroki, Mt. Tara-dake, Nagasaki Pref., 24–VI–1984, S. KASAHARA leg.; 1 ♀, Nakayama, Mt. Tara-dake, Saga Pref., 9–VI–1985, T. OGATA leg.; 1 ♀, Nakayama, Mt. Tara-dake, Saga Pref., 9–VI–1985, M. NISHIDA leg.; 2 ♂♂, Nakayama, Mt. Tara-dake, Saga Pref., 7–VI–1986, M. NISHIDA leg.; 1 ♂, Nakayama, Mt. Tara-dake, Saga Pref., 12–VI–1986, M. NISHIDA leg.; 1 ♀, Nakayama, Mt. Tara-dake, Saga Pref., 23–VI–1987, M. NISHIDA leg.

*Other specimens examined.* 1 ♀, Bessho, Mt. Unzen-dake, Nagasaki Pref., 19–VIII–1982, S. IMASAKA leg.; 3 ♂♂, Bessho, Mt. Unzen-dake, Nagasaki Pref., 15–VI–1984, S. KASAHARA leg.

The holo- and allotypes are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. The paratypes and the other specimens are separately deposited in those of the collectors.

*Notes.* The present new species is somewhat allied to *P. (P.) kyushuensis* HABU (1955, pp. 143–144, 153–156), but is clearly distinguishable from the latter by the following points: larger body, with longer antennae and lighter coloured legs; different shape of terminal sternite in the male; different configuration of aedeagus and so on. The Unzen-dake specimens are not different in the shape of aedeagus, though its terminal sternite in the male is not perfectly the same (Fig. 3) with those of the topotypical specimens. However, this seems to be a mere geographical variation.

The species is named in honour of Mr. Shôichi IMASAKA, who is keenly in-

vestigating the coleopterous fauna of Mt. Tara-dake and Mt. Unzen-dake.

*Pterostichus (Pterostichus) taradakensis* sp. nov.

[Japanese name: Taradake-nagagomimushi]

(Figs. 5–7)

*Description.* Length (measured as in the preceding species) 16.2–18.3 mm. Width 5.4–6.0 mm. Larger and robuster than the preceding. Black, shiny, elytra less shiny in the female; labrum, mandibles, antennae and tibiae dark reddish brown; palpi and tarsi reddish brown.

Head moderately convex, shiny; neck constriction weakly depressed above; labrum and mandibles normal; eyes convex, more or less prominent; tempora short, strongly contracted behind, weakly tumid; genae finely rugose near buccal fissures; frontal furrows rather deep, almost parallel though divergent behind in posterior extremities, and extending to the level of anterior supraorbital setae; supraorbital areas convex in front; lateral grooves deep, extending a little beyond the post-eye level; surface sparsely and minutely punctate, microsculpture slightly visible, formed by isodiametric meshes; both maxillary and labial palpi normal; antennae relatively long, extending beyond the basal third of elytra, relative lengths of scape and segments 2–6 as follows: — 1: 0.65; 0.85: 0.90: 0.90: 0.90; segment 2 ventrally unisetose at apex.

Pronotum quadrate-cordate, moderately convex and shiny, widest at about apical third, 1.3 times as wide as head (PW/HW 1.24–1.31, mean 1.25), a fourth as wide again as long (PW/PL 1.23–1.27, mean 1.25), half as wide again as base (PW/PBW 1.42–1.52, mean 1.48); lateral margins well convergent roundly from the widest part to apex, strongly and roundly convergent posteriad, and deeply sinuate at basal fifth, basal parts nearly parallel, and with irregularly small notches; lateral reflexed borders narrow, though becoming wider towards apex; marginal grooves almost smooth; anterior marginal setae inserted a little before the widest level; apical margin weakly emarginate, not bordered, apical angles produced, rounded at the tips; basal margin always narrower than the apical, gently and widely emarginate at the median part, and rather oblique on each side, which is vaguely bordered, basal angles obtuse, though nearly rectangular, blunt at the tips; basal foveae distinct, with linear impressions at the bottoms, almost smooth, divergent in front, and divergent posteriad in basal part; external sides of the foveae convex; median line moderately impressed; apical crescent depression weak or obsolete; basal transverse depression obsolete; surface impunctate, though often with transverse wrinkles, especially on the basal part; microsculpture slightly visible, formed by transverse meshes.

Apterous. Elytra oblong-subovate, shiny in the male, less shiny in the female, widest at about middle, less than 1.3 times as wide as pronotum (EW/PW 1.22–1.29, mean 1.24), ca. 2.6 times as long as pronotum (EL/PL 2.50–2.79, mean 2.62),

ca. 1.7 times as long as wide (EL/EW 1.64–1.72, mean 1.69); basal border complete, curved at the base of interval 4, thence obliquely extending to shoulder, and joining with lateral border at an obtuse angle; shoulders widely rounded; lateral margins feebly sinuate behind shoulders, and gently divergent to the widest part, thence gently and roundly convergent to preapical emarginations, which are relatively distinct; apices rounded in the male, while rather subtruncated in the female; inner plica slightly visible in lateral view; scutellar striae short or rudimentary, lying on interval 1; striae moderately impressed throughout, almost smooth; intervals convex, interval 3 with five to six dorsal pores, anterior one or often two of them adjoining stria 3 at about basal fourth, the remainings adjoin stria 2, and irregularly arranged from about middle to apical fourth; interval 5 often with additional pores in basal half; marginal series of pores 17–20 in number, widely spaced at middle; micro-sculpture more strongly impressed in the female than in the male, forming transverse meshes in both sexes.

Basal three segments of meso- and metatarsi externally sulcate.

Ventral side moderately shiny, almost smooth; prosternal process shallowly furrowed at middle, apex unbordered; terminal sternite distinctly depressed on apical half in the male, the depression longitudinally raised at middle, weakly warped downwards at the apex.

Aedeagus strongly bent at about 90 degrees at basal third, feebly curved ventrad at apical fourth, apical lobe distinctly twisted to the right, and narrowly rounded at the apex; ventral side shallowly concave and rugose at apical third to fourth on the left side; left paramere relatively narrow, widely rounded; right one thick, rounded at the apex.

*Type series.* Holotype: ♂, Konsenji, Mt. Tara-dake, Nagasaki Pref., 24–VI–1984, S. KASAHARA leg.; allotype: ♀, Mt. Tara-dake, Saga Pref., 5–VI–1983, T. OGATA leg.; paratypes: 2 ♀♀, Mt. Gokahara-dake, Mts. Tara, Nagasaki Pref., 19–VII–1983, S. IMASAKA leg.; 1 ♂, 1 ♀, Mt. Tara-dake, Saga Pref., 9–VI–1985, T. OGATA leg.; 1 ♂, Nakayama, Mt. Tara-dake, Saga Pref., 9–VI–1985, M. NISHIDA leg.

*Other specimen examined.* 1 ♂, Mt. Sefuri-san, Sefuri-mura, Saga Pref., 7–VIII–1986, F. HIROKAWA leg.

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

*Notes.* This new species may have certain relationship with *P. (P.) sphodri-formis* BATES (1873, pp. 289–290) and its allies in having the several common characteristics, but is clearly separable from them by the shorter body, with larger number of dorsal pores, and the different configuration of aedeagus, especially by having twisted apical lobe. The Sefuri-san specimen is only different from the type series in the coloration of legs, and the locality seems to delimit the eastern edge of the

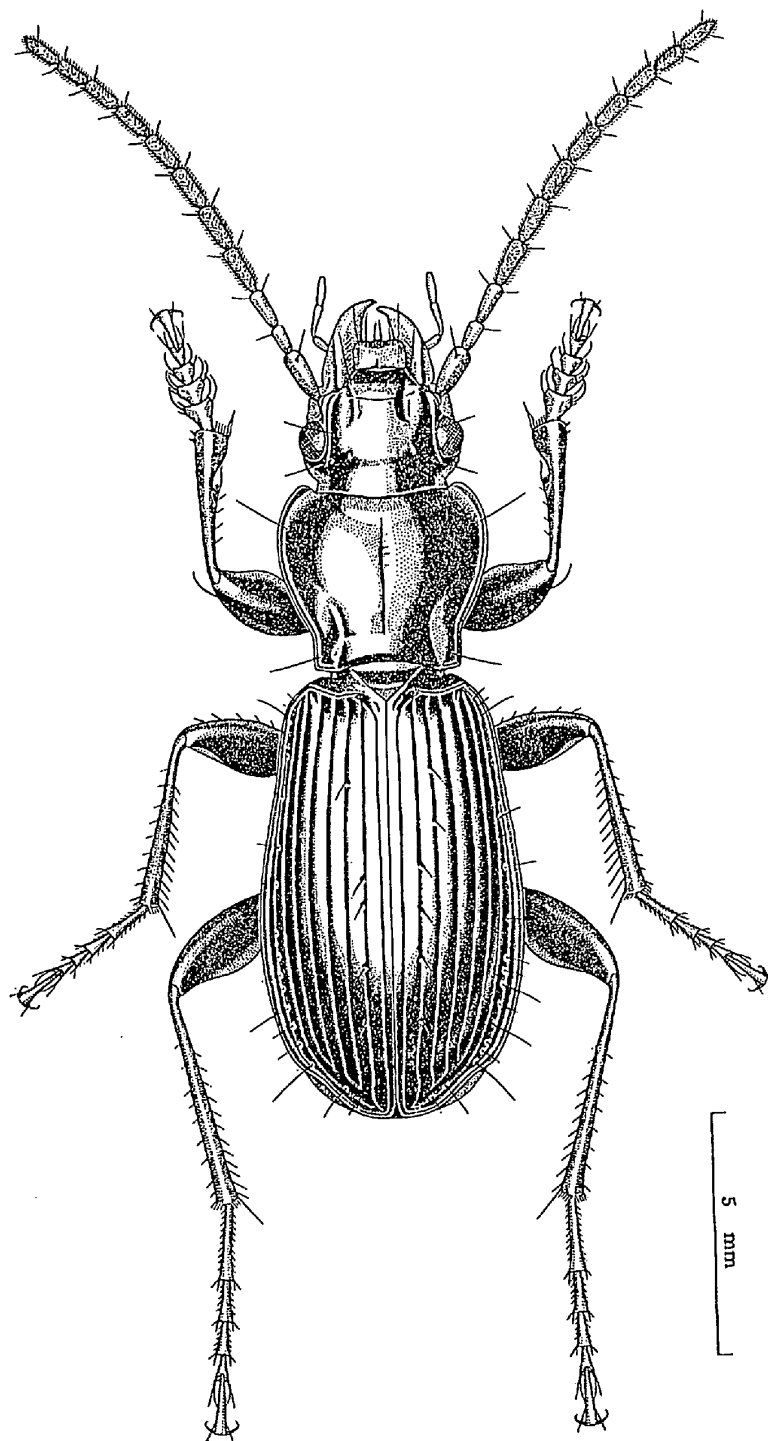
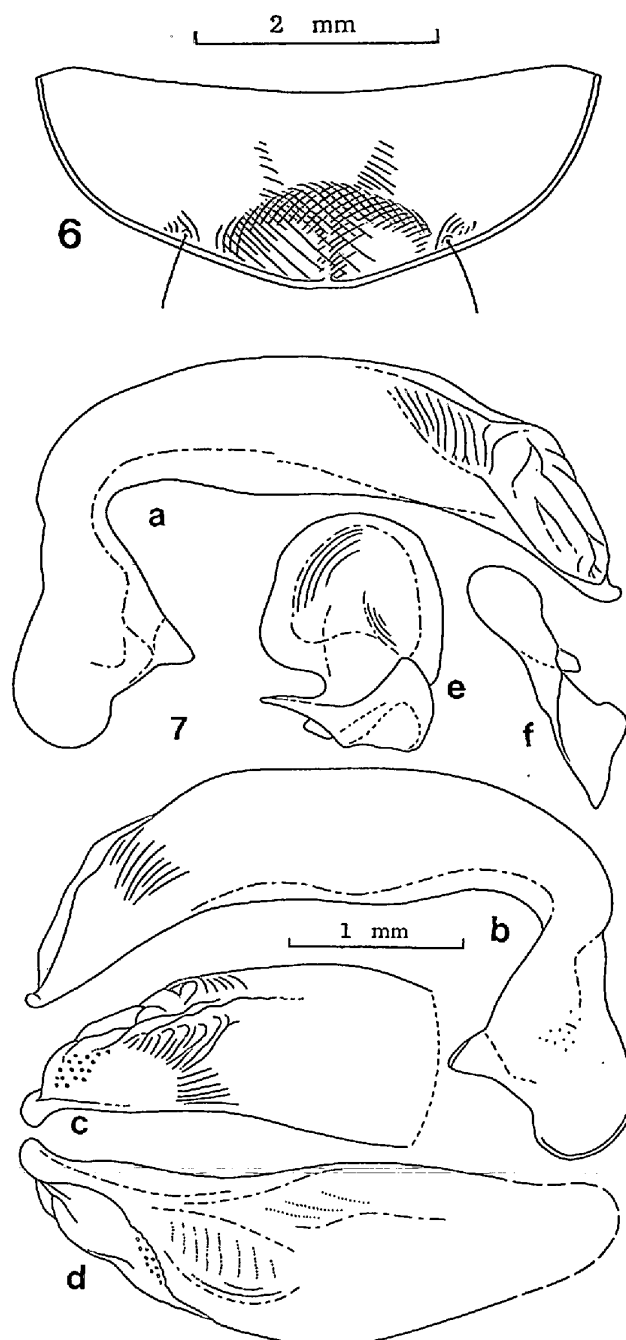


Fig. 5. *Pterostichus* (*Pterostichus*) *taradakensis* sp. nov., ♂, from Mt. Tara-dake in Nagasaki Prefecture.



Figs. 6-7. *Pterostichus (Pterostichus) taradakensis* sp. nov. — 6. Terminal sternite in the male. — 7. Male genitalia: a-d, aedeagus; a, left lateral view; b, right lateral view; c, apical half in dorsal view; d, ventral view (basal part omitted); e, left paramere; f, right paramere.

distributional range of the species. Another relative of this new species\* has been known from Mt. Hiko-san in Fukuoka Prefecture, about 50 km east of Mt. Sefuri-

\* HABU, 1955, pp. 150-152, figs. 4, 6; HABU, 1960, p. 3; NAKANE, 1983, p. 12.

san, though it has not yet been properly described.

### References

- BATES, H. W., 1873. On the geodephagous Coleoptera of Japan. *Trans. ent. Soc. London*, **1873**: 219–322.
- HABU, A., 1955. Über die *Pterostichus*-Arten vom Berg Hiko (Die Carabidenfauna vom Berg Hiko, VII). *Bull. natn. Inst. agr. Sci.*, (C), (5): 143–156.
- 1960. Notes and description of the Carabidae from Mt. Hiko and its vicinity (Coleoptera). *Esakia*, (2): 3–6.
- NAKANE, T., 1983. The beetles of Japan (new series) 63. *Nature & Insect, Tokyo*, **18**(8): 11–14. (In Japanese.)
- TANAKA, K., 1985. Carabidae (Pterostichinae). In UÉNO, S.-I., Y. KUROSAWA & M. SATÔ (eds.), *Coleoptera of Japan in Color*, **2**: 105–135. Hoikusha, Osaka. (In Japanese.)