

A New *Pterostichus* (Coleoptera, Carabidae) from Central Japan

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Abstract A new pterostichine carabid beetle, *Pterostichus (Nialoe) masatakai* sp. nov., is described from Shizuoka and Yamanashi Prefectures, Central Japan.

I first became interested in a pterostichine species in 1970 when Dr. Yûki IMURA obtained three females of a carabid beetle belonging to the genus *Pterostichus* on the Abe Pass, Shizuoka Prefecture, Central Japan. To obtain more specimens, especially males, of this species and to clarify its systematic status, I visited the locality several times. After investigations made by myself, it became clear that its actual population density at that locality is considerably high, since I was able to take a long series of its specimens. After a careful examination of the males and grasping the range of individual variation, it became apparent that the Abe Pass species doubtless falls in the subgenus *Nialoe*, but is specifically distinct from any of its described members. Therefore, I have decided to describe this new species in this paper.

The late Dr. Masataka SATÔ of the Japanese Society of Coleopterology who passed away in the last summer affectionately watched my study of carabid beetles for a long time. My deep thanks are also due to him, and the new species of *Pterostichus* described herein is named to his memory.

The abbreviations used herein are the same as those explained in my previous papers. The holotype and allotype of this new species are deposited in the National Science Museum (Nat. Hist.), Tokyo.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critically reading the original manuscript of this paper. My thanks are also due to Dr. Yûki IMURA for supplying me with important material.

Pterostichus (Nialoe) masatakai MORITA, sp. nov.

[Japanese name: Minobu-naga-gomimushi]

(Figs. 1–15 a–e)

Pterostichus (Nialoe) brunneipennis akaishicus: MORITA, 1984, Shizuoka no Kôchû, (2): 45. — KASAHARA, 1990, *Elytra, Tokyo*, 18: 44.

Diagnosis. Body robust; elytra always black; anal projection quadrate; aedeagal

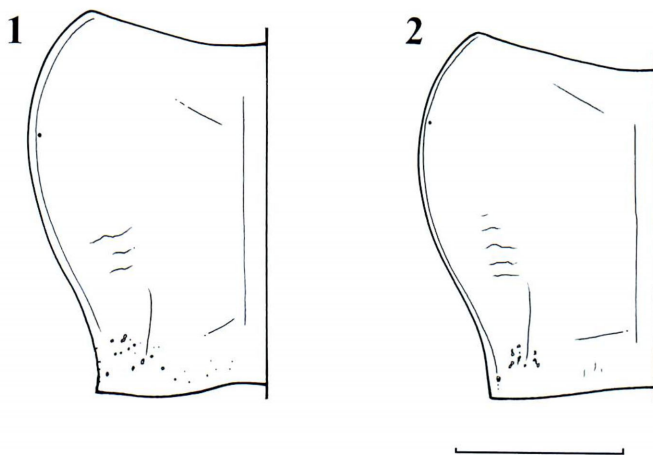
tumor rather large; apex of aedeagus narrow and simply rounded; right paramere of male genital organ rather slender.

Description. Length: 14.0–16.5 mm (from apical margin of clypeus to apices of elytra).

Body robust. Colour black; dorsal surface slightly shiny; ventral side almost black to blackish brown; appendages blackish brown.

Head convex; eyes moderately convex; frontal furrows parallel or a little divergent posteriorly and reaching the level of the anterior supraorbital pores; lateral grooves deep, straight, and extending to supraorbital pores; PW/HW 1.30–1.36 (M 1.32) in 10 ♂♂, 1.26–1.37 (M 1.33) in 10 ♀♀ in the Abe Pass population; genae moderately convex and a little shorter than eyes; microsculpture composed of isodiametric meshes; mentum tooth stout and bifid; relative lengths of antennal segments of the Abe Pass population as follows:— I : II : III : IV : V : VI : XI \cong 1 : 0.59 : 0.94 : 0.95 : 0.90 : 0.91 : 0.89.

Pronotum cordate and convex; apex moderately to deeply emarginate, and not bordered; PW/PL 1.29–1.38 (M 1.33) in 10 ♂♂, 1.32–1.44 (M 1.37) in 10 ♀♀ in the Abe pass population; sides widely and usually strongly arcuate in front, and then shallowly sinuate and crenulate a little before hind angles; base straight or weakly emarginate at median part, oblique inside each hind angle; PW/PA 1.31–1.41 (M 1.37) in 10 ♂♂, 1.29–1.40 (M 1.35) in 10 ♀♀, PW/PB 1.38–1.49 (M 1.44) in 10 ♂♂, 1.38–1.54 (M 1.46) in 10 ♀♀, PA/PB 1.01–1.08 (M 1.05) in 10 ♂♂, 1.04–1.14 (M 1.08) in 10 ♀♀ in the Abe Pass population; apical angles moderately produced and widely rounded at the tips; hind angles usually sharp; anterior pair of setae inserted at a little before the widest part, posterior ones a little before and inside hind angles; anterior transverse impression very shallow; median line clearly impressed, reaching neither apex nor base; basal foveae rather shallow, linear, and with some punctures and wrinkles;



Figs. 1–2. Outline of the left side of pronotum in *Pterostichus (Nialoe) masatakai* MORITA, sp. nov.
— 1, Specimen from the Abe Pass; 2, specimen from Mt. Minobu-san. (Scale: 2 mm.)

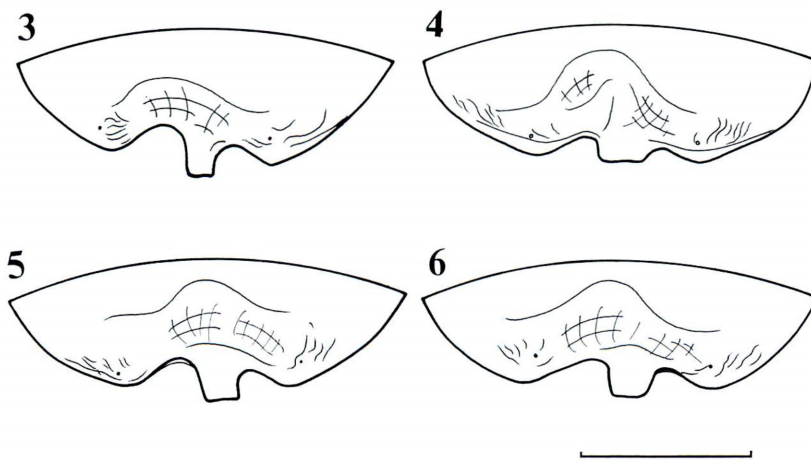
basal part usually covered with sticky clay; lateral area between the widest part and hind angle with several transverse wrinkles; microsculpture composed of fine and wide meshes.

Elytra elongated ovate, convex and widest at a little behind the middle; EW/PW 1.18–1.28 (M 1.23) in 10 ♂♂, 1.20–1.25 (M 1.23) in 10 ♀♀, EL/EW 1.42–1.58 (M 1.50) in 10 ♂♂, 1.45–1.53 (M 1.50) in 10 ♀♀ in the Abe Pass population; shoulders oblique and rounded; sides gradually divergent or weakly arcuate towards the widest part, and moderately arcuate towards apices, each with deep preapical emargination; apices separated from each other, and sutural angle obtuse; scutellar striole short, situated on interval I, and joining basal border which is moderately arcuate; striae 1 and 2 usually anastomosed at basal part; a short stria present between the meeting point of striae 1 and 2 and basal border, rarely lacking; basal pore usually situated on interval I and joining stria 1, rarely on the meeting point of striae 1 and 2; dorsal pores on interval III variable in number and position, usually four, sometimes three or five, rarely six on each side; the first pore usually joining stria 3, rarely lacking; the remaining pores usually joining stria 2, rarely on interval III or joining stria 3; microsculpture composed of transverse meshes; marginal series composed of 16 to 19 pores.

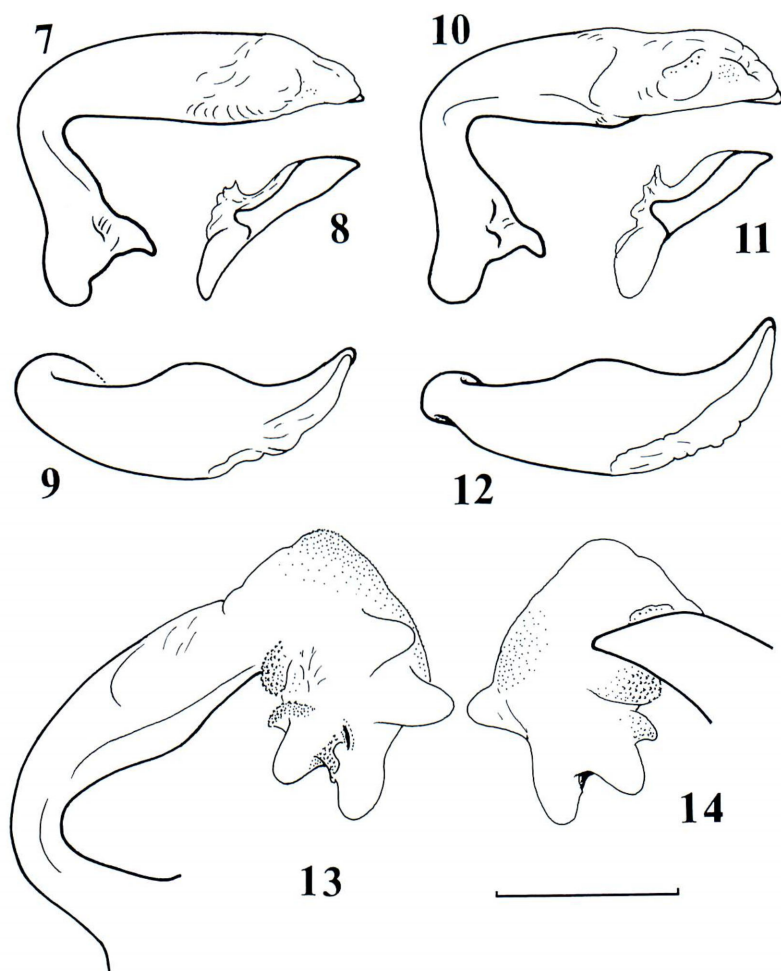
Mesosternum finely and sparsely punctate; in ♂, anal sternite deeply excavated at middle, and with an anal projection at about middle and several oblique wrinkles in the areas to which are inserted a pair of setae; anal projection quadrate, variable in the width, usually as in Fig. 5, but varying appreciably.

Basal three segments of meso- and metatarsi each with outer sulci; TL/HW 1.28–1.41 (M 1.34) in 10 ♂♂, 1.22–1.34 (M 1.27) in 10 ♀♀ in the Abe Pass population.

Aedeagus elongate, relatively stout, strongly bent at basal third, and with a large tumor at apical third; apex short, narrow and simply rounded; right paramere more



Figs. 3–6. Anal sternite of male in *Pterostichus* (*Nialoe*) *masatakai* MORITA, sp. nov. — 3, 4, Specimens from the Abe Pass; 5, 6, specimens from Mt. Minobu-san. (Scale: 2 mm.)



Figs. 7-14. Male genital organ in *Pterostichus (Nialoe) masatakai* MORITA, sp. nov. — 7, 10, Aedeagus, left lateral view; 8, 11, right paramere, left lateral view; 9, 12, aedeagus, dorsal view; 13, aedeagus, left lateral view, showing everted inner sac; 14, apical part of aedeagus, right lateral view. — 7-9, Specimen from the Abe Pass; 10-14, specimens from Mt. Minobu-san. (Scale: 2 mm.)

elongate and narrower than average for its relatives.

Type series. Holotype: ♂, allotype, ♀, Abe Pass, 4~11-X-1997, S. MORITA leg. Paratypes: 3 ♀♀, Abe Pass, 29-VII-1970, Y. IMURA leg.; 12 ♂♂, 10 ♀♀, same locality, 3~4-VII-1977, S. MORITA leg.; 3 ♂♂, same locality, 24-VI-1978, S. MORITA leg.; 12 ♂♂, 30 ♀♀, same locality, 19~20-IX-1980, S. MORITA leg.; 4 ♂♂, 2 ♀♀, same locality, 2-VII-1994, S. MORITA leg.; 20 ♂♂, 1 ♀, same locality, 1-VI-1997, S. MORITA leg.; 23 ♂♂, 8 ♀♀, same locality, 2-VI-1997, S. MORITA leg.; 37 ♂♂, 96 ♀♀,

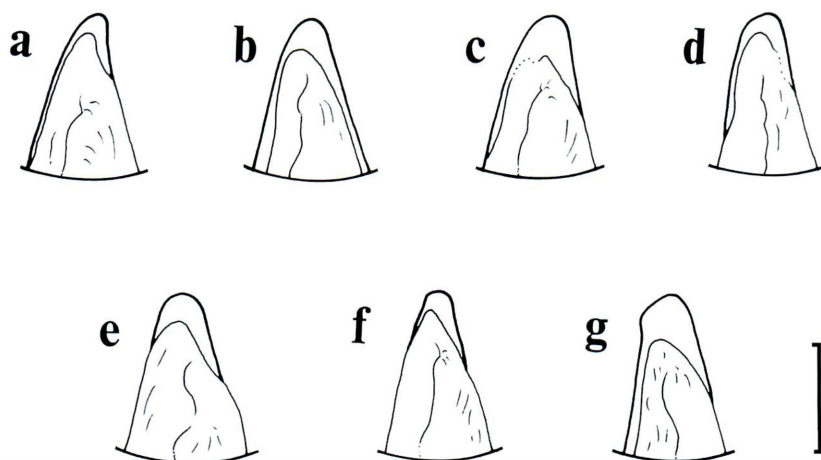


Fig. 15. Apex of aedeagus in *Pterostichus* (*Nialoe*) spp., oblique and left dorso-lateral view. — a–e, *P. (N.) masatakai* MORITA, sp. nov.; f, *P. (N.) brunneipennis akaishicus* TANAKA; g, *P. (N.) tahirai* KASAHARA. — a, Abe Pass; b, same locality; c, Mt. Minobu-san; d, same locality; e, Nagahata; f, Sanpuku Pass, Nagano Pref.; g, Mt. Sobatsubu-yama, Shizuoka Pref. (Scale: 0.5 mm.)

same locality, 4~11-X-1997, S. MORITA leg.; 15 ♂♂, 8 ♀♀, Mt. Minobu-san, 3~4-IX-1983, S. MORITA leg.; 7 ♂♂, 6 ♀♀, same locality, 2~3-IX-2006, S. MORITA leg.; 9 ♂♂, 2 ♀♀, Nagahata, 1-VII-2000, N. SHIBATA leg.

Localities of the type series. Abe Pass, Shizuoka-shi, Shizuoka Prefecture; Mt. Minobu-san, Minobu-chô and Nagahata, Hayakawa-chô, Yamanashi Prefecture, Central Japan.

Notes. Judging from the shape of anal projection of the male and structure of the aedeagus, this new species is closely allied to *Pterostichus (Nialoe) brunneipennis akaishicus* TANAKA (1958, p. 93). It is, however, distinguished from it by the following points: 1) larger body, 2) elytral colour always black, 3) basal foveae of pronotum with some punctures and wrinkles, and 4) right papamere of male genital organ more elongate and narrower.

On the other hand, large individuals of this new species look like *P. (N.) tahirai* KASAHARA (1992, p. 21). However, it is distinguished from the latter by the following points: 1) pronotum and elytra wider, 2) elytra more convex, 3) aedeagus roubster, 4) aedeagal tumor larger, 5) apex of aedeagus simply rounded, and 6) right paramere slenderer.

The standard ratios of body parts in the specimens from Mt. Minobu-san are as follows: PW/HW 1.29–1.40 (M 1.33) in 10 ♂♂, 1.32–1.36 (M 1.34) in 10 ♀♀; PW/PL 1.32–1.42 (M 1.36) in 10 ♂♂, 1.34–1.44 (M 1.39) in 10 ♀♀; PW/PA 1.29–1.39 (M 1.34) in 10 ♂♂, 1.26–1.38 (M 1.33) in 10 ♀♀; PW/PB 1.40–1.53 (M 1.46) in 10 ♂♂, 1.41–1.58 (M 1.47) in 10 ♀♀; PA/PB 1.03–1.15 (M 1.09) in 10 ♂♂, 1.05–1.16 (M

1.11) in 10 ♀♀; EW/PW 1.18–1.28 (M 1.23) in 10 ♂♂, 1.19–1.25 (M 1.22) in 10 ♀♀; EL/EW 1.42–1.58 (M 1.50) in 10 ♂♂, 1.42–1.45 (M 1.48) in 10 ♀♀; TL/HW 1.28–1.41 (M 1.34) in 10 ♂♂, 1.15–1.28 (M 1.22) in 10 ♀♀; relative lengths of antennal segments as follows:— I : II : III : IV : V : VI : XI = 1 : 0.58 : 0.93 : 0.93 : 0.89 : 0.88 : 0.81.

The specimens from Nagahata are different from those of the Abe Pass in several details: pronotal sides more strongly sinuate before hind angles which are sharp; pronotal disc with many transverse wrinkles. The standard ratios of body parts in this population are as follows: PW/PL 1.25–1.33 (M 1.30), TL/HW 1.39–1.48 (M 1.43) in 5 ♂♂.

要 約

森田誠司：中部地方産ナガゴミムシの1新種。——静岡県安倍峠，山梨県身延山などから採集されたナガゴミムシを新種と認めて，故佐藤正孝先生に献名し，ミノブナガゴミムシ *Pterostichus (Nialoe) masatakai* sp. nov. として命名記載した。この種は，雄の腹端節の突起の形から，ハネアカナガゴミムシ南アルプス亜種 *P. (N.) brunneipennis akaishicus* TANAKA およびその近縁種に近い種であるが，つねに黒色の上翅，陰茎各部の形態などの点で識別される。

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