

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

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**Abstract** A new macrocephalic pterostichine carabid beetle, *Pterostichus miyazawai* sp. nov., is described from Nagano Prefecture, Central Japan.

We first became interested in a pterostichine species in 1994 when Mr. Yutaka MIYAZAWA obtained a small macrocephalic pterostichine carabid beetle in Nagano Prefecture, Central Japan. His specimen was a female and less taxonomically important. Later, Mr. HAYAKAWA (1996) published a list of carabid beetles of Nagano Prefecture and made a comment that MIYAZAWA's specimen seemed possibly to belong to a new species based on the opinion given by the first author.

To obtain more specimens, especially males, of this species and to clarify its systematic status, the second author had made several investigations in various places near MIYAZAWA's collecting site. At last, he succeeded in obtaining many specimens. The purpose of this paper is to show the result of the examination of the additional specimens.

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 of pronotal apex; PB – width of pronotal base; EW – greatest width of elytra; EL – greatest length of elytra; M – arithmetic mean; NSMT – National Museum of Nature and Science, Tokyo.

Before going further, we wish to express our deep gratitude to Dr. Shun-Ichi UÉNO of the National Museum of Nature and Science, Tokyo, for critically reading the original manuscript of this paper. My thanks are also due to Messrs. Yutaka MIYAZAWA and Yûji UCHIYAMA for their help.

*Pterostichus miyazawai* MORITA et OHKAWA, sp. nov.

[Japanese name: Shiwamune-ôzu-naga-gomimushi]

(Figs. 1-9)

*Diagnosis.* Body small and robust. Head very large; eyes vestigial or entirely flat; basal foveae and disc of pronotum with deep transverse wrinkles; aedeagus with elongate apical lobe.

*Description.* L: 12.5–14.2 mm. Body small and robust. Colour brown to dark brown; appendages dark brown.

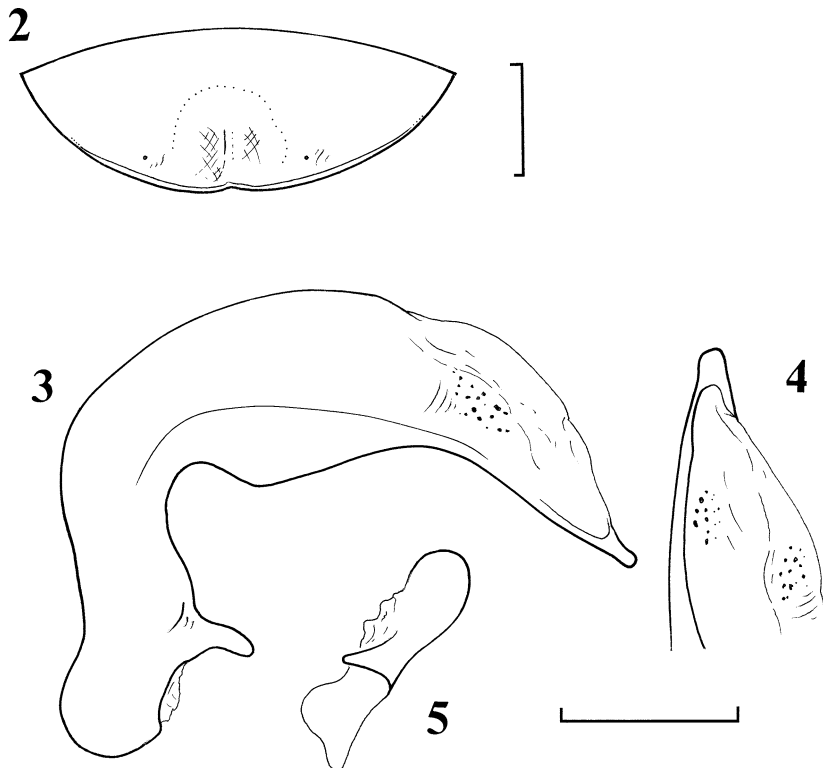
Head very large and convex; eyes vestigial or entirely flat; frontal furrows shallow and divergent posteriad; lateral grooves deep, straight in front, curved inwards and wide at the posterior halves, and then reaching the posterior supraorbital pore on each side; additional groove situated a little outside lateral groove and joining posterior ends of



Fig. 1. *Pterostichus miyazawai* MORITA et OHKAWA, sp. nov., from Shirabiso Pass.

lateral grooves on each side; surface usually sparsely and finely punctate, rarely impunctate; PW/HW 1.10–1.14 (M 1.11) in 4 ♂♂, 1.01–1.04 (M 1.03) in 3 ♀♀; genae strongly convex; microsculpture almost obliterated, partially consisting of wide meshes; mentum tooth stout and bifid; relative lengths of antennal segments as follows:— I : II : III : IV : V : VI : XI  $\approx$  1 : 0.50 : 0.94 : 0.86 : 0.81 : 0.80 : 0.86.

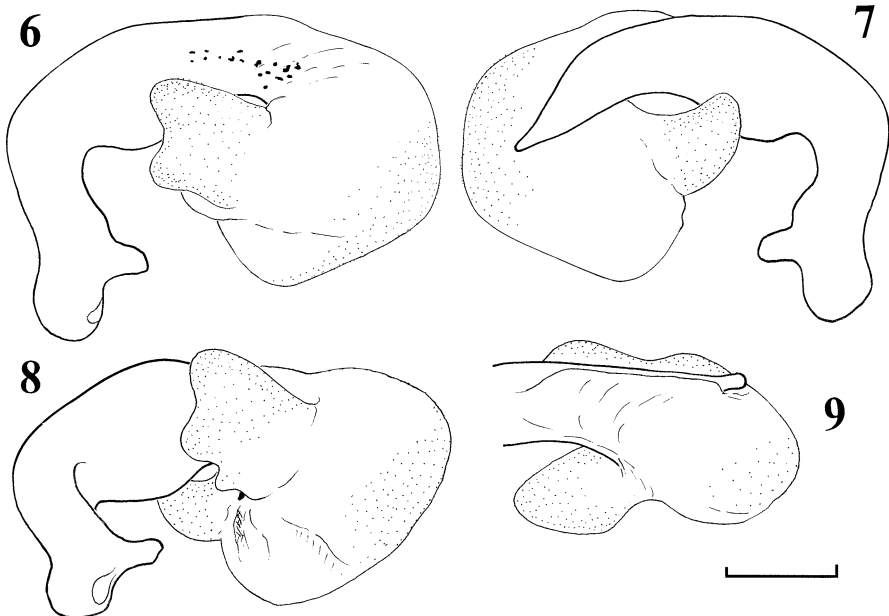
Pronotum trapezoidal, weakly convex and widest at about apical 3/20–1/5 (measured along the median line); apex widely and moderately emarginate; PW/PL 1.56–1.63 (M 1.60) in 4 ♂♂, 1.40–1.51 (M 1.47) in 3 ♀♀; sides widely and weakly arcuate in front, and then shallowly sinuate at basal 1/5 (measured along mid-line) and weakly divergent towards hind angles; base moderately emarginate at median part, slightly oblique inside each hind angle; PW/PA 1.10–1.14 (M 1.13) in 4 ♂♂, 1.07–1.12 (M 1.10) in 3 ♀♀, PW/PB 1.34–1.38 (M 1.37) in 4 ♂♂, 1.35–1.44 (M 1.40) in 3 ♀♀, PA/PB 1.18–1.24 (M 1.21) in 4 ♂♂, 1.23–1.34 (M 1.28) in 3 ♀♀; apical angles strongly produced and simply rounded at the tips; hind angles sharp; anterior pair of setae inserted at a little behind the widest part or on that level, posterior ones a little before



Figs. 2–5. *Pterostichus miyazawai* MORITA et OHKAWA, sp. nov. — 2, Anal sternite in ♂; 3, aedeagus, left lateral view; 4, apical part of aedeagus, dorsal view; 5, right paramere, left lateral view. (Scale: 1.00 mm.)

and inside hind angles; anterior transverse impression very shallow at the median part and obliterated at the sides; median line impressed between anterior and posterior impressions; basal foveae shallow, linear at the bottom, and with deep, wide and transverse wrinkles and fine punctures; disc with fine and transverse wrinkles; microsculpture composed of fine and wide or transverse meshes; surface rarely finely and sparsely punctate; basal part between bottoms of basal foveae not wrinkled.

Elytra elongated ovate, very weakly convex and widest at about middle or a little behind the middle; EW/PW 1.21–1.26 (M 1.24) in 4 ♂♂, 1.21–1.23 (M 1.22) in 3 ♀♀, EL/EW 1.48–1.55 (M 1.52) in 4 ♂♂, 1.52–1.56 (M 1.54) in 3 ♀♀; shoulders rounded; sides very weakly arcuate, and then moderately arcuate at the apical parts, with shallow preapical emargination on each side; apices separated from each other, and with obtuse sutural angle; scutellar striole very short, situated on interval I, and joining basal border which is weakly arcuate; striae rather shallow throughout and smooth; striae 1 and 2 anastomosed at basal part with a basal pore; two dorsal pores situated on interval III; anterior dorsal pore adjoining stria 2, and posterior one usually adjoining stria 2, rarely on interval III; anterior dorsal pore situated at basal 2/5 to the middle; posterior dorsal pore situated at basal 3/4–17/20; intervals weakly convex; microsculpture composed of wide meshes; inner plica visible; epipleuron gradually narrowed towards apex; marginal series composed of 13–16 pores.



Figs. 6–9. Aedeagus of *Pterostichus miyazawai* MORITA et OHKAWA, sp. nov., showing inflated inner sac. — 6, Left lateral view; 7, right lateral view; 8, left ventro-lateral view; 9, dorsal view. (Scale: 1.00 mm.)

Genae usually rugose on ventral side; prosternum rarely finely punctate; prepisternum usually finely punctate; mesosternum, mesepisternum, metasternum and sides of sternite 1 finely punctate; in ♂, anal sternite shallowly concave at apical part, the concavity being very weakly and longitudinally carinate at the middle, and very narrowly emarginate at apex.

Aedeagus elongate, strongly bent at basal third; basal part thin; apex rather elongate, simply rounded in lateral view and obliquely rounded in dorsal view; ventral edge of the right wall with a tumor which is large and longitudinally narrow; right paramere straight with rounded apex.

*Type series.* Holotype: ♂, Shirabiso Pass, 16~30-VII-2008, H. OHKAWA leg. (NSMT). Paratypes: 1 ♀, Hodonooike, 30-VII-1994, Y. MIYAZAWA leg.; 1 ♂, Shirabiso Pass, 4~18-X-2006, H. OHKAWA leg.; 3 ♀♀, Shirabiso Pass, 30-VII~27-VIII-2008, H. OHKAWA leg.; 2 ♂♂, 3 ♀♀, Shirabiso Pass, 17-IX~15-X-2008, H. Ohkawa leg.; 2 ♂♂, 1 ♀, Shirabiso Pass, 15-X~12-XI-2008, H. OHKAWA leg.; 1 ♂, Shirabiso Pass, 12-XI~2-XII-2008, H. OHKAWA leg.

*Localities.* Shirabiso Pass and Hodonooike, Iida-shi, Nagano Prefecture, Central Japan.

*Notes.* Judging from the shape of aedeagus, this new species is closely allied to *Pterostichus toyodai* MORITA et Y. KUROSA (1998, p. 69). It is, however, distinguished from it by the following points: 1) body larger, 2) smaller genae, 3) basal foveae and disc of pronotum with deep wrinkles, 4) more convex pronotum and 5) aedeagal apical lobe more elongate.

## 要 約

森田誠司・大川秀雄：中部地方産オオズナガゴミムシの1新種。——長野県飯田市から採集されたナガゴミムシを新種と認め、第一発見者の宮澤 豊氏に献名してシワムネオオズナガゴミムシ *Pterostichus miyazawai* sp. nov. と命名記載した。この種は、雄の交尾器から判断して静岡県安倍峠から知られているヒメオオズナガゴミムシ *Pterostichus toyodai* MORITA et Y. KUROSA に近い種であるが、やや大きく、前胸背板はやや隆まり、基部凹陥に深い横皺をもち、より長い陰茎先端部をもつこと、などで識別される。

## References

- HAYAKAWA, H., 1996. Carabid beetles from Nagano Prefecture, Central Japan. II. *Matsumushi, Matsumoto*, 1-60.
- MORITA, S., & Y. KUROSA, 1998. A new macrocephalic species of the genus *Pterostichus* (Coleoptera, Carabidae). *Elytra, Tokyo*, **26**: 69-73.