

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

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Abstract A new pterostichine carabid beetle, *Pterostichus (Epinialoe) ryoheii* sp. nov., is described from Gifu Prefecture, Central Japan.

The purpose of this paper is to describe a new pterostichine carabid species collected recently.

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; EB – width of basal part of elytra; EW – greatest width of elytra; EL – greatest length of elytra; M – arithmetic mean; NSMT – National Museum of Nature and Science, Tokyo.

Before going further, I wish to express my 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 Dr. Ryohei SHIMOYAMA and Mr. Hideo OHKAWA for supplying me with important material.

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Pterostichus (Epinialoe) ryoheii MORITA, sp. nov.

[Japanese name: Kuraiyama-naga-gomimushi]

(Figs. 1–13)

Diagnosis. A *Pterostichus* species with very large genae and very weakly convex eyes; elytra elongated ovate, with narrow basal part; anal projection wide and large; aedeagal apex rather wide in dorsal view; right paramere rather wide.

Description. L: 9.28–10.86 mm.

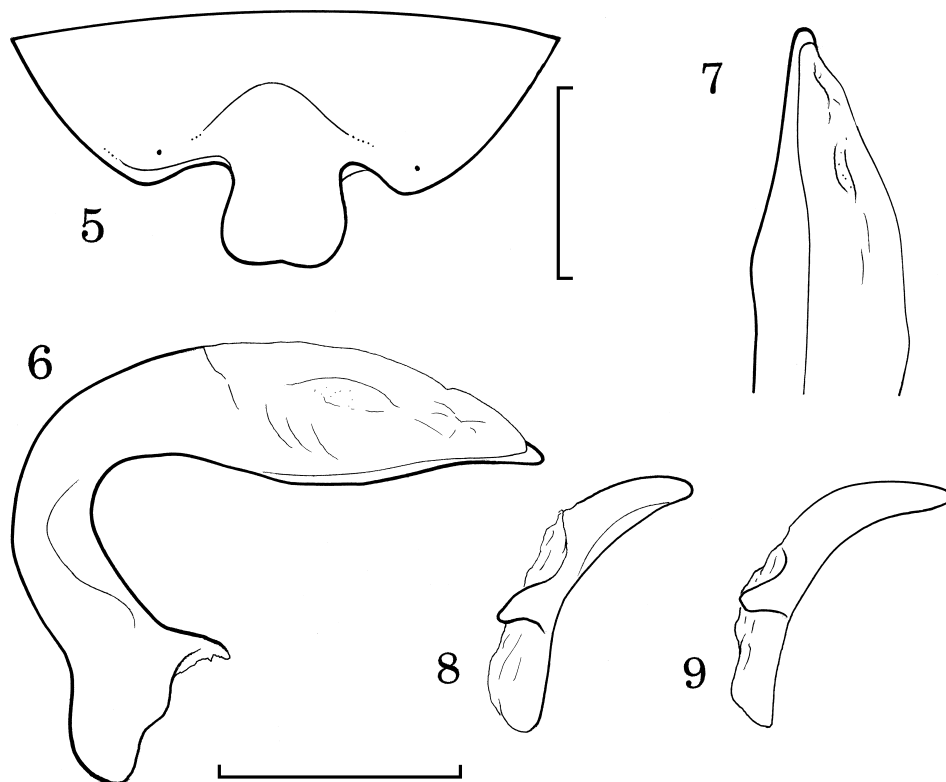
Body rather small and convex. Colour reddish brown to dark brown; appendages lighter than dorsum.

Head ovoid, relatively large and convex; eyes small and very weakly convex; frontal furrows deep, linear, short and reaching the ante-eye level on each side; lateral grooves deep, straight and reaching the post-eye level on each side; anterior supraorbital pore situated a little behind the mid-eye level; posterior one apart from the post-eye level; surface moderately convex, and sparsely and finely punctate; PW/HW 1.35–1.42 (M 1.39) in ♂, 1.31–1.41 (M 1.39) in ♀; genae strongly convex, longer than eyes (measured along the median line); microsculpture consisting of wide or isodiametric meshes; mentum tooth strongly produced and bifid at apex; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI ≅ 1 : 0.65 : 1.09 : 1.09 : 1.05 : 1.07 : 1.18 in ♂, 1 : 0.64 : 1.04 : 1.09 : 1.04 : 1.07 : 1.14 in ♀.

Pronotum wide, flat and widest at about basal 7/10 (measured along the median line); apex widely and moderately emarginate; PW/PL 1.28–1.37 (M 1.32) in ♂, 1.34–1.41 (M 1.37) in ♀; sides mod-



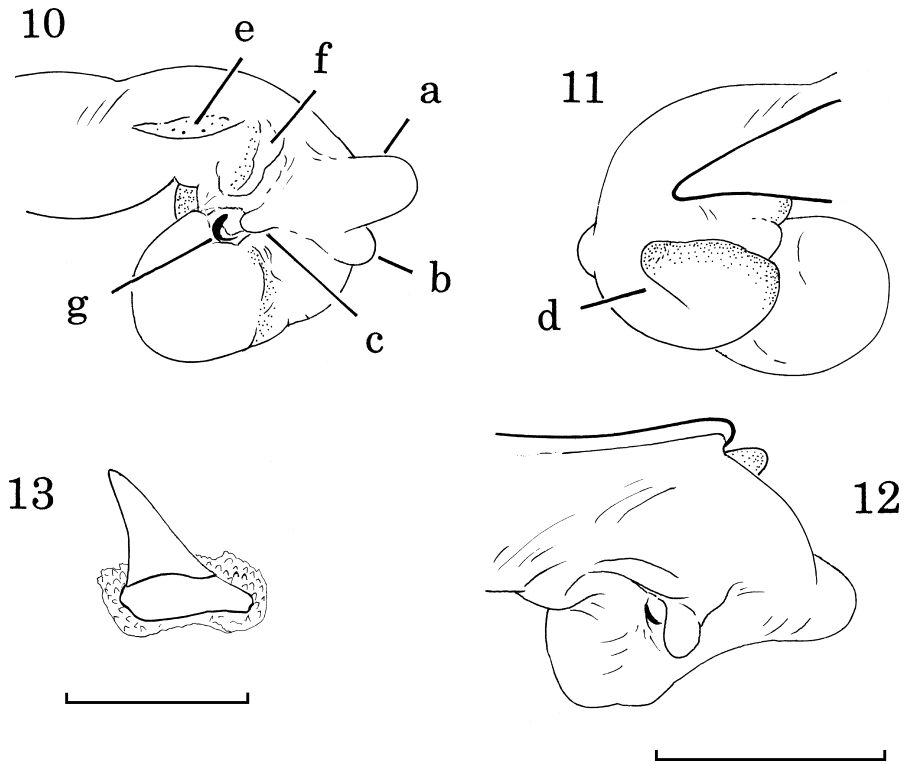
Figs. 1–4. *Pterostichus (Epinialoe) ryoheii* MORITA, sp. nov. — 1, Habitat; 2, male specimen; 3, head; 4, anal projection.



Figs. 5–9. *Pterostichus (Epinialoe) ryoheii* MORITA, sp. nov. — 5, Anal sternite in ♂; 6, aedeagus, left lateral view; 7, apical part of aedeagus, dorsal view; 8, right paramere, left lateral view; 9, same in another specimen. Scale: 1.00 mm.

erately and widely arcuate in front, moderately sinuate at basal 1/7–1/4 (measured along the median line) and then weakly divergent towards hind angles and partially crenulate near hind angles; base moderately emarginate at median part and briefly and weakly oblique at the sides; PW/PA 1.29–1.34 (M 1.32) in ♂, 1.28–1.35 (M 1.31) in ♀, PW/PB 1.30–1.32 (M 1.31) in ♂, 1.32–1.37 (M 1.35) in ♀, PA/PB 0.98–1.03 (M 1.00) in ♂, 1.00–1.05 (M 1.03) in ♀; apical angles strongly produced and simply rounded at the tips; hind angles sharp; anterior pair of marginal setae inserted at the widest part or a little before that level; posterior ones a little before and inside hind angles; anterior transverse impression obliterated; median line impressed between anterior and posterior impressions; basal foveae usually shallow, linear at the bottom, rugose and sparsely and finely punctate; microsculpture densely impressed and composed of fine transverse meshes; surface finely and sparsely punctate; basal part between bottoms of basal foveae with short wrinkles and fine punctures.

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 ♂, 1.21–1.23 (M 1.22) in ♀; EL/EW 1.48–1.55 (M 1.52) in ♂, 1.52–1.56 (M 1.54) in ♀; shoulders rounded; base narrow, PB/EB 0.90–0.97 (M 0.95) in ♂, 0.94–1.00 (M 0.97) in ♀; sides very weakly arcuate towards the widest part, and then moderately so at the apical parts, with shallow preapical emargination on each side; apices slightly separated from each other; apex obtuse; scutellar striole very short, situated on interval I, and adjoining basal border which is weakly arcuate; striae smooth and rather shallow throughout; basal pore situated at the meeting



Figs. 10–13. Aedeagus of *Pterostichus ryoheii* MORITA, sp. nov., showing inflated inner sac. — 10, Left lateral view; 11, right lateral view; 12, dorso-apical view; 13, proximal sclerite. — a, Lobe “a”; b, lobe “b”; c, lobe “c”; d, lobe “d”; e, sclerotized plate; f, apical sclerite; g, proximal sclerite. Scales: 1.00 mm for 10–12; 0.2 mm for 13.

point of striae 1 and 2; interval III with three dorsal pores; the first dorsal pore adjoining stria 3, rarely lacking on one side, and situated between basal $1/5$ – $1/3$; the second one usually adjoining stria 2, rarely on the interval, and situated at about the middle or a little behind that level; the third one adjoining stria 2, and situated between basal $3/4$ – $17/20$; an additional pore rarely present on one side and situated between basal $2/5$ – $3/5$; intervals weakly convex and sparsely and finely punctate; microsculpture composed of wide meshes; inner plica visible; epipleuron gradually narrowed towards apex; marginal series composed of 13–16 pores.

Mesosternum, mesepisternum and sides of metasternum punctate; in ♂, anal projection wide, large and with wide and emarginate apex. In ♂, protarsal segments 2–4 with median sulcus on dorsal side, which is sometimes rudimentary.

Aedeagus elongate, strongly arcuate at basal third; apex rather short, rather widely rounded in dorsal view; viewed dorsally, right wall weakly convex in apical third.

Inflated inner sac armed with four lobes (called “lobe a, b, c and d” here), apical sclerite and proximal one (cf. MORITA, 2007 a, p. 144); lobe “a” large, strongly produced and larger than lobe “b”; lobe “c” very small, situated near proximal sclerite, though variable in size; lobe “d” large, elongate, covered with poorly sclerotized scales or spinules, and with narrow apical part in right lateral view; apical sclerite semicircular, moderately sclerotized, situated just inside sclerotized plate (cf. MORITA, 2007 a, p. 144), and covered with minute spinules; proximal sclerite small, heavily sclerotized, trian-

gular on one side (Fig. 13), strongly arcuate on the other side and with more strongly sclerotized and large basal part.

Right paramere elongate and weakly curved, usually as in Fig. 8, rarely more elongate as in Fig. 9; longitudinal fovea present at the frontal face; apical part rather wide, with narrowly rounded apex.

Type series. Holotype: ♂, 4-V~11-VI-2011, R. SHIMOYAMA leg. (NSMT). Paratypes: 1 ♀, 28-IX~18-X-2007, H. OHKAWA leg.; 2 ♂♂, 2 ♀♀, 19-V III~23-IX-2009, H. OHKAWA leg.; 1 ♀, 23-IX~17-X-2009, H. OHKAWA leg.; 1 ♂, 1 ♀, 4~6-VI-2011, H. OHKAWA leg.; 19 ♂♂, 12 ♀♀, 4-V~11-VI-2011, R. SHIMOYAMA leg.

Locality. Mt. Kurai-yama, Ichinomiya-machi, Gifu Prefecture, Central Japan.

Specimens compared. *Pterostichus (Epinialoe) daihizanus* ISHIDA (1968, p. 37): 1 ♂, Keihokuchō, Chūji, Kyoto, 4-VI-1995, H. ASHIDA leg.; 2 ♂♂, Keihokukamiyuge, Kyoto-shi, 23-IX-2011, S. YAMASHITA leg.

Notes. Judging from the shape of anal projection and male genital organ, this new species is closely allied to *Pterostichus (Epinialoe) daihizanus* ISHIDA. It is, however, distinguished from the latter by the following points: 1) lighter coloration, 2) larger genae, 3) less convex eyes, 4) elongated ovate elytra, 5) PB/EB 0.90–0.97 (M 0.95) in ♂, 6) rather wide aedeagal apex in dorsal view, and 7) right paramere rather wide, with wide apical part.

[In *P. (E.) daihizanus*: PB/EB 0.84–0.88 (M 0.85) in 3 ♂♂; right paramere of male genitalia is slender, with cylindrical apical part and simply rounded apex. (cf. KASAHARA, 1982, p. 76)]

In order to evert the aedeagal inner sac, the water pressure by a syringe is used (MORITA, 2007 b, p. 105). The apical part is expanded only by stronger pressure, but this degree is sometimes accompanied with the bursting of the wall of inner sac. Therefore, the apex of inner sac shown in Fig. 10 is not fully everted.

要 約

森田誠司：岐阜県産ナガゴミムシ（コウチュウ目オサムシ科）の1新種。——岐阜県高山市から採集されたナガゴミムシを新種と認め、クライヤマナガゴミムシ *Pterostichus (Epinialoe) ryohiei* sp. nov. と命名記載した。この種は、雄の腹端節の突起や交尾器の形状から判断して京都付近から知られているダイヒザンナガゴミムシ *P. (E.) daihizanus* ISHIDA に近い種であるが、淡色である点のほか、頭部は大きく、複眼は突出せず、大きく膨らんだ側頭部、幅の狭い上翅の基部、より幅広い陰茎先端部、および幅広い右側片をもつことなどで容易に識別される。

References

- ISHIDA, H., 1968. Two new species of the genus *Pterostichus* BONELLI from western Japan (Coleoptera: Harpalidae). *Ent. Rev. Japan, Osaka*, **20**: 37–40.
- KASAHARA, S., 1982. Ground beetles from Mt. Hira-san, Shiga Prefecture. *Kita-Kyūshū no Konchū, Kokura*, **29**: 75–76. (In Japanese.)
- MORITA, S., 2007 a. The group of *Pterostichus (Epinialoe) cristatoides* STRANEO (Coleoptera, Carabidae) of Japan. *Jpn. J. syst. Ent., Matsuyama*, **13**: 141–169.
- 2007 b. Notes on the pterostichine subgenus *Eosteropus* (Coleoptera, Carabidae) from Japan. Part 1. Complex of *Pterostichus japonicas*. *Elytra, Tokyo*, **38**: 105–124.