

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

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**Abstract** A new pterostichine carabid, *Pterostichus (Epinialoe) fumikoeae* sp. nov., is described from Shizuoka Prefecture, central Japan.

**Key words:** ground beetle, new species, *Epinialoe*

The purpose of this paper is to describe a new pterostichine carabid species from Shizuoka Prefecture, central Japan. Out of ordinary as the *Epinialoe* species, this new species dwells in the thick rock debris drifted to streamside.

The abbreviations used herein are as follows: L — body length, measured from the apical margin of the clypeus to apices of the elytra; HW — greatest width of the head; PW — greatest width of the pronotum; PL — length of the pronotum, measured along the mid-line; PA — width of the pronotal apex; PB — width of the pronotal base; EW — greatest width of the elytra; EL — greatest length of the elytra; M — the arithmetic mean.

Before going further, the author wishes to express his hearty thanks to Mr. Seiji MORITA, for great incitement to the study and critically reading of the original manuscript of this paper.

### *Pterostichus (Epinialoe) fumikoeae* Y. KUROSA, sp. nov.

[Japanese name: Kiyozasa-naga-gomimushi]

(Figs. 1–8)

**Description.** The present new species is similar to *Pterostichus (E.) enasanus* MORITA in external features. L: 11.5–12.3 mm. Colour dark reddish brown; appendages reddish brown.

Head ovoid, relatively large and convex; eyes small and weakly convex; frontal furrows linear, deep and reaching the level of anterior supraorbital pore, and with fine punctures; anterior supraorbital pore situated at the mid-eye level; posterior one apart from the post-eye level; frons moderately convex, and sparsely and finely punctate; PW/HW 1.23–1.31 (M 1.28) in ♂, 1.21–1.30 (M 1.26) in ♀; genae strongly convex and a little shorter than eyes; microsculpture consisting of isodiametric meshes; neck short but constricted; mental tooth strongly produced and bifid at the apex; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI  $\cong$  1.00 : 0.66 : 1.04 : 1.15 : 1.09 : 1.10 : 1.00 in ♂,  $\cong$  1.00 : 0.67 : 1.01 : 1.08 : 1.11 : 1.02 : 1.01 in ♀.

Pronotum transversely subcordate, weakly convex, wider than long, widest at about 3/4 from the base (measured along the median line); the apex widely and moderately emarginate; PW/PL 1.28–1.43 (M 1.36) in ♂, 1.29–1.39 (M 1.33) in ♀; sides widely arcuate in front half, decrease width linearly from basal 1/2 to 1/6, and then turn towards hind angles in approximately parallel; basal portions crenulate with 4–6 notches; the base weakly emarginate at the median part and almost straight at the lateral portion; reflexed lateral sides narrow; PW/PA 1.23–1.31 (M 1.27) in ♂, 1.23–1.28 (M 1.26) in ♀; PW/PB 1.40–1.47 (M 1.45) in ♂, 1.41–1.51 (M 1.46) in ♀; the apex apparently wider than the base, PA/PB 1.08–1.18 (M 1.14) in ♂, 1.13–1.20 (M 1.16) in ♀; apical angles strongly produced and round-

ed at the tips; hind angles sharp and nearly right; anterior pair of marginal setae inserted at a level before the widest part; posterior ones inserted at a level a little before and inside hind angles; median line impressed between anterior and posterior impressions, reaching neither the apex nor base; basal foveae shallow, linear at the bottom, rugose and sparsely punctate; basal portion between bottoms of basal foveae with short wrinkles.

Elytra elongated ovate, weakly convex and widest at a little behind the middle; EW/PW 1.23–1.34 (M 1.27) in ♂, 1.23–1.31 (M 1.28) in ♀; EL/EW 1.45–1.59 (M 1.52) in ♂, 1.48–1.56 (M 1.52) in ♀; shoulders rounded; sides very weakly arcuate towards the widest part, moderately arcuate behind, with a shallow preapical emargination on each side; apices obtuse, weakly separated from each other; scutellar striole very short, adjoining basal border; striae smooth and rather shallow throughout; basal pore situated at the meeting point of striae 1 and 2; interval III with three dorsal pores; the first dorsal pore adjoining stria 3, and situated between basal 1/6 and 1/4; the second one adjoining stria 2, and situated between basal 1/2 and 4/7; the third one adjoining stria 2, and situated between basal 5/6 and 6/7; intervals weakly convex and sparsely punctate; microsculpture composed of wide meshes; inner plica visible; marginal series composed of 11 or 12 umbilicate pores; epipleuron gradually narrowed towards the apex; hind wings rudimentary, fibrous, 1/3 length of EL.

In ♂, sternite VII transversely concave at the apical part, and with a projection (called here as “sternal projection”); in ventral view, the sternal projection triangular and very slightly inclined to the right and with simply rounded apex; viewed laterally, apical half of the sternal projection a little curved dorsally. In ♀, sternite VII shallowly and widely depressed along the margin.

Legs relatively short within *Epinaloe* species. Protarsal segments 1–4 each with shallow dorsal sulcus which is sometimes rudimentary.

Male genital organ rather small. Aedeagus robust; in left lateral view, the dorsal line contour slightly convex at the middle and abruptly attenuated in apical fourth; tumour rather large; inflated inner sac equipped with four lobes (cf. MORITA, 2007, p. 144). Right paramere elongate, weakly curved and with narrowly rounded apex.

The standard ratios of body parts shown in the descriptive part are those of 9 ♂♂ and 7 ♀♀.

*Type series.* Holotype: ♂, Kiyozasa-tôge, Fujieda-shi, 11.XI.2017, Y. KUROSA leg. (National Museum of Nature and Science, Tsukuba). Paratypes: 1 ♀, Kiyozasa-tôge, Kuromata, Aoi-ku, Shizuoka-shi, 16.X.2009, F. SATÔ leg.; 2 ♂♂, 3 ♀♀, Kiyozasa-tôge, Fujieda-shi, 1.IX.2017, Y. KUROSA leg.; 5 ♂♂, 4 ♀♀, same locality, 27.X.–11.XI.2017, Y. KUROSA leg.; 2 ♀♀, same locality, 11.XI.2017, Y. KUROSA leg.; 2 ♂♂, 1 ♀, same locality, 8.VI.2018, Y. KUROSA leg.; 2 ♂♂, 2 ♀♀, same locality, 21.X–8.XI.2018, Y. KUROSA & F. SATÔ leg.

*Type Locality.* Kiyozasa-tôge on the borders between Fujieda-shi and Shizuoka-shi, Shizuoka Prefecture, central Japan.

*Specimens compared.* *Pterostichus (Epinaloe) enasanus* MORITA (2007, p. 163): 9 ♂♂, 7 ♀♀, Mt. Ena-san, Achi-mura, Nagano Pref., 23.VIII.1998, Y. KUROSA leg.

*Comparative notes.* This new species is allied to *Pterostichus (Epinaloe) enasanus* MORITA. It is, however, distinguished from the latter by the following points: 1) larger head (PW/HW 1.21–1.31), 2) larger genae, 3) less convex eyes, 4) pronotum with the apparently wider apex than the base (PA/PB 1.08–1.20), and 5) robust aedeagus attenuated abruptly in apical fourth.

[In *P. (E.) enasanus*; PW/HW 1.34–1.49, PA/PB 0.89–1.17 (cf. MORITA, 2007, p. 163).]

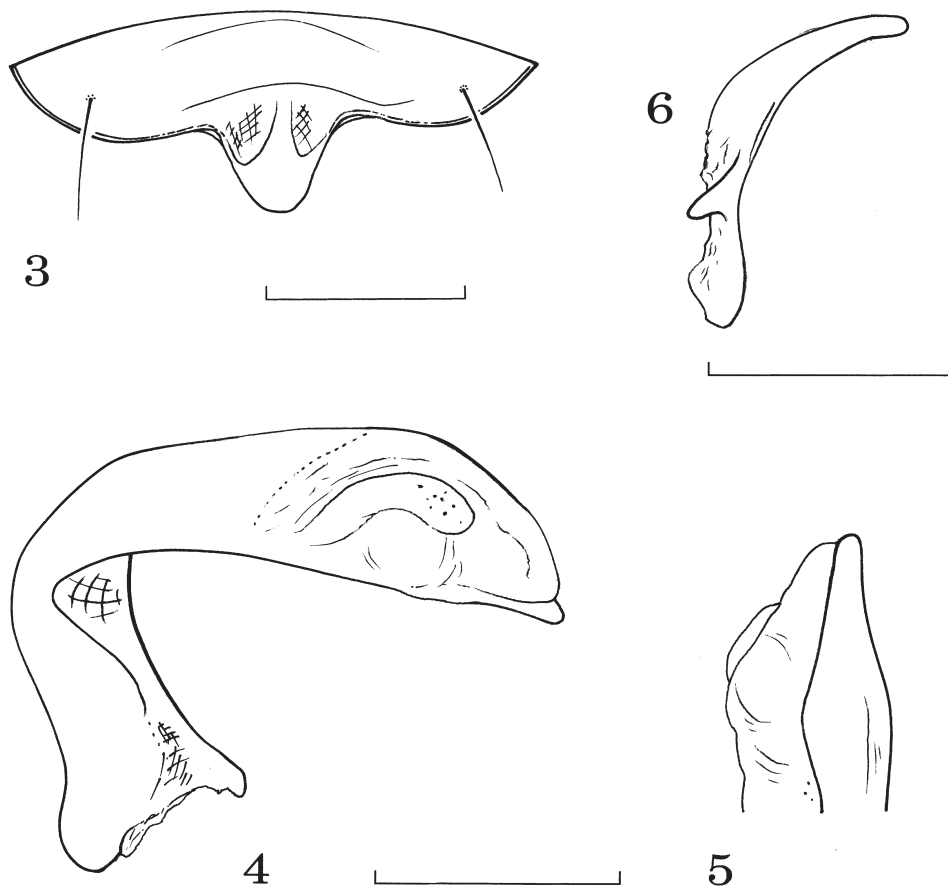
*Biological notes.* Twelve specimens of *Pterostichus (Epinaloe) fumikoeae* sp. nov. were dug out from the colluvia deposited streamside at the depth of 40–80 cm. Other specimens were found in subterranean baited traps.



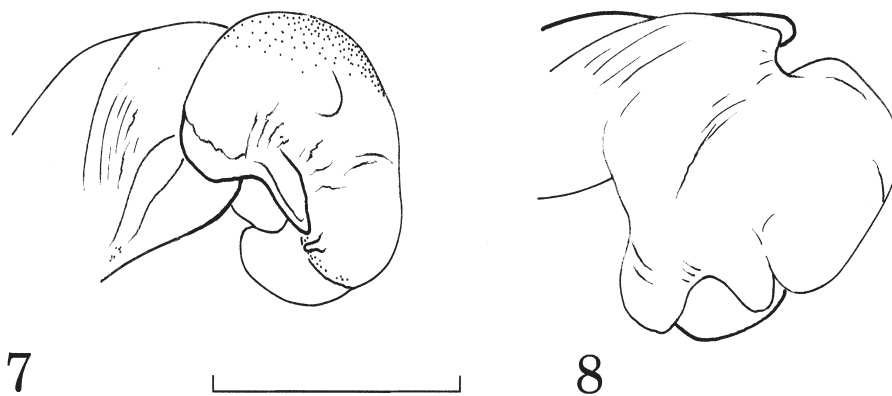
Fig. 1. A habitat of *Pterostichus (Epinialoe) fumikoeae* Y. KUROSA, sp. nov.



Fig. 2. *Pterostichus (Epinialoe) fumikoeae* Y. KUROSA, sp. nov. from Kiyozasa-tôge, holotype male, dorsal view.



Figs. 3–6. *Pterostichus (Epinaloe) fumikoe* Y. KUROSA, sp. nov. — 3, Sternite VII in male, ventral view; 4, aedeagus, left lateral view; 5, apical part of aedeagus, ventral view; 6, right paramere, left lateral view. Scale: 1.0 mm.



Figs. 7–8. *Pterostichus (Epinaloe) fumikoe* Y. KUROSA, sp. nov. showing inflated inner sac. — 7, Lateral view; 8, dorso-apical view. Scale: 1.0 mm.

*Etymology.* This new species is dedicated to my reliable cooperator, Ms. Fumiko SATÔ who had dug out the first material of this new species and made the beginning of this study.

## 要 約

黒佐義郎：静岡県産ナガゴミムシ（鞘翅目オサムシ科）の1新種。——静岡県藤枝市と静岡市の市境に位置する清笹峠周辺で採集されたナガゴミムシを新種と認め、キヨザサナガゴミムシ *Pterostichus (Epinialoe) fumikoeae* sp. nov. と命名し、記載した。本種は恵那山から知られているエナサンナガゴミムシ *P. (E.) enasanus* に近似するが、頭部の横径が大きいこと、複眼と同等に膨隆した側頭部をもつこと、前胸背板前縁の幅が大きく基縁の1.08~1.20倍であること、陰茎が先端部1/4で急激に縦径を減ずることなどで識別できる。

## Reference

MORITA, S., 2007. The group of *Pterostichus (Epinialoe) cristatoides* STRANEO (Coleoptera, Carabidae) of Japan. *Japanese Journal of Systematic Entomology, Matsuyama*, **13**: 141–169.

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