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A New Pterostichine Carabid Beetle from the Island of Kyushu, Southwest Japan

Sumao KASAHARA

Nishifuna 4–9–13, Funabashi City, Chiba, 273 Japan

and

Norio OHTANI

Miirihigashi 1–15–13, Asakita-ku, Hiroshima City,
Hiroshima, 732–01 Japan

Abstract A new pterostichine carabid beetle, *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov., is described from the central mountains of the Island of Kyushu, Japan. It is so unique that none of its allies have hitherto been known, and is probably endemic to those mountains.

There occurs an unnamed pterostichine carabid beetle belonging to the subgenus *Pterostichus* (sensu TANAKA, 1985, p. 113) on the central mountains of the Island of Kyushu, Southwest Japan. It was first found more than twenty years ago by the junior author on Mt. Sobo-san in Ôita Prefecture, but was not satisfactorily studied for a long time. In the early summer of 1984, we made a collecting trip to those mountains for the purpose of investigating the carabid fauna, and found the same species on Mt. Hakuchô-zan in Kumamoto Prefecture. Several days later, the senior author obtained it also at the Shiiya-tôge, the highest pass at the central part of the mountains, on the borders of Kumamoto and Miyazaki Prefectures. These new localities lie about 50 km southwest of Mt. Sobo-san.

The pterostichine in question is very interesting in having a peculiarly shaped aedeagus, which bears a membraneous elliptic fenestra or a "window" at the middle of the ventral surface. No allied species with such a peculiarity have hitherto been known from Kyushu and its surroundings. In the following lines, we are going to describe and illustrate it under the name of *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov. The abbreviations used herein were already explained in previous papers of the senior author.

Before going further, we wish to express our deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his advice and for reading the manuscript of this paper. Our thanks are also due to Mr. Shôichi IMASAKA of Shimabara City for his kind support of our investigations in Kyushu.

Pterostichus* (*Pterostichus*) *fenestratus sp. nov.

[Japanese name: Sobo-nagagomimushi]

(Figs. 1–3)

Description. Length (measured from apex of labrum to apices of elytra) 13.3–14.6 mm. Width 4.4–4.9 mm.

Elongate, rather flat, shiny, dark reddish brown to black; labrum, antennae, femora and tibiae dark reddish brown, palpi and tarsi reddish brown; venter dark reddish brown to blackish.

Head gently convex; eyes small, though convex; temporae gently swollen, almost as long as eyes; genae smooth or feebly rugose near buccal fissures; frontal furrows distinct, divergent posteriad, and reaching the level of anterior supraorbital setae; supraorbital areas convex in front; clypeal suture fine; lateral grooves deep, extending to the level of posterior supraorbital setae, which are fairly distant from the post-eye level; mandibles relatively long; apical margins of both labrum and clypeus emarginate; antennae rather long, extending to the basal third of elytra; relative lengths of scape and segments 2–6 as follows:— 1: 0.65: 1: 1.15: 0.95: 0.95; segment 2 ventrally unisetose at apex; surface very minutely and sparsely punctate; microsculpture visible, formed by fine irregular meshes.

Pronotum cordate, rather flat, widest at about apical fourth, ca. 1.3 times as wide as head (PW/HW 1.24–1.32, mean 1.28), ca. 1.26 times as wide as long (PW/PL 1.22–1.34, mean 1.26), ca. 1.4 times as wide as base (PW/PBW 1.39–1.48, mean 1.43); lateral margins evenly well arcuate in anterior halves, then strongly convergent posteriad and fully sinuate before base, basal part more or less dilated posteriad; apical margin emarginate, not bordered; apical angles produced, rounded at the tips; basal margin narrower than the apical, widely emarginate at the median part, more or less oblique and vaguely bordered on each side; basal angles rectangular; basal foveae distinct, with linear impressions at the bottoms, divergent anteriad, deepening in the basal parts, almost smooth, though often with transverse rugosities and punctures; median line deep; both apical crescent and basal transverse depressions weak or obsolete; surface smooth, though often with irregular transverse wrinkles; microsculpture visible, formed by fine transverse meshes.

Apterous. Elytra oblong-subovate, relatively flat, faintly iridescent, widest at about middle, ca. 1.3 times as wide as pronotum (EW/PW 1.24–1.35, mean 1.29), ca. 2.7 times as long as pronotum (EL/PL 2.62–2.87, mean 2.74), ca. 1.7 times as long as wide (EL/EW 1.65–1.77, mean 1.69); basal border curved, obliquely extending to shoulder, and joining lateral border at a very obtuse angle; shoulders rounded; lateral margins gently divergent from behind shoulders to the widest part, then gently and roundly convergent to preapical emarginations, which are shallow, and rounded at apices; sutural angles obtuse, rounded at the tips; inner plica invisible; scutellar striole short, lying on interval 2, arising from basal pores at the base of stria 2; striae moderately impressed, almost smooth, or feebly notched at the bottoms; intervals

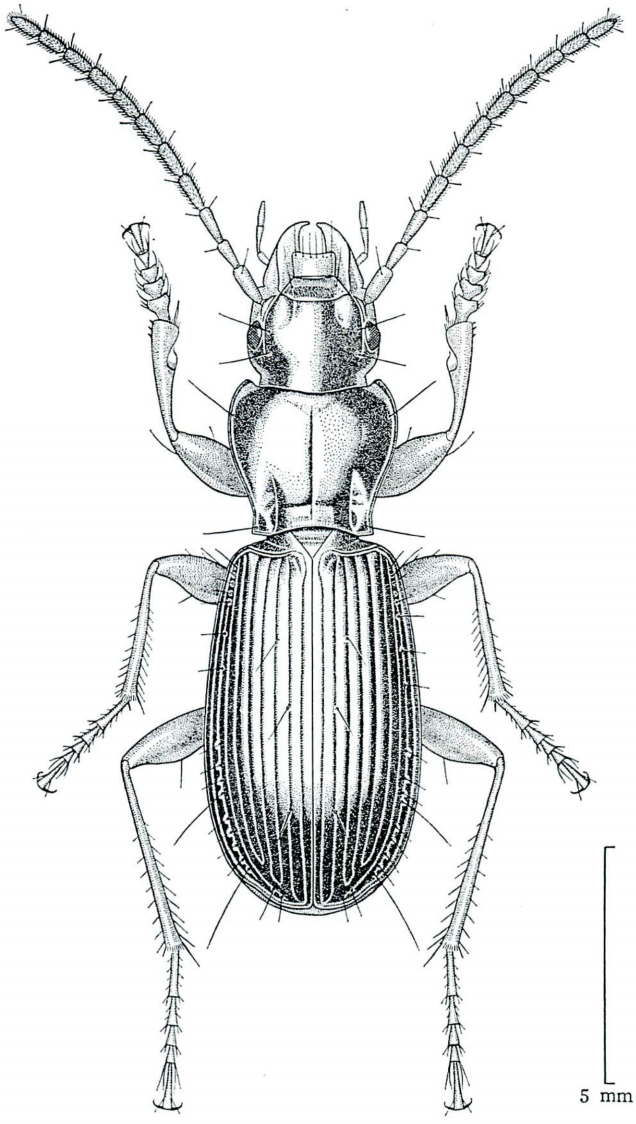

Fig. 1. *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov., ♂, from Mt. Sobo-san in Ôita Prefecture.

convex; interval 3 with three dorsal pores, anterior one at about basal fourth and adjoining stria 3, while the posterior two adjoin stria 2 at about middle and apical fourth, respectively; marginal series of pores 16–17 in number, widely spaced at middle; microsculpture formed by fine transverse meshes.

Basal three segments of meso- and metatarsi externally sulcate. Venter almost smooth, shiny; prosternal process shallowly furrowed at middle, bordered at apex;

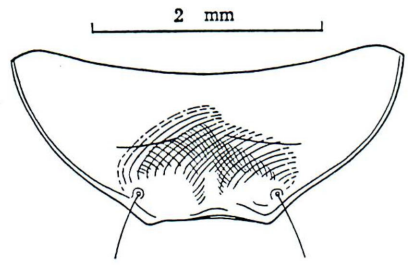

Fig. 2. Terminal sternite in the male of *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov., from Mt. Sobo-san in Ôita Prefecture.

terminal sternite in the male widely depressed in apical half, its apical margin widely truncated at middle, each side of the truncation more or less angulate and produced.

Aedeagus strongly bent at basal third, then abruptly and widely tumid on the right ventral side at middle, and gently bent downwards at apical fifth, with rounded apex; ventral surface with a membraneous elliptical fenestra at the middle, its right anterior margin adjoining a distinct carina; another short but distinct carina present, running parallel to the ventral one on the right side at apical third; left paramere widely arcuate at apex; right one stout, rounded at apex.

Type series. Holotype: ♂, Mt. Sobo-san, Ôita Pref., 2–V–1964, N. OHTANI leg.; allotype: ♀, same data as for the holotype. Paratypes: 2 ♂♂, same data as for the holotype; 3 ♂♂, 6 ♀♀, same locality as for the holotype, 1–V–1967, N. OHTANI leg.; 3 ♂♂, 1 ♀, same locality, 2–V–1967, N. OHTANI leg.; 1 ♂, same locality, 26–VIII–1968, N. OHTANI leg.; 1 ♂, same locality, 27–VIII–1968, N. OHTANI leg.

Other specimens examined. 1 ♂, Mt. Hakuchô-zan, Gokanoshô, Kumamoto Pref., 17–VI–1984, S. KASAHARA & N. OHTANI leg.; 2 ♂♂, 1 ♀, Shiiya-tôge, Kumamoto Pref., 21–VI–1984, S. KASAHARA & S. IMASAKA 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 preserved in our collections.

Notes. The present new species is easily discriminated from all the other pterostichine species known from Kyushu not only by rather flattened facies with widely truncated terminal sternite in the male but also by peculiar conformation of aedeagus. Only the other Japanese species hitherto known to bear a membraneous fenestra on the ventral surface of its aedeagus is *P.* (*P.*) *mirificus* BATES, widely distributed in northeastern Honshu and the southernmost part (Oshima Peninsula) of Hokkaido.

This membraneous fenestra seems to have been formed for receiving the apex of the left paramere, since the latter closely fits the former in repose. In *P. mirificus*, its circumference is clearly defined by sclerotization, so that its size is almost constant. In *P. fenestratus*, on the other hand, circumference of the fenestra is not sharply marked, and its extent varies with individuals, sometimes occupying a fairly large

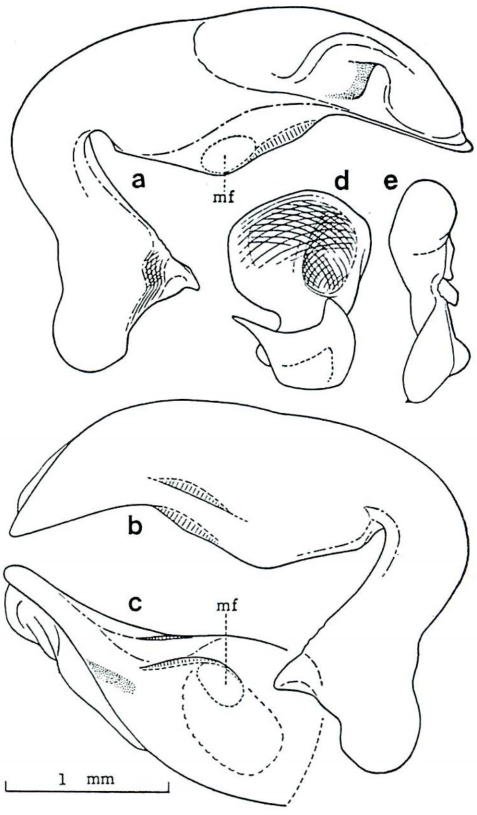

Fig. 3. Male genitalia of *Pterostichus* (*Pterostichus*) *fenestratus* sp. nov., from Mt. Sobo-san in Ôita Prefecture; a–c, aedeagus: a, left lateral view; b, right lateral view; c, apical half in ventral view; d, left paramere; e, right paramere; mf, membraneous fenestra, outer broken line in c shows its maximum extent.

part of the ventro-median surface of aedeagus.

So far as we have investigated, *P. fenestratus* seems to be confined to the central mountains of Kyushu. Judging from the distributional pattern of other pterostichines, however, its close relatives may occur at the southwestern part of the Island of Shikoku (cf. KASAHARA, 1985, pp. 49–57).

要　　約

笠原須磨生・大谷規夫: 九州山地産ナガゴミムシ属（オサムシ科）の1新種. —— 九州大分県の祖母山から，ナガゴミムシ属の1新種ソボナガゴミムシ *Pterostichus* (*Pterostichus*) *fenestratus* を記載した．本種は，体がやや扁平で，雄の腹部末端節腹板の後縁が幅広く切断状を呈し，外形的特徴からも容易に九州産の他種から識別できる．さらに特異な点は，陰茎の下面に，楕円形膜質の窓 (fenestra) をもつことで，このような特徴をもつ種は，日本ではほかにただ1種，本州北東部に広く分布し北海道の渡島半島にも見られる，フタトゲナガゴミムシ *P.* (*P.*) *mirificus* BATES が知られるのみである．

ソボナガゴミムシの存在は，かなり以前から一部で知られていたが，近年におけるわれわれの調査で，熊本県五家荘の白鳥山附近と椎矢峠でも発見され，九州山地の中央部に広く分布することが判明

した．現在のところ，本種はこの地域に固有と考えられるが，これまでの分布上の知見から推測して，近縁種が四国南西部から発見される可能性もある．

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ヤマトモリヒラタゴミムシ四国に産す

笠原須磨生・伊東善之

KASAHARA, S., & Y. ITÔ: Occurrence of *Colpodes yamatonis* (Carabidae) in the Island of Shikoku, Southwest Japan

ヤマトモリヒラタゴミムシ *Colpodes* (*Oncostylus*) *yamatonis* (HABU) は，紀伊半島の奈良，和歌山両県に分布し，最近，東海の愛知県北東部からも記録されたが（笠原，1988*），四国からは未知であった．筆者らは，本種の高知県産 1♂ の標本を確認し，四国南東部にも分布することがわかったので記録しておく．

1♂，高知県物部村西熊山（標高，1,120 m），10-X-1986，伊東善之採集．

なお，本種に近縁のホソモリヒラタゴミムシ *C.* (*O.*) *speculator* HAROLD は，四国に分布することが知られているが，高知県本川村大森に産する個体群のなかに，前胸背板の形態が *C. yamatonis* に似て，ややまぎらわしい個体があることをあわせて報告する．

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* 笠原須磨生，1988，甲虫ニュース，(83/84): 10.