

Occurrence of a New Pterostichine Carabid Beetle in the Bôso Peninsula, Central Honshu, Japan

Sumao KASAHARA

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

and

Shusei SAITO

Japan Wildlife Research Center,
Yushima 2-29-3, Bunkyo-ku, Tokyo, 113 Japan

Abstract A new pterostichine carabid beetle, *Pterostichus (Nialoe) isumiensis* sp. nov., is described from the Bôso Peninsula in Chiba Prefecture, central Honshu, Japan. This is a *Nialoe* species first recorded from the peninsula, and seems much localized and widely isolated in distribution.

It is most unexpected that a pterostichine carabid beetle belonging to the sub-genus *Nialoe* of the genus *Pterostichus* occurs in the Bôso Peninsula of Chiba Prefecture, central Honshu, Japan. None of its relatives have hitherto been known from that peninsular area.

In the late summer to the autumn of 1995, the junior author and the students of the Nature Conservation College, Tokyo, collected a series of specimens of a *Nialoe* species by baited pit-fall traps set on the low hills (less than 80 m alt.) covered with a plantation of cryptomeria and coppice lying at the right side of the River Isumi-gawa, only 7 km distant to the west from the Pacific shore. This seemed to be an exceptional habitat for apterous pterostichine beetles.

This unnamed species may be related to *P. (N.) yokohamae* NAKANE et STRANEO (1979, pp. 56-57) endemic to the banks of the River Tsurumi-gawa in Kanagawa Prefecture and *P. (N.) nishiyamai* KASAHARA (1986) widely distributed on the Abukuma Hills in Ibaraki and Fukushima Prefectures. It is, however, widely isolated in distribution from the two species and is evidently different from them in several characteristics. It must be new to science. In this paper, the authors are going to describe it under the name *Pterostichus (Nialoe) isumiensis* sp. nov. The abbreviations used herein are the same as those explained in other papers of the senior author's.

The holotype to be designated is preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo [NSMT]. The paratypes are

deposited in the same collection, the collection of the Natural History Museum and Institute, Chiba [CBM], and the first author's cabinet.

Before going further, the authors wish to express their sincere thanks to Dr. Shun-ichi UÉNO, Emeritus Curator of the National Science Museum (Nat. Hist.), Tokyo, for his encouragement and for reading the manuscript of this paper. Thanks are also due to Messrs. Toshiyuki AKAMINE, Masato AMEMIYA, Nozomu FUJII, Tomonari NAKAJIMA and Takashi SUZUKI as well as to Miss Mariko KONNO, all of the Nature Conservation College, Tokyo, for their cooperation in the field research.

This study is a part of the results of the biological survey of Isumi-machi made by the Japan Wildlife Research Center, Tokyo.

Pterostichus (Nialoe) isumiensis sp. nov.

[Japanese name: Isumi-nagagomimushi]

(Figs. 1–3)

Description. Length (measured from apex of labrum to apices of elytra) 17.9–20.0 mm; width 6.2–6.9 mm. Body stout, black and shiny, labrum, mandibles and appendages dark reddish brown.

Head gently convex; eyes convex, more or less prominent; postgenae shorter than eyes, oblique and gently swollen; apices of both labrum and clypeus gently emarginate; clypeal suture distinct; frontal furrows deep and smooth, linearly impressed at the bottoms, parallel to each other in apical halves, then divergent posteriad in posterior halves and extending to the mid-eye level; supraorbital areas convex; lateral grooves deep, extending to a little behind the post-eye level; surface smooth, though very minutely and sparsely punctate on frons; microsculpture partially and faintly visible, formed by very fine isodiametric meshes; antennae moderately long, reaching the basal third of elytra; relative lengths of scape and segments 2–6 as follows:— 1 : 0.6 : 0.9 : 1 : 0.95 : 0.95; segment 2 plurisetose at apex.

Pronotum cordate, convex, widest at apical third, ca. 1.3 times as wide as head (PW/HW 1.29–1.36, mean 1.33), ca. 1.5 times as wide as base (PW/PBW 1.47–1.55, mean 1.51), ca. 1.35 times as wide as long (PW/PL 1.26–1.38, mean 1.35); lateral margins well arcuate and strongly convergent posteriad, then gently sinuate before base; apical margin gently emarginate, finely bordered on each side, apical angles somewhat produced, rounded at the tips; basal margin narrower than the apical, weakly emarginate at median part, bordered on each side, basal angles rectangular, more or less produced laterad; median line deep; basal foveae deep and smooth, linearly impressed at the bottoms, divergent anteriad in apical halves; both apical and basal transverse impressions shallow; surface smooth, though the basal part bears transverse wrinkles; microsculpture faintly visible, formed by very fine transverse meshes.

Apterous. Elytra elliptical, convex, widest at about middle, ca. 1.2 times as wide as pronotum (EW/PW 1.18–1.25, mean 1.21), ca. 2.6 times as long as pronotum (EL/PL 2.55–2.79, mean 2.62), ca. 1.6 times as wide as base (EW/EBW 1.55–1.68,

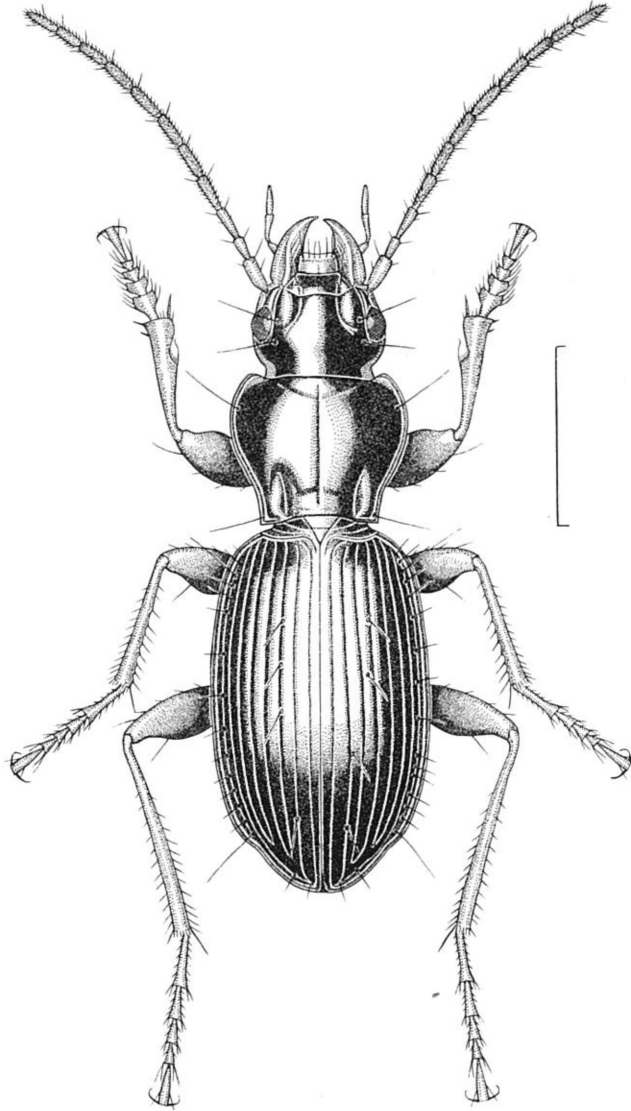


Fig. 1. *Pterostichus (Nialoe) isumiensis* sp. nov., ♂, from Isumi-machi in Chiba Pref. Scale 5 mm.

mean 1.62), as long as wide in almost the same proportion (EL/EW 1.59–1.69, mean 1.63); basal border complete, gently curved, and obliquely extending to shoulder and joining lateral border at an obtuse but distinct angle; shoulders oblique and widely rounded; lateral margins gently divergent from behind shoulders to the widest level, then roundly convergent posteriad, preapical emarginations rather distinct, apices

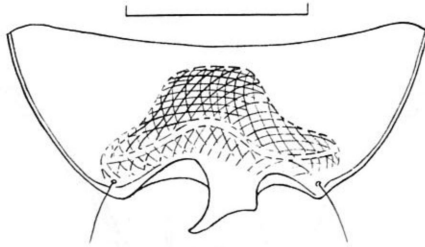


Fig. 2. Terminal sternite in the male of *Pterostichus (Nialoe) isumiensis* sp. nov., from Isumi-machi in Chiba Pref. Scale 2 mm.

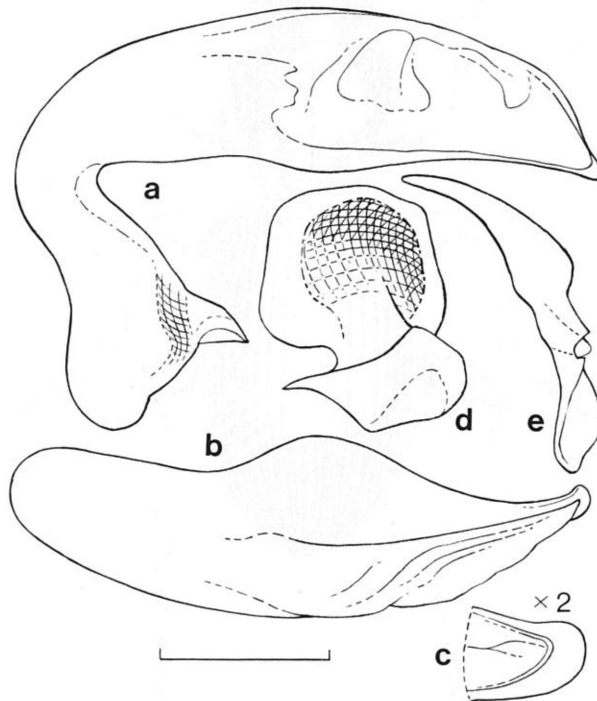


Fig. 3. Male genitalia of *Pterostichus (Nialoe) isumiensis* sp. nov., from Isumi-machi in Chiba Pref.; a, aedeagus, left lateral view; b, same, dorsal view; c, apical part of the same in dorsal view; d, left paramere; e, right paramere. Scale 1 mm.

rounded, sutural angles obtuse, blunt at the tips; scutellar striole very short, lying on interval 1, and connected with basal border; striae fine and deeply impressed throughout, smooth; intervals gently convex; interval 3 generally with four to five, sometimes with six to seven dorsal pores, anterior one or two, rarely three, adjoining stria 3 at basal fourth to before the middle, the remainings adjoining stria 2, irregularly arranged



Fig. 4. A habitat of *Pterostichus (Nialoe) isumiensis* sp. nov. in a cryptomeria plantation on Mangi Hill of Isumi-machi, Chiba Prefecture.

from the middle to the preapical part; marginal series of pores 17–18 in number, widely spaced at middle; surface smooth; microsculpture faintly visible, formed by very fine transverse meshes.

Legs slender, basal three segments of meso- and metatarsi externally sulcate. Venter moderately shiny, almost smooth; prosternal process furrowed at middle; in the male, terminal sternite deeply and trapezoidally excavated at middle, apical margin deeply emarginate, and with an asymmetrical projection, whose left angle is very acutely produced latero-posteriad in ventral view.

Aedeagus strongly bent at more than 90 degrees at basal third, then almost straightly extending to apex in lateral view, widely and distinctly tumid at apical third on the right side in dorsal view, apical lobe twice as wide as long, widely rounded at the apex; left paramere wide, square in apical half; right paramere slender, gently arcuate, tapered towards apex.

Type series. Holotype: ♂, Mangi, Isumi-machi, Chiba Pref., 28-IX-1996, S. SAITO *et al.* leg. [NSMT]. Paratypes: 6 ♂♂, 2 ♀♀ [incl. 2 ♂♂, 2 ♀♀ CBM-ZI 72826–72829], same data as for the holotype; 2 ♂♂, 5 ♀♀, same locality, 17-VIII-1996, S. SAITO *et al.* leg.; 1 ♂, same locality, 23-VIII-1996, S. SAITO *et al.* leg.; 1 ♂, 1 ♀, same locality, 14-IX-1995, S. SAITO *et al.* leg.

Notes. The present new species resembles *P. (N.) yokohamae* NAKANE *et* STRA-NEO in general appearance, but is easily discriminated from the latter by smaller body and different configuration of the male genitalia, especially more strongly bent aede-

agus, with the apical lobe more widely rounded at the apex. It is also similar in certain respects to *P. (N.) nishiyamai* KASAHARA, but is evidently distinguished from the latter by larger body and differently shaped terminal sternite and genitalia in the male. It seems strictly localized to a small hill of the Bôshô Peninsula and can be regarded as a relict. Its occurrence is of considerable zoogeographical importance and poses an interesting problem for future investigations.

要 約

笠原須磨生・斉藤秀生：千葉県房総半島で発見されたナガゴミムシ属の1新種。——千葉県の房総半島では、これまで狭義のナガゴミムシ類の記録はなく、半島中央部が低標高の丘陵状山地であり、大部分が杉の植林地や常緑広葉樹林でおおわれていて、ナガゴミムシ類の生息環境に乏しいことから、狭義のナガゴミムシ類は分布していないものと考えられてきた。しかし、1995年夏から翌年の秋にかけて、夷隅川右岸の標高80m前後の丘陵地で発見採集された一連の個体は、明らかに *Nialoe* 亜属に属するナガゴミムシで、新種と認められるので、これをイスマナガゴミムシ *Pterostichus (Nialoe) isumiensis* と命名記載した。

本種は、神奈川県鶴見川に生息するヨコハマナガゴミムシ *P. (N.) yokohamae* NAKANE et STRANEO に近縁で、阿武隈山地に広く分布するアブクマナガゴミムシ *P. (N.) nishiyamai* KASAHARA との類縁関係も想定される。とくに、その生息環境は、ヨコハマナガゴミムシとともに、本亜属の種としてはきわめて異例であり、寒冷期の数少ない遺存種のひとつであろうと考えられる。

なお、この研究に用いた資料は、千葉県夷隅町の委託による自然資源調査によって得られたものである。

References

- KASAHARA, S., 1986. A new pterostichine carabid beetle from the Abukuma Mountains of eastern Honshu, Japan. *Elytra, Tokyo*, **14**: 11-16.
- NAKANE, T., 1979. New or little-known Coleoptera from Japan and its adjacent regions, XXX. *Rept. Fac. Sci. Kagoshima Univ., (Earth Sci. & Biol.)*, (12): 51-60.