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A New Subgenus and Species of *Pterostichus* (Coleoptera, Carabidae) from Aomori Prefecture, North Japan

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Abstract A new pterostichine carabid beetle, *Pterostichus yamauchii* sp. nov., is described from Aomori Prefecture, North Japan. A new subgenus, *Abea*, is erected for this new species. It is mainly characterized by loss of setiferous dorsal pore on the interval 3 and of basal pore on the elytron.

In the present paper, I am going to describe a new small-sized pterostichine carabid beetle, which was discovered in the subalpine zone of the Hakkôda Mountains, at the northern part of the Tôhoku District in North Japan. This new species is very peculiar mainly in the loss of setiferous dorsal pore and of basal pore on the elytra. Therefore, this species had better be separated from the other members of the grand genus *Pterostichus* in its own subgenus. It will be described below under the name of *Pterostichus* (*Abea*) *yamauchii*.

The abbreviations used herein are as follows: HW–greatest width of head; PW–greatest width of pronotum; PL–length of pronotum, measured along the median line; PA–width of pronotal apex; PB–width of pronotal base; EW–greatest width of elytra; EL–greatest length of elytra; TL–length of hind tarsus; M–arithmetic mean.

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for critically reading the original manuscript of this paper. My thanks are also due to Messrs. Azuma ABE, Shigehiko SHIYAKE and Satoshi YAMAUCHI for their kind help.

Subgenus ***Abea*** MORITA, nov.

Type species: *Pterostichus* (*Abea*) *yamauchii* subgen. et sp. nov.

Description. Body small and convex; apterous.

Head large and convex, with small eyes; tempora swollen; apical margin of labrum almost straight; antennae submoniliform, pubescent from segment 4; segment 2 with a single seta. Pronotum with a single basal fovea on each side. Elytra with neither setiferous pore on interval 3 nor basal pore, and without scutellar striole.

Metepisternum slightly wider than long; anal sternite normal. All tarsal segments smooth on dorsal side, claw segment glabrous below.

Aedeagus short and stout; inner sac with two copulatory pieces, and everting on the left side of aedeagus; left paramere wide and square; right one thick, with apex

simply rounded.

Notes. So far as the East Asian groups are concerned, three subgenera are characterized by losing setiferous dorsal pore on interval 3. They are *Stereocerus* KIRBY (1837, p. 34) [=*Boreobia* TSCHITSCHÉRINE (1896, p. 375)], *Licentius* JEDLIČKA (1939, p. 4) and *Carllindrothius* HABU (1984, p. 2). *Abea* is, however, distinguished from these subgenera by combination of the following points: 1) body size, 2) coloration, 3) swollen tempora, 4) loss of basal pore and of scutellar striole on the elytron, and 5) grabrous claw segment.

Incidentally, this chaetotaxial peculiarity of elytron reminds us of *Anilloferonia* VAN DYKE (1926, p. 115) from the Pacific Northwest of North America. Needless to say, there is a very wide geographical gap between *Abea* and *Anilloferonia*. In fact, the latter is different from the former in having reduced eyes or being blind.

The true affinity of *Abea* remains uncertain, as many species of *Pterostichus* have been described without subgeneric assignment.

Pterostichus (*Abea*) *yamauchii* MORITA, sp. nov.

[Japanese name: Aomori-naga-gomimushi]

(Figs. 1–5)

Length: 6.06–6.52 mm (from apical margin of clypeus to apices of elytra).

Body rather robust, with fairly stout appendages. Colour blackish brown, slightly iridescent on elytra; palpi reddish brown; mandibles, labrum, clypeus, antennae, legs, gula, prosternum, metasternum, and apical part of anal sternite dark brown.

Head large and convex, without punctures; PW/HW 1.47–1.54 (M 1.50) in 10 ♂♂, 1.43–1.53 (M 1.49) in 4 ♀♀; frontal furrows short, rather shallow, and moderately divergent posteriad; eyes flat; tempora swollen, about 3/4 as long as eyes; anterior supraorbital seta located at the mid-eye level, posterior one apart from the posterior margin of eye; mentum tooth bifid at the tip; mandibles long, hooked at apices; antennae stout, segments 7–10 ovate, forming submoniliform; relative lengths of antennal segments as follows: I: II: III: IV: V: VI: XI≒1: 0.52: 0.92: 0.81: 0.80: 0.78: 1.08; microsculpture composed of isodiametric meshes on frons but of wide ones on neck.

Pronotum wider than long, PW/PL 1.12–1.21 (M 1.16) in 10 ♂♂, 1.12–1.23 (M 1.18) in 4 ♀♀; PW/PA 1.35–1.42 (M 1.39) in 10 ♂♂, 1.37–1.40 (M 1.39) in 4 ♀♀, PW/PB 1.25–1.38 (M 1.31) in 10 ♂♂, 1.28–1.36 (M 1.31) in 4 ♀♀; apical margin usually weakly emarginate, rarely almost straight, a little narrower than base, PA/PB 0.91–0.98 (M 0.95) in 10 ♂♂, 0.92–0.97 (M 0.95) in 4 ♀♀; sides moderately arcuate and convergent posteriad, rarely very slightly sinuate just before hind angles; apical angles a little advanced at the tips; hind ones slightly produced outwards, usually forming obtuse denticles without carina; base arcuately oblique inside each hind angle, and almost straight at middle; basal foveae small, rather deep and linear at the bottom, a little diverging anteriorly or almost parallel, and sparsely and coarsely punctate;

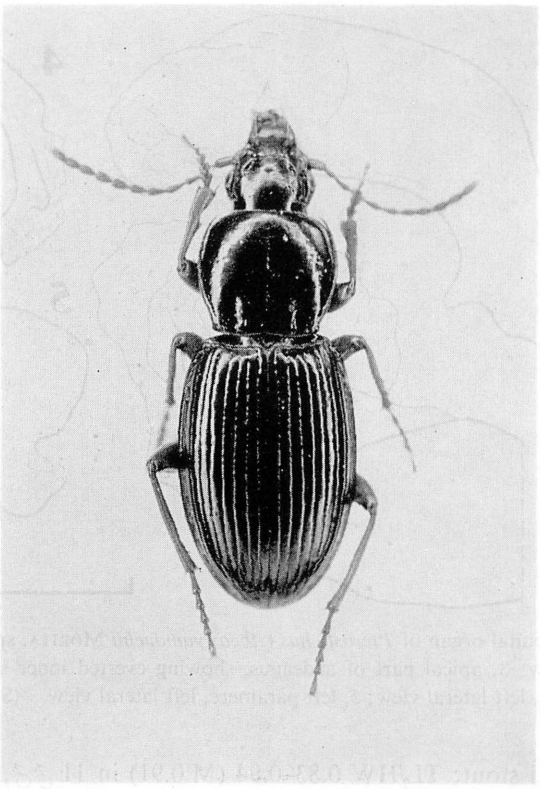
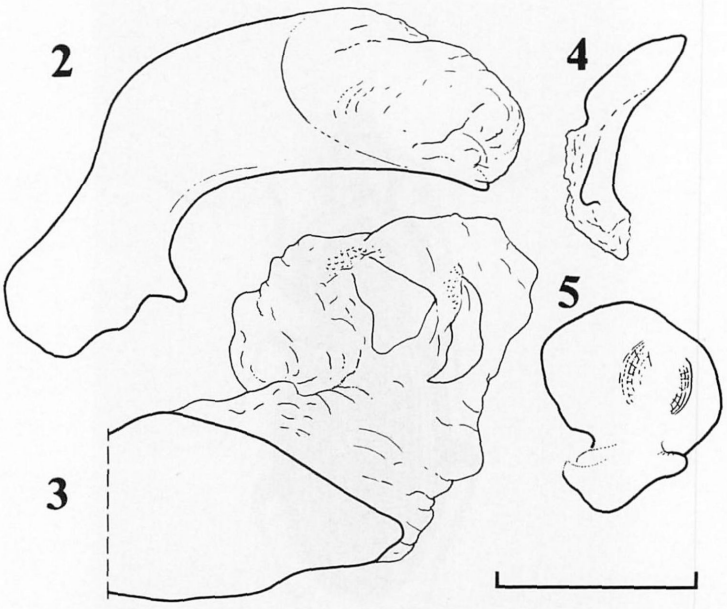


Fig. 1. *Pterostichus* (*Abea*) *yamauchii* MORITA, sp. nov., ♂, from Oodake, Mts. Hakkôda-san, Aomori Prefecture, North Japan.

median line clearly impressed, not reaching apex nor base; anterior marginal setae inserted a little before the widest part, with no additional seta, posterior ones inserted just before and inside hind angles; microsculpture composed of fine transverse lines or meshes but partially disordered.

Elytra ovate and convex, widest at about middle; EW/PW 1.25–1.33 (M 1.28) in 10 ♂♂, 1.27–1.30 (M 1.28) in 4 ♀♀, EL/EW 1.43–1.55 (M 1.50) in 10 ♂♂, 1.45–1.51 (M 1.48) in 4 ♀♀; sides evenly arcuate, usually without preapical emargination; shoulders denticulate; apices usually conjointly rounded, rarely forming a very small re-entrant angle at suture; striae entire, weakly crenulate, but becoming indistinct at apices; intervals slightly convex; inner plica visible; marginal series composed of 13 to 15 pores; microsculpture composed of fine transverse lines and meshes.

Prepisternum, apical part of mesosternum, meso- and metepisternum, sides of metasternum, and sides of sternites 1–3 strongly and coarsely punctate; anal sternite slightly depressed along apical margin; in ♀, anal sternite with two pair of setae which are on a shallow arc open anteriorly.



Figs. 2–5. Male genital organ of *Pterostichus* (*Abea*) *yamauchii* MORITA, sp. nov.; 2, aedeagus, left lateral view; 3, apical part of aedeagus, showing everted inner sac, ventral view; 4, right paramere, left lateral view; 5, left paramere, left lateral view. (Scale: 0.5 mm.)

Legs short and stout; TL/HW 0.83–0.94 (M 0.91) in 11 ♂♂, 0.84–0.91 (M 0.88) in 4 ♀♀.

Aedeagus short and stout; apical part simply rounded in ventral view.

Type series. Holotype: ♂, Oodake, 6–VIII–1988, S. MORITA leg.; allotype: ♀, same data as for the holotype. Paratypes: 1 ♂, Oodake, 11–VIII–1987, A. ABE leg.; 1 ♀, Oodake, 23–VII–1988, S. MORITA leg.; 1 ♂, Oodake, 24–VII–1988, A. ABE & S. YAMAUCHI leg.; 6 ♂♂, 2 ♀♀, Oodake, 6–VIII–1988, S. MORITA leg.; 1 ♂, Oodake, 24–VI–1989, A. ABE leg.; 1 ♂, Tomarizawa, 24–VII–1989, A. ABE leg.; 1 ♂, 1 ♀, Tomarizawa, 25–VII–1989, A. ABE leg.

Localities. Oodake (type locality), Mts. Hakkôdasan; Tomarizawa, Ajigasawa-machi, Aomori Prefecture, North Japan.

The holo- and allotypes are preserved in the National Science Museum (Nat. Hist.), Tokyo. The paratypes are distributed to the above collection and the private collection of the author.

Notes. As was already described in the subgeneric description, this new species is very peculiar in the chaetotaxy of elytra and the swollen tempora. It is easily discriminated from all the other Japanese species. All the materials were found from under stones by mountain trails in deciduous broadleaved forests.

要　約

森田誠司：青森県で採集されたナガゴミムシ属の新亜属新種．—— 青森県で採集された小型のナガゴミムシ *Pterostichus yamauchii* を記載した．本種は，目のうしろが膨れること，上翅の第3間室の孔点および基部孔点を欠くことで，わが国から知られている種類との識別はやさしい．*Pterostichus* 属の亜属の研究は不充分であるものの，おもに上記の特徴から新亜属 *Abea* を創設した．

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