

*Pterostichus (Rhagadus) thorectoides* JEDLIČKA (Coleoptera, Carabidae)  
and its New Relative from Southwest Japan

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**Abstract** *Pterostichus (Rhagadus) thorectoides* JEDLIČKA is redescribed based on the holotype and an additional male collected from Okayama Prefecture, Southwest Japan. A new relative of the species is described from the Island of Awaji-shima, Hyôgo Prefecture, Southwest Japan, under the name of *P. (R.) ishiii* MORITA, Y. KUROSA et MORI, sp. nov.

This short paper is drawn up to redescribe *Pterostichus (Rhagadus) thorectoides* JEDLIČKA (1958, p. 240), on the basis of the holotype, since the original description given by JEDLIČKA is of little use for recognizing the species. At this opportunity, we are going to describe a new species related to it from the Island of Awaji-shima, Hyôgo Prefecture, Southwest Japan.

The abbreviations used herein are the same as those explained in previous papers of MORITA's; NW and EB mean the width of the neck in dorsal view and the width of elytral base, respectively.

Before going further, We wish to express our 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. Hearty thanks are also due to Messrs. Takaaki AONO and Masao ISHII for supplying us with important material.

Our thanks are also due to Dr. Svatopluk BÍLÝ for loan of the type specimen of *Pterostichus (Rhagadus) thorectoides* under his care.



Fig. 1. Holotype of *Pterostichus (Rhagadus) thorectoides* JEDLIČKA and the labels.

***Pterostichus (Rhagadus) thorectoides* JEDLIČKA**

[Japanese name: Nise-futokubi-naga-gomimushi]

(Figs. 1, 2, 4-6)

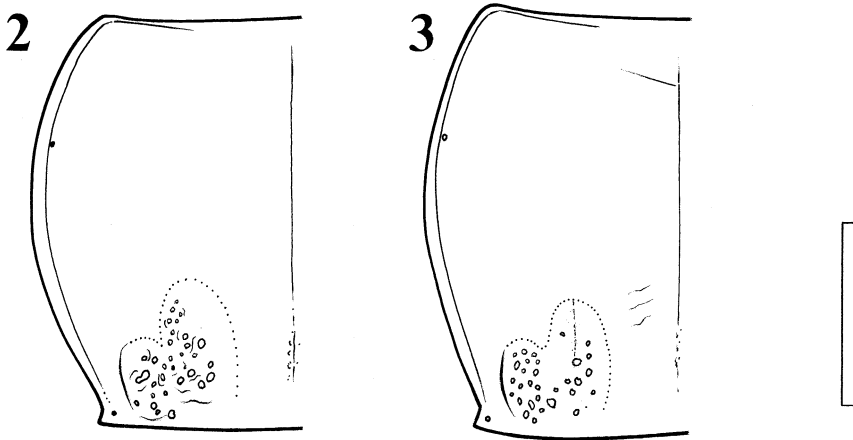
*Pterostichus thorectoides* JEDLIČKA, 1958, Acta ent. Mus. natn. Pragae, **32**: 240; type locality: Kobe, Japan; 1962, Ent. Abh., Dresden, **26**: 208, fig.15-a.

*Pterostichus (Rhagadus) thorectoides*: NAKANE, 1979, Nat. & Ins., Tokyo, **14**(4): 15, fig. 3-B-a.

**Diagnosis.** Body stout, with short elytra; eyes rather flat; neck wide; microsculpture indistinct; pronotum wide (PW/PL 1.24–1.27); reflexed lateral sides of pronotum wide; hind angle of pronotum dentate; elytral shoulders without tooth on each side; aedeagal apical lobe straight in ventral view.

**Redescription.** L: 8.6–9.7 mm. Body small though stout. Colour black to blackish brown; dorsal surface slightly shiny; ventral side almost black to blackish brown; sides and base of pronotum as well as appendages dark brown to brown; in the holotype, body brown, more or less teneral.

Head moderately convex; eyes rather flat; frontal furrows linear, deep, clearly impressed, becoming shallower towards bases and reaching a little before the anterior supraorbital pore, and with several fine punctures; lateral grooves deep, straight, deeper than the frontal furrows, and reaching beyond the post eye; anterior supraorbital pore situated a little before the mid-eye level; posterior one at the post-eye level; frons sparsely and finely punctate; PW/HW 1.50; genae oblique and a little shorter than eyes;



Figs. 2-3. Pronota of *Pterostichus (Rhagadus)* spp. — 2, *Pterostichus (Rhagadus) thorectoides* JEDLIČKA, from Okayama Prefecture; 3, *P. (R.) ishiii* MORITA, Y. KUROSA et MORI, sp. nov., from Mt. Mikuma-yama. (Scale: 1 mm.)

microsculpture not clearly impressed and consisting of isodiametric meshes; relative lengths of antennal segments as follows:— I : II : III : IV : V : VI : XI = 1 : 0.54 : 1.06 : 0.98 : 0.97 : 0.98 : 1.16.

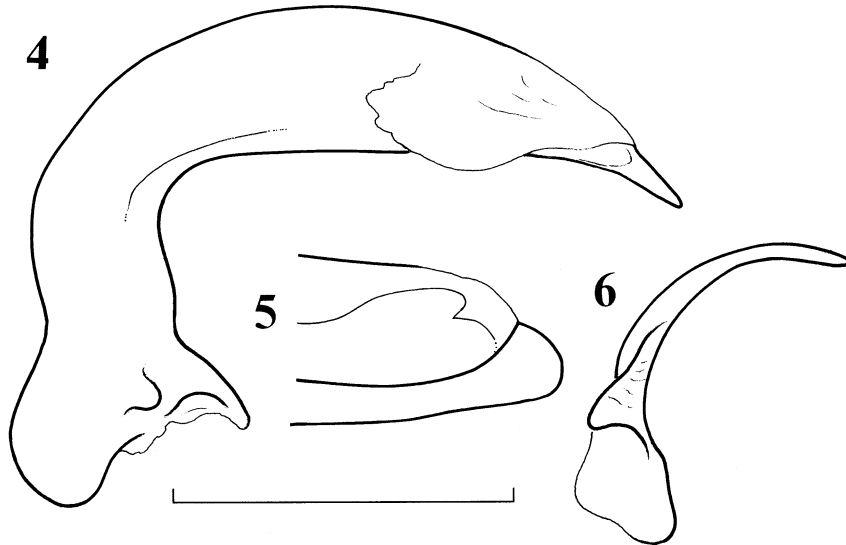
Pronotum transverse and convex; apex almost straight or weakly emarginate, and deeply bordered at the sides; PW/PL 1.27; sides strongly arcuate throughout; base straight; PW/PA 1.40; PW/PB 1.42; PA/PB 1.01; apical angles weakly produced and narrowly rounded at the tips; hind angles dentate; anterior pair of marginal setae inserted at a little before the widest part; anterior transverse impression vanished; median line clearly impressed, reaching neither apex nor base; basal foveae rather deep, wide, and with coarse punctures; microsculpture almost vanished.

Elytra ovate, convex, widest at about the middle, and with wide base; EW/PW 1.20; EL/EW 1.48; shoulders distinct, without tooth on each side; sides moderately arcuate, with very shallow preapical emargination; apices separated from each other and sutural angle rounded; scutellar striole lacking; striae crenulate or moderately punctate; stria 1 adjoining basal border; basal pore situated at the base of stria 2; two dorsal pores situated on interval III and adjoining stria 2; first pore situated at a little before the middle and second one at basal 3/4; intervals weakly convex; microsculpture composed of fine transverse meshes; marginal series composed of 15 pores.

Ventral surface moderately punctate, but the gula, median part of prosternum, metepimera and metacoxae are smooth.

Basal two segments of meso- and metatarsi each with outer sulci on lateral side; TL/HW 0.91.

Aedeagus elongate; viewed dorsally, apical lobe elongate and straight with widely rounded apex; right paramere elongate, with elongate apical part; left one square.



Figs. 4-6. Male genital organ of *Pterostichus (Rhagadus) thorectoides* JEDLIČKA, from Okayama Prefecture. — 4, Aedeagus, left lateral view; 5, apical part of aedeagus, ventral view; 6, right paramere, left lateral view. (Scale: 1 mm.)

*Specimens examined.* 1 ♀, “Mont Roko Kobe, Japan Dr. Baum lgt” / “TYPUS” / “*Pterostichus thorectoides* sp. n. det. ING. JEDLIČKA”; 1 ♂, Kajioka, Tamano, Okayama Pref., 16-VI-1987, T. AONO leg.

*Notes.* The standard ratios of body parts shown in the descriptive part are those of the holotype.

The specimen from Okayama Prefecture is distinguished from the holotype by the following points: 1) eyes convex, 2) frontal furrows with wrinkles and punctures, 3) carina of pronotum weaker and 4) elytral striae more strongly punctate.

The standard ratios of body parts in the Okayama specimen are as follows: PW/HW 1.47, PW/PL 1.24, PW/PA 1.44, PW/PB 1.37, PA/PB 0.95, EW/PW 1.17, EL/EW 1.52, TL/HW 0.96.

This species is closely allied to *Pterostichus (Rhagadus) straneoi* HABU (1958, p. 5) from Mt. Hiko-san, Fukuoka Prefecture. It is, however, distinguished from the latter by the following points: 1) eyes less convex, 2) genae less convex, 3) frontal furrows narrower, and 4) hind angles of pronotum dentate. These species are also decisively different in their body form.



Fig. 7. *Pterostichus (Rhagadus) ishii* MORITA, Y. KUROSA et MORI, sp. nov., from Mt. Yuzuruha-san.

***Pterostichus (Rhagadus) ishii***

MORITA, Y. KUROSA et MORI, sp. nov.

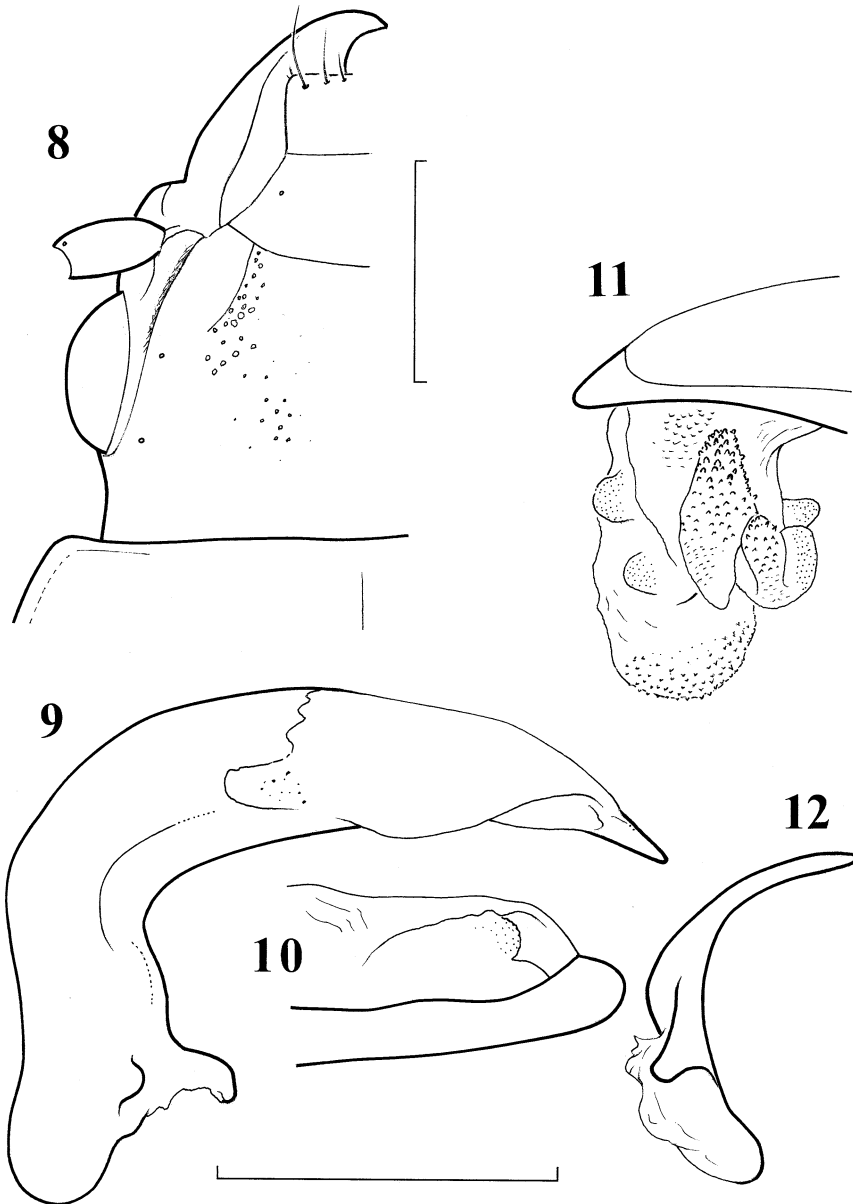
[Japanese name: Awaji-hime-naga-gomimushi]

(Figs. 3, 7–12)

*Diagnosis.* Body stout with large head; eyes flat; neck very wide; pronotum rather narrow; reflexed lateral sides of pronotum very narrow; elytral base wide; elytral shoulder with a weak tooth; scutellar striole usually absent, rarely very short and situated on interval II.

*Description.* L: 8.6–9.7 mm. Body stout. Colour black; dorsal surface slightly shiny; ventral side almost black to blackish brown; sides and base of pronotum and appendages dark brown to blackish brown.

Head moderately convex; eyes flat; frontal furrows linear, deep, clearly impressed and reaching a little before the level of the anterior supraorbital pore, and with fine punctures; lateral grooves very deep, almost straight, linear throughout and reaching



Figs. 8-12. *Pterostichus (Rhagadus) ishii* MORITA, Y. KUROSA et MORI, sp. nov. — 8, 11, Specimen from Mt. Mikuma-yama; 9, 10, 12, specimen from Mt. Yuzuruha-san. — 8, Left side of head; 9, aedeagus, left lateral view; 10, apical part of aedeagus, ventral view; 11, apical part of aedeagus, right dorso-lateral view, showing everted inner sac; 12, right paramere, left lateral view. (Scale: 1 mm.)

beyond the post eye; anterior supraorbital pore situated at a level of basal 3/5 of eyes; posterior one at a little before the post-eye level; frons sparsely and finely punctate; PW/HW 1.35–1.44 (M 1.40) in ♂, 1.38–1.41 (M 1.40) in ♀; genae oblique and short; microsculpture not clearly impressed and partially consisting of wide meshes; neck very wide; NW/PA 0.80–0.85 (M 0.82) in ♂, 0.83–0.86 (M 0.84) in ♀; relative lengths of antennal segments as follows:— I : II : III : IV : V : VI : XI = 1 : 0.55 : 1.04 : 0.96 : 0.95 : 0.94 : 1.12.

Pronotum rather narrow; apex almost straight to weakly emarginate, and deeply bordered at the sides; PW/PL 1.21–1.23 (M 1.21) in ♂, 1.20–1.24 (M 1.22) in ♀; sides rather weakly arcuate throughout; reflexed lateral sides very narrow; base weakly emarginate at the median part and almost straight at the sides; PW/PA 1.28–1.36 (M 1.33) in ♂, 1.32–1.38 (M 1.35) in ♀; PW/PB 1.30–1.36 (M 1.33) in ♂, 1.30–1.38 (M 1.33) in ♀; PA/PB 0.96–1.05 (M 1.00) in ♂, 0.96–1.00 (M 0.99) in ♀; apical angles very weakly produced and narrowly rounded at the tips; hind angles dentate with strong carina on each side; anterior pair of marginal setae inserted a little before the widest part; anterior transverse impression vanished or very weakly impressed at the median part; median line clearly impressed, reaching neither apex nor base; basal foveae rather deep, with coarse punctures; microsculpture not clearly impressed and partially consisting of fine transverse meshes.

Elytra ovate, convex, widest at about middle, and with wide base; PB/EB 0.80–0.86 (M 0.83) in ♂, 0.79–0.86 (M 0.82) in ♀; EW/PW 1.18–1.23 (M 1.21) in ♂, 1.21–1.26 (M 1.23) in ♀; EL/EW 1.51–1.59 (M 1.54) in ♂, 1.49–1.57 (M 1.53) in ♀; shoulders distinct, with a very weak tooth on each side; sides weakly arcuate from shoulders to the widest part, moderately arcuate behind, and then narrowly produced towards apices, with very shallow preapical emargination; apices weakly separated from each other, and sutural angle obtuse; scutellar striole usually absent, rarely very short and situated on interval II; striae moderately punctate; stria 1 adjoining basal border; basal pore situated at the interval II and close to the stria 2 or base of stria 2; two dorsal pores situated on interval III and adjoining stria 2; first pore situated at basal 2/5–9/20 and second one at basal 13/20–3/4, respectively; intervals weakly convex; microsculpture not clearly impressed and partially consisting of fine transverse lines; marginal series composed of 14–16 pores.

Mentum tooth wide and bifid; prepisternum, mesosternum, sides of metasternum, mesepisternum, sternites 1–5 and sides of sternite 6 (anal sternite) strongly and coarsely punctate; anal sternite elongate and widely bordered throughout.

Basal two or three segments of meso- and metatarsi each with outer sulci on lateral side; TL/HW 0.93–1.03 (M 0.98) in ♂, 0.85–0.93 (M 0.89) in ♀.

Aedeagus elongate with robust basal part; apical lobe elongate and straight in ventral view; viewed dorsally, apex rather widely rounded; inner sac with rolled membranous part covered with rather strongly sclerotized spinulus; right paramere elongate, arcuate and with elongate apical part; left one square.

*Type series.* Holotype: ♂, Mt. Yuzuruha-san, 9-X-2000, Y. KUROSA leg. (NSMT).

Paratypes: 1 ♂, Mt. Yuzuruha-san, 9-X-2000, Y. KUROSA leg.; 3 ♂♂, 1 ♀, Mt. Mikuma-yama, 7-XI-2000, M. ISHII leg.; 1 ♂, 2 ♀♀, Mt. Yuzuruha-san, 21-XI-2000, M. Mori leg.; 2 ♀♀, Mt. Yuzuruha-san, 17-VI-2001, M. MORI leg.; 1 ♀, Mt. Kashiwara-yama, 26-V-2001, M. MORI leg.

*Localities.* Mt. Yuzuruha-san, Mt. Kashiwara-yama and Mt. Mikuma-yama, on the Island of Awaji-shima in Hyôgo Prefecture, Southwest Japan.

*Notes.* This new species is closely allied to *Pterostichus (Rhagadus) thorectoides* JEDLIČKA. It is, however, distinguished from the latter by the following points: 1) neck wider and longer, 2) pronotum narrower, PW/PL 1.21–1.23 (M 1.22), 3) reflexed lateral sides of pronotum narrower, 4) tooth of hind angles of pronotum larger, 5) elytra narrower, EL/EW 1.51–1.56 (M 1.53) in ♂, 1.49–1.57 (M 1.53) in ♀, 6) elytral sides more strongly arcuate, 7) aedeagal apex rather widely rounded in ventral view and 8) basal part of right paramere wider.

The basal orifice of the aedeagus is much smaller than the needle for injection, so that it is difficult to insert it into the basal orifice. In order to put the needle into the aedeagus, the aedeagus is cut at the basal part with a surgical knife. The inner sac of the aedeagus of one specimen was everted and inflated. Unfortunately, the inner sac of the aedeagus is slightly reduced and deformed,

Another species of the same subgenus occurs on the same mountain, but we are unable to determine it.

The standard ratios of body parts shown in the descriptive part are those of 5 ♂♂ and 4 ♀♀.

## 要 約

森田誠司・黒佐義郎・森 正人：ニセフトクビナガゴミムシ *Pterostichus (Rhagadus) thorectoides* JEDLIČKA と近縁の1新種。——神戸を基産地として記載されたニセフトクビナガゴミムシ *Pterostichus (Rhagadus) thorectoides* JEDLIČKA について、正基準標本および岡山県産の1雄をもとに、再記載した。さらに、淡路島から採集された近縁の1新種、アワジヒメナガゴミムシ *Pterostichus (Rhagadus) ishiii* を記載した。

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