

Notes on the Platynine Genus *Synuchus* (Coleoptera, Carabidae) of Japan

Part 2. A New Species from Okinawa-jima Island, Southwestern Japan,

with a Redescription of *Synuchus inadai*

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Abstract A new carabid beetle of the genus *Synuchus* is described from Okinawa-jima Island, southwestern Japan, under the name of *Synuchus* (*Synuchus*) *uedai* sp. nov. *Synuchus* (*Synuchus*) *inadai* MORITA et ARAI is redescribed based on the newly obtained specimens.

The main purpose of this paper is to describe a new carabid species of the genus *Synuchus* collected from Okinawa-jima Island, southwestern Japan, under the name of *S. (Synuchus) uedai*. Taking this opportunity, I am going to redescribe *S. (S.) inadai* MORITA et ARAI (2003, p. 404) mainly based on the newly obtained specimens.

The abbreviations used herein are as follows: — L – body length, measured from apical margin of clypeus to apices of elytra; HW – greatest width of head; PW – greatest width of pronotum; PL – length of pronotum, measured along the mid-line; PA – width of pronotal apex; PB – width of pronotal base; EW – greatest width of elytra; EL – greatest length of elytra; WL – length of hind wing; M – arithmetic mean. The PB value was taken by the width between the roots of hind angular setae, since the hind angles are rounded.

Before going further, I wish to express my deep gratitude to Dr. Akira UEDA and Mr. Masaaki KIMURA for supplying me with the important material.

Synuchus (*Synuchus*) *uedai* MORITA, sp. nov.

[Japanese name: Yanbaru-tsuya-hirata-gomimushi]

(Figs. 2–9)

Diagnosis. Body medium-sized; eyes weakly convex; terminal segments of palpi not dilated; antennal segment II with a long seta and a short seta on each side; sides of pronotum weakly arcuate throughout; elytral apices not obliquely truncated; apices of striae 2 and 7 not anastomosed near the elytral apices; claw with several teeth; in ♂, anal sternite with moderately arcuate margin; aedeagus bent at about middle; basal half of aedeagus deeply concave, and forming ridges at the sides; inflated inner sac C-shaped with a lobe at the dorsal side of aedeagus; right paramere of male genitalia weakly bent at about middle, with narrowly rounded apex; left paramere narrowly produced at the dorsal margin.

Description. L: 7.0–9.0 mm. Body medium-sized. Body black; sides of pronotum, elytral epipleuron and appendages brown.

Head weakly convex; eyes weakly convex; frontal furrows vanished; lateral grooves linear, deep, straight and reaching a little before the post-eye level; a pair of anterior supraorbital pore situated at the level of basal 3/4 of eyes; a pair of posterior supraorbital pore situated at the post-eye level; microsculpture sharply impressed, consisting of polygonal meshes; genae oblique and 1/3 as long as

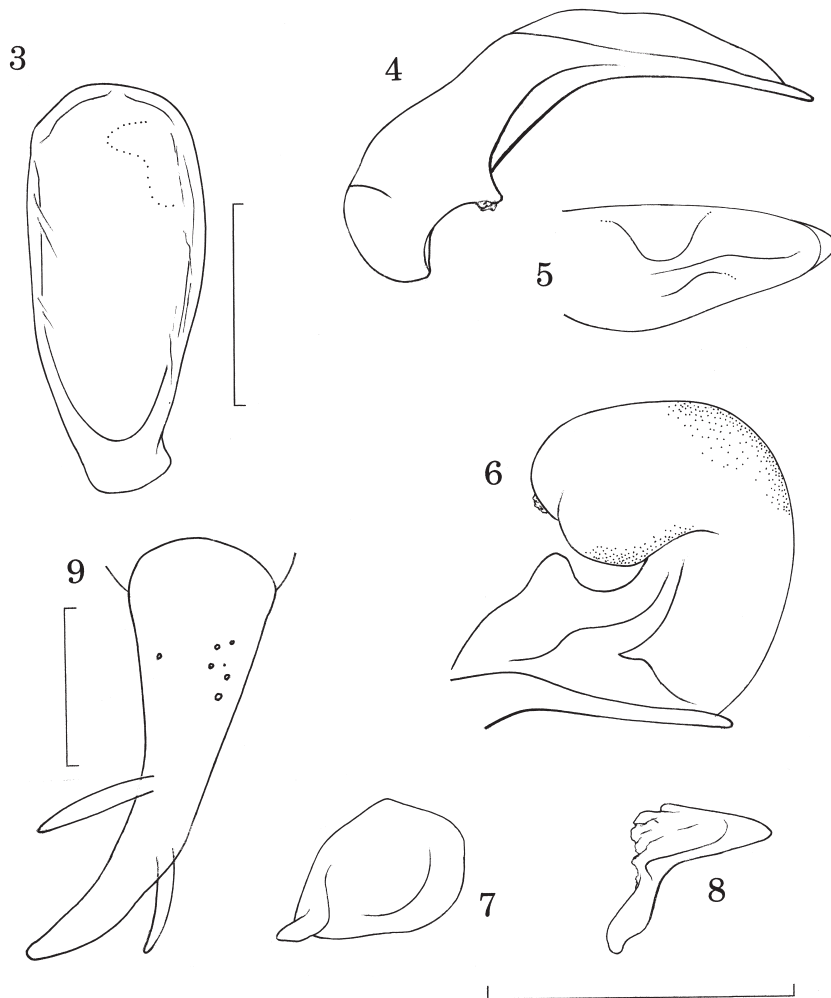


Figs. 1–2. *Synuchus* (*Synuchus*) spp. — 1, *S. (S.) inadai* MORITA et ARAI; 2, *S. (S.) uedai* MORITA, sp. nov.

eyes; mentum tooth moderately bifid at the tips; apex of labrum weakly arcuate or almost straight; in ♂, terminal segment of labial palpus rather wide, widest at about middle (not dilated), and wider than in ♀; terminal segment of maxillary palpus widest at about middle; antennae filiform, rather short and reaching basal 1/3 of elytra; antennal segment II with a long seta and a short seta on each side; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI \approx 1 : 0.56 : 1.07 : 1.13 : 1.17 : 1.17 : 1.28 in ♂, 1 : 0.58 : 1.01 : 1.19 : 1.17 : 1.15 : 1.26 in ♀.

Pronotum weakly convex and widest at about basal 2/5; PW/HW 1.46–1.57 (M 1.54) in ♂, 1.46–1.60 (M 1.53) in ♀; PW/PL 1.12–1.23 (M 1.18) in ♂, 1.12–1.21 (M 1.18) in ♀; PW/PA 1.51–1.60 (M 1.55) in ♂, 1.48–1.60 (M 1.54) in ♀; PW/PB 1.28–1.37 (M 1.33) in ♂, 1.35–1.40 (M 1.37) in ♀; PA/PB 0.84–0.88 (M 0.86) in ♂, 0.87–0.92 (M 0.89) in ♀; sides moderately arcuate throughout; apical angles weakly to moderately produced, and narrowly and simply rounded at the tips; apex almost straight at middle, and moderately emarginate at the sides, or moderately so throughout; median line finely impressed and close to margins; anterior marginal setae situated a little before the widest part; anterior transverse impression obliterated; basal foveae very shallow, wide and weakly rugose; hind angles rounded and each with a seta; base very weakly arcuate between the levels of bottoms of basal foveae, and more strongly arcuate and bordered at the sides; basal part sparsely punctate and weakly wrinkled; microsculpture clearly impressed and consisting of wide meshes at most part, and of polygonal meshes at basal foveae and the narrow areas along the outside of hind angles.

Elytra narrow, elongate and moderately convex; EW/PW 1.37–1.47 (M 1.42) in ♂, 1.38–1.51 (M 1.45) in ♀; EL/EW 1.53–1.62 (M 1.61) in ♂, 1.51–1.60 (M 1.58) in ♀; shoulders oblique and weakly arcuate; sides weakly arcuate throughout, with no preapical emargination; apices weakly produced, weakly separated from each other, and each with narrowly rounded apex (not obliquely truncated); striae deep and impunctate; scutellar striole long, situated on interval I and impunctate; basal pore sit-



Figs. 3–9. *Synuchus (Synuchus) uedai* MORITA, sp. nov. — 3, Genital segment; 4, aedeagus, left lateral view; 5, apical part of aedeagus, dorsal view; 6, apical part of aedeagus in left lateral view, showing everted inner sac; 7, left paramere, left lateral view; 8, right paramere, left lateral view; 9, apical styli in ♀. Scale: 1 mm for 3–8; 0.2 mm for 9.

uated at the meeting point of striae 1 and 2; microsculpture strongly impressed and consisting of coarse and polygonal meshes; intervals moderately convex and very sparsely punctate; marginal series of umbilicate pores 16–17 in number; two dorsal pores very weak, situated on interval III and adjoining stria 2; the first pore situated between basal $2/5$ and the middle in ♂, between basal $3/10$ – $9/20$ in ♀; the second one between basal $13/20$ – $4/5$ in ♂, $7/10$ – $3/4$ in ♀; subapical pore situated at the end of stria 7 (cf. HABU, 1978, p. 329); elytral epipleuron gradually narrowed apicad; inner plica indistinct. WL/EL 1.37 in 1 ♂, 1.39 in 1 ♀.

Ventral surface smooth; sides of sternites usually with short and longitudinal wrinkles; in ♂, anal sternite coarsely and strongly impressed with microsculpture of wide to transverse meshes, and narrowly arcuate at apex; in ♀, anal sternite more coarsely and strongly impressed with microsculpture of transverse meshes, and narrowly arcuate at apex.

Legs long and slender; metatrochanter robust, with widely rounded apex; in ventral view, metafemora each with two setae at the middle and basal 3/11, respectively, and with one short and stout seta at basal 17/20; outer sides of basal three segments of meso- and metatarsi sulcate; segment 4 of metatarsi with a pair of setae and a pair of very minute hairs on apical part; claw segments of meso- and metatarsi with several setae on ventral side; claw with several teeth.

Genital segment elongate with wide handle.

Aedeagus elongate and moderately bent at about middle; basal part large without sagittal aileron; basal half of ventral side deeply concave, and forming ridges at the sides; apical half of ventral side almost flat; in lateral view, apical lobe very short with narrowly rounded apex; viewed dorsally, both sides close to each other at basal 2/3; apex narrowly rounded at the tip in dorsal view.

Right paramere moderately bent at about middle, with narrowly rounded apex; left paramere wide, concave at outside and narrowly produced at the dorsal margin.

Inflated inner sac C-shaped with a short lobe at the dorsal side of aedeagus; surface almost smooth, and apical part covered with very poorly sclerotized scales.

Apical styli in ♀ elongate and with elongate spines.

Type series. Holotype: ♂, 17.XII.2013–11.II.2014, A. UEDA leg. Paratypes: 2 ♀♀, 30.XI.1993, M. KIMURA leg.; 19 ♂♂, 10 ♀♀, 17.XII.2013–11.II.2014, A. UEDA leg.; 8 ♂♂, 11.II–15.IV.2014, A. UEDA leg.

Locality. Mt. Nishime-dake, Kunigami-son, Okinawa-jima Island, southwestern Japan.

Depository of the holotype. The holotype is deposited in the Department of Zoology, the National Museum of Nature and Science, Tsukuba.

Specimens dissected and measured. Standard ratios of body parts shown in the descriptive part are those of ten males and four females. The genitalia of ten males were dissected. The structure of inner sacs of three specimens was examined.

Notes. Judging from the male genital organ including the structure of inner sac, this new species is very closely allied to *Synuchus (Synuchus) inadai* MORITA et ARAI (2003, p. 404) known from the same mountain. It is, however, distinguished from the latter by the following points: 1) body smaller, 2) eyes less convex, 3) pronotum narrower, with narrower reflexed sides and hind angles more rounded, 4) elytral shoulders more obliquely arcuate, and 5) right paramere of male genitalia more elongate.

Etymology. The specific epithet is given in honor of Dr. UEDA, who collected this species.

Synuchus (Synuchus) inadai MORITA et ARAI

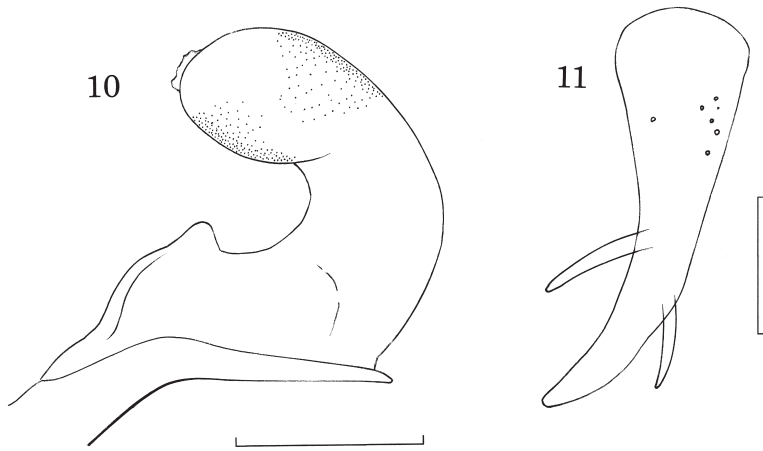
[Japanese name: Okinawa-tsuya-hirata-gomimushi]

(Figs. 1, 10 & 11)

Synuchus (Synuchus) inadai MORITA et ARAI, 2003, p. 404; type locality: Mt. Nishime-dake, Kunigami-son, Okinawa-hontô, southwestern Japan.

Redescription based on newly obtained specimens. L: 8.43–9.71 mm. Medium-sized. Head weakly convex, with moderately convex eyes; microsculpture clearly impressed and composed of polygonal meshes; relative lengths of antennal segments as follows: — I : II : III : IV : V : VI : XI \cong 1 : 0.58 : 1.13 : 1.21 : 1.19 : 1.20 : 1.25 in ♂, \cong 1 : 0.55 : 1.07 : 1.13 : 1.13 : 1.12 : 1.21 in ♀.

Pronotum weakly convex; PW/HW 1.52–1.65 (M 1.59) in ♂, 1.54–1.63 (M 1.60) in ♀; PW/PL 1.19–1.27 (M 1.22) in ♂, 1.24–1.34 (M 1.26) in ♀; PW/PA 1.52–1.66 (M 1.58) in ♂, 1.52–1.62 (M 1.58) in ♀; PW/PB 1.28–1.37 (M 1.34) in ♂, 1.29–1.36 (M 1.33) in ♀; PA/PB 0.83–0.88 (M 0.85) in ♂, 0.82–0.90 (M 0.84) in ♀; microsculpture strongly impressed, consisting of wide or polygonal



Figs. 10–11. *Synuchus (Synuchus) inadai* MORITA et ARAI. — 10, Aedeagus in left lateral view, showing everted inner sac; 11, apical styli in ♀. Scale: 1 mm for 10; 0.2mm for 11.

meshes at most part, and more strongly impressed and of polygonal meshes at basal foveae and re-flexed sides.

Elytra narrow, elongate and moderately convex; shoulders moderately arcuate; EW/PW 1.29–1.42 (M 1.35) in ♂, 1.34–1.46 (M 1.39) in ♀; EL/EW 1.56–1.72 (M 1.62) in ♂, 1.51–1.57 (M 1.53) in ♀; microsculpture clearly impressed, composed of coarse and polygonal meshes; intervals moderately convex and very sparsely punctate; two dorsal pores very weak, situated on interval III and adjoining stria 2; the first pore situated between basal 1/4–2/5; the second one between basal 13/20 and 3/4 in ♂, 3/5–4/5 in ♀.

Anal sternite narrowly arcuate at apex; microsculpture composed of transverse meshes at the basal half, and of fine transverse ones at the apex.

Aedeagus elongate, and moderately bent at about the middle; basal part large without sagittal aileron; basal half of ventral side deeply concave, and forming ridges at the sides; apical half of ventral side almost flat or very weakly convex; viewed dorsally, both sides close to each other at basal 3/4 of dorsal side; apex narrowly rounded at the tip in dorsal view.

Right paramere weakly bent at about middle, with narrowly rounded apex; left paramere wide, concave at outside and narrowly produced at the dorsal margin.

Inflated inner sac C-shaped with a lobe at the dorsal side of aedeagus; surface almost smooth.

Apical styli in ♀ elongate with elongate spines.

Specimens examined. 13 ♂♂, 8 ♀♀, 17.XII.2013–11.II.2014, A. UEDA leg.; 2 ♂♂, 2 ♀♀, 11.II.–15.IV.2014, A. UEDA leg.; 1 ♀, 22.X–17.XII.2014, A. UEDA leg.; 1 ♂, 2 ♀♀, 1.XII.2014–2.II.2015, A. UEDA leg.

Locality. Mt. Nishime-dake, Kunigami-son, Okinawa-jima Is., southwestern Japan.

Specimens dissected and measured. Standard ratios of body parts shown in the descriptive part are those of seven males and five females. The genitalia of four males and two females were dissected. The structure of inner sacs of two specimens was examined.

Depository of the holotype. The holotype is deposited in the Department of Zoology, the National Museum of Nature and Science, Tsukuba.

Notes. This and the former species can be regarded as forming a species group, mainly charac-

terized by the presence of the aedeagal concavity in ventral side.

要 約

森田誠司：日本産ツヤヒラタゴミムシ属の研究（鞘翅目オサムシ科）. Part 2. 沖縄本島からの1新種とオキナワツヤヒラタゴミムシの再記載. —— 沖縄本島から採集されたツヤヒラタゴミムシを新種と認め、ヤンバルツヤヒラタゴミムシ *Synuchus (Synuchus) uedai* MORITA, sp. nov. と命名し記載した. この種は、同所的に生息するオキナワツヤヒラタゴミムシ *S. (S.) inadae* MORITA et ARAI に近い種であるが、体は小さく、複眼が扁平で、前胸背板、雄交尾器右側片の形態などで識別される. さらに、この機会にオキナワツヤヒラタゴミムシの再記載を行った.

References

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MORITA S., & K. ARAI, 2003. A new *Synuchus* (Coleoptera, Carabidae) from Okinawa-hontô Island, Southwest Japan. *Elytra*, Tokyo, **31**: 403–408.

Manuscript received 30 March 2015;
revised and accepted 10 July 2015.