

A New Patrobine Carabid Beetle from Central Honshu, Japan

Seiji MORITA

1-3-28-405, Motoazabu, Minato-ku, Tokyo, 106 Japan

Abstract A new patrobine carabid beetle, *Apatrobus iwasakii* sp. nov., is described from central Honshu, Japan. It is related to *A. echigonus* (HABU et BABA), but differs from it mainly in the body form and the configuration of male genitalia.

In Japan, the genus *Apatrobus* is one of the most important genera of the subfamily Patrobinae, with its members widely distributed in Honshu, Shikoku, and Kyushu. They are similar to one another in their external morphology, though they can be classified by their male genital organ. Probably, this genera can be divided into three species-groups mainly on the basis of the difference in the configuration of aedeagal apical lobe. One of them, the group of *A. echigonus*, is characterized mainly by the following points: 1) apical lobe of aedeagus simple; 2) apical part of aedeagus less strongly bent ventrad.

Recently, I had an opportunity to examine patrobine carabid beetles collected in Neo-mura, Gifu Prefecture, central Honshu. After a careful examination, I have come to a conclusion that this patrobine carabid is a new species belonging to the *echigonus* group. In this paper, I am going to describe it under the name of *A. iwasakii*. The abbreviations used herein are the same as those explained in my previous paper (MORITA, 1986, p. 143).

Apatrobus iwasakii MORITA, sp. nov.

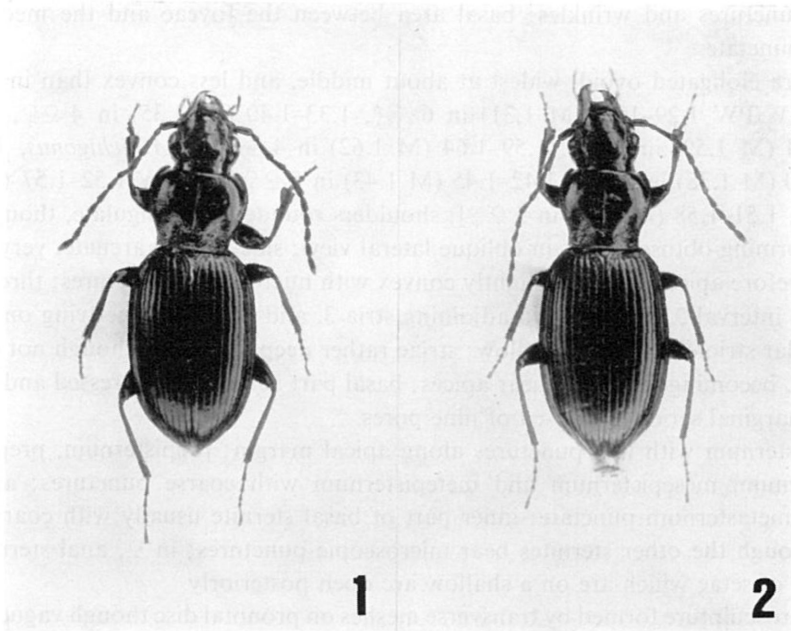
[Japanese name: Iwasaki-nurechi-gomimushi]

(Figs. 1-8)

Length: 8.25-8.40 mm (from apical margin of clypeus to apices of elytra).

Body elongate; colour as in *A. echigonus*.

Head large, wide and rather convex; frontal furrows wide and moderately deep with rather coarse punctures, divergent posteriad and often arcuate inwards at the posterior parts; lateral grooves deep, wide and reaching the mid-level of genae; the area at the posterior end of the grooves usually depressed; eyes less convex than in *A. echigonus*; genae weakly tumid, a little shorter than eyes and with longitudinal wrinkles; anterior supraorbital pores located at the mid-eye level; posterior ones apart from the posterior margin of eyes and close to neck constriction, which bears coarse punctures behind vertex; mandibles rather long and stout; apical margin of labrum somewhat



Figs. 1-2. *Apatrobis iwasakii* MORITA, sp. nov.; 1, ♂; 2, ♀.

emarginate; mentum tooth bifid; antennae rather long, reaching basal third of elytra, segment 2 with three setae (in *A. echigonus*, segment 2 usually with three, rarely four, setae); relative lengths of antennal segments as follows: I: II: III: IV: V: VI=1: 0.54: 1.42: 0.98: 0.92: 0.92.

Pronotum rather quadrate, moderately convex, though rather flat at the base, widest at about apical third; PW/HW 1.31-1.35 (M 1.32) in 7 ♂♂, 1.27-1.31 (M 1.29) in 4 ♀♀, PW/PL 1.23-1.31 (M 1.26) in 7 ♂♂, 1.21-1.25 (M 1.23) in 4 ♀♀, PW/PA 1.39-1.42 (M 1.41) in 7 ♂♂, 1.33-1.39 (M 1.36) in 4 ♀♀, PW/PB 1.27-1.40 (M 1.34) in 7 ♂♂, 1.28-1.34 (M 1.32) in 4 ♀♀ [in *A. echigonus*, PW/HW 1.24-1.32 (M 1.28) in 5 ♂♂, 1.24-1.30 (M 1.27) in 5 ♀♀, PW/PL 1.28-1.32 (M 1.30) in 5 ♂♂, 1.24-1.33 (M 1.29) in 5 ♀♀, PW/PA 1.33-1.42 (M 1.36) in 5 ♂♂, 1.31-1.41 (M 1.36) in 5 ♀♀, PW/PB 1.28-1.35 (M 1.31) in 5 ♂♂, 1.24-1.33 (M 1.30) in 5 ♀♀]; apex almost straight or somewhat emarginate, a little narrower than base, PA/PB 0.90-0.99 (M 0.95) in 7 ♂♂, 0.94-1.00 (M 0.97) in 4 ♀♀; sides moderately arcuate in front, though less strongly arcuate than in *A. echigonus*, rather weakly sinuate behind, and then parallel before hind angles; reflexed lateral borders narrow as in *A. echigonus*; apical angles somewhat produced and rounded; hind ones rectangular or a little sharp, without carina; anterior transverse impression shallow with fine punctures; median line deep, becoming widened near base, with coarse punctures near base, though reaching neither apex nor base; anterior marginal setae situated at the widest part; posterior ones situated just before and inside hind angles; base almost straight; basal foveae rather deep with

coarse punctures and wrinkles; basal area between the foveae and the median line densely punctate.

Elytra elongated ovoid, widest at about middle, and less convex than in *A. echigonus*; EW/PW 1.29–1.33 (M 1.31) in 6 ♂♂, 1.33–1.40 (M 1.35) in 4 ♀♀, EL/EW 1.54–1.64 (M 1.59) in 6 ♂♂, 1.59–1.64 (M 1.62) in 4 ♀♀ [in *A. echigonus*, EW/PW 1.35–1.40 (M 1.38) in 5 ♂♂, 1.42–1.45 (M 1.43) in 5 ♀♀, EL/EW 1.52–1.57 (M 1.55) in 5 ♂♂, 1.51–1.58 (M 1.54) in 5 ♀♀]; shoulders rounded, not angulate, though more or less forming obtuse angles in oblique lateral view; sides gently arcuate, very slightly sinuate before apices; intervals lightly convex with microscopic punctures; three dorsal pores on interval 3, anterior two adjoining stria 3, and posterior one lying on interval 3; scutellar striole short and shallow; striae rather deep, distinctly though not coarsely punctate, becoming shallower near apices; basal part somewhat depressed and without striae; marginal series composed of nine pores.

Prosternum with fine punctures along apical margin; prepisternum, prepimeron, mesosternum, mesepisternum and metepisternum with coarse punctures; apex and sides of metasternum punctate; inner part of basal sternite usually with coarse punctures, though the other sternites bear microscopic punctures; in ♀, anal sternite with two pair of setae which are on a shallow arc open posteriorly.

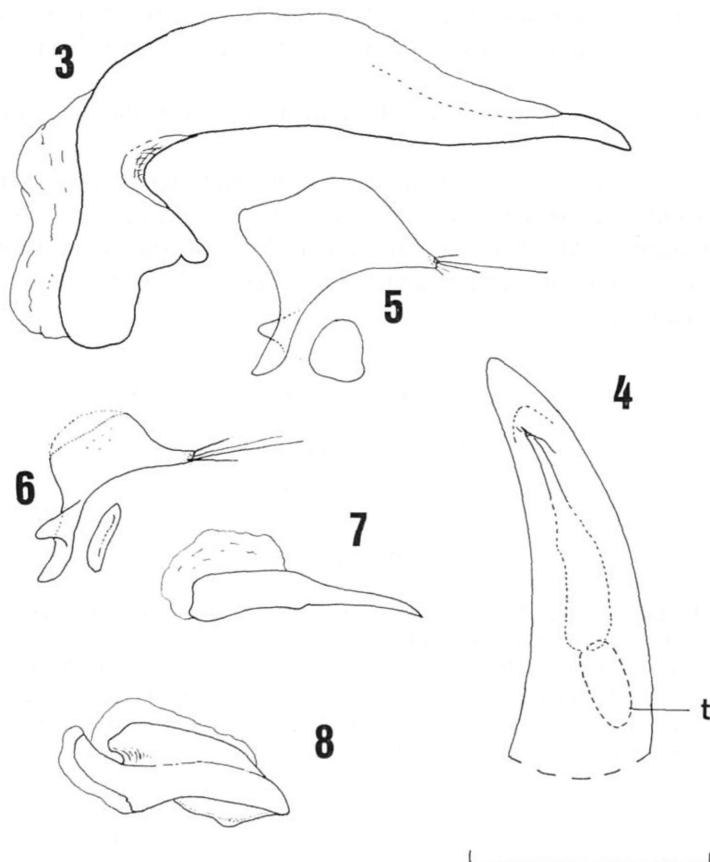
Microsculpture formed by transverse meshes on pronotal disc though vague; microsculpture of elytra consisting of more or less transverse meshes.

Male genitalia basically similar to those of *A. echigonus*; aedeagus bent at about 90 degrees at the basal fourth; basal part rather elongate with large protuberances for the articulation of styles; viewed dorsally, apical half inclined to the right and gradually tapered towards apex, which is very narrowly rounded; viewed laterally, apical half weakly sinuate with the apical part curved ventrad; inner sac armed with two copulatory pieces and a teeth-patch; apical copulatory piece heavily sclerotized, spine-like, lying at the dorsal position, and pointed at apex, though the basal half is broad and gutter-like, with simple basal margin; proximal copulatory piece lightly sclerotized, strongly rolled, with a right apical projection which is produced dorso-apically and moderately sclerotized; teeth-patch lies at the middle of inner sac along the left wall [in *A. echigonus*, apical copulatory piece elongate, narrowed in basal half and with twisted basal part; proximal one smaller than in this new species, with a short projection produced ventro-apically]; styles very lightly sclerotized, and variable in form; right style fairly slender, tapering towards apex, apical projection usually very short and with three to five setae; left style wider than the right, tapering towards apex, though the apical projection is shorter than in the right, and bearing four to five apical setae.

Type series. Holotype: ♂, 10-X-1981, H. IWASAKI leg. Allotype: ♀, 13-VI-1982, H. IWASAKI leg. Paratypes¹⁾: 2 ♂♂, 2 ♀♀, 18-IV-1982, H. IWASAKI leg.; 2 ♂♂, 13-VI-1982, H. IWASAKI leg.; 3 ♂♂, 1 ♀, 27-III-1983, H. IWASAKI leg.

The holo- and allotypes are preserved in the collection of the National Science

1) Unfortunately, 3 ♂♂ of the paratypes are not in a perfect condition of preservation, but are still available for taxonomic study.



Figs. 3-8. Male genitalia of *Apatrobis iwasakii* MORITA, sp. nov. — 3. Aedeagus, left lateral view. 4. Apical part of aedeagus, dorsal view. 5. Separated left style, left lateral view. 6. Separated right style, left lateral view. 7. Separated apical copulatory piece, ventral view. 8. Separated proximal copulatory piece, right lateral view. (t: Teeth-patch; scale: 1.00 mm.)

Museum (Nat. Hist.), Tokyo. The paratypes are distributed to the above collection and the private collections of Mr. H. IWASAKI and mine.

Type locality. Midori-dani, 330 m in altitude, in Neo-mura of Gifu Prefecture, central Honshu, Japan.

This new species is closely allied to *A. echigonus*, but is distinguished from it by the following points: 1) elongate body, 2) less convex eyes, 3) less arcuate sides of pronotum and elytra, 4) aedeagus much slenderer in lateral view, 5) basal half of apical copulatory piece broad and simple; and, 6) proximal copulatory piece with a long arcuate apical projection.

In the spring of 1986, Mr. H. IWASAKI visited and searched for the beetle at the

same spot, but failed in finding it out. According to him, the gully in which the type material had been obtained became exposed to the sun and dried up because of deforestation.

This new species is dedicated to Mr. Hiroshi IWASAKI, the only collector of the beetle.

In concluding, I am deeply indebted to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for not only giving advice but also reading the original manuscript. My thanks are also due to Mr. Hiroshi IWASAKI for kindly supplying me with important material and to Mr. Akinori YOSHITANI for taking photographs inserted in this paper.

摘 要

岐阜県産スレチゴミムシの1新種, *Apatrobus iwasaki* MORITA を記載した。本種は, *A. echigonus* に近縁であるが, 体形や♂交尾器の形により識別される。

References

- HABU, A., & K. BABA, 1962. Two new species of *Patrobus* from Niigata Prefecture, Japan (Coleoptera, Carabidae). *Kontyû, Tokyo*, **30**: 143-147.
- MORITA, S., 1985. Carabidae (Bembidiinae, Patrobinae). In UÉNO, S.-I., Y. KUROSAWA & M. SATÔ (eds.), *The Coleoptera of Japan in Color*, **2**: 89-103. Hoikusha, Osaka. (In Japanese.)
- 1986. A new *Apatrobus* (Coleoptera, Carabidae) from Mt. Tara-dake in Kyushu, West Japan. *Ent. Pap. pres. Kurosawa, Tokyo*, 143-146.