Elytra, *Tokyo*, **38**(1): 131–136, May 31, 2010

Occurrence of a New *Uozumitrechus* (Coleoptera, Trechinae) in the Shimané Peninsula, West Japan

Shun-Ichi UÉNO

Department of Zoology, National Museum of Nature and Science,
3–23–1 Hyakunin-chô, Shinjuku, Tokyo, 169–0073 Japan

Abstract A new blind trechine beetle of the subgenus *Uozumitrechus* is described from an abandoned adit of an old copper mine in the Shimané Peninsula, West Japan, under the name of *Rakantrechus* (*Uozumitrechus*) *notsui* S. UÉNO. With the discovery of this new species, the distributional range of *Uozumitrechus* extends northeastwards along the coast of the Sea of Japan for about 98 km.

Introduction

Uozumitrechus S. UÉNO (1958 a, p. 50) is a relatively small group of blind trechine beetles hitherto known from only the westernmost part of the Chûgoku District in West Japan, particularly from the karstic areas embracing the Akiyoshi-dai Plateau. In general appearance, it is most closely similar to *Izushites* S. UÉNO (1982, p. 67) from northwestern Shikoku, but is evidently different from it by the presence of distinct transverse depression on the basal peduncle of elytra, completely glabrous disc of pronotum, and the narrowly prolonged apical lobe of male genitalia that are devoid of sclerotised copulatory piece. In configuration of male genitalia, it looks like *Pilosotrechiama* S. UÉNO (1958 b, p. 199; 2008 a; UÉNO & NAITÔ, 2008, pp. 220–224), but is distinguished from it by the absence of sclerotised copulatory piece inside the inner sac. It is different from *Paratrechiama* S. UÉNO (1959, p. 37) in many peculiarities, above all, in the presence of only one setiferous dorsal pore on the 5th elytral stria, and slender apical lobe of the aedeagus. In short, *Uozumitrechus* is isolated from all the other groups of the *Rakantrechus* complex both taxonomically and zoogeographically.

As was mentioned elsewhere, *Uozumitrechus* was first brought to light from caves of the Akiyoshi karstic area, and later found out from caves in the northeastern and eastern parts of Yamaguchi Prefecture, and western part of Hiroshima Prefecture. Occurrence of its members in the southwestern part of Shimané Prefecture was suggested by the discovery of a specimen of *Uozumitrechus* from a heap of vegetable debris washed up by a flood at the estuary of the Misumi-gawa River (at Miho of Misumi-chô; now called Minatoura of Misumi-chô in Hamada-shi). This specimen was described later under the name of *Rakantrechus mukaibarai* S. UÉNO (1958 a, p. 59, fig. 13), and was considered to be a proof of northeastward dispersal of *Uozumitrechus*

along the coast of the Sea of Japan, though this supposition was not verified for more than fifty years.

At last in the summer of 2008, four specimens of a *Uozumitrechus* were unexpectedly caught by Yutaka NOTSU in an abandoned adit of an old copper mine lying at the westernmost part of the Shimané Peninsula (cf. UÉNO, 2008 b, pp. 1–2). Since then, the adit has been repeatedly examined by several entomologists, both by naked eyes and by baited traps, and has yielded five additional specimens of *Uozumitrechus*. At the same time, the upper hypogean zone in nearby places was also examined carefully, though nothing of interest was found out from this subterranean environment. In view of the zoogeographical importance, the new species of *Uozumitrechus* will be described in the present paper under the new name *Rakantrechus* (*Uozumitrechus*) *notsui*. The abbreviations employed herein are the same as those explained in previous papers of mine.

Before going further, I wish to express my deep indebtedness to Dr. Yoshiaki NISHIKAWA, and Messrs. Hiroshi MIYAMA, Yutaka NOTSU and Takao NAITÔ for their unfailing support in field works.

Rakantrechus* (*Uozumitrechus*) *notsui S. UÉNO, sp. nov.

(Figs. 1–3)

Length: 5.00–5.60 mm (from apical margin of clypeus to apices of elytra).

Closely similar to *R.* (*U.*) *mukaibarai*, but the head is more parallel-sided, the pronotal sides are more strongly and less widely arcuate in front, the elytra are a little more elongate, with less widely arcuate humeri and nearly straight prehumeral margins; the antennae and legs are more or less slenderer than in *R. mukaibarai*; the male genitalia are also slenderer than in the latter species.

Colour light reddish brown, shiny, faintly iridescent in basal areas of elytra; palpi pale; antennae, legs and venter lighter in coloration than dorsums of head amd prothorax. Microsculpture very fine, mostly consisting of transverse lines and meshes, and largely obliterated on elytra.

Head subquadrate, slightly longer than wide, with the sides nearly straight in front, subparallel and slightly convergent anteriad; genae slightly convex at the posterior parts, each provided with several short hairs; frontal furrows deeply impressed in front, widely divergent behind towards neck constriction, which are shallow but distinct; neck wide; frons and supraorbital areas gently convex, the latter bearing two pair of supraorbital setae on lines convergent posteriorly; mandibles fairly stout, with acute incurved apices: antennae slender, reaching apical two-fifths of elytra, pedicel the shortest, a half as long as antennomere 3 or 4, antennomeres 3–6 each more than 4.5 times as long as wide, 6–10 gradually decreasing in length towards terminal antennomere which is as long as antennomere 7.

Pronotum cordate, much wider than head, about as wide as or slightly wider than long, widest at about two-thirds from base, and a little more contracted towards base than towards apex; PW/HW 1.34–1.41 (M 1.38), PW/PL 0.93–1.11 (M 1.01), PW/PA

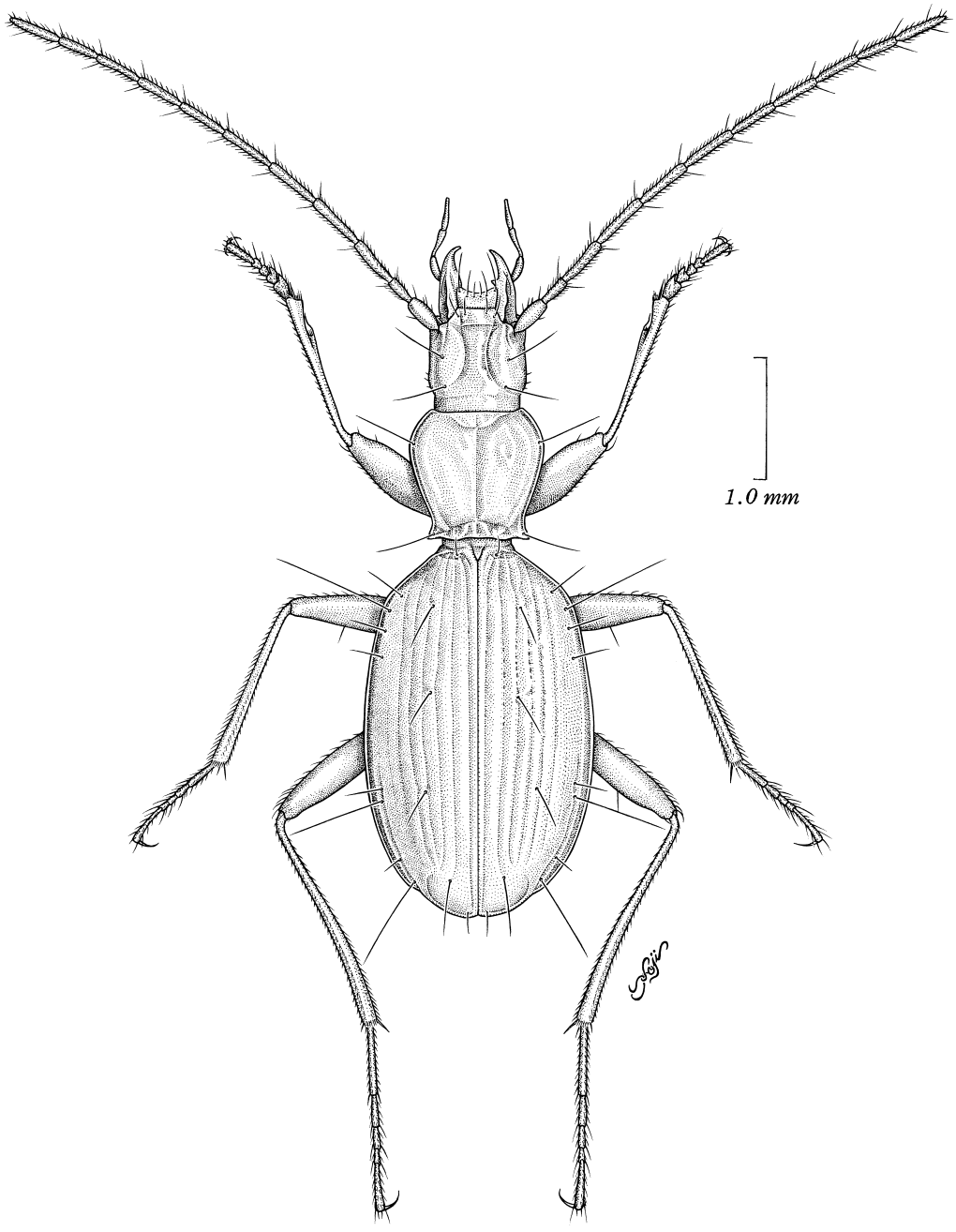
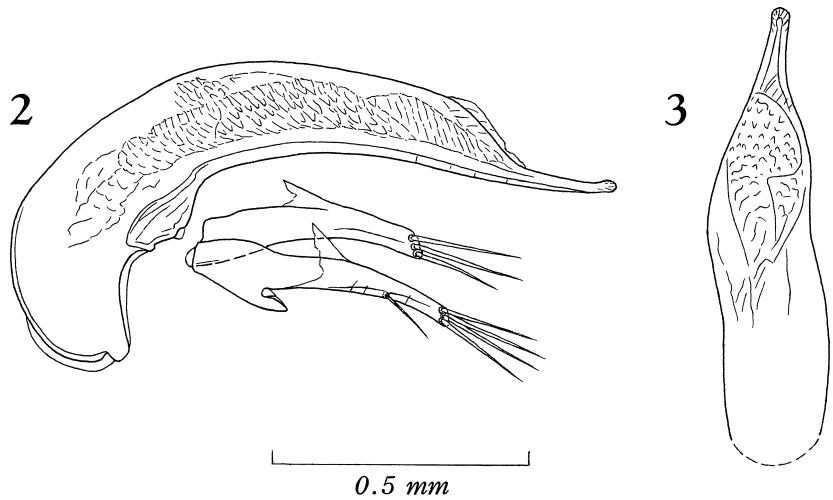


Fig. 1. *Rakantrechus* (*Uozumitrechus*) *notsui* S. UÉNO, sp. nov., ♂, from Sagi Dôzan in Taisha-chô.



Figs. 2–3. Male genitalia of *Rakantrechus* (*Uozumitrechus*) *notsui* S. UÉNO, sp. nov., from Sagi Dôzan in Taisha-chô; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

1.42–1.55 (M 1.48), PW/PB 1.37–1.47 (M 1.42); sides narrowly bordered at front angles, then moderately bordered to hind angles, moderately arcuate in apical halves, obviously less so behind, and very briefly sinuate just before hind angles, which are small and postero-laterally denticulate; apex nearly straight or very slightly emarginate, slightly narrower than base, PB/PA 1.03–1.20 (M 1.08); front angles slightly advanced and rounded; base slightly emarginate at middle and briefly sinuate on each side just inside hind angle; apical transverse impression vague, basal one mal-defined and uneven; basal foveae fairly deep though small, extending anteriorly parallel to side borders; basal area narrow, longitudinally strigose.

Elytra oblong-oval, widest at about middle and equally narrowed towards bases and towards apices; EW/PW 1.65–1.76 (M 1.71), EL/PL 2.63–2.99 (M 2.83), EL/EW 1.64–1.81 (M 1.72); shoulders very obtuse and somewhat rounded, with prehumeral margins nearly straight; sides moderately bordered, very feebly arcuate from behind shoulders to the level of 7th umbilicate pore of the marginal series; dorsum relatively flat, steeply declivous at lateral sides and apical areas; striae almost entire, rather deeply impressed and nearly impunctate on the disc, becoming shallower at the side, striae 1–6 distinct, 7 faint, 8 deeply impressed behind the level of 7th pore of the marginal series; scutellar striole short though clear, apical striole distinct, well curved, and directed to stria 5; stria 3 with two setiferous dorsal pores at 1/7–1/6 and about 2/5 from base, respectively, stria 5 with a single setiferous dorsal pore behind middle at about 2/3 from base; preapical pore located at the apical anastomosis of striae 2 and 3, and more distant from apex than from suture; marginal series of umbilicate pores nearly aggregated, though pore 1 of the humeral set does not adjoin marginal gutter and pore 4 is a little more distant from the proximal two (pores 2 and 3).

Ventral surface glabrous and smooth; anal and paramedian setae on ventrites as usual. Legs slender; protibiae straight, gradually dilated towards apices; mesotibiae also straight, about two-fifths as long as elytra; metatibiae about four-sevenths as long as elytra, and slightly outcurved in apical halves; tarsi thin, mesotarsi about a half as long as mesotibiae, metatarsi about four-fifths as long as metatibiae; modification of male protarsi as in other congeners.

Male genital organ very small and rather lightly sclerotised. Aedeagus two-sevenths as long as elytra, slenderer and more strongly arcuate in proximal half than in *R. mukaibarai*, highest just behind middle, and gradually narrowed towards apex in lateral view, with narrowly produced apical lobe slightly reflexed at the apex; basal part strongly bent ventrad, with vertical basal orifice whose sides are deeply emarginate; sagittal aileron very narrow and hyaline though distinct; viewed dorsally, apical part fairly wide at the sides of apical orifice, and rapidly narrowed towards the base of apical lobe whose tip is blunt; ventral margin feebly but widely emarginate at middle in profile. Inner sac wholly covered with scales, which are moderately sclerotised and compactly, almost imbricately arranged at the median part, but hardly sclerotised and rather irregular at both proximal and apical parts. Styles narrow, particularly at the apical parts, left style longer than the right, each bearing three or four apical setae, which are sometimes supplemented by a shorter subapical seta on the ventral margin.

Type series. Holoype: ♂, allotype: ♀, 9–VIII–2008, Y. Notsu leg. (found in baited traps set by Y. Notsu on 4–VIII–2008). Paratypes: 2 ♂♂, 9–VIII–2008, Y. Notsu leg. (found in baited traps set by Y. Notsu on 4–VIII–2008); 1 ♀, 29–XI–2008, H. Miyama leg. (found in a baited trap set by S. Uéno & Y. Nishikawa on 27–X–2008); 1 ♂, 1 ♀, 16–III–2009, H. Miyama leg. (found in baited traps set by H. Miyama on 29–XI–2008); 1 ♂, 1 ♀, 17–VI–2009, H. Miyama leg. (found in baited traps set by H. Miyama on 16–III–2009). All deposited in the collection of the Department of Zoology, National Museum of Nature and Science, Tokyo.

Type locality. Abandoned adit of the copper mine called Sagi Dôzan, 30 m in altitude, at Sagiura of Taisha-chô in Izumo-shi, Shimané Prefecture, on the Japan Sea side of western Honshû, West Japan.

Notes. A brief account of Sagi Dôzan, the type locality of *R.* (*U.*) *notsui*, was already given in the introduction of my paper dealing with *Stygiotrechus izumonis* (Uéno, 2008 b, p. 2). It is therefore useless to repeat it. Anyway, all the known specimens of *R. notsui* were caught by traps baited with silkworm powder and set in a small inclined room at the highest point of the adit.

要　　約

上野俊一: 島根半島で発見されたアキヨシメクラチビゴミムシ亜属の 1 新種. —— アキヨシメクラチビゴミムシ亜属 *Uozumitrechus* のチビゴミムシ類は，秋吉台を中心とする山口県西部の石灰洞に広く分布し，既知の分布域の東限が広島県西部と島根県南西部とを結ぶ地域に到達してい

る．しかし，石見地方中央部より北東方向の日本海沿いの地域では，この仲間の見つかったことがなく，亜属の分布域は山陰地方西部でそれほど拡がっていないのではないかというのが，これまでの推察だった．ところが，2008 年の夏になって，島根半島の西端部近くに位置する銅鉱山の古い廃坑から数種のチビゴミムシが発見され，そのうちのひとつが，意外にもアキヨシメクラチビゴミムシ亜属の新種だと判定されたので，発見者に因んでノツメクラチビゴミムシ ***Rakantrechus* (*Uozumitrechus*) *notsui*** **S. UÉNO** という新名を与えて，この論文に記載した．

この新種が，陸伝いに拡散してきた祖先に由来するものか，それとも河川の洪水と海流に運ばれた祖先に由来するものかを判定するのはむずかしいが，近縁のミスミメクラチビゴミムシ ***R.* (*U.*) *mukaibarai*** **S. UÉNO** が，三隅川河口部に漂着したごみの中から見つかったという事実は，後者の可能性を示唆する一例なのかもしれない．

References

UÉNO, S.-I., 1958 a. The cave beetles from Akiyoshi-dai Karst and its vicinities. II. *Uozumitrechus*, a new group of the genus *Rakantrechus*. *Mem. Coll. Sci. Univ. Kyoto*, (B), **25**: 49–61.

———— 1958 b. A remarkable new cave trechid from eastern Kyushu of Japan (Coleoptera, Harpalidae). *Ibid*., (B), **25**: 199–203.

———— 1959. New cave trechids from the Gokasé-gawa drainage area of Kyushu. *Ibid*., (B), **26**: 37–44.

———— 1982. The *Rakantrechus* (Coleoptera, Trechinae) of the Island of Shikoku, Southwest Japan. *J. speleol. Soc. Japan*, **7**: 66–77.

———— 2008 a. The blind trechines of the subgenus *Pilosotrechiama* (Coleoptera, Trechinae) from eastern Kyushu, Southwest Japan. *Elytra, Tokyo*, **36**: 369–376.

———— 2008 b. Occurrence of a new *Stygiotrechus* (Coleoptera, Trechinae) in the Shimané Peninsula, West Japan. *J. speleol. Soc. Japan*, **33**: 1–5.

———— & T. NAITÔ, 2008. Occurrence of Shikoku representatives of blind trechines (Coleoptera, Trechinae) originated in eastern Kyushu, Southwest Japan. *Elytra, Tokyo*, **36**: 213–225.