

A New *Kurasawatrechus* (Coleoptera, Trechinae) from Northeastern Kwantô, Central Japan¹⁾

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Abstract A new anophthalmic trechine beetle belonging to the genus *Kurasawatrechus* is described from the northeastern part of the Kwantô District, Central Japan, under the name of *K. ohkawai*. It is the second species of the group of *K. quadraticollis*, and is the first endogean trechine known from the Yamizo Range.

Near the end of 1974, an anophthalmic trechine beetle was collected by Mr. Masahide KUBOTA in an artificial cavity lying in Mito City at the northeastern part of the Kwantô District, Central Japan, and was submitted to me for taxonomic study. It looked like *Kurasawatrechus quadraticollis* S. UÉNO (1974, p. 112, figs. 7-9; 1985, p. 87, pl. 16, fig. 18), an isolated species characterized by the peculiarly shaped prothorax and elytra, the degenerated pubescence on pronotum, the presence of pronotal discal setae, and the presence of two copulatory pieces in the aedeagal inner sac, but differed from it in the configuration of male genitalia. Its discovery was important from the biospeological viewpoint, as the terrace in which lies the artificial cavity is very recent, having emerged after the Last Interglacial, or being less than 60,000 years old. Since no additional specimens are available, however, it has long been set aside, and the problem remains unsolved as to whether it is a close relative of *K. quadraticollis* or a geographical race of the latter.

In the autumn of 1987, Mr. Hideo OHKAWA collected a pair of the specimens of an endogean *Kurasawatrechus* on Amemaki-yama of the Keisoku Hills about 28 km west by north of the Mito locality, and submitted them to me for taxonomic examination. It belonged to the same species-group as *K. quadraticollis* beyond doubt, but differed from it in both external and genitalic features. A closer study proved that its male genitalia are identical with those of the Mito specimen, so that the two populations seemed to belong to the same species. At my request, Mr. OHKAWA and his friend searched for additional specimens on Amemaki-yama and finally obtained two more males, a careful examination of which verified the stability of genitalic peculiarities.

In the present paper, I am going to name the new trechine after its discoverer, Mr. OHKAWA. Though differing to some extent in external morphology, the Mito

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specimen is regarded herewith as a local variant of the same new species. This conclusion is of considerable interest, since the new trechine occurs at the same time on an old inland mountain and a young coastal terrace, and since it extends its distribution into an area from which no terrestrial troglobionts have hitherto been recorded (cf. UÉNO, 1987, p. 604, fig. 11B). Though not comparable with *Trechiana terraenovae* S. UÉNO (1988, p. 46, figs. 1–5), a long-legged troglobiont differentiated in a young land, the present species can also be regarded as a proof of the recency of terrestrial cave animals.

The abbreviations used in this paper are the same as those explained in other papers of mine.

I wish to express my hearty thanks to Messrs. Hideo OHKAWA, Kazushige KUSANO and Masahide KUBOTA, who kindly submitted their findings to my study. Deep appreciation is also expressed to Professors Hiroshi MORINO and Yoshiaki KIKUCHI for providing information about the geological history of the Mito area.

Kurasawatrechus ohkawai S. UÉNO, sp. nov.

[Japanese name: Ohkawa-mekura-chibigomimushi]

(Figs. 1–3)

Length: 3.05–3.35 mm (from apical margin of clypeus to apices of elytra).

Belonging to the group of *K. quadraticollis* and closely allied to its type species. Externally distinguished from the latter by smaller head, contracted apex of prothorax and broader elytra. Decisively different from *K. quadraticollis* in the configuration of aedeagus, which is smaller and regularly arcuate from base to apex, with broader and ventrally curved apical lobe and more elongate copulatory pieces.

Colour as in *K. quadraticollis*. Head similar to, though smaller than, that in *K. quadraticollis*, with frontal furrows a little less widely divergent in front; antennae reaching basal three-tenths of elytra. Pronotum obviously wider than head, wider than long, widest at about five-sevenths from base, and more strongly contracted towards apex than towards base; PW/HW 1.39–1.43 (M 1.42), PW/PL 1.15–1.21 (M 1.19), PW/PA 1.33–1.39 (M 1.36), PW/PB 1.07–1.13 (M 1.09); sides more strongly arcuate in front than in *K. quadraticollis*, a little more shallowly and widely sinuate at about basal third, with front angles a little more obtuse and hind angles somewhat sharper; apex always distinctly narrower than base, PB/PA 1.23–1.26 (M 1.24). Elytra ovate, broader and shorter than in *K. quadraticollis*, widest at about two-fifths from bases, with the sides less arcuate at prehumeral portions, more regularly so in basal three-fifths, and more evenly so in apical parts, with apices usually less pointed; EW/PW 1.49–1.59 (M 1.53) [1.49–1.53, M 1.51, in ♂♂, 1.59 in ♀], EL/EW 1.40–1.45 (M 1.42). Other external features as in *K. quadraticollis*.

Male genital organ very small and poorly sclerotized, basically similar in conformation to that of *K. quadraticollis* but different from the latter in many details.

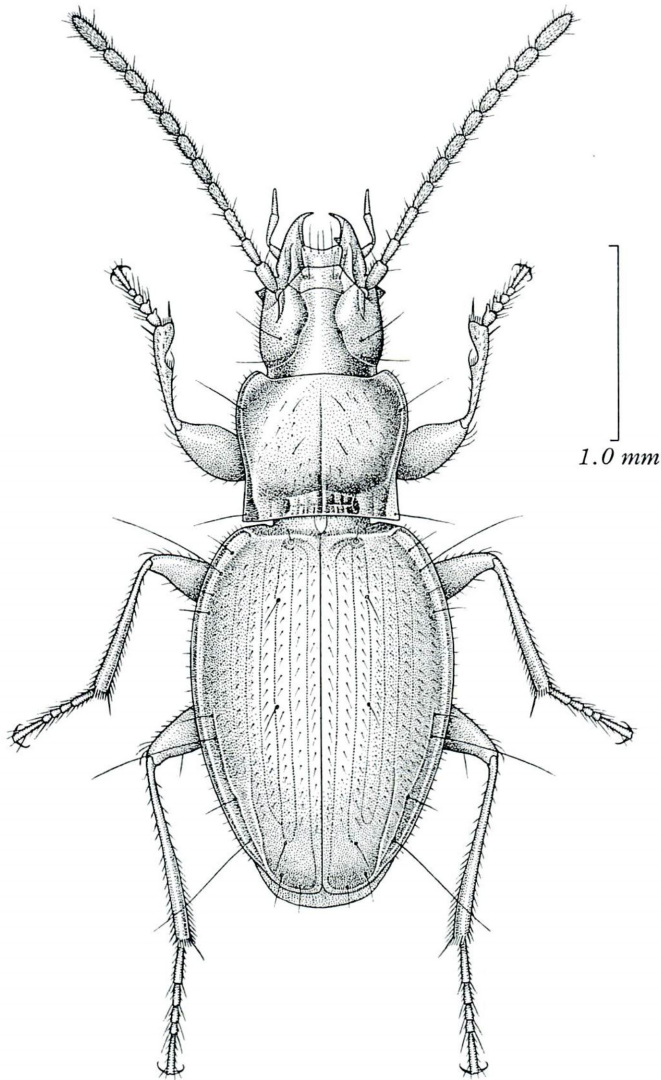
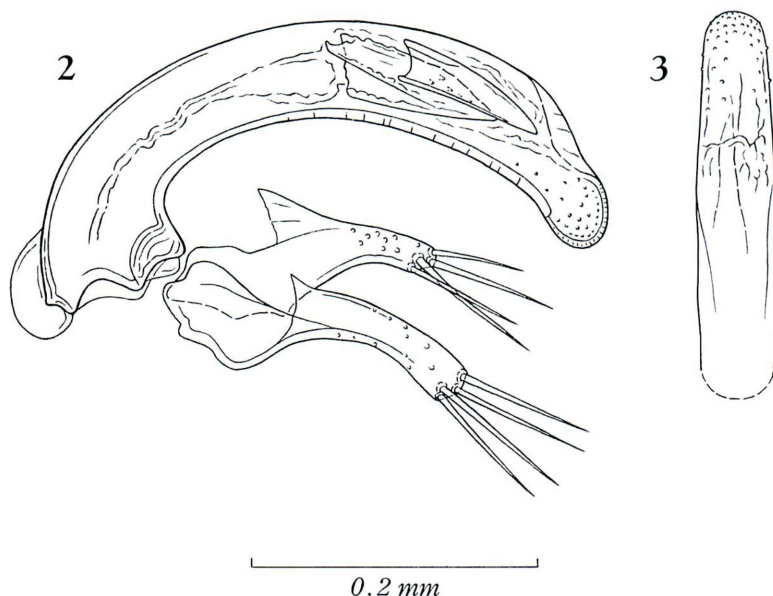


Fig. 1. *Kurasawatrechus ohkawai* S. UÉNO, sp. nov., ♂, from Amemaki-yama of the Keisoku Hills.

Aedeagus only one-fifth as long as elytra, tubular though compressed, regularly arcuate from base to apex, with the dorsal margin semicircularly rounded in profile; basal part small, rather strongly bent, and moderately emarginate at the sides of basal orifice; sagittal aileron fairly large though hyaline; viewed dorsally, apical lobe fairly broad and almost parallel-sided to near apex, which is widely rounded; viewed laterally, apical lobe large, broad, ovate and gently curved ventrad; ventral margin widely arcuate in profile. Copulatory pieces large and elongate, obviously more



Figs. 2-3. Male genitalia of *Kurawatrechus ohkawai* S. UÉNO, sp. nov., from Amemaki-yama of the Keisoku Hills; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

elongate than in *K. quadraticollis* though structurally similar to those of the latter. Styles stout and more or less arcuate, left style larger than the right and devoid of ventral projection, each bearing four stout setae at the apex.

Type series. Holotype: ♂, allotype: ♀, 30-X-1987, H. OHKAWA leg. Paratypes: 2 ♂♂, 31-XII-1987, K. KUSANO leg. All preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Amemaki-yama, 290 m alt. on the northern slope, at Ohkawado of Mashiko-machi in Tochigi Prefecture, Central Japan.

Further specimen examined. 1 ♂, Kairakuén-nangai-no-ana Mine, Tokiwa, Mito-shi, Ibaraki Pref., 22-XII-1974, M. KUBOTA leg. (NSMT).

Notes. The single specimen known from Kairakuén-nangai-no-ana (3.10 mm in the length of body) varies towards *K. quadraticollis* in all the diagnostic characters of external morphology, that is, it is intermediate between the type specimens of *K. ohkawai* and those of *K. quadraticollis* in the size of head and the configuration of prothorax and elytra. However, its male genitalia are identical with those of the former, showing that it is a geographical variant of *K. ohkawai*. The standard ratios of its body parts are as follows: PW/HW 1.31, PW/PL 1.17, PW/PA 1.30, PW/PB 1.13, PB/PA 1.15, EW/PW 1.48, EL/EW 1.48.

Amemaki-yama (533 m in height) is a southwestern head of the Keisoku Hills belonging to the Yamizo Range, which stretches from north to south along the

northeastern edge of the Kwantô Plain. At its northern foot, there is a hot spring called Ohkawado-kôsen. According to the collectors, the type specimens of *K. ohkawai* were taken in the gently sloping valley above the hot spring, at an altitude of 290 m. They were dug out from the sides of a gully on the right side of the main valley. The locality is about 43.5 km distant to the west-southwest from Ohkubo-no-kaza-ana Cave, the type locality of *K. quadraticollis*.

Kairakuén-nangai-no-ana is an artificial cavity, which was dug about 300 years ago into tuffaceous mudstone of the Late Miocene origin thickly covered with layers of the Kwantô tephra. Its location is about 28 km east by south of Amemaki-yama and about 23.5 km southwest of Ohkubo-no-kaza-ana. It is, therefore, nearer to the type locality of *K. quadraticollis* than to that of *K. ohkawai*. Topographically, however, Kairakuén-nangai-no-ana and Amemaki-yama lie on the same (right) side of the Naka-gawa River, and are separated from Ohkubo-no-kaza-ana at least by two rivers of moderate size and their alluvia. It is probable that reproductive isolation between two populations of their common ancestor was effected by the existence of ancient valleys of these rivers, and that the southwestern population has become differentiated into *K. ohkawai*, which is genitally stable but is variable to some extent in its external morphology.

摘 要

上野俊一：関東地方北東部で見つかったクラサワメクラチビゴミムシ属の1新種。——栃木、茨城両県の県境上に位置し、鶏足山地の最高点になる雨卷山から、クラサワメクラチビゴミムシ属アブクマメクラチビゴミムシ群の1新種を記載し、オオカワメクラチビゴミムシと命名した。また、水戸市内の人工洞、偕楽園南崖の穴で得られたメクラチビゴミムシの一種を、この新種の地方型として記録した。オオカワメクラチビゴミムシは、古い山地からきわめて新しい洪積台地までひろがっている点で注目に値し、陸生洞窟動物の起源がごく新しいことを示すひとつの証拠になる。

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