

A New *Trechiana* from the Japanese Alps

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It has long been known that the high mountains of Japan are inhabited by the apterous members of the subfamily Trechinae. On the so-called Japanese Alps, these trechids have been considered to be represented by two polytypic species, of which the definition is still in the course of study. One of the two species is called *Trechus vicarius* H. W. BATES and the other is *Trechiana lewisi* (JEANNEL), each constituting an independent species-group.

Recently, an example of a trechid was taken by Mr. KIMURA at the eastern side of Mt. Kiso-Koma-ga-také, one of the peaks of the Kiso Range of the Central Japanese Alps, and was submitted to the writer for identification. It is a member of the genus *Trechiana*, but seems to belong to a species-group different from that of *T. lewisi*. It will be described in the present paper, together with a note on its zoogeographical value.

The writer's hearty thanks are due to Prof. Kenji NAKAMURA for his encouragement, to Mr. Kinji KIMURA, who kindly placed his valuable material at the writer's disposal for study, as well as to Messrs. Ryôsuke ISHIKAWA and Yukiaki KUMAGAI for their kind help in preparing the present report.

***Trechiana* (s. str.) *kimurai* S. UÉNO, sp. nov.**

Length: 5.8 mm (from front margin of clypeus to anal end).

Colour dark brown, shiny and weakly iridescent; elytra black, with the exception of interval 1 and apical areas, which are more or less brownish; palpi pale; antennae (becoming paler towards apices), legs and the ventral side of hind body dark yellowish brown.

Head fairly wide, with entire frontal furrows which are deep throughout and not angulate at middle; supraorbital areas and front moderately convex, microsculpture formed by well impressed reticulation; eyes small and flat, though perfect and evidently faceted; genae only slightly convex and glabrous, slightly shorter than eyes; mandibles fairly long, slender and slightly hooked at apices; mentum tooth large and wide, nearly truncated at apex; palpi slender, with the apical segments subacuminate; antennae long and slender, reaching the middle of elytra,

with segment 3 about 1.5 times longer than segment 2 and as long as segment 4.

Pronotum subcordate and convex, 1.44 times wider than head, 1.14 times wider than long, widest at about two-thirds from base, the ratio of the greatest width to the width of apex 1.53; lateral sides narrowly bordered and reflexed, with marginal gutters fairly wide behind the widest part but becoming narrower near front

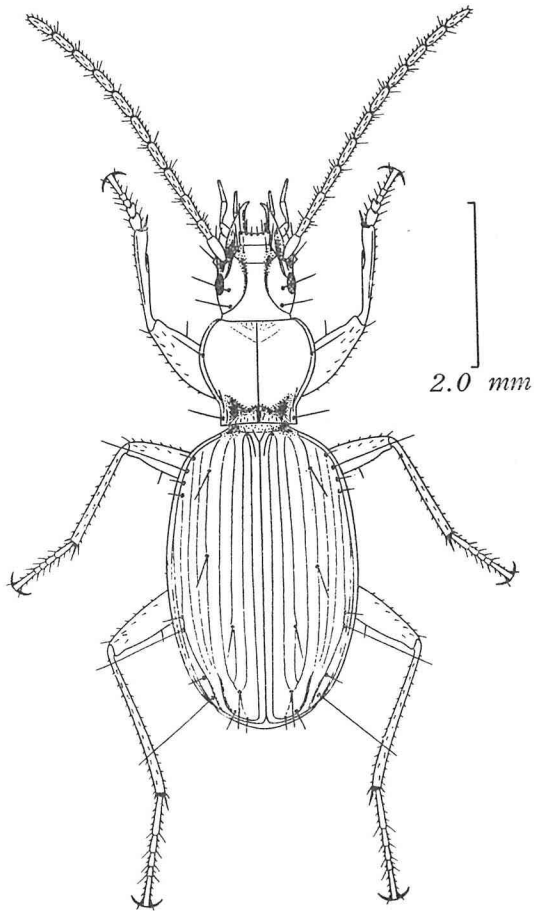


Fig. 1. *Trechiana* (s. str.) *kimurai* sp. nov., ♂, of Kurokawayama on Mt. Kiso-Koma-ga-také.

angles, widely and strongly rounded in front, deeply sinuate at one-seventh from base; both lateral and postangular setae present, the latter of which is inserted at a position a little before hind angle; apex widely and slightly emarginate; base only a little wider than apex and slightly reduced at middle; front angles slightly

produced though rounded; hind angles large and sharp, projecting hardly outwards and a little backwards; median line distinct, nearly reaching both the borders and widening near base; apical transverse impression nearly obsolete; basal transverse impression deep and continuous, with a small fovea on each side of median line and merging on each side into deep basal fovea, which is fairly large and extends anteriorly; the bottom of basal transverse impression and of basal foveae more or less uneven; postangular carina obtuse; surface smooth, both apical and basal areas rugose; microsculpture formed by fine transverse lines though rather indistinct.

Elytra oval, relatively flat though moderately convex at the sides, 1.66 times wider than pronotum, 1.52 times longer than wide, widest at a little before middle; disk depressed; shoulders widely rounded, with prehumeral borders oblique; lateral

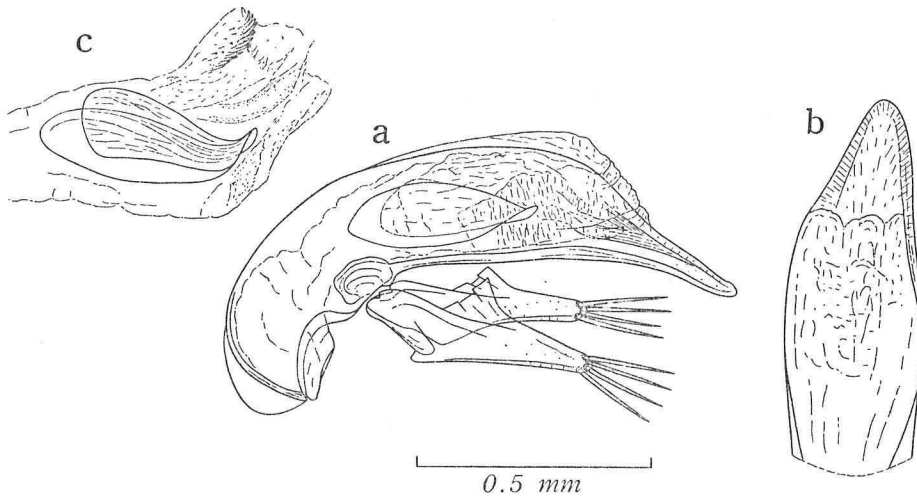


Fig. 2. Male genital organ of *Trechiana kimurai* sp. nov., of Kurokawayama on Mt. Kiso-Koma-ga-také; left lateral view (a); apical part of aedeagus, dorsal aspect (b); and, inner sac, showing copulatory piece and a group of teeth (c).

sides moderately explanate and reflexed, gently and regularly rounded at middle, and hardly emarginate before apices; apex of each elytron rounded at suture; striae entire, shallow and crenulate, striae 1-5 more or less deepening near base; scutellar striole relatively short but distinct; apical striole deep, only slightly curved and almost joining stria 5; intervals flat and smooth, apical carina prominent; stria 3 with a single setiferous dorsal pore situated at two-thirds from base, preapical pore inserted at the meeting point of striae 2 and 3, stria 5 with two dorsal pores at basal one-eighth and a little before middle; microsculpture composed of fine transverse lines but rather indistinct.

Ventral surface smooth; anal sternite provided with a single seta on each side in ♂. Legs long and fairly slender; protibiae externally grooved; tarsal segment

4 with a long ventral apophysis in pro- and mesotarsi; in ♂, protarsal segments 1 and 2 widely dilated and well produced inwards at apices.

Male genital organ remarkably small, though moderately chitinized. Aedeagus rather short, robust, hardly arcuate at middle and widely membranous on the dorsal side; basal part fairly large and moderately bent towards ventral side, with large basal orifice, of which lateral sides are deeply emarginate; sagittal aileron distinct but narrow; in profile, apical part prolonged and curved ventrally, with the tip slightly turned up; in dorsal aspect, apical part wide and rounded at apex; ventral side hardly concave at middle. Inner sac armed with a large copulatory piece at middle and a small group of teeth near apical orifice; copulatory piece spoon-shaped and twofold, two lamellae being joined at the narrower end, which is placed apically. Styles relatively small and tapering towards apices, left style a little longer than the right, each provided with four setae at apex.

Female unknown.

Type-specimen: Holotype: ♂ (26-VII-1959, collected by K. KIMURA and deposited in UÉNO's collection).

Type-locality: Kurokawayama, in the vicinity of a waterfall called "Isé-daki", on the eastern slope of Mt. Kiso-Koma-ga-také, on the Central Japanese Alps, in Nagano Prefecture, central Honshu.

The type-specimen of this interesting new species was obtained by Mr. KIMURA in a broad-leaved forest on the side of a mountain stream at an altitude of about 2,000 m. It was found under a carpet of moss, which covered a decayed tree fallen down on the ground.

This species seems to belong to the group of *Trechiana oreas*, but is different in many features from any of the known species of the species-group. It is unique in its aedeagal characters, especially in the structure of copulatory piece. Most striking is, however, the absence of the proximal one of dorsal pores on the third elytral stria. So far as known to the writer, this character has been reported only in a cavernicolous subspecies belonging to the species-group of *Trechiana pluto*¹⁾. From *T. lewisi*, the present new species may easily be distinguished by the absence of a row of hairs on each side of pronotal median line²⁾, by its smaller size, by the shape of pronotum and of elytra, by the elytral chaetotaxy and by the structure of aedeagus.

It was quite unexpected that a representative of the group of *T. oreas* was discovered on the Japanese Alps, in the centre of the distribution range of the group of *T. lewisi*. The former species-group has hitherto been known to be spread over the high mountains and the limestone caves of northern Honshu and central Chūgoku, remaining a wide gap of distribution between the two areas.

1) *Trechiana* (s. str.) *pluto kanekiyo* S. UÉNO, 1958, Mem. Coll. Sci. Univ. Kyoto, (B), 25, p. 47.

2) The presence of such a row of hairs is characteristic of the group of *Trechiana lewisi*.

This has made difficult to analyse the geographical distribution of Japanese trechids. The discovery of *T. kimurai* on the Japanese Alps is, therefore, very important from the zoogeographical point of view. It has led the writer to consider that the group of *T. oreas* was once widely spread all over the mountainous areas of Honshu, probably in Pleistocene, and that the group is now preserved as relics on the high mountains and in the limestone caves. Further discussion on this subject will be made at another opportunity.