

## Alpine Trechids from Hokkaido, Japan

### II. A New Type of Trechina found on the Hidaka Mountain Range

By

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In the summer of 1960, the writer participated as a zoologist in an expedition to the northern part of the Hidaka mountain range. Taking this golden opportunity, his interest was concentrated on the searches for the alpine insects, especially for trechids. His efforts were repaid with the success in clarifying the trechid fauna of that part of the range, which was quite different from that of the Daisetsu-zan mountains. The results obtained will be reported in the present and the following parts of this series.

In preparing the manuscripts of this and the next parts, the writer wishes to acknowledge his indebtedness to Messrs. Masahito HASHIMOTO and Okitsugu WATANABE of the Academic Alpine Club of Hokkaido as well as to Mr. Kazuo WADA of our Institute. But for their kind aid, we could not have succeeded in our expedition.

Genus **Masuzoa** S. UÉNO, gen. nov.

*Type-species*: *Masuzoa notabilis* S. UÉNO, sp. nov.

*Diagnosis*: Body glabrous; apterous and depigmented; head with small eyes and well developed genae, the latter of which are almost glabrous; frontal furrows branching off behind middle, each with shallow outer branch; two supraorbital pores present; mandibles bidentate; labium fused, submentum sexsetose; mentum tooth truncated or slightly emarginate at apex; pronotal postangular seta distant from hind angle which is sharp; elytra with distinct scutellar striole; apical striole very short, usually joining stria 7; two dorsal pores present on stria 3 and none on stria 5; preapical pore normal though fairly distant from apex; humeral group of umbilicate pores regular and aggregated; protibiae pubescent at the apical part of the anterior face and provided with four grooves, two on the external face, one on the posterior face and one on the anterior face; two proximal segments dilated in ♂ protarsi; aedeagus elongate, with large sagittal aileron; apex simple; a large spatulate copulatory piece present inside inner sac with the convex side facing the right wall.

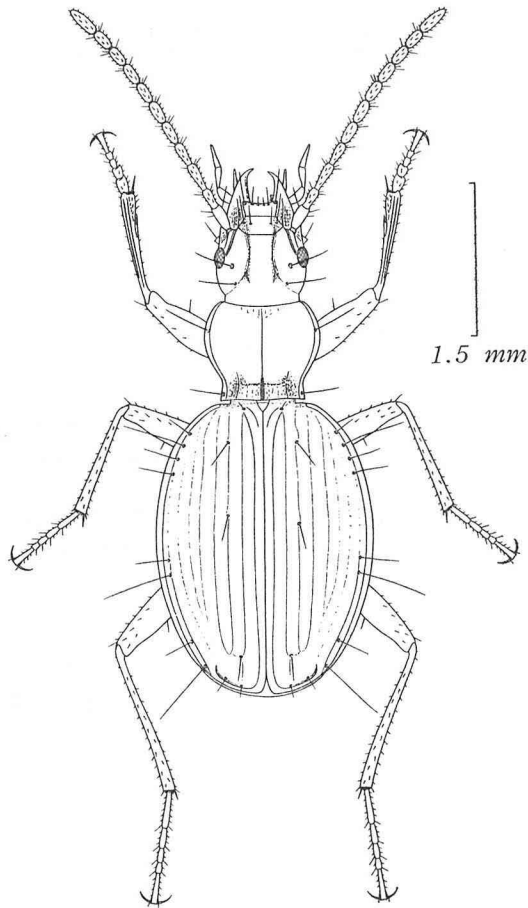


Fig. 1. *Masuzoa notabilis* gen. et sp. nov., ♂, of Mt. Poroshiri-daké on the Hidaka mountain range.

*Description:* Apterous and depigmented. Body glabrous on both dorsal and ventral surfaces; colour reddish brown.

Head large, with small eyes which are evidently faceted; frontal furrows deep in front, each branching off behind the level of anterior supraorbital pore; the inner branch of frontal furrow short, curving inwards and disappearing on vertex; the outer branch shallow and not sharply defined, curving laterally towards neck constriction; genae well developed and almost glabrous, though the vestige of a few minute pubescence perceptible under high magnification; present two supraorbital pores, the hind one of which is not adjoining frontal furrow. Labrum transverse, deeply emarginate and not trilobed at apex, and

sexsetose. Mandibles fairly slender and bidentate. Mentum fused with submentum, though the trace of the suture between them sometimes visible at the sides, with epilobes extending beyond lateral lobes; mentum tooth wide, truncated or slightly emarginate at apex; submentum provided with three setae on each side; ligula rounded at apex and octosetose, two long setae at middle and three shorter ones on each side; paraglossae very narrow, extending well beyond ligula. Palpi relatively thick, with apical segments subacuminate towards the tips, slightly longer than penultimate segment in maxillary palpus but a little shorter than the penultimate in labial palpus; penultimate segment dilated towards apex and asetose in maxillary palpus, quadrisetose in labial palpus. Antennae filiform, not very long, with segments 2-11 densely pubescent.

Pronotum transverse-cordate; lateral sides entirely bordered and deeply sinuate before hind angles, with both lateral and postangular setae, the latter of which is removed a little forwards; base nearly straight; hind angles sharp and reflexed; no postangular carina; basal transverse impression continuous, merging on each side into large basal fovea.

Elytra large and oval, not fused together; shoulders effaced; prehumeral borders reaching the base of stria 5 and obliquely inclined to the mid-line; lateral sides rather widely explanate and reflexed; striae superficial, scutellar striole present; apical striole very short and curved, either interrupted at the end or joining stria 7 (rarely joining stria 5 on one elytron); apical carina prominent; stria 3 with two setiferous dorsal pores, no dorsal pore on stria 5; preapical pore situated at the meeting point of striae 2 and 3 evidently before the level of the termination of apical striole; humeral group of umbilicate pores regular and aggregated, four pores ranged equidistantly and adjoining marginal gutter.

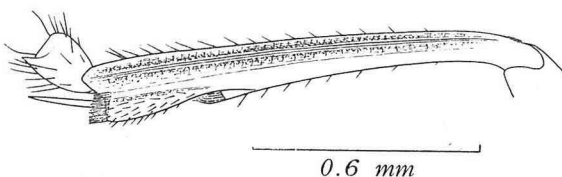


Fig. 2. *Masuzoa notabilis* gen. et sp. nov., ♂, of Mt. Poroshiri-daké; right protibia, dorso-anterior view.

Anal sternite provided on each side with one seta in ♂, two setae in ♀. Legs long and slender; protibiae densely pubescent at the apical part of the anterior face and provided with two deep grooves on the external face, a third shallower groove present at the apical part of the anterior face and a fourth groove on the posterior face; tarsal segment 4 with a long ventral apophysis in pro- and mesotarsi; in ♂ protarsal segments 1 and 2 dilated, inwardly produced at apices and furnished beneath with sexual adhesive appendages.

Aedeagus tubular and elongate, with the basal part bent towards the ventral side; sagittal aileron well developed; basal orifice small, with the lateral sides hardly emarginate; apical part not prolonged nor dilated; apical orifice small; inner sac armed with a large copulatory piece, which is not bifid at apex and is placed inside the sac with the convex side facing the right wall. Each style provided usually with four apical setae.

The systematic position of this curious new genus is not yet certain. According to JEANNEL's diagnosis of the genera of Trechina<sup>1)</sup>, it may fall into the phyletic series of *Lasiotrechus*, or into that of *Aphaenops* if the presence or absence of eyes would not be taken into account. From the genera belonging to these two phyletic series, however, the present new genus is greatly different not only in its general appearance but also in many morphological features. Most striking among them is the structure of protibiae, which is very intricate and is unique among the genera of Trechina. In one of the Pyrenean trechids, *Trechus distigma* KIESENWETTER, there are two grooves on the external face of each protibia. The grooves are, however, not equally formed in the Pyrenean species<sup>2)</sup> and are not comparable to those in the present genus. In view of that the pubescence on protibiae is not so decisive of phylogenetic meaning in archaic genera as was considered by JEANNEL, it seems to be reasonable at present to range *Masuzoa* between *Trechus* and *Lasiotrechus*. It may be regarded as a glacial relic, which has long been preserved on the Hidaka mountain range, a massif oldest in the Island of Hokkaido.

It is a great pleasure to the writer to dedicate this remarkable new genus to his father, Prof. Dr. Masuzō UÉNO, the President of the Spelaeological Society of Japan, under whose guidance and protection the writer has grown up as a student of zoology.

***Masuzoa notabilis* S. UÉNO, sp. nov.**

Length: 4.3-4.7 mm (from front margin of clypeus to anal end).

General appearance of *Trechiamma*-type, though wide. Colour reddish brown, shiny, translucent when alive; palpi pale; antennae becoming paler towards apices; epipleura and legs pale reddish brown or yellowish brown; ventral side of hind body more or less paler than the rest of body.

Head large, wide and more or less depressed on dorsal side; frontal furrows deeply impressed before the level of posterior supraorbital pore, converging at a little behind the level of the front margins of eyes, a little diverging and deepening posteriorly, and then converging again on vertex, with the outer branch shallow and curving outwards; both supraorbital areas and front convex; microsculpture well impressed, composed mostly of wide meshes; eyes small,

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1) JEANNEL, R., 1928, L'Abeille, Paris, 35, pp. 21-27.

2) The anterior groove is no doubt of secondary nature in *T. distigma*.

flat and often covered with a coat of chitin, about four-fifths as long as genae or still longer; genae long and gently convex; neck wide, neck constriction fairly deep; mandibles fairly slender, sharply hooked at apices; antennae not very long, reaching basal one-third of elytra or extending a little beyond that level, with segment 2 about three-fourths as long as segment 3 and about five-sixths as long as segment 4; antennal segments 9 and 10 about twice as long as wide.

Pronotum transverse-cordate and convex, 1.22–1.30 times wider than head (mean 1.26), 1.17–1.21 times wider than long (mean 1.19), widest at about two-thirds from base; the ratio of the greatest width to the width of apex 1.36–1.47 (mean 1.43), that to the width of base 1.38–1.45 (mean 1.42); lateral sides rather widely explanate and sharply reflexed, widely and strongly rounded in front, deeply sinuate at one-sixth to one-fifth from base, with marginal gutters wide at the widest part but becoming narrower both in front and behind; lateral seta situated usually at a little before the widest part; apex widely but very slightly emarginate, about as wide as base, which is nearly straight or slightly bisinuate, the ratio of the width of apex to that of base 0.96–1.04 (mean 1.00); front angles slightly advanced and rounded; hind angles sharp, more or less produced outwards; median line distinct, widening near base and almost reaching apex; front transverse impression nearly obsolete; basal transverse impression deep and uneven; basal foveae large, deep and elongate, smooth at the bottom; surface smooth, with vague transverse striations; both apical and basal areas more or less wrinkled; microsculpture formed by fine transverse lines.

Elytra elliptical and convex, though more or less depressed on basal area, 1.86–1.95 times wider than pronotum (mean 1.90), 1.32–1.37 times longer than wide (mean 1.35), widest at about three-sevenths from base; shoulders effaced; lateral sides moderately rounded, each with a slight emargination before apex which is rounded; striae superficial, either punctate or crenulate, inner striae deeper than the outer, stria 8 more or less deepening apically; scutellar striole of moderate length; apical striole very short but deep; intervals smooth, slightly convex near suture but flat at the sides; apical carina short but salient; stria 3 with two setiferous dorsal pores located at one-eighth to one-seventh and three-eighths to three-sevenths from base respectively, preapical pore much more distant from apex than from suture; microsculpture formed by fine transverse lines.

Legs long and slender.

Male genital organ rather small and moderately chitinized. Aedeagus long and slender, slightly arcuate at middle in profile, nearly parallel-sided throughout in dorsal view; basal part not large, rather strongly bent towards the ventral side; sagittal aileron remarkably large and hyaline; apical part gently curving to the ventral side; apex blunt in lateral view, widely rounded in dorsal view; ventral side slightly but evenly concave. Copulatory piece large, spatulate and covered with minute scales, with the apex rounded. Styles

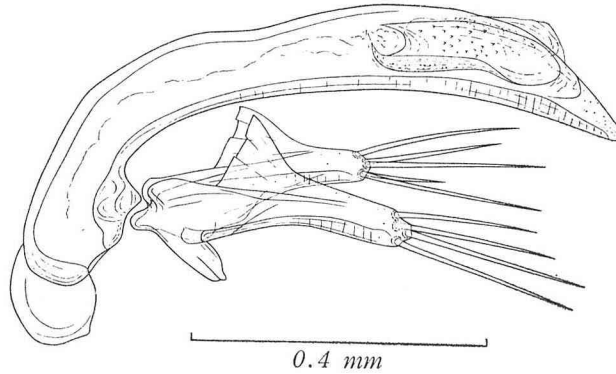


Fig. 3. Male genital organ of *Masuzoa notabilis* gen. et sp. nov., of Mt. Poroshiri-daké.

relatively short and wide, left style longer than the right, each provided usually with four, very long setae at apex; in one of the paratypes, a fifth shorter seta present on right style (Fig. 3).

*Type-specimens*: Holotype: ♂, allotype: ♀, paratypes: 3 ♂♂ (8-VIII-1960, collected by S. UÉNO and preserved in his collection).

*Type-locality*: Mt Poroshiri-daké, at the northern part of the Hidaka mountain range, in Hokkaido.

This interesting new species was found on the northeastern ridge of Mt. Poroshiri-daké at a height of about 1,900 m. The peak is the highest point on the Hidakas (2,052 m above sea-level), but is situated on a branch of the range. The habitat of the beetle seems to be confined in a small area, covered with the thick carpet of a mountain heath (*Phyllodoce*), where the type-specimens were found under large stones deeply embedded in the soil. They were not so active and sometimes found clinging to the under side of stones. This station is remote from streams or snow couloirs, and is usually exposed to the strong west wind. An individual of this beetle was carried away by the wind immediately after a stone, beneath which the individual was in hiding, was turned up. The writer has never met with any other trechid in such a habitat as was inhabited by this new species.