

A New Isolated *Trechus* (Coleoptera, Trechinae) from the  
Micang Shan Mountains in Northeastern Sichuan,  
Southwest China

**Shun-Ichi UÉNO**

Department of Zoology, National Science Museum (Nat. Hist.),  
3–23–1 Hyakunin-chô, Shinjuku, Tokyo, 169–0073 Japan

**Abstract** A new species of the trechine genus *Trechus* is described from the Micang Shan Mountains on the borders of northeastern Sichuan and southern Shaanxi, Southwest China, under the name of *Trechus* (s. str.) *imurai*. It is a small species recognized at first sight on the absence of the preapical pore on each elytron and the peculiar conformation of its male genitalia.

In the past decade, many species of the trechine genus *Trechus* have been described, mostly by DEUVE, from China. They are abundantly found on the Tibetan Plateau and its continuations, or in the northern territories, and are gradually replaced by the members of the genus *Epaphiopsis* in the southern part of the country. An epitome of this is found in Sichuan; *Trechus* species commonly occur in the northern and northwestern areas of the province, or in the eastern peripheries of the Tibetan Plateau (cf. DEUVE, 1988, 1989, 1992, 1995, 1997; DEUVE & QUÉINNEC, 1993), but are only sporadically met with on other mountains (cf. DEUVE, 1992, 1995; UÉNO, 1998), which are frequently occupied by the members of *Epaphiopsis*.

Only two species of trechine beetles have hitherto been recorded from the Daba Shan Mountains and their continuations, stretching from northwest to southeast on the borders of Sichuan and Shaanxi and extending into western Hubei. One of them is *Epaphiopsis* (*Epaphiama*) *lamellata* S. UÉNO et YU (1997, p. 25, figs. 1–3) described from Shennongjia at the eastern end of the Daba Shans, and the other is *Paragonotrechus laticollis* S. UÉNO et YU (1997, pp. 29, 33, figs. 4–6) recorded from the Liangjiawan Yakou on the Daba Shans. No *Trechus* has been met with in spite of repeated investigations made by many entomologists, above all on Shennongjia.

On his recent trip to the Micang Shan Mountains, the northwestern continuation of the Daba Shans, Yûki IMURA collected two different species of humicolous trechine beetles. One of them is known from only a female specimen but is possibly referable to *Epaphiopsis lamellata*, whereas the other is an indubitable new species of the grand genus *Trechus* and is unique in its morphological peculiarities. I am going to describe this interesting new species in the present paper, under the name of *Trechus* (s. str.) *imurai*. The abbreviations used herein are the same as those explained in previous pa-

pers of mine.

Before going into further details, I wish to express my heartfelt thanks to Dr. Yûki IMURA for his effort to obtain trechine beetles for me on the mountains never investigated before by entomologists, and also to my friend, Mr. FAN Ting, who made every effort to help Dr. IMURA's investigation in the field.

*Trechus* (s. str.) *imurai* S. UÉNO, sp. nov.

(Figs. 1-3)

Length: 2.60-2.95 mm (from apical margin of clypeus to apices of elytra).

A small isolated species of short broad facies readily recognized on the absence of preapical pore on elytra. Also characterized by the polished body surface almost completely devoid of microsculpture, small flat eyes, tumid genae, presence of continuous basal transverse sulcus on pronotum, strongly convex elytra with only feeble but coarsely punctate striae on the disc, and peculiar conformation of male genitalia.

Body short and broad, with transverse head and prothorax, strongly convex ovate elytra, and short appendages; surface polished; microsculpture practically absent, though vestiges of fine transverse lines are visible through integument on the anterior part of head and large part of elytra; inner wings absent. Colour brown to light brown, more or less infuscated in fore body; clypeus, labrum, palpi, several apical antennomeres, epipleura, apical sternites, and legs yellowish brown, more or less paler than the other parts of body.

Head transverse, only three-fourths as long as wide; dorsum depressed, though both the supraorbital areas and frons are moderately convex due to deeply carved frontal furrows, which are very obtusely subangulate, moderately divergent in front and widely so behind towards deep neck constriction; supraorbital pores closely located, lying on lines divergent posteriorly, the anterior pair being foveolate; eyes small and flat, though individually variable in size and convexity; genae tumid, two-thirds to one and one-ninth as long as eyes and sometimes slightly more convex than eyes, completely glabrous; neck very wide, with the anterior constriction deeply and sharply marked at the sides; labrum transverse, with the apical margin deeply emarginate and sometimes slightly bisinuate at the bottom; mandibles short and stout, bidentate, with sharply hooked apical portions; mental tooth broad and porrect, distinctly bifid at the tip; submentum sexsetose, with the innermost pair smaller than the others; palpi short and stout, penultimate segments widely dilated towards apices, about as long as apical segment in labial palpus, obviously longer than the apical in maxillary palpus, apical segments elongated subconical; antennae short and stout though subfiliform rather than submoniliform, reaching basal fifth of elytra or extending slightly beyond that level, segment 2 about as long as segment 3 and about five-sixths as long as scape, segments 4-10 subequal in length to one another, each less than twice as long as wide and slightly shorter than segment 2 or 3, terminal segment the longest, slightly longer but narrower than scape.

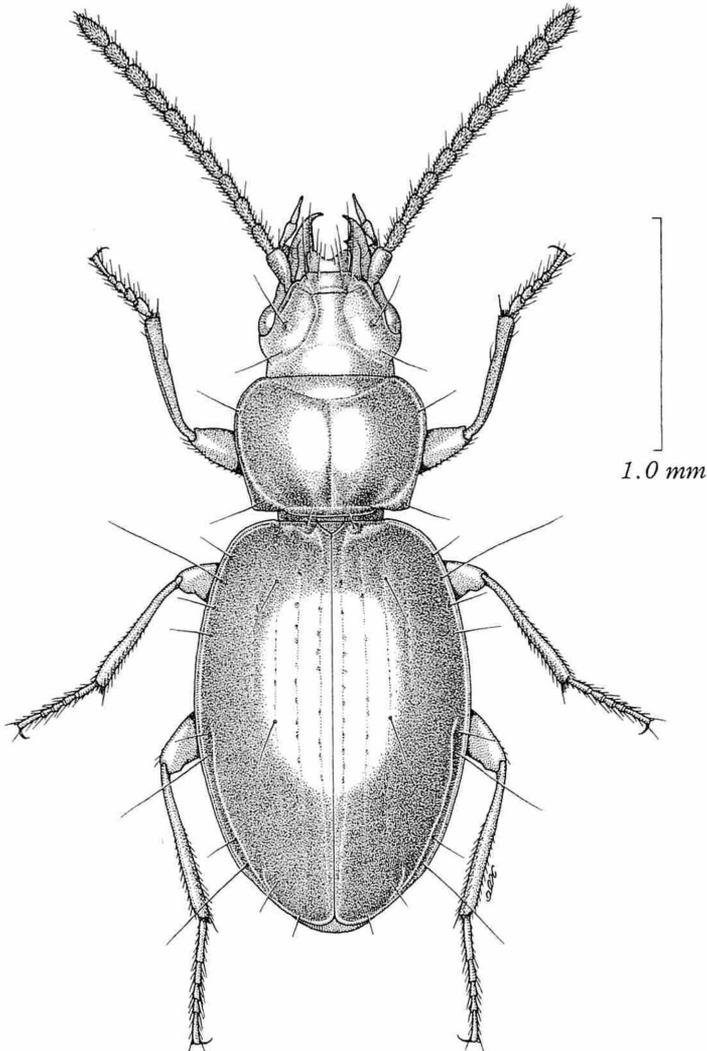


Fig. 1. *Trechus* (s. str.) *imurai* S. UENO, sp. nov., ♂, from the Jiaojia He Valley below Daba on the Micang Shan Mountains.

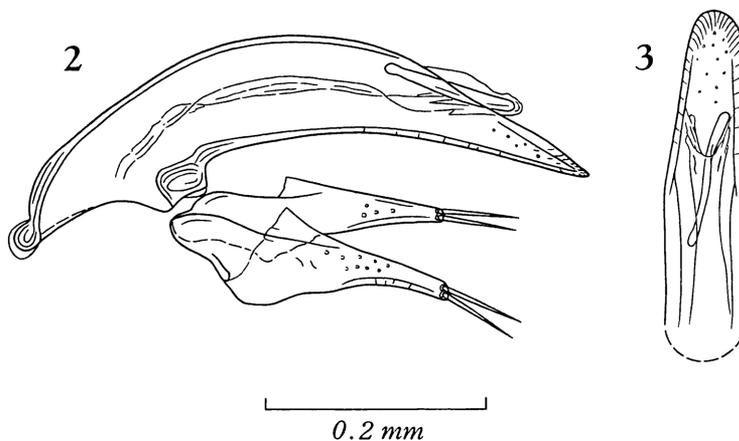
Pronotum transverse, wider than head, widest at about three-fifths from base or a little before that level, and more gradually narrowed towards base than towards apex; PW/HW 1.36–1.48 (M 1.41), PW/PL 1.37–1.53 (M 1.44), PW/PA 1.43–1.55 (M 1.48), PW/PB 1.27–1.39 (M 1.33); sides moderately bordered, narrowly near front angles and rather widely at the reflexed postangular parts, rather strongly arcuate in front, less so behind middle, and hardly or very slightly sinuate just before hind angles, which are obtuse and more or less worn-out at the corners; apex more or less narrower than base,

PB/PA 1.07–1.18 (M 1.12), either straight or very slightly arcuate, with front angles rounded and not advanced; base slightly produced at the median part and nearly straight, briefly but distinctly emarginate on each side above basal peduncle of elytra, and briefly arcuate anteriorly at each hind angle; dorsum well convex and smooth, steeply declivous posteriorly and at the antero-lateral parts; median line distinct, particularly near apical transverse impression, which is distinct, linear and continuous; basal transverse sulcus sharply carved; no postangular carinae; basal area narrow and transversely convex.

Elytra ovate, usually a little more rotundate in ♀ than in ♂, obviously wider than pronotum, longer than wide, widest at about four-ninths from bases, and more gradually narrowed towards bases than towards apices; EW/PW 1.43–1.53 (M 1.48), EL/PL 2.76–3.05 (M 2.91), EL/EW 1.32–1.42 (M 1.36); shoulders rounded continuously to prehumeral borders; sides narrowly bordered throughout, gently arcuate at middle, less so in front and behind, and rather narrowly rounded at apices which form a small re-entrant angle at suture, preapical emargination shallow but appreciable; dorsum strongly convex, steeply declivous at the lateral and apical parts; striae superficial though rather coarsely punctate on the disc, evanescent at the side, stria 1 entire, distinctly impressed before middle, 2 also distinct though obsolete near base, 3 shallower than inner two and often fragmentary, 4 just perceptible before the middle, 5–7 effaced, 8 impressed behind the middle set of marginal umbilicate pores; scutellar striole absent; apical striole distinctly impressed though short and lightly curved, free at the anterior end but apparently directed to the site of stria 5; intervals smooth and completely flat, apical carina obtuse; stria 3 with two setiferous dorsal pores at 1/7–1/6 and 3/7–1/2 from base, respectively; preapical pore absent; marginal umbilicate pores regular.

Ventral surface smooth; visible sternites 3–5 each with a pair of paramedian setae; anal sternite with a pair of marginal setae in ♂, with two pair of them in ♀. Legs short but fairly thin; protibiae straight, moderately dilated towards apices, and externally grooved; tarsi fairly thin, tarsomere 1 about as long as tarsomeres 2 and 3 together in both meso- and metatarsi; in ♂, two proximal protarsomeres moderately dilated and rather stoutly produced inwards at apices.

Male genital organ small and rather lightly sclerotized. Aedeagus three-tenths as long as elytra, fairly slender, gently compressed and lightly arcuate, gradually and regularly tapered from behind middle towards apex in profile, with fairly large basal part and long spatulate apical lobe; dorsal margin moderately arcuate at middle in lateral view; basal part fairly large but low, hardly bent ventrad, distinctly tuberculate at the proximal end, and with an extremely narrow hyaline sagittal aileron on the tubercle; basal orifice large, with the sides widely but not deeply emarginate; viewed laterally, apical lobe narrowly produced and pointed at the extremity; viewed dorsally, apical lobe nearly parallel-sided and symmetrical though somewhat inclined to the left, with the tip widely and strongly rounded; ventral margin widely and shallowly emarginate in profile. Inner sac armed with a slender subcylindrical copulatory piece a little less than one-fourth as long as aedeagus, lying diagonally from right proximal to left apical



Figs. 2–3. Male genitalia of *Trechus* (s. str.) *imurai* S. UÉNO, sp. nov., from the Jiaojia He Valley below Daba on the Micang Shan Mountains; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

just inside apical orifice, with the blunt apex almost protruding outside; no teeth-patches. Styles relatively straight with very narrow apical parts, left style only a little longer than the right and with rudimentary ventral apophysis, each bearing only two short apical setae.

*Type series.* Holotype: ♂, allotype: ♀, paratypes: 4♂♂, 6♀♀ (incl. teneral 1♂, 2♀♀), 4–VI–1999, Y. IMURA leg. All deposited at present in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

*Type locality.* Micang Shan Mountains, Jiaojia He Valley below Daba, 1,350 m in altitude, in Nanjiang Xian of northeastern Sichuan, Southwest China.

*Notes.* I have been unable to find any *Trechus* species directly related to the present new trechine. It may be placed in its own subgenus seeing that it exhibits a combination of many peculiarities, but I prefer to refrain from making such a proposal, at least at the present moment, since there are numerous congeners not available for my study.

The type specimens of this interesting new species were collected by sifting dead leaves in a deciduous broadleaved forest on the left side of the Jiaojia He Valley at the southern side of the main ridge of the Micang Shan Mountains, together with a single female of *Epaphiopsis* (*Epaphiama*) cf. *lamellata* S. UÉNO et YU. It is dedicated with pleasure to Dr. Yûki IMURA, an eminent specialist of the Carabinae.

### 要 約

上野俊一：中国四川省米倉山産チビゴミシ属の孤立した1新種。—— 過去10年ほどのあいだに、多くのチビゴミシ属の新種が中国から記載された。しかし、その大多数はチベット高原やその周縁部の地域に分布するもので、ほかの山地からの記録はひじょうに少なく、とく

に南方の地域では、ケムネチビゴミムシ属の種によって置き換えられる傾向が強くみられた。この事情は、四川省北東部と陝西省南部とを境する大巴山脈やその延長上に位置する山地でも同様で、これまでには、湖北省側の神农架から記載されたケムネチビゴミムシ属の1種と、四川盆地の周縁部に広く分布するハバビロチビゴミムシ群の有翅の1種が知られているにすぎなかった。

1999年の初夏に行われた井村有希博士らの現地調査で、大巴山脈の北西方向への延長部に当たる米倉山脈から2種のチビゴミムシ類が発見された。そのひとつは、おそらく神农架産の *Epaphiopsis* (*Epaphiama*) *lamellata* S. UENO et YU に同定されるものではないかと考えられるが、他のひとつは明らかな新種で、しかもチビゴミムシ属 *Trechus* のなかに孤立した地位を占めるものと認められた。とくに上翅の亜端毛を欠くことや、体表に微細印刻がなく、前胸背板基部の横溝が一続きの深い溝になっていること、雄交尾器の形状が特異で、きわめて狭い矢状片をそなえた矢状突出部が中央片の基部にあり、交尾片が細長くて端孔のすぐ内側に斜めに位置することなど、独立の亜属が認められるのではないかと思われるほど特異な点が多い。しかし、チビゴミムシ属は、きわめて多数の種を含むチビゴミムシ亜科では最大の属であり、個々の種の吟味も系統関係の解析もまだ不十分であるうえに、今なお多くの新種が記載されつづけているという事情を考慮して、差し当たりはこのチビゴミムシを、チビゴミムシ亜属のうちの孤立した地位にある新種だと認めるにとどめ、これを採集者の井村博士に捧げて、*Trechus* (s. str.) *imurai* S. UENO と命名記載した。

## References

- DEUVE, Th., 1988. Nouveaux Carabidae et Trechidae de Chine [Coleoptera]. *Revue fr. Ent.*, (N. S.), **10**: 249–259.
- 1989. Nouveaux Trechinae du Népal et du Sichuan (Coleoptera, Trechidae). *Boll. Mus. reg. Sci. nat., Torino*, **7**: 315–319.
- 1992. Contribution à la connaissance des Trechidae asiatiques (Coleoptera). *Bull. Soc. ent. Fr.*, **97**: 171–184.
- 1995. Contribution à l'inventaire des Trechidae Trechinae de Chine et de Thaïlande [Coleoptera]. *Revue fr. Ent.*, (N. S.), **17**: 5–18.
- 1997. Nouveaux Trechini du Tibet et des régions limitrophes [Coleoptera, Trechidae]. *Ibid.*, **19**: 139–154.
- & E. QUÉINNEC, 1993. Nouveaux *Trechus* du Qinghai, du Sichuan et du Gansu, Chine (Coleoptera, Caraboidea: Trechidae). *Opusc. zool. flumin.*, (104): 1–9.
- UENO, S.-I., 1998. The Trechinae (Coleoptera) from Mt. Gongga Shan and its vicinities, Southwest China, with notes on the *Epaphiopsis* from Mt. Emei Shan. *Elytra, Tokyo*, **26**: 263–287.
- & P. YU, 1997. Two new trechine beetles (Coleoptera, Trechinae) from Hubei, Central China. *J. speleol. Soc. Japan*, **22**: 24–36.