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The Trechinae (Coleoptera) from Mt. Gongga Shan and its Vicinities, Southwest China, with Notes on the *Epaphiopsis* from Mt. Emei Shan

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Abstract Trechine beetles from Mt. Gongga Shan and its vicinities are enumerated. The mountains covered are Mt. Gongga Shan, the Dichi Shan Mts. to the southwest, the Zheduo Shan Mts. to the north, and the Jiajin Shan and the Daxiang Ling Mts. to the east. Of the nine species recorded, five are described as being new and are named *Epaphiopsis* (*Epaphiama*) *niba* from the Daxiang Lings, *E.* (*E.*) *erlangensis* from the Jiajin Shans, *Queinnectrechus zheduoshanus* and *Q. glacialis* from the Zheduo Shans, and *Trechus* (s. str.) *nomurai* from the Jiajin Shans. Mt. Gongga Shan itself harbours three known species on its eastern slope, *Perileptus* (s. str.) *denticollis* JEANNEL, *Epaphiopsis* (*Pseudepaphius*) *gonggaica* (DEUVE) and *Queinnectrechus smetanai* S. UÉNO, the first one of which is newly recorded from Sichuan. From the Dichi Shans, only one anophthalmic species, *Duvalioblemus sichuanicus* DEUVE, has been known. *Epaphiopsis perreaui* (DEUVE), one of the two species of the genus described from Mt. Emei Shan, which lies on the eastern continuation of the Daxiang Ling Mountains, is transferred to the subgenus *Pseudepaphius*, while the other, *E. budhaica* (DEUVE), is regarded as a member of the subgenus *Epaphiama* in spite of its external similarity to *Pseudepaphius*.

The primary purpose of the present paper is to record the trechine beetles collected by Aleš SMETANA at the eastern side of Mt. Gongga Shan, the highest and most famous mountain in Sichuan, Southwest China. Three species of three genera, *Perileptus* (s. str.) *denticollis* JEANNEL, *Epaphiopsis* (*Pseudepaphius*) *gonggaica* (DEUVE) and *Queinnectrechus smetanai* S. UÉNO, have so far been found, all having been previously described though the first one is newly recorded from Sichuan. The remaining two are probably restricted to Mt. Gongga Shan and exhibit an interesting pattern of distribution with their congeners.

The other mountain ranges surrounding Mt. Gongga Shan also harbour respective endemic species, whose affinities are not necessarily close to the Gongga Shan ones. From the Dichi Shan Mountains to the southwest, only one anophthalmic species, *Duvalioblemus sichuanicus*, has been known, and its congeners have never been met with until now on other nearby mountains even though repeated investigations were made. From the Zheduo Shan Mountains to the north, two new *Queinnectrechus* have been known. From the Jiajin Shan Mountains lying to the east beyond the deep valley of the

Dadu He River, two new species of the Trechinae, an *Epaphiopsis* and a *Trechus*, have been collected, but the *Epaphiopsis* is subgenerically different from the Gongga Shan species, and from the Daxiang Ling Mountains also to the east, another new species of *Epaphiopsis* is found and shows a close affinity to the Jiajin Shan species, not to the Gongga Shan one (*E. gonggaica*).

Needless to say, this overview is not necessarily exact, since collections have been made only at some limited places. Because of very steep topography, it is very difficult, if not impossible, to make extensive researches throughout the mountain ranges. However, it seems to me not useless to enumerate now the trechine beetles hitherto known from these mountains, since an intricate feature of the trechine fauna of Sichuan can be glimpsed from it.

For the convenience of future studies, I will give some accounts of the two *Epaphiopsis* species described from Mt. Emei Shan, a well known sacred mountain lying at the eastern end of the eastern continuation of the Daxiang Ling Mountains. Both the species were originally described as belonging to *Epaphiama*, but one of them, *E. perreaui* (DEUVE), has a closer affinity to *E. gonggaica* (DEUVE) and belongs to the subgenus *Pseudepaphius*. The other one, *E. budhaica* (DEUVE), also shows the elytral chaetotaxy characteristic of *Pseudepaphius*, but is identical in the basic conformation of its male genitalia with the Daxiang Ling and the Jiajin Shan species, and therefore had better be regarded as a member of *Epaphiama*. The male genitalia of the latter species were erroneously described by SCIAKY (1995, p. 67, fig. 4) as those of *E. perreaui*, but those of true *perreaui* were already described by DEUVE himself (1988, p. 258, fig. 15) in his original description. Besides, SCIAKY's description is not accurate in certain critical points, so that clarification of the confusion is necessary for describing the new species from the western mountains.

The abbreviations used herein are the same as those explained in previous papers of mine.

Before going further, I wish to express my heartfelt thanks to colleagues and friends of mine, first of all to Dr. Aleš SMETANA who gave me the opportunity to take up this study by offering his rich collection to me for taxonomic examination, and to Drs. Masataka SATÔ, Yoshiaki NISHIKAWA and Shûhei NOMURA as well as to Messrs. Toshio KISHIMOTO, FAN Ting and ZHAO Lijun for their kind help in the field. Hearty thanks are also due to Dr. Thierry DEUVE and Dr. M. BRANCUCCI who gave me permission to reexamine type and other important specimens under their care.

Perileptus (s. str.) ***denticollis*** JEANNEL, 1923

Perileptus denticollis JEANNEL, 1923, Ann. Mag. nat. Hist., (9), **12**, pp. 397, 406; type area: Yun-Nan. —— UÉNO, 1996, Elytra, Tokyo, **24**, p. 20.

Perileptus (s. str.) *denticollis*: JEANNEL, 1926, Abeille, Paris, **32**, pp. 408, 426, figs. 202–204.

Other references are omitted.

Specimens examined. 1 ♂ (somewhat teneral), 1 ♀, "CHINA Sichuan / Gongga

Shan, Moxi / 1250 m, 11. VII. 1996 / 29°13 N 102°10 E C62 // collected by / A. Smetana".

Notes. Though previously known with certainty only from the vicinities of Dali in western Yunnan (cf. UÉNO, 1996), this species seems widely distributed in the mountainous areas of Yunnan and Sichuan. The Moxi specimens recorded above agree well with the Dali ones, hence identical with the type material. They were collected "on a small bank of very fine gravel" of a "small creek emptying in a river near Moxi", "with sparse, low vegetation".

Epaphiopsis* (*Pseudepaphius*) *gonggaica (DEUVE, 1992), stat. nov.

Epaphiama gonggaicus DEUVE, 1992, Bull. Soc. ent. Fr., **97**, p. 180, figs. 10, 20; type locality: Moxi.
Epaphiopsis (*Allepaphiama*) *gonggaica*: SCIAKY, 1995, Ent. basil., **18**, p. 65.

Length: 2.95–3.75 mm (from apical margin of clypeus to apices of elytra).

Considerably variable in size, coloration, body proportion, elytral striation, and even in the elytral chaetotaxy, but the variation is continuous and the male genitalia are identical between the two extremes of size and shape.

Colour usually dark reddish brown with black elytra, whose lateral margins and sutural intervals are dark reddish brown, rather strongly iridescent on elytra and sometimes also on pronotum; head often infuscated; antennae, buccal appendages, propleura, epipleura and legs yellowish brown. In some specimens, the body is concolorously black and devoid of reddish margins, but the appendages are clearly pale coloured. There are other specimens whose body is wholly dark reddish brown, infuscated only on the disc of each elytron, and with weak iridescence on the elytra.

Head, pronotum and elytra as described in the original description, but the pronotum is sometimes ampler and more transverse than in the ordinary individuals, with the sides less strongly arcuate, and the elytra are sometimes narrower with less rounded sides than in most other specimens. Elytral striae usually superficial, stria 1 always complete, 2 usually traceable throughout though sometimes evanescent in basal area, 3 more frequently obsolete at the two ends, 4–5 usually vestigial and often fragmentary; in some individuals, striae 1–2 distinctly impressed throughout, 3 also complete though shallower than inner two, and even 4 traceable throughout. Elytral stria 3 usually with two setiferous dorsal pores, but rarely with three pores on one elytron or even on both the elytra; interval 5 or stria 5 almost always with a single setiferous dorsal pore only, but rarely with a second pore behind the ordinary one on one elytron. Preapical pore located on the apical declivity almost always behind the level of the terminus of apical striole and adjoining stria 2, sometimes located on the apical anastomosis of striae 2 and 3 as in the species of *Epaphiama*.

Additional specimens examined. 3 ♂♂, 2 ♀♀, "CHINA, Sichuan, Gongga / Shan, above Camp 3 / 3050 m, 22. VII. 1994 / A. Smetana [C18]"; 1 ♂, 1 ♀, same locality but "abv. Camp 3 3300– / 3350 m, 23. VII. 1994" / "[C19]"; 3 ♂♂, 7 ♀♀, same locality but "Lake abv. Camp 2 / 2750 m, 24. VII. 1994" / "[C20]"; 3 ♀♀, same locality but "above Camp 2 / 2750 m, 25. VII. 1994" / "[C21]"; 1 ♂, same locality but "above Camp 2 /

2750 m, 25. VII. 1994" / "[C22]"; 2 ♂♂, 5 ♀♀, same locality but "Lake abv. Camp 2 / 2750 m, 25. VII. 1994" / "[C23]"; 1 ♀, same locality but "above Camp 2 / 2850 m, 26. VII. 1994" / "[C24]"; 1 ♀, same locality, altitude and date, but "[C25]"; 1 ♂, same locality and date, but "2800 m" / "[C26]"; 3 ♀♀, same locality but "Lake abv. Camp 2 / 2750 m, 27. VII. 1994" / "[C27]"; 1 ♂, 1 ♀ (teneral), "CHINA Sichuan Gongga / Shan, Hailuogou, above / Camp 3, 3050 m 6. VII. 96 / 29°35 N 102°00 E C52 // collected by / A. Smetana"; 1 ♂ (teneral), same locality and date, but "3000 m" / "[C53]"; 15 ♂♂, 13 ♀♀, same locality but "Hailuogou, in front of / Glacier 1, 2800 m 9. VII. 96" / "[C58]"; 11 ♂♂, 11 ♀♀, same locality but "Lake / above Camp 2, 2750 m / 29°35 N 102°00 E, 4. VII. / 1998, A. Smetana [C74] // 1998 China Expedition / J. Farkač, D. Král, / J. Schneider / & A. Smetana"; 10 ♂♂, 7 ♀♀, same locality but "Hailuogou, for. / above Camp 2, 2800 m / 29°35 N 102°00 E, 5. VII. / 1998, A. Smetana [C75]".

Localities. All the known collecting sites of this trechine beetle are located in the Hailuogou above Moxi in Luding Xian, western Sichuan, between 2,750 m and 3,350 m in altitude. The valley runs down the eastern slope of Mt. Gongga Shan and is well known as a scenic place. It may occur in other valleys of Moxi Zhen, like the Moxi Gou and the Yanzi Gou, but no intensive investigations have so far been made in those places.

Notes. This is an unusually variable species, whose largest individuals look specifically different from the smallest. Indeed, I had an impression that there occurred two or more species of *Epaphiopsis* in the Hailuogou on Mt. Gongga Shan when I received from SMETANA the first lot of his collection of the Trechinae made in 1994 in the Moxi area. Thanks to his rich material collected later in 1996 and 1998, however, I was finally convinced that all the specimens of *Epaphiopsis* from the Hailuogou belong to a single variable species, *E. gonggaica*, though I have never seen such a variability in any strictly localized species of flightless trechines.

Epaphiopsis gonggaica is also peculiar in the disposition of the preapical pore on the elytra, which approaches to the state characteristic of *Epaphiama*. In other respects, however, it seems closest to *E. perreaui* of Mt. Emei Shan of all the described species of *Epaphiopsis*, and therefore had better be regarded as a specialized member of the subgenus *Pseudepaphius*. Similar inconsistency of "diagnostic" characters is also found in undescribed species of the genus from southern Sichuan and northern Vietnam (UÉNO, unpubl. data), so that a thorough revision of the continental forms of this group of trechine beetles is needed for obtaining a satisfactory understanding of their phylogenetical relationships. Incidentally, both *E. gonggaica* and *E. perreaui* have strong iridescence on their elytra, a feature which is only exceptionally found in the Asian Trechinae.

According to SMETANA, *E. gonggaica* seems to occur in various environment, but was most abundant on a "side moraine overgrown by deciduous shrubs and trees", where the trechine was collected by "sifting rotting leaves and other debris in crevices between the rocks, and of humus deeper under the rocks". Many other specimens were sifted out from "thick layers of moss on the ground and on fallen trees" in mixed

forests, "particularly under the growths of large rhododendrons".

Epaphiopsis (*Epaphiama*) *niba* S. UÉNO, sp. nov.

(Figs. 1–3)

Length: 3.00–3.15 mm (from apical margin of clypeus to apices of elytra).

Closely similar to *E. budhaica* (DEUVE) from Mt. Emei Shan, but recognized at first sight on the position of preapical pore on elytra, which is settled at the apical anastomosis of striae 2 and 3 in the field of apical striole. Besides, the pronotum is more strongly contracted at the base and has more widely rounded sides, and the aedeagus is much thicker and has much larger basal part.

Body robust, glabrous on both dorsum and venter; inner wings absent. Colour reddish brown, shiny; elytra usually a little lighter than fore body and faintly iridescent; buccal appendages, antennae, venter of prothorax and hind body, and legs more or less lighter than dorsum.

Head transverse, with deep frontal furrows which are obtusely subangulate at middle and widely divergent posteriad; frons and supraorbital areas gently convex, the latter bearing two pair of supraorbital setae on lines subparallel to each other; microsculpture coarse, mostly consisting of wide meshes but partially (particularly on vertex) of isodiametric ones; eyes small and flat, though always evidently longer than genae, the latter tumid, completely glabrous, and three-eighths to three-fifths as long as eyes; neck very wide, neck constriction deep and sharply marked at the sides; labrum shallowly emarginate at the apex; mental tooth porrect, either bifid or slightly emarginate at the tip; palpi short and stout; antennae short and stout, subfiliform, reaching basal fifth of elytra in ♂, usually reaching basal sixth of elytra in ♀, segment 2 about five-sixths as long as segment 3 or 4, segments 5–10 gradually decreasing in length towards apex, each suboval and 1.5 times or more as long as wide, terminal segment the longest, slightly longer but narrower than scape.

Pronotum large, transverse, obviously wider than head, widest at about four-sevenths from base, and a little more gradually narrowed towards base than towards apex; PW/HW 1.42–1.51 (M 1.45), PW/PL 1.33–1.48 (M 1.39), PW/PA 1.46–1.63 (M 1.52), PW/PB 1.38–1.50 (M 1.44); sides moderately bordered throughout, moderately arcuate in front, less so behind, and hardly or only very slightly sinuate close to obtuse hind angles; two pair of marginal setae present, the posterior pair slightly removed forwards from hind angles; apex slightly emarginate, somewhat narrower than base, PB/PA 1.02–1.09 (M 1.06), with front angles narrowly rounded and not produced; base slightly arcuate at middle, very briefly and roundly oblique on each side close to hind angles; surface convex, particularly at the antero-lateral parts, microsculpture consisting of fine transverse lines though partially obliterated; median line distinct, widened in basal area; apical transverse impression shallow though obvious; basal transverse impression distinct, with a longitudinal foveole on each side of median line, and laterally arcuate posteriad; basal foveae fairly large and deep; postangular carinae short and

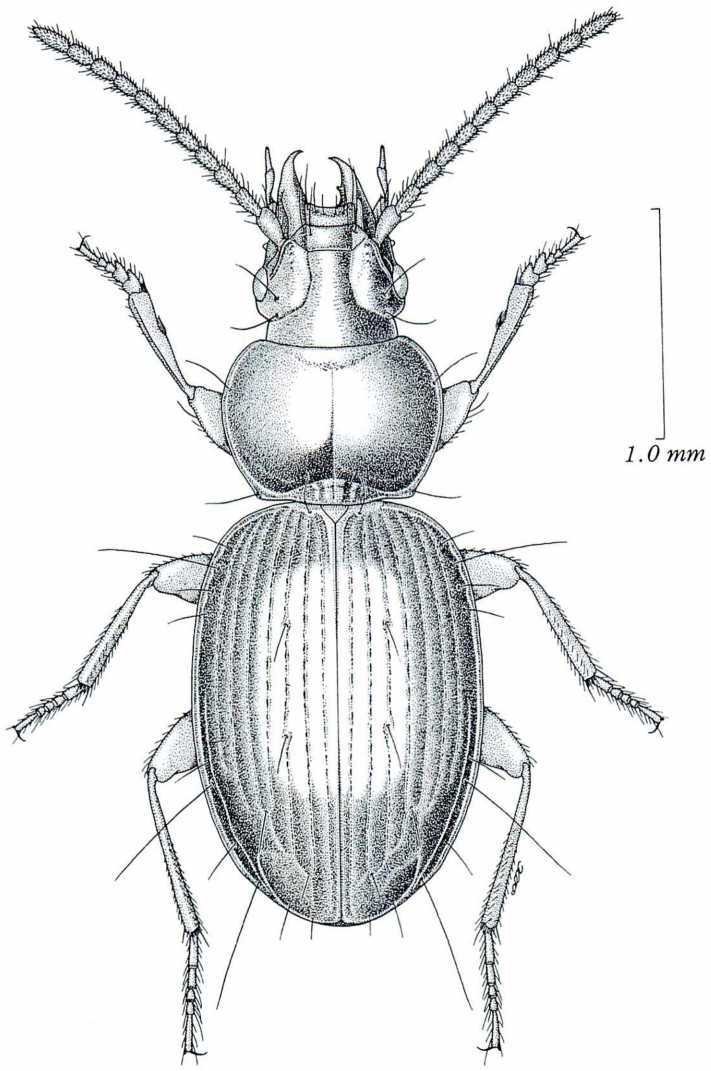


Fig. 1. *Epaphiopsis* (*Epaphiama*) *niba* S. UÉNO, sp. nov., ♂, from Mt. Niba Shan of the Daxiang Ling Mountains.

obtuse; basal area more or less uneven, often longitudinally strigose.

Elytra ovate, wider than prothorax, widest at about four-ninths from bases, and more gradually narrowed towards bases than towards apices, which are rather narrowly and almost conjointly rounded; EW/PW 1.24–1.40 (M 1.34), EL/PL 2.43–2.64 (M 2.58), EL/EW 1.35–1.49 (M 1.39); shoulders rounded, not so prominent as in *E. budhaica*, with prehumeral borders slightly arcuate and a little more oblique than in *E. budhaica*; sides moderately reflexed throughout, more widely so than in *E. budhaica*,

gently arcuate at middle, gradually convergent behind, and rather narrowly and almost conjointly rounded at apices; dorsum convex though lightly depressed on the disc in basal third; apical declivity rather steep; microsculpture formed by fine transverse lines though largely obliterated; striae entire, finely but distinctly punctate, stria 3 usually forming apical anastomosis with stria 2, stria 8 deeply impressed behind the middle set of marginal umbilicate pores; scutellar striole short but clearly impressed; apical striole short but deep, moderately curved, free at the anterior end though directed to stria 5; intervals mostly flat, apical carina obtuse; stria 3 with two setiferous dorsal pores at about 1/4 and 1/2 from base, respectively; preapical pore located at the apical anastomosis of striae 2 and 3 or at least on the apical declivity much behind the level of the terminus of apical striole; interval 5 or stria 5 with a single setiferous dorsal pore at about 2/3 from base; marginal umbilicate pores well aggregated and regular.

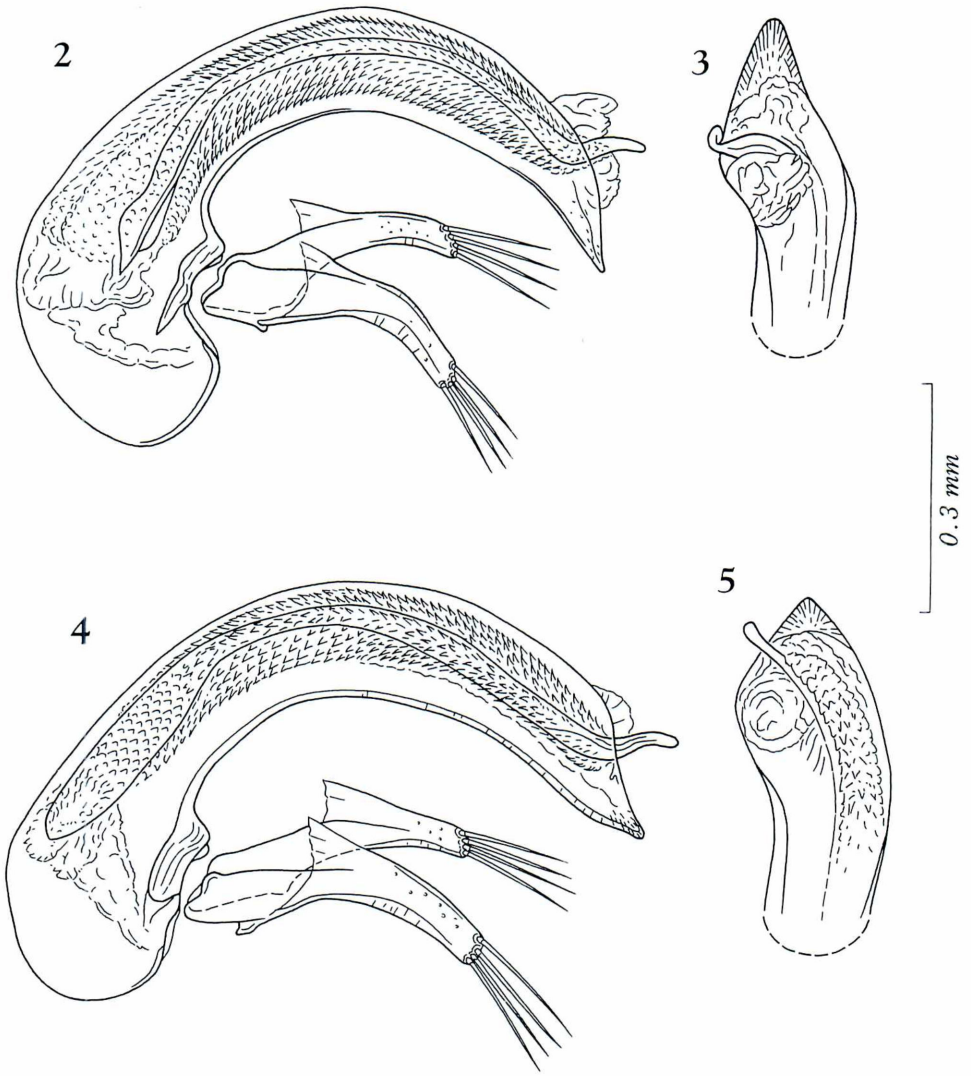
Ventral surface smooth; anal sternite bisetose in ♂, quadrisetose in ♀. Legs short and stout; protibiae rather widely dilated towards apices, feebly arcuate in apical third, and longitudinally grooved on each external face; tarsomere 1 about as long as tarsomeres 2–3 together in both meso- and metatarsi; in ♂, two proximal protarsomeres widely dilated, stoutly produced inwards at apices, and furnished beneath with adhesive appendages.

Male genital organ identical in basic conformation with that of *E. budhaica* (cf. pp. 284–285, figs. 6–7), but much thicker, with obviously larger basal bulb, sigmoidally curved apical part pointed at the tip, and more developed teeth-patch covering the whole inner sac. Aedeagus about two-fifths as long as elytra, strongly arcuate particularly in proximal half, and in profile, gradually acuminate from behind middle; basal part very large, strongly curved ventrad, with small basal orifice which faces subapical part of median lobe; no sagittal aileron; apical part twisted to the right and sigmoidally curved on the horizontal plane so as to make the apical lobe parallel to the main axis; viewed dorsally, apical lobe elongated subtriangular with the extremity narrowly rounded; viewed laterally, apical lobe produced obliquely ventrad and straightly tapered to the pointed extremity; ventral margin deeply emarginate before middle in profile. Inner sac armed with a very long slender copulatory piece, whose apical hook is longer than in *E. budhaica*; teeth-patch more extensive than in *E. budhaica*, particularly in its proximal part. Styles as in *E. budhaica* though obviously thicker.

Type series. Holotype: ♂, allotype: ♀, 26–IX–1996, S. Uéno leg. Paratypes: 4 ♂♂, 2 ♀♀ (incl. teneral 2 ♂♂, 1 ♀), 26–IX–1996, S. Uéno & S. Nomura leg. All deposited at present in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

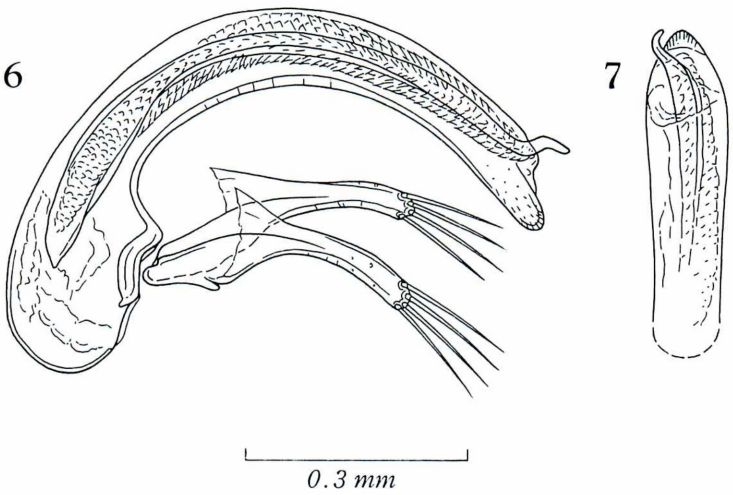
Type locality. Mt. Niba Shan, 2,320 m in altitude, of the Daxiang Ling Mountains, in Yingjing Xian of western Sichuan, Southwest China.

Notes. Though evidently different from *E. budhaica* of Mt. Emei Shan in the position of the preapical pore, *E. niba* shares the peculiar aedeagal structure with the latter species. This is enigmatic if we follow the current classification of trechine beetles, since the former character state is regarded as a diagnostic feature of the subgenus



Figs. 2–5. Male genitalia of *Epaphiopsis* (*Epaphiama*) spp.; left lateral view (2, 4), and apical part of aedeagus, dorso-apical view (3, 5). —— 2–3. *E.* (*E.*) *niba* S. UÉNO, sp. nov., from Mt. Niba Shan of the Daxiang Ling Mountains. —— 4–5. *E.* (*E.*) *erlangensis* S. UÉNO, sp. nov., from Mt. Erlang Shan of the Jiajin Shan Mountains.

Epaphiama JEANNEL (1962, pp. 175, 188; UÉNO, 1978, p. 125), not found in any species of *Pseudepaphius* S. UÉNO (1962, p. 70) with the exception of *E. gonggaica* (refer to the note on pp. 265, 266). So far as concerned with the external features, *E. budhaica* has to be regarded as a member of *Pseudepaphius*, but to adopt such a classi-



Figs. 6–7. Male genitalia of *Epaphiopsis* (*Epaphiama*) *budhaica* (DEUVE), from Leidongping on Mt. Emei Shan; left lateral view (6), and apical part of aedeagus, dorso-apical view (7).

fication is contradictory to the fact that its male genitalia are closely similar to those of *E. niba* and *E. erlangensis*, both of which should belong to *Epaphiama*. Besides, *E. budhaica* is much closer to the two western species than to *E. perreaui* and *E. gonggaica* in its external morphology except for the position of the preapical pore. I therefore regard *E. budhaica* as an aberrant species of *Epaphiama* directly related to *E. niba* and *E. erlangensis*. Further discussion on this subject will be given at the end of this paper under the heading of *Epaphiopsis* (*Epaphiama*) *budhaica* (DEUVE).

The type specimens of *E. niba* were obtained by sifting leaf litter in a secondary forest of deciduous and evergreen broadleaved trees with patches of bamboo groves. This forest is located at the head of a narrow branch of the Yangtan Gou to the northeast of the pass of the Daxiang Ling Mountains called the Niba Shan Yakou, and is about 72 km distant to the west by north from Mt. Emei Shan. The beetle was by no means common, only eight specimens having been collected after hours of siftings made by four entomologists, probably due to limitation of favourable habitat.

Epaphiopsis* (*Epaphiama*) *erlangensis S. UÉNO, sp. nov.

(Figs. 4–5, 8)

Length: 2.90–3.10 mm (from apical margin of clypeus to apices of elytra).

Closely allied to *E. niba* and agreeing with the latter in many respects, but the prothorax is relatively narrow on an average and a little less contracted at the apex, the apical striole on each elytron is less arcuate anteriad and usually directed to stria 7, and the aedeagus is a little larger and obviously thicker.

Colour as in *E. niba*, though often infuscated on the disc of each elytron.

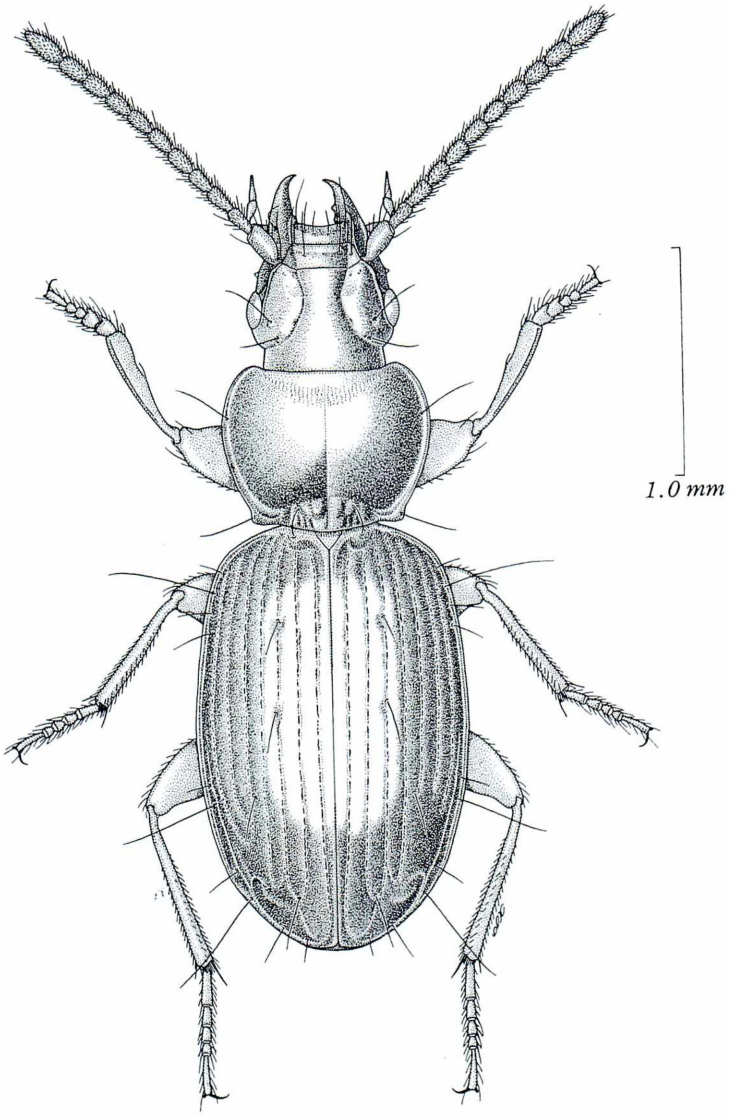


Fig. 8. *Epaphiopsis* (*Epaphiama*) *erlangensis* S. UÉNO, sp. nov., ♂, from Mt. Erlang Shan of the Jiajin Shan Mountains.

Head as in *E. niba*, with genae one-fourth to two-thirds as long as eyes; antennae somewhat thicker than in *E. niba*, though usually reaching basal fifth of elytra.

Pronotum somewhat narrower on an average than in *E. niba*, widest at about four-sevenths from base, and rather gradually narrowed towards apex and base; PW/HW 1.35–1.48 (M 1.41), PW/PL 1.27–1.40 (M 1.35), PW/PA 1.38–1.53 (M 1.46), PW/PB 1.36–1.45 (M 1.39), PB/PA 1.00–1.09 (M 1.05); sides more gently arcuate than in *E.*

niba; apex relatively wide, with front angles slightly advanced; apical transverse impression shallower though more or less wrinkled longitudinally; other pronotal features as in *E. niba*.

Elytra as in *E. niba*, though usually a little narrower than the latter, widest at about middle; EW/PW 1.26–1.39 (M 1.33), EL/PL 2.40–2.63 (M 2.55), EL/EW 1.37–1.45 (M 1.42); sides a little more feebly arcuate at middle; dorsum a little less strongly convex and more widely depressed on the disc; striation and chaetotaxy as in *E. niba*, but the apical striole is more feebly arcuate at the anterior part and usually directed to stria 7; two dorsal pores on stria 3 located at about 1/5 and 2/5–4/9 from base, respectively, dorsal pore of the external series at 3/5–5/7 from base; preapical pore as in *E. niba*.

Ventral surface and legs similar to those in *E. niba*.

Male genital organ generally similar to that of *E. niba*, but a little larger and obviously thicker. Aedeagus nearly a half as long as elytra, nearly parallel-sided in profile, and strongly arcuate except for the basal part which is hardly bent ventrad; basal part large, with small basal orifice directed posteriorly; no sagittal aileron; apical part curved to the right, though the short apical lobe is parallel to the main axis; viewed dorsally, apical lobe short triangular and blunt at the extremity; viewed laterally, apical lobe broad at the base, rapidly narrowed towards the blunt tip, and very slightly reflexed; ventral margin deeply emarginate in profile. Inner armature similar to that of *E. niba*, but the copulatory piece is more elongate, nearly as long as aedeagus itself, and broader in proximal third. Styles relatively large, left style larger and broader than the right, each bearing four apical setae.

Type series. Holotype: ♂, allotype: ♀, 2–X–1996, S. NOMURA leg. Paratypes: 6 ♂♂, 1 ♀ (teneral), 2–X–1996, S. UÉNO & S. NOMURA leg. All deposited at present in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Mt. Erlang Shan, 2,860–2,870 m in altitude on SW slope, of the Jiajin Shan Mountains, in Luding Xian of western Sichuan, Southwest China.

Notes. Mt. Erlang Shan is a peak of the Jiajin Shan Mountains 3,437 m in height. The present new species was found on the southwestern slope of its southeastern ridge 2,860–2,870 m above sea-level. This place is about 39 km distant to the west-northwest in a bee-line (more than 50 km distant when measured along the ridge) from the type locality of *E. niba*, which lies on the Daxiang Ling Mountains branching off from the Jiajin Shans towards the southeast. It is therefore not surprising that *E. erlangensis* is closely allied to *E. niba*, though its habitat is considerably different from that of the latter species. All the specimens examined were sifted out from leaf litter accumulated under short rhododendron trees at two sites in a sparse *Abies* forest. The lower collecting site was more humid than the upper, and yielded more specimens of the *Epaphiopsis* together with two examples of a new *Trechus* to be described on later pages of the present paper.

Queinnectrechus smetanai S. UÉNO, 1995

Queinnectrechus smetanai S. UÉNO, 1995, Bull. natn. Sci. Mus., Tokyo, (A), **21**, p. 94, figs. 1–3; type locality: Mt. Gongga Shan.

Additionsal specimens examined. 1 ♂, "CHINA Sichuan, Gongga / Shan, Hailuogou, above / Camp 3, 3000 m 6. VII. 96 / 29°35 N 102°00 E C53 // collected by A. Smetana"; 1 ♀, same locality and collector but "3200 m 7. VII. 96" "C54"; 1 ♀, same locality and collector but "3100 m 8. VII. 96" "C56"; 1 ♂, 2 ♀♀, "CHINA: Sichuan Gongga / Shan, Hailuogou, for. / above Camp 2, 2800 m / 29°35 N 102°00 E, 5. VII. / 1998, A. Smetana [C75] // 1998 China Expedition / J. Farkač, D. Král, / J. Schneider / & A. Smetana".

Notes. The specimens from the collecting site C75 are somewhat different from the type series in minor details of the male genitalia, that is, the aedeagal basal orifice is more deeply emarginate at the sides and the left dorsal copulatory piece is more sharply aciculate at the apical part. These differences can be regarded as infraspecific variation, not as an indication of geographical differentiation. They were collected from humus accumulated among rocks on talus slopes of a side moraine overgrown with forest.

Queinnectrechus zheduoshanus S. UÉNO, sp. nov.

(Fig. 9)

Length: 4.00–4.05 mm (from apical margin of clypeus to apices of elytra).

Closely similar in external morphology to *Q. smetanai*, but different in the following points:

Fore body relatively narrow, hind body more clearly obovate; elytra black, each with reddish brown margins. Head with somewhat smaller eyes slightly shorter than genae, which are obviously less convex, particularly at the posterior parts; antennae a little longer, reaching basal third to three-eighths of elytra. Pronotum somewhat narrower and more strongly convex, widest at two-thirds from base, with the sides less strongly arcuate in front and sinuate at basal sixth, and with front angles completely effaced; PW/HW 1.20 in the holotype, 1.15 in the paratype, PW/PL 1.14, 1.07, PW/PA ca. 1.39, 1.36, PW/PB 1.37, 1.37, PB/PA ca. 1.02, 0.99; base less arcuate at middle and more shallowly emarginate on each side inside digitiform hind angle, which is shorter. Elytra more clearly obovate, widest at five-ninths from bases; EW/PW 1.97, 1.96, EL/PL 2.96, 2.84, EL/EW 1.32, 1.35; shoulders more completely effaced, with prehumeral borders more oblique; three or four setiferous dorsal pores present on the site of stria 3 at 1/11–1/9, 1/5–1/4, (2/5) and 3/5–2/3 from base, respectively.

Male unknown.

Type series. Holotype: ♀, paratype: 1 ♀, "CHINA: W. Sichuan, 15 km / W Kangding, Rte 138 / 3250 m, 29°57 N 102°54 E / 19. VII. 98 A. Smetana [C86] // 1998 China Expedition / J. Farkač, D. Král, / J. Schneider / & A. Smetana". The holotype will be de-

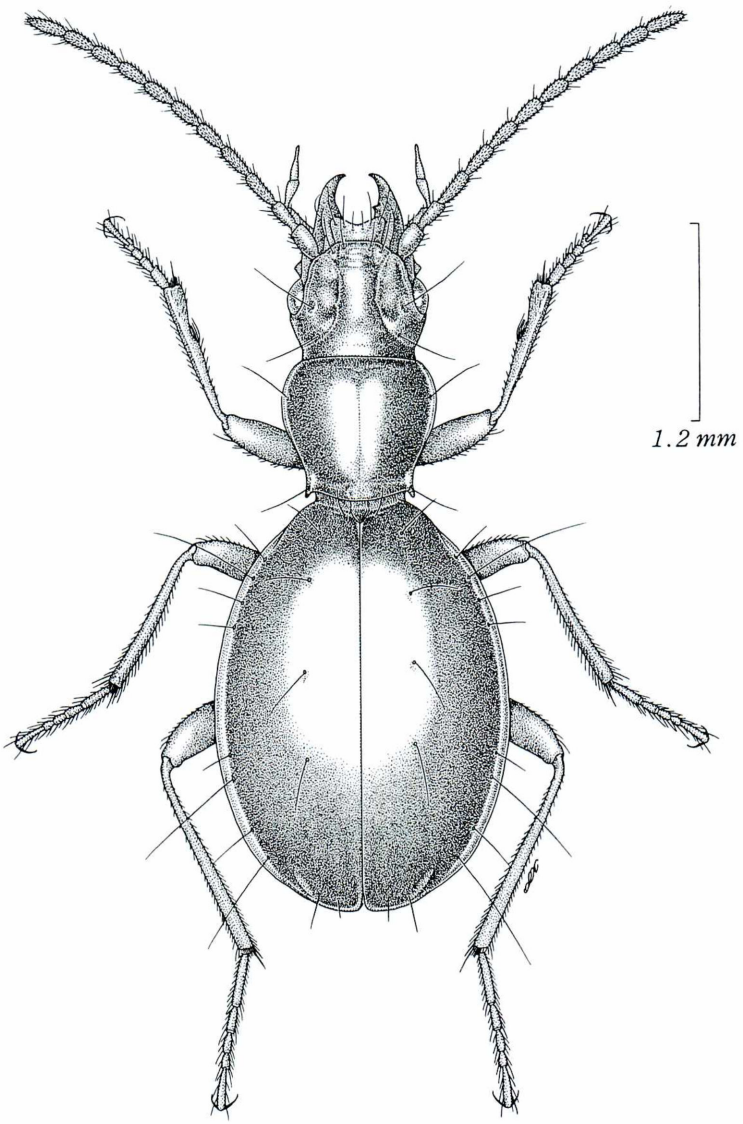


Fig. 9. *Queinnectrechus zheduoshanus* S. UÉNO, sp. nov., ♀, from the Maojia Gou on the Zheduo Shan Mountains.

posited in the collection of the Musée d'Histoire Naturelle, Genève. The paratype is in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Maojia Gou above Zheduotang Cun, 3,250 m in altitude, Zheduo Shan Mountains, in Kangding Xian of western Sichuan, Southwest China.

Notes. It is difficult to determine the true systematic status of this trechine beetle without examining the male genitalia. Though closely similar in many respects to *Q. smetanai* from Hailuogou on the eastern slope of Mt. Gongga Shan, the two known specimens collected in the Maojia Gou exhibit peculiarities in the genae which are posteriorly convergent in almost straight lines, in the pronotal front angles which are completely effaced, and in the pronotal base which is less modified, in addition to minor differences in the coloration, size of eyes, length of antennae, convexity of pronotal disc, configuration of elytra, and the lesser number of setiferous dorsal pores. A combination of these differences seems to suggest that the Maojia Gou population represents an independent species, not a geographical race of *Q. smetanai*. This view is also supported by the geographical situation of the two localities; the Maojia Gou is located about 46 km north-northwest of Hailuogou in a bee-line and is on the other side of the northeastern ridge of Mt. Gongga Shan which attains to a height of 6,000 m and forms a barrier impassable for such a flightless hygrophilous beetle as *Queinnectrechus*.

The two known specimens of *Q. zheduoshanus* were collected in a secondary forest of young *Abies* with undergrowth of various deciduous and evergreen trees and arrow-bamboo at the right side of the Maojia Gou Valley. They were sifted out from wet debris and moss along a small trickle. Guided by SMETANA's detailed sketch of the collecting site, NISHIKAWA, KISHIMOTO and I reached the trickle in question in the morning of September 9 and searched for additional specimens of the trechine beetle. Unfortunately, however, the young forest was completely dried up at that time of the year and did not yield any specimens of mesophilous beetles we were looking for.

Queinnectrechus glacialis S. UÉNO, sp. nov.

(Figs. 10–11)

Length: 3.85–4.05 mm (from apical margin of clypeus to apices of elytra).

A small species probably related to *Q. excentricus* DEUVE (1992 a, p. 354; 1992 b, p. 183, figs. 22–23), but the genae are longer and more gradually convergent towards neck constriction, the pronotum is a little narrower, with less strongly arcuate sides and less protrudent hind angles, and the protibia is distinctly, though shallowly, grooved on the external face. Decisively different from *Q. excentricus* in the configuration of aedeagus (UÉNO, unpubl. data), which is higher and much less elongate, with shorter and less strongly curved basal part and much longer left dorsal copulatory piece.

Mature coloration unknown; in the holotype, body yellowish brown, with somewhat paler legs. Surface polished; microsculpture vanished altogether.

Head wider than long, with frontal furrows not angulate, gently curved and deeply impressed in anterior two-thirds but becoming shallower posteriorly towards neck constriction; frons and supraorbital areas moderately convex, each of the latter bearing a distinct foveole at the base of anterior supraorbital seta; eyes small though feebly convex, slightly shorter than genae, which are only very slightly convex and

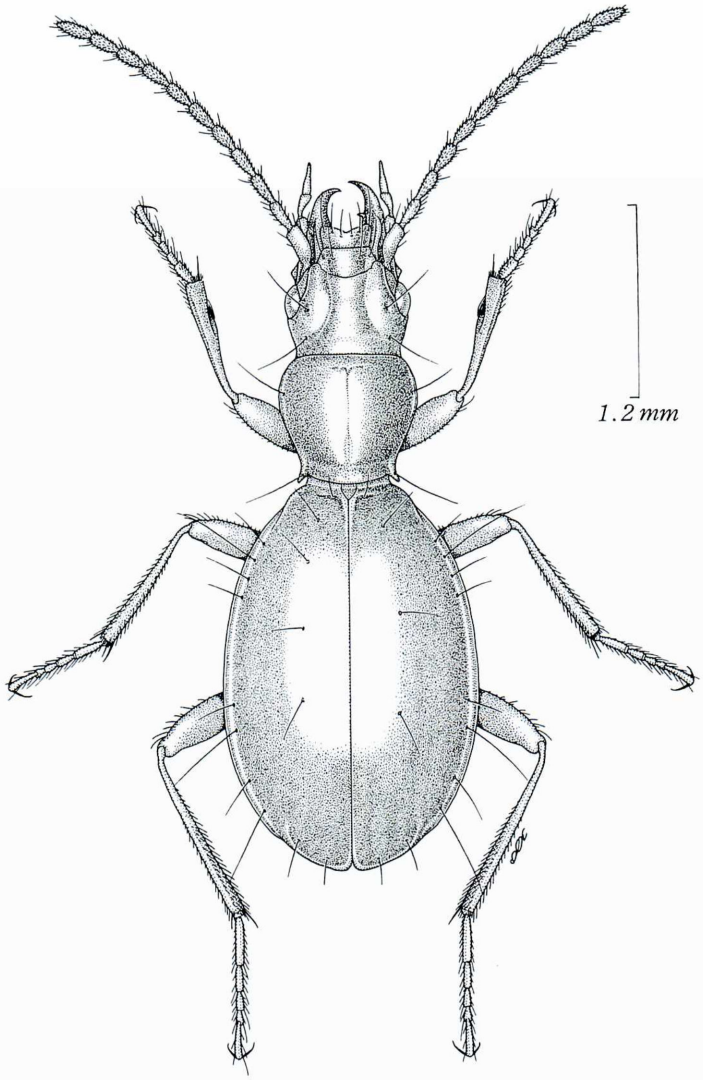


Fig. 10. *Queinnectrechus glacialis* S. UÉNO, sp. nov., ♂, from the Zheduo Shankou on the Zheduo Shan Mountains.

gradually convergent towards shallow neck constriction; labrum deeply emarginate at the apex; labium fused, with broad mental tooth whose tip is truncate and somewhat emarginate; submentum sexsetose; antennae a little longer than in *Q. excentricus*, reaching basal three-eighths of elytra.

Pronotum relatively narrow, strongly convex, widest at two-thirds from base, and more gradually narrowed posteriad than anteriad; PW/HW 1.15, PW/PL 1.07, PW/PA ca. 1.38, PW/PB 1.41, PB/PA ca. 0.98; sides moderately arcuate in front, almost straight

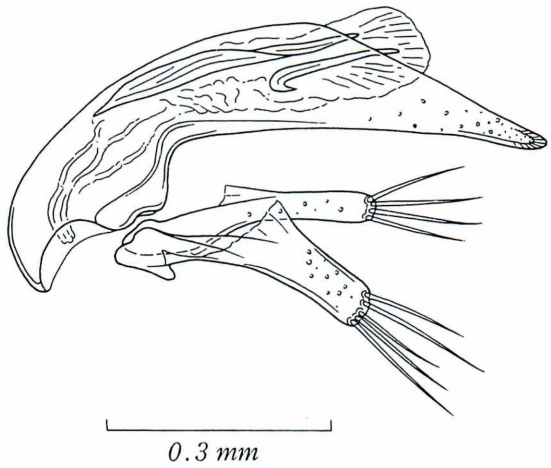


Fig. 11. Male genitalia of *Queinnectrechus glacialis* S. UÉNO, sp. nov., from the Zheduo Shankou on the Zheduo Shan Mountains; left lateral view.

behind middle, briefly but deeply sinuate at two-thirteenths from base, and then divergent again towards hind angles, which form short processes protrudent postero-laterally; marginal gutters and marginal setae as in the other species of the genus; apex gently arcuate, with front angles completely effaced; base feebly arcuate, obliquely emarginate just inside postangular processes; basal transverse impression shallow and maldefined; basal foveae small but fairly deep.

Elytra fairly large, much wider than prothorax, widest at about middle, and almost equally narrowed towards bases and towards apices; EW/PW 1.87, EL/PL 2.89, EL/EW 1.44; shoulders almost effaced, with prehumeral borders oblique and nearly straight; sides very feebly arcuate behind shoulders, more regularly so behind, and almost conjointly and rather widely rounded at apices; no appreciable striation except apical striole, which is very short and hardly curved; three (the allotype and the right elytron of the holotype) or four (the left elytron of the holotype) setiferous dorsal pores present on the site of stria 3 at about 1/12, 1/5, (3/8) and 3/5 from base, respectively.

Ventral surface as in the other congeners. Legs relatively long; protibiae straight and gently dilated towards apices, each with a shallow longitudinal groove on the external face; in ♂, two proximal segments of each protarsus gently dilated, minutely denticulate inwards at apices, and furnished beneath with adhesive appendages.

Male genital organ small, similar in basic conformation to that of *Q. smetanai* but different in the shape of aedeagus and inner armature. Aedeagus three-tenths as long as elytra, not much depressed, highest at about middle, and gradually narrowed towards blunt apex, with lateral walls not reduced; basal part fairly large, with large basal orifice whose sides are deeply emarginate; no sagittal aileron; ventral margin only very slightly emarginate in profile. Inner sac armed with two slender copulatory pieces,

whose apices are somewhat produced from apical orifice; left dorsal sclerite much longer than the right ventral, about a half as long as aedeagus, twisted, pointed at the proximal end, and aciculate in apical part; right ventral sclerite a little less than a half as long as the left dorsal, aciculate, and abruptly hooked at the proximal end; no patches of sclerotized teeth. Styles moderate, left style broader and a little longer than the right and bearing five apical setae, while the right style bears four apical setae.

Type series. Holotype: ♂ (somewhat teneral), 9–IX–1998, T. KISHIMOTO leg. Allotype: ♀ (teneral), 1–X–1996, S. UÉNO leg. Both preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Zheduo Shankou of the Zheduo Shan Mountains, 3,870 m (holotype) and 3,920 m (allotype) in altitude on the eastern slope, in Kangding Xian of western Sichuan, Southwest China.

Notes. This is an upper hypogean species quite exceptional for a member of *Queinnectrechus*, whose constituents are primarily humicolous (*Q. smetanai* and *Q. globipennis*) or muscicolous (*Q. zheduoshanus* and *Q. excentricus*) or saproxylophilous (*Q. excentricus*). Living in moraines at high altitude, the surface of which is thoroughly dry and only sparsely covered with dwarf rhododendrons, the trechine beetle must have found its habitat in spaces of stones filled with moist soil in the upper hypogean zone. Narrow streams flowing beneath piles of huge rocks, the headwaters of the Zheduo He River, may have provided favourable environment for the hygrophilous beetle. It is, however, extremely difficult to locate the leading points to the upper hypogean zone, since it is impossible to remove tons of huge rocks from the moraines. I visited the moraines three times, twice in the early autumn and once in the early summer, and spent a total of five days for locating the habitat of the beetle but my efforts were repaid only by a pair of more or less teneral specimens. Both were dug out from beneath piled stones deeply buried at the edges of the moraines.

I am rather reluctant to describe this species in the present paper, since the single male specimen available is not fully mature and the female is miserably weak and deformed. Due to immaturity of the holotype, the description and illustration of the male genitalia may not be very accurate, though sufficient enough for showing its systematic status. It is a distinctive new species worth introducing into science now, especially in view of extreme difficulty in obtaining additional material. It is markedly different from *Q. zheduoshanus*, which occurs in the same drainage area only 11 km south-southeast of the moraines under consideration, and seems to have some relationship to *Q. excentricus*. The latter species, the type of the genus, was previously known from a single female alone, but I was able to obtain a short series of additional specimens recently and to compare the present species with them. Besides, I have seen DEUVE's type of *Q. excentricus* at the Naturhistorisches Museum Basel.

Duvalioblemus sichuanicus DEUVE, 1995

Duvalioblemus sichuanicus DEUVE, 1995, Revue fr. Ent., (N. S.), **17**, p. 16, figs. 3, 19–20; type locality: Mt.

Wahui Shan. —— UÉNO & ZHAO, 1997, Elytra, Tokyo, **25**, p. 194.

No additional record.

Notes. The Dichi Shan Mountains, on which lies Mt. Wahui Shan, stretch from northwest to southeast about 35 km southwest of the Daxue Shan Mountain Range which is crowned with Mt. Gongga Shan.

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

(Figs. 12–14)

Length: 4.05–4.25 mm (from apical margin of clypeus to apices of elytra).

Probably belonging to the same lineage as *T. imaicus* JEANNEL (1923, pp. 416, 421, fig. 13; 1927, pp. 157, 161, figs. 537–539; UÉNO, 1965, p. 343, figs. 1–2) and *T. bhutanicus* S. UÉNO (1977, p. 184, figs. 3–5), both from the eastern Himalayas, but larger, with relatively large head, larger eyes, more convex genae, more transverse prothorax, more deeply impressed but laterally obsolete elytral striae, and so on. Markedly different from them in the large compressed aedeagus, with short apical lobe, small basal orifice, and very large spatulate copulatory piece mostly covered with small scales.

Body fairly robust, with short stout appendages; inner wings absent. Colour blackish brown, shiny; elytra black with reddish scutellar area and sutural intervals, faintly iridescent; buccal appendages, antennae, epipleura and legs dark yellowish brown. In the paratype which is slightly teneral, the dorsum is concolorously brown with paler appendages.

Head transverse, moderately depressed above, with deep frontal furrows subangulate at middle and widely divergent in front and behind; frons and supraorbital areas only feebly convex, the latter bearing two pair of supraorbital pores on lines somewhat convergent posteriad; microsculpture distinct, mostly consisting of polygonal meshes, partially of isodiametric or wide ones; eyes fairly large though feebly convex, obviously longer than genae, which are one-third to two-fifths as long as eyes, well convex, and strongly convergent behind; neck wide, with the anterior constriction deep and sharply marked at the sides; labrum deeply emarginate at the apex; mandibles short and stout, acutely hooked at the apices; mental tooth broad, distinctly emarginate at the tip; palpi short and stout; antennae short, only reaching basal fifth of elytra or a little longer than that, segment 2 about as long as segment 10 and about six-sevenths as long as segment 3, segments 4–10 gradually decreasing in length towards apex, each of segments 6–9 subovate and a little more than twice as long as wide, terminal segment the longest, slightly longer but evidently narrower than scape.

Pronotum transverse, much wider than head, much wider than long, widest at about three-fifths from base, and a little more gradually narrowed towards base than towards apex; PW/HW 1.39 in the holotype, 1.36 in the paratype, PW/PL 1.49, 1.50, PW/PA 1.51, 1.51, PW/PB 1.37, 1.28; sides narrowly bordered in front, more widely

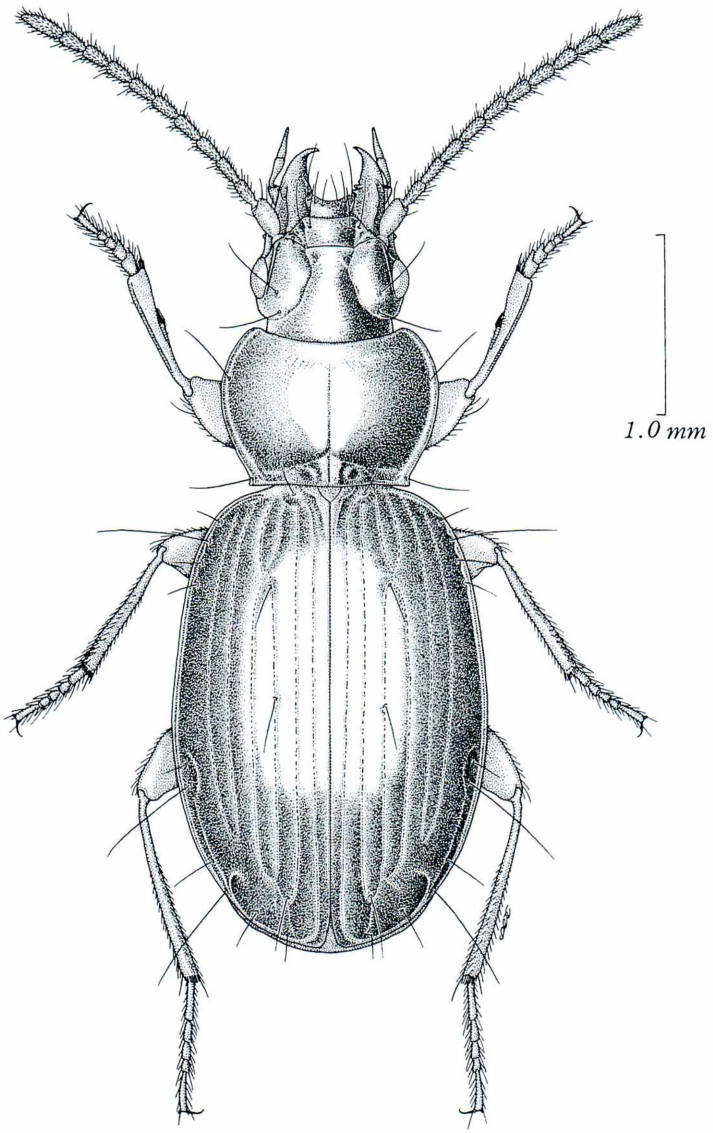
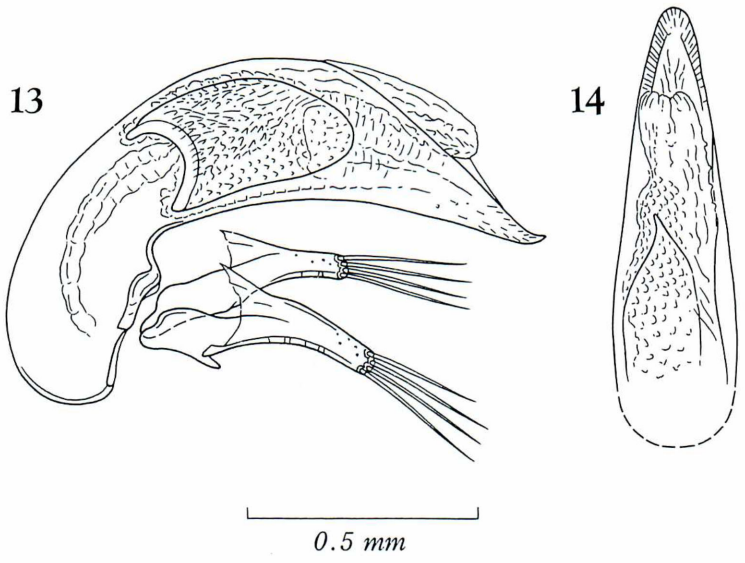


Fig. 12. *Trechus* (s. str.) *nomurai* S. UÉNO, sp. nov., ♂, from Mt. Erlang Shan of the Jiajin Shan Mountains.

so in posterior parts, widely arcuate, and very briefly and slightly sinuate just before hind angles, which are very small and nearly rectangular; two pair of marginal setae present, the posterior pair slightly removed forwards; apex slightly emarginate, narrower than base, PB/PA 1.11 in the holotype, 1.18 in the paratype, with front angles somewhat advanced and narrowly rounded; base nearly straight, though somewhat



Figs. 13–14. Male genitalia of *Trechus* (s. str.) *nomurai* S. UÉNO, sp. nov., from Mt. Erlang Shan of the Jiajin Shan Mountains; left lateral view (13), and apical part of aedeagus, dorso-apical view (14).

emarginate on each side inside hind angle; dorsum moderately convex, with sharply impressed median line which is hardly widened in basal area; microsculpture mostly evanescent though consisting of fine transverse lines; apical transverse impression maldefined though more or less wrinkled; basal transverse impression interrupted at middle, with a longitudinal foveole on each side of median line, and laterally merging into basal foveae, which are not large but deep; basal area uneven.

Elytra ovate, wider than prothorax, widest at about middle, and more gradually narrowed towards bases than towards apices; EW/PW 1.43 in the holotype, 1.47 in the paratype, EL/PL 2.95, 3.00, EL/EW 1.38, 1.36; shoulders continuously arcuate to prehumeral borders, which are almost perpendicular to the mid-line at the innermost portions; sides moderately bordered, nearly straight behind shoulders, gently arcuate behind middle, and separately rounded at apices, which form a small re-entrant angle at suture; dorsum moderately convex though widely depressed on the disc, microsculpture mostly effaced, though trace of fine transverse lines is perceptible here and there; striae deeply impressed and distinctly crenulate on the disc but becoming shallower at the side, striae 1–4 complete, 5 shallower than inner ones but traceable, 6 still more superficial, 7 either indicated by a fragmentary row of fine punctures or completely obliterated, 8 deeply impressed behind the middle set of marginal umbilicate pores; scutellar striole short but sharply impressed; apical striole short but deep, free at the anterior end though directed to the site of stria 5; intervals slightly convex on the disc but flat at the side, apical carina prominent; stria 3 with two setiferous dorsal pores at about basal fifth and the middle; preapical pore located at the apical anastomosis of striae 2 and 3

on apical declivity, and a little closer to suture than to apex; marginal umbilicate pores as usual.

Ventral surface smooth; anal sternite bisetose in ♂. Legs short and fairly stout; protibiae moderately dilated towards apices, slightly arcuate in terminal portions, and longitudinally grooved on each external face; tarsi fairly short and stout, tarsomere 1 obviously shorter than tarsomeres 2–3 together in mesotarsus, nearly as long as tarsomeres 2–3 together in metatarsus; in ♂, two proximal protarsomeres widely dilated, stoutly produced inwards at apices, and furnished beneath with adhesive appendages.

Male genital organ large and moderately sclerotized. Aedeagus about four-ninths as long as elytra, compressed, gently arcuate with the dorsal margin semicircularly rounded in profile, gradually narrowed towards apex in dorsal view, high at middle and rather rapidly acuminate in lateral view, with short apical lobe and rather elongate basal part, the latter of which is moderately curved ventrad; basal orifice small, with the sides only feebly emarginate; no sagittal aileron; viewed dorsally, apical lobe narrow, nearly symmetrical, gradually narrowed apicad, and narrowly rounded at the tip; viewed laterally, apical lobe slightly reflexed at the extremity, which is acute; ventral margin shallowly emarginate in profile. Inner sac scaly though the scales are poorly sclerotized, armed with a large spatulate copulatory piece at the right side, which is about three-eighths as long as aedeagus, very broad in proximal half, rather narrowly rounded at the warped apex, and mostly covered with small scales. Styles small and narrow, left style being longer than the right, each bearing four slender setae at the apex.

Female unknown.

Type series. Holotype: ♂, paratype: 1 ♂, 2–X–1996, S. NOMURA leg. Both deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Type locality. Mt. Erlang Shan, 2,860 m in altitude on SW slope, of the Jiajin Shan Mountains, in Luding Xian of western Sichuan, Southwest China.

Notes. Though placed by JEANNEL (1927) in his "groupe de *T. indicus*", *Trechus imaicus* from the Singalila Dara on the borders of East Nepal and West Bengal is evidently different from *T. indicus* and its close relatives in the conformation of the male genitalia (cf. UÉNO, 1965, pp. 345–346). This is why I did not place the present new species in the *indicus* group in spite of my opinion that it may be a relative of *T. imaicus* and *T. bhutanicus*. Unfortunately, no close relative of *T. nomurai* has hitherto been known from the westernmost part of Sichuan or the northwestern part of Yunnan, so that the new species is widely isolated from its presumable allies. It is most strange that representatives of the genus *Trechus* have never been met with on Mt. Gongga Shan and its neighbouring mountains to the north and west, i.e., the Zheduo Shans, the Gao'ershi Shans and the Dichi Shans, though many species of the genus have already been known from high mountains in the other parts of Sichuan.

As was already mentioned in the *Notes* under the heading of "*Epaphiopsis* (*Epaphiama*) *erlangensis*" (cf. p. 273), the type specimens of *T. nomurai* were sifted out from humus accumulated under short rhododendron trees in a sparse *Abies* forest on

the southwestern slope of the southeastern ridge of Mt. Erlang Shan. The collecting site was revisited in next June, but did not yield any additional specimens.

Notes on the *Epaphiopsis* from Mt. Emei Shan

Epaphiopsis (*Pseudepaphius*) *perreaui* (DEUVE, 1988), stat. nov.

Epaphiama perreaui DEUVE, 1988, Revue fr. Ent., (N. S.), **10**, p. 258, figs. 7, 15, 18, 22; type locality: Mont Emei.

Epaphiopsis (*Allepaphiama*) *perreaui*: SCIAKY, 1995, Ent. basil., **18**, p. 65.

This species was originally described on two pairs of specimens collected from "Mont Emei, 2 400 mètres", which is the area called Leidongping. It occurs widely in the *Abies* forests above Leidongping, particularly in leaf litter under rhododendron undergrowths, though not so common as the following species, *E. budhaica*. I have seen the type specimen in the Muséum National d'Histoire Naturelle, Paris, and also a series of additional material collected by SMETANA, SATÔ, NOMURA and myself. DEUVE's original description accompanied with fine illustrations of habitus and genitalia is so good that no supplementary account seems needed. It is, however, necessary to point out that *E. perreaui* is a member of the subgenus *Pseudepaphius* as is clearly indicated by the characteristic elytral chaetotaxy and aedeagal conformation. Since no *Pseudepaphius* has so far been known in the intervening area between Mt. Emei Shan and Mt. Gongga Shan and in the areas north and west of the latter mountain, these two localities may delimit the western periphery of the distributional range of the subgenus.

Epaphiopsis (*Epaphiama*) *budhaica* (DEUVE, 1988), stat. nov.

(Figs. 6–7)

Epaphiama budhaicus DEUVE, 1988, Revue fr. Ent., (N. S.), **10**, p. 256, figs. 6, 16, 23; type locality: Mont Emei.

Epaphiopsis (*Allepaphiama*) *budhaica*: SCIAKY, 1995, Ent. basil., **18**, p. 65.

Pseudepaphius perreaui: SCIAKY, 1995, Ent. basil., **18**, p. 67, fig. 4 [nec DEUVE, 1988].

Originally described on three females from Leidongping on Mt. Emei Shan, this species was considered to belong to the same group as *E. perreaui*. Seven years later, SCIAKY found a male specimen of this species in the collection of the Naturhistorisches Museum Basel and reported on the genitalia of that specimen. However, he inadvertently described them under the name of "*Pseudepaphius perreaui*" and besides, overlooked the presence of a very long copulatory piece probably due to the sheath of sclerotized teeth and scales concealing the most parts of the sclerite (SCIAKY, 1995, p. 67, fig. 4). I am therefore going to describe below the male genitalia of the trechine beetle again under the correct name *Epaphiopsis budhaica*. This is required for analysing its close relationship to *E. niba* and *E. erlangensis* described on preceding pages, and for clarifying its remoteness from *E. perreaui*.

Male genital organ fairly large and moderately sclerotized. Aedeagus about three-sevenths as long as elytra, very slender, semicircularly arcuate from base to apex, with large basal part and somewhat depressed apical part; basal part elongate, with very small basal orifice on its posterior side, the lateral sides of which are hardly emarginate; sagittal aileron absent; viewed laterally, median lobe nearly parallel-sided at middle; apical part gently curved to the right, with short apical lobe, which is subtriangular with blunt extremity in dorsal view, straight and narrowly rounded at the extremity in lateral view; ventral margin deeply and widely emarginate in profile. Inner sac armed with an unusually long slender copulatory piece mostly enveloped with sclerotized teeth and scales; copulatory piece only a little shorter than aedeagus itself, regularly arcuate, longitudinally concave below, forming a dilated lamellar basal part with pointed proximal end and peculiar apical hook protrudent from apical orifice; apical hook narrow, hyaline, sigmoidally curved right dorsally, and blunt at the extremity; teeth-patch compact, particularly in proximal fourth, where the scales are fused together to form a sheet. Styles narrow with gently arcuate apical parts, left style longer than the right and with reduced ventral apophysis, each bearing four setae at the apex.

Notes. As is obvious from the description given above, the male genitalia of *E. budhaica* are identical in basic conformation with those of *E. niba* and *E. erlangensis*, and are utterly different from those of *E. perreaui* and *E. gonggaica*. On the other hand, the elytral chaetotaxy of *E. budhaica* is identical with that of the latter two in the archaic position of the preapical pore, not with that of the former two. Combination of these peculiarities inevitably leads to the conclusion that *E. budhaica* is a composite of two different subgenera.

Recently, MORAVEC and WRASE (1997, pp. 1064–1065; 1998, 208–209) pointed out that position of the preapical pore does not furnish a definite key character for classifying certain Asian species of *Trechus* and *Epaphius*, and that the so-called *Epaphius* is most probably not a monophyletic group. I fully agree with them in considering that "*Epaphius*" is not a natural group, though I have been unable to set up a more convincing classification up to now.

Anyway, most Asian genera and subgenera of the Trechinae comprise of rather variable species as compared with those from the other parts of the world. Many of them are primitive or archaic, probably because Mainland China must have served as an important centre of differentiation of this large subfamily of ground-beetles. In these primitive groups, many morphological characters currently considered useful for classifying genera and species are not so stable as in European or North American forms. The chaetotaxy is the best example of such instability, which is most outstanding in the genus *Trechiama*. Though not comparable with *Trechiama*, *Epaphiopsis* also shows instability in its elytral chaetotaxy, usually regarding the number and position of dorsal pores but sometimes regarding the preapical pore. For instance, the preapical pore disappears altogether in the two species of *Pseudepaphius* endemic to an island off the southern end of Kyushu, Southwest Japan (cf. UÉNO, 1975, pp. 138–144). *Epaphiopsis budhaica* can be regarded as another example of aberrant chaetotaxy. It be-

longs to the subgenus *Epaphiama* but exceptionally retains until now the archaic state of the preapical pore.

As was already noticed (UÉNO & YU, 1997, pp. 28–29), the first Chinese species of *Epaphiama* known from Hubei seems to belong to the *jacobsoni* group. The three Sichuan species of the subgenus dealt with in the present paper are markedly different from that species-group in the peculiar conformation of their male genitalia and can be discriminated in a species-group of their own. It will be called the group of *Epaphiopsis niba*, since the first described species, *E. budhaica*, is exceptional in its aberrant elytral chaetotaxy.

Epaphiopsis budhaica is a humicolous species widely distributed in higher places of Mt. Emei Shan, from the vicinities of Leidongping to just below the summit. It occurs in various kinds of forests, but is most frequent in the forests of *Abies*, *Rhododendron*, *Betula* and *Acer*, all of which grow luxuriantly in the Leidongping area at a height of 2,400–2,500 m. Arrow-bamboo growths are also preferred by this trechine beetle at a height of 3,000 m. All the specimens before me were sifted out from moist leaf litter; some specimens were found active even under dead leaves covered with snow at the beginning of November, 1995.

要　　約

上野俊一：中国四川省西部の贡嘎山とその周辺山地のチビゴミムシ類，ならびに峨眉山から記載されたケムネチビゴミムシ類2種の所属再検討．—— 中国四川省西部に位置する贡嘎山とその周辺の山地，すなわち滴痴山地，折多山地，夹金山地および大相岭山地から，9種のチビゴミムシ類を記録し，そのうちの5種を新種として命名し記載した．贡嘎山からは，*Perileptus* (s. str.) *denticollis* JEANNEL, *Epaphiopsis* (*Pseudepaphius*) *gonggaica* (DEUVE) および *Queinnectrechus smetanai* S. UÉNO の3種が知られ，あとの2種は贡嘎山に固有，最初のホソチビゴミムシは四川省から初めて記録されるものである．贡嘎山の南西に位置する滴痴山地では，瓦灰山に生息する盲目地中性の *Duvalioblemus sichuanicus* DEUVE が知られているだけで，有眼種はまったく発見されていない．贡嘎山の北方に位置する折多山地では，新種として記載した *Queinnectrechus zheduoshanus* S. UÉNO と *Q. glacialis* S. UÉNO が，それぞれコケの下と地下浅層から掘り出されているにすぎず，チビゴミムシ相の偏りが目立つ．これに対して，大渡河の深い谷を挟んで贡嘎山の東方に対峙する夹金山地と，その分枝ないしは東に曲がった延長部とも見做しうる大相岭山地では，シャクナゲの林やヤダケの腐葉土のなかから，*Epaphiopsis* 属と *Trechus* 属の3新種が発見されていて，東方への関連性が深い．これらは，*Epaphiopsis* (*Epaphiama*) *niba* S. UÉNO, *E.* (*E.*) *erlangensis* S. UÉNO および *Trechus* (s. str.) *nomurai* S. UÉNO と命名して，この論文に記載した．

なお，DEUVE (1988) によって峨眉山から記載された2種のケムネチビゴミムシについては，SCIAKY (1995) の種の取り違えによる混乱が生じているので，*E. budhaica* (DEUVE) の雄交尾器を図示して記載し，*E. niba* や *E. erlangensis* との近縁性を示して *Epaphiama* 亜属に含めるとともに，*E. perreaui* (DEUVE) のほうは，*E. gonggaica* に類縁の近いものと認めて *Pseudepaphius* 亜属に移した．

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