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Tienmutrechus dispersipunctis, an Extraordinary Trechine Beetle from Eastern China

By

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In 1957, SUENSON published a paper on his collection of trechid beetles from the Far East and described two new genera and six new species. Some of these taxa are synonymous with previously described ones, but there are others, mainly from China, that are not only valid but are very important for analysing the trechine fauna of East Asia. Without doubt, the most striking of them is *Tienmutrechus dispersipunctis* reported from Mt. Si Tien-mu Shan on the borders of Chekiang and Anhwei. Unfortunately, SUENSON's account of the species is poor, as is always the case with his descriptions; it is sufficient for a recognition of this extraordinary trechine beetle but is inadequate for the purpose of classifying it in its proper taxonomic position. To make the matter worse, only the holotype is fully mature among the five known specimens of *T. dispersipunctis*, and though JEANNEL (1962, pp. 189–191) redescribed the species in his revision of East Asian trechines and added its aedeagal characters to our knowledge, his account is not satisfactory, either, having been based upon a very teneral paratype.

Through the courtesty of Professor S. L. TUXEN, the present writer had an opportunity to re-examine the type materials of all the species described by SUENSON, now preserved in the collection of the Universitetets Zoologiske Museum at Copenhagen. The result of his study will be published in several separate papers according to the genera to which belong the species in question. In the present article, the writer is going to redescribe *Tienmutrechus* in view of its taxonomic importance among East Asian trechines. Since all the paratypes are teneral and more or less deformed, standard ratios of body parts are given solely upon the holotype. The abbreviations used are the same as those explained in his previous papers (cf. UÉNO, 1962, p. 41).

Before going into details, the writer wishes to express his hearty thanks to Professor S. L. TUXEN for his kind permission to re-examine SUENSON's types under his charge, and to Mr. A. DESCARPENTRIES of the Muséum National d'Histoire Naturelle, Paris, for kindly allowing to see the paratype previously studied by the late Professor R. JEANNEL.

Genus ***Tienmutrechus*** SUENSON, 1957

Tienmutrechus SUENSON, 1957, Ent. Medd., **28**, p. 91; type-species: *Tienmutrechus dispersipunctis* SUENSON, 1957. —— JEANNEL, 1962, Rev. fr. Ent., **29**, pp. 174, 189.

Body glabrous, broad and moderately convex; colour brown; inner wings absent.

Head small, with entire frontal furrows and rather flat eyes; two supraorbital pores present on each side as usual; genae long and glabrous. Labrum transverse, with the apex slightly bisinuate and not evenly emarginate, sexsetose. Mandibles fairly slender and sharply hooked at apices; right mandible sharply tridentate, while the left is bidentate but has sharp retinacular tooth. Mentum very transverse and free, not fused with submentum, with the tooth in apical emargination large and broad, either widely truncated or emarginate at the tip; submentum with three setae on each side; ligula roundly produced, with two, very long setae at middle and three shorter ones on each side; paraglossae long and thin, extending much beyond ligula. Palpi slender; penultimate segments long, thin and quadrisetose in labial palpus, gradually dilated towards apex and asetose in maxillary palpus; apical segments long subconical, evidently shorter than penultimate segment in labial palpus but about as long as the penultimate in maxillary palpus. Antennae filiform and slender.

Pronotum transverse, equally contracted in front and behind, and moderately convex; sides regularly arcuate and rather widely bordered throughout, with three or four pair of lateral and a pair of postangular setae, the latter of which are slightly before denticulate hind angles; base straight at middle; basal foveae large.

Elytra ovate and convex; shoulders rounded, humeral borders arcuate and complete to the base of stria 5; sides narrowly reflexed; punctate-striate, all the striae being entire though more or less irregular, particularly at the side; scutellar striole distinct; apical striole deeply impressed, usually joining stria 5 but rarely joining stria 6 or 7; setiferous dorsal pores very numerous, about 50 or more in number on one elytron, and scattered all over the intervals between striae 2 and 7, though more numerous on or near stria 3 and interval 6 than on the others; preapical pore not fixed; apical pores normal, fairly close to each other; marginal umbilicate pores regular and aggregated, the four pores of the humeral set being ranged equidistantly.

Ventral surface glabrous and smooth; sternites 3–5 each with a pair of ordinary setae and several short accessory hairs along the posterior margin; anal sternite with a pair of setae in ♂, two pair of them in ♀. Legs fairly long; protibiae straight and gently dilated towards apices, distinctly grooved on the external face, and nearly glabrous on the anterior face even at the apical part; tarsi slender, segment 4 with a hyaline ventral apophysis in pro- and mesotarsi; in ♂, protarsal segments 1 and 2 widely dilated, stoutly produced inwards at apices, and furnished beneath with sexual adhesive appendages.

Aedeagus large, elongate and hardly arcuate at middle, with fairly large, simply bulbous basal part; sagittal aileron vestigial; apical lobe narrowly produced, curved ventrad and arcuate; inner sac wholly covered with a compact mat of spinules. Styles slender, each provided with four apical setae.

Range. Known so far only from Mt. Si Tien-mu Shan of the Tien-mu Shan Mountains, on the borders of Chekiang and Anhwei, eastern China.

Notes. This genus is most unusual and quite unique in the whole subfamily for

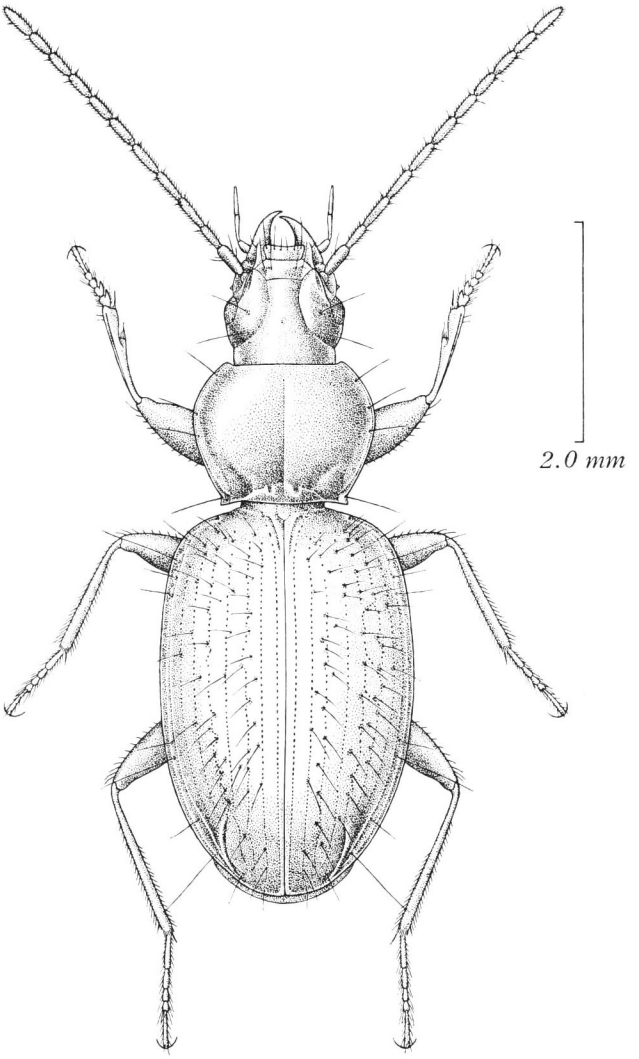


Fig. 1. *Tienmutrechus dispersipunctis* SUENSON, ♂ holotype, of Mt. Si Tien-mu Shan in eastern China.

the aberrant chaetotaxy of its pronotum and elytra. The supernumerary of pronotal lateral setae alone is very exceptional, but the exceeding multiplication of elytral dorsal setae is almost unbelievable. Besides, the number and position of these setae are not fixed, a condition that is not ordinarily found in Trechinae. A somewhat similar disposition of elytral dorsal pores is known in *Elgonophyes leleupi* (JEANNEL, 1954, pp. 176–177, figs. 34–36), another extraordinary trechine beetle endemic to Mt. Elgon in East Africa, but only to a much lesser extent.

On the other hand, *Tienmutrechus* is perfectly normal in the number and arrangement of supraorbital, labial, elytral apical and marginal umbilicate pores. It possesses all the fundamental characters of *Epaphiopsis* (cf. UÉNO, 1962), which include general body form, mandibular dentition, labial structure, condition of side borders of pronotum and elytra, conformation of protibiae, basic features of male genitalia, and chaetotaxy with the obvious exception of pronotal lateral setae and elytral dorsal pores. If we disregard the chaetotaxial aberrancy, *Tienmutrechus* forms a trechine beetle that is very similar to *Epaphiopsis*. Even the exceedingly numerous dorsal pores on elytra, characteristic of *Tienmutrechus*, show a tendency to assemble on or near the 3rd stria and the 6th interval, suggesting their correlation with the two (internal and external) series of dorsal pores in Central Japanese and Taiwanese forms of *Epaphiopsis*.

Thus, *Tienmutrechus* seems directly related to *Epaphiopsis* in spite of its peculiar chaetotaxy. Although it is difficult to decide conclusively if the hypertrichosis occurring in the former is a primitive condition, it may represent an archaic type that gave rise to relatively modern but still primitive chaetotaxial condition now seen in *Epaphiopsis*, since both Taiwanese and Japanese species of the latter must have originated in the Chinese Continent.

Tienmutrechus dispersipunctis SUENSON, 1957

(Figs. 1–3)

Tienmutrechus dispersipunctis SUENSON, 1957, Ent. Medd., **28**, p. 91, pl. 1, lower right; type-locality: Si Tien mu shan. —— JEANNEL, 1962, Rev. fr. Ent., **29**, p. 190, figs. 15–16.
Tienmutrechus diversipunctis SUENSON, 1957, Ent. Medd., **28**, pl. 1 [err.].

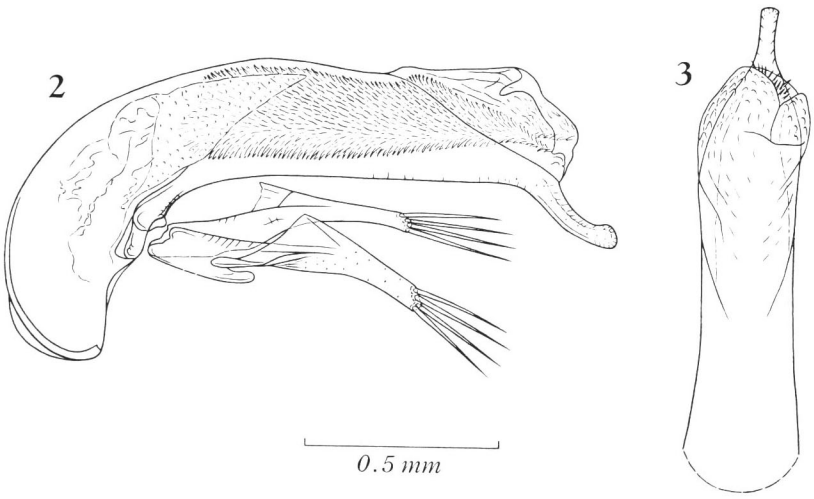
Length: 5.6–6.1 mm (from apical margin of clypeus to apices of elytra).

Body large and broad. Colour chestnut brown, shiny, somewhat iridescent on elytra; palpi yellowish brown; apical segments of antennae, and tarsi more or less lighter than the body.

Head small, lightly depressed above, with frons and supraorbital areas gently convex; frontal furrows deep, not angulate at middle, and rather weakly divergent in front; a shallow foveole usually present at the posterior part of frons; microsculpture sharply impressed throughout, largely consisting of more or less wide, polygonal meshes; eyes small and flat, though perfectly faceted; genae slightly convex, about as long as or a little shorter than eyes; neck wide, with the anterior constriction distinct at the lateral sides though shallow; antennae slender and fairly long, reaching basal four-ninths of elytra, with segment 2 about three-fourths as long as segment 3 or 4, middle segments each about three times as long as wide, terminal segment longer than scape but narrower than the latter.

Pronotum transverse, much wider than head, widest at about three-fifths from base, and equally contracted in front and behind; PW/HW 1.51, PW/PL 1.28, PW/PA 1.51, PW/PB 1.43; surface moderately convex though depressed on the disk, with

vague transverse striations; apical transverse impression indistinct though longitudinally wrinkled, median line sharply marked, somewhat widening near base and reaching the latter; microsculpture composed of fine transverse lines though more or less depressed and partially obliterated; sides rather strongly arcuate in front, obviously less so in basal two-fifths, but not sinuate before hind angles, which are denticulate and somewhat sharp; apex nearly straight or very slightly emarginate, with front angles slightly advanced and narrowly rounded; base a little wider than apex, PB/PA 1.06, nearly straight or very slightly arcuate at middle, and slightly oblique backwards on each side; basal transverse impression very shallow, though having a distinct foveole on each side of median line, and laterally merging into basal foveae, which are large, fairly deep and smooth; postangular carinae very obtuse; basal area longitudinally strigose.



Figs. 2–3. *Tienmutrechus dispersipunctis* SUENSON, holotype, of Mt. Si Tien-mu Shan in eastern China. —— 2. Male genitalia, left lateral view. —— 3. Apical part of aedeagus, dorsal view.

Elytra ovate, widest a little before middle, and more pointed at apex than at base; EW/PW 1.42, EL/EW 1.47; surface convex, though somewhat depressed on the disk in basal third; microsculpture nearly obsolete though consisting of fine transverse lines; shoulders distinct though rounded; sides feebly arcuate behind shoulders, more strongly so in apical three-fifths, and hardly emarginate before apices, which are conjointly rounded; striae entire, deep, and clearly punctate, striae 1 and 8 straight, 2 and 7 also relatively straight, but the remainings are more or less irregular due to the irregular arrangement of setiferous dorsal pores; apical striole deep, gently curved in front, and rather widely distant from the side border; apical carina distinct though obtuse; intervals slightly convex and smooth, though bearing foveolate dorsal pores.

Male genital organ large and heavily sclerotized. Aedeagus nearly a half (five-

elevenths) as long as elytra, elongate, and slightly compressed at middle; basal part fairly elongate and moderately curved towards the ventral side, with a vestige of hyaline sagittal aileron; basal orifice rather small, with the sides shallowly emarginate; apical lobe narrowly produced, curved ventrad, then gently turned up, and slightly dilated at the extremity; ventral side nearly straight at middle in profile. Inner sac wholly covered with a compact mat of sclerotized spinules, which is divided into two narrow lateral lobes near apical orifice. Styles slender but not very long, with narrow apical parts, left style being longer than the right, each bearing four apical setae.

Type depository. Universitetets Zoologiske Museum, Copenhagen.

Specimens examined. 2 ♂♂, 3 ♀♀ (holotype and paratypes), 23–VI–1937, E. SUENSON leg.

The male paratype is preserved in the Muséum National d'Histoire Naturelle, Paris, and one of the female paratypes is in the National Science Museum (Nat. Hist.), Tokyo. All the others are in the collection of the Universitetets Zoologiske Museum, Copenhagen.

Locality. Mt. Si Tien-mu Shan, 1,050 m alt., of the Tien-mu Shan Mountains, in Chekiang, eastern China.

Notes. This remarkable species occurs at a moderate altitude and seems to be primarily humicolous. Regarding its habitat, SUENSON (pp. 92–93) described as follows: "This mountain [Mt. Si Tien-mu Shan] is 1500 m. high with fine woods of big trees below and up the sides to a terrace where there is a small temple at 1050 m. altitude. . . . In the woods behind this temple there was a tiny brook where I sifted four specimens including the type from small heaps of dead leaves and found another under a big stone on wet clayey soil in the brook." This account accords well with the habitat condition of *Epaphiopsis*, whose members are also primarily humicolous though sometimes occurring under stones. Therefore, *Tienmutrechus* is not only related to *Epaphiopsis* in morphological features, but must be similar to the latter in the ecological aspect.

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