

Two New Genera and Species of Anophthalmic Trechine Beetles
(Coleoptera, Trechinae) from Limestone Caves of
Southeastern Guizhou, South China

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Abstract Two new anophthalmic trechine beetles belonging to two new genera are described from limestone caves in Libo Xian of southeastern Guizhou, South China. One of them, named *Oodinotrechus kishimotoi*, is remarkable for its unique facies but bears various peculiarities that shroud its true affinity in obscurity. The other one, named *Libotrechus nishikawai*, is related to *Cathaiaphaenops* of Hunan and Hubei, but is less modified in the degree of adaptation to subterranean existence.

In a previous paper of mine (UÉNO, 1997, p. 14), I made a preliminary notice that three distinctive new genera were recognized among half a dozen new species of trechine beetles collected in the autumn of 1997 in limestone caves of South and Central China. I am going to take up two of them in the present paper, the types of both the genera having been discovered in Libo Xian of southeastern Guizhou. One of them is remarkable for its unique facies that reminds us of certain small pterostichines or oodines, and though anophthalmic and depigmented, does not look like a troglobiontic species in general appearance. It will be named *Oodinotrechus kishimotoi* (new genus and species), though its true affinity is not certain because of a combination of various peculiarities that are characteristic of phylogenetically different genus-groups. The other species, to be named *Libotrechus nishikawai* (new genus and species), is related to *Cathaiaphaenops* DEUVE of Hunan and Hubei, but is obviously less modified in the degree of adaptation to subterranean existence. However, it shows peculiar modification of chaetotaxy and integumental sculpture and is discriminated at a glance from the members of the northern genus.

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

Before going into further details, I wish to express my hearty thanks to Dr. Yoshiaki NISHIKAWA, Dr. WANG Fuxing, Messrs. Toshio KISHIMOTO and Jingcheng RAN for their kind help extended to me in exploring large limestone caves in the Libo area.

Genus *Oodinotrechus* S. UÉNO, nov.

Type species: *Oodinotrechus kishimotoi* S. UÉNO, sp. nov.

Diagnosis. A medium-sized trechine beetle of uncertain affinity, recognized at first sight on its unique facies: oval body with small head, ample pronotum and short broad elytra. Apterous, anophthalmic and depigmented. Head subquadrate, with deep entire frontal furrows and moderately convex genae, the latter of which are sparsely pubescent and also provided with several short temporal setae; supraorbital areas with two pair of setae; mandibles tridentate; mentum not fused with submentum, the former bearing a simple tooth and the latter sexsetose; penultimate segment of maxillary palpus with several minute hairs near apex; antennae not long. Pronotum campanulate, transverse and ample, with sparse pubescence and several short setae on the disc; sides weakly convergent behind, not sinuate, widely explanate and reflexed in posterior two-thirds, and with two pair of marginal setae; base deeply emarginate on each side, forming posteriorly protrudent postangular parts. Scutellum invisible from above. Elytra ovate, unusually short and broad, truncated at bases, widest at about basal third, very wide at basal parts, and rather rapidly narrowed towards pointed apices; side margins distinctly serrulate in basal halves and ciliated throughout; striae superficial, only indicated by rows of punctures at the lateral parts, scutellar striole absent, apical striole distinct though short, joining stria 7; intervals rather sparsely covered with short suberect pubescence, which is denser at the sides than on the disc; stria 3 with a single dorsal pore near base, interval 5 also with a single dorsal pore just before the middle; preapical pore located at the apical anastomosis of striae 3 and 4 just antero-internal to the terminus of apical striole; maginal umbilicate pores aggregated; visible sternites pubescent at the median parts; legs not long, protibiae wholly pubescent and not externally grooved; protarsi simple even in ♂; aedeagus extremely small, rather strongly arcuate from base to apex, with rather small basal part devoid of sagittal aileron and short simple apical lobe; copulatory piece anisotropic, large but hyaline; styles fairly large, each bearing two or three setae at the apex.

Description. Body oval, widest behind middle and almost equally narrowed in front and behind; apterous and depigmented; appendages fairly short; surface more or less pubescent on both dorsum and venter, though nearly glabrous on head. Colour wholly yellowish brown, with reddish parts in head and cephalic appendages.

Head small, transverse subquadrate, with deep entire frontal furrows widely divergent in front and behind; eyes absent; frons and supraorbital areas provided with a few vestigial hairs, vertex and gula completely glabrous; anterior pair of supraorbital pores close to the posterior pair and not distinctly foveolate at the roots; genae moderately convex at the posterior parts, less so in front, each provided with two or three short temporal setae mingled with sparse pubescence; neck very wide, with the anterior constriction sharply marked; labrum transverse, with the anterior margin shallowly emarginate. Mandibles stout, moderately arcuate inwards and acute at the apices, tridentate, apical tooth of retinaculum prominent and apically removed in right mandible,

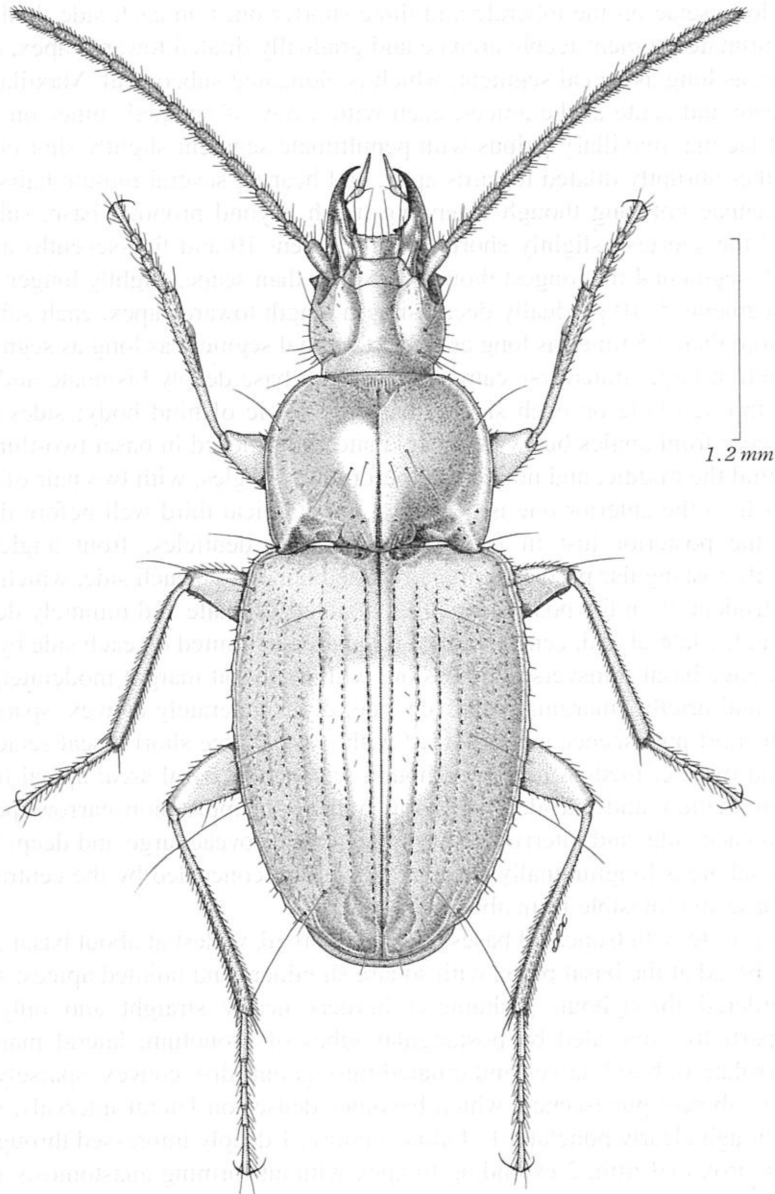


Fig. 1. *Oodinotrechus kishimotoi* S. UENO, gen. et sp. nov., ♂, from Shuiboshui Dong Cave in Libo Xian.

premolar tooth large and prominent. Labium not fused, with a distinct labial suture between mentum and submentum; mental tooth porrect, simply rounded at the tip; submentum sexsetose; ligula rather narrowly rounded and briefly produced at the middle,

with two long setae on the tubercle and three shorter ones on each side; labial palpus with penultimate segment feebly arcuate and gradually dilated towards apex, quadrise-tose, about as long as apical segment, which is elongated subconical. Maxillae moder-ately arcuate and acute at the apices, each with a row of unequal spines on the inner margin of lacinia; maxillary palpus with penultimate segment slightly shorter than the apical, rather abruptly dilated towards apex, and bearing several minute hairs near the apex. Antennae not long though extending much beyond pronotal base, subfiliform; segment 2 the shortest, slightly shorter than segment 10 and five-sevenths as long as segment 3; segment 4 the longest though narrower than scape, slightly longer than seg-ment 3; segments 5–10 gradually decreasing in length towards apex, each subcylindri-cal and more than 2.5 times as long as wide; terminal segment as long as segment 5.

Pronotum large, transverse campanulate, with base deeply bisinuate and forming a narrow through hole on each side of basal peduncle of hind body; sides narrowly bordered near front angles but widely explanate and reflexed in basal two-thirds, espe-cially behind the middle, and not sinuate before hind angles, with two pair of marginal setae, of which the anterior one is located at about apical third well before the widest part and the posterior just in front of postangular denticles; front angles almost rounded off; postangular parts forming a reflexed lamella on each side, which is poste-riorly protrudent, with the posterior margin distinctly sinuate and minutely denticulate outwards at the lateral end; central part of basal area delimited on each side by an arcu-ate edge above basal transverse impression, with the basal margin moderately arcuate at middle and briefly emarginate on each side; disc moderately convex, sparsely scat-tered with short pubescence and provided with two or three short discal setae on each side behind middle; median line fine, though widened in basal area; apical transverse impression shallow and mal-defined; basal transverse impression narrow, posteriorly arcuate on each side, and interrupted at middle; basal foveae large and deep; both api-cal and basal areas longitudinally strigose. Scutellum concealed by the central lobe of pronotal base and invisible from above.

Elytra ovate with truncated bases, short and broad, widest at about basal third, and unusually broad at the basal parts, with square shoulders and pointed apices; sides nar-rowly bordered throughout, prehumeral borders nearly straight and only slightly oblique, partially concealed by postangular lobes of pronotum; lateral margins dis-tinctly serrulate in basal halves and ciliated throughout; disc convex, sparsely covered with short suberect pubescence, which becomes denser on lateral intervals; striae su-perficial though clearly punctate, 1–4 almost entire, 1 deeply impressed throughout, es-pecially in proximal fifth, 2 extending to apex without forming anastomosis with stria 3, 5 fragmentary in proximal third, 6–7 only represented by rows of punctures, 8 also represented by a row of punctures but fragmentarily impressed near the middle and apical sets of marginal umbilicate pores; scutellar striole absent; apical striole short but clearly impressed, moderately curved, and continuing anteriorly to the row of punc-tures of stria 7; intervals completely flat, 1 narrow especially in apical third, 2 wider than the others, apical carina obtuse.

Elytral stria 3 with a single dorsal pore near base, interval 5 also with a single dorsal pore just before the middle; preapical pore located at the apical anastomosis of striae 3 and 4 just before the level of the terminus of apical striole, more distant from apex than from suture, and obviously closer to apical striole than to suture; apical pores normal. Marginal umbilicate pores aggregated and regular, four pores of the humeral set being ranged almost equidistantly.

Ventral surface more or less pubescent at the median parts; anal sternite with a pair of marginal setae in ♂. Legs of moderate length; protibiae straight, moderately dilated towards apices, wholly pubescent, and devoid of longitudinal groove on the external face; tarsi thin, segment 1 longer than segments 2–3 together but shorter than segments 2–4 together in both meso- and metatarsi, segment 4 with a long ventral apophysis in pro- and mesotarsi; protarsomeres in ♂ not modified and devoid of adhesive hairs on the ventral side.

Male genital organ extremely small and transparent due to thin sclerotization; aedeagus rather strongly arcuate, especially behind middle, compressed, and longitudinally membraneous on dorsum; basal part with large basal orifice but devoid of sagittal aileron; apical lobe straightly produced and rounded at the extremity; inner sac provided with a large spatulate copulatory piece acuminate at the apical part. Styles fairly large, each bearing two or three apical setae.

Range. Known so far only from a large limestone cave in Libo Xian of southeastern Guizhou, South China.

Notes. Under the present state of our knowledge, it is difficult to determine the true affinity of this new genus. It is the *Trechoblemus* group among others that shares the largest number of character states with *Oodinotrechus*, that is, more or less pubescent body surface, serrulate and ciliated margins of the elytra (e.g., *Stygiotrechus*), reduction of the scutellum (e.g., *Kurasawatrechus*), mandibular dentition, general conformation of the male genitalia, and so on. However, none of the genera belonging to the *Trechoblemus* group are known to bear setiferous dorsal pores on the 5th elytral interval. Besides, the known members of this genus-group usually bear a transverse row of more than six setae on the submentum.

Possession of the external series of setiferous dorsal pores on the elytra is characteristic of the *Epaphiopsis* and the *Trechiamia* groups in the Asian Trechinae. In the genera of these groups, however, the elytral margins are neither serrulate nor ciliated, the scutellum is always visible, and the aedeagal inner sac usually bears patches of sclerotized teeth. *Oodinotrechus* is similar to *Vietotrechus* S. UENO (1995, p. 20) of the *Trechus* group in the simple protarsomeres in the male, a character state seldom found in the subfamily Trechinae, but it is otherwise different from the members of this genus-group. It is also similar to certain genera of the *Agonotrechus* group in the widely reflexed lateral parts of the pronotum, but this should be regarded as a result of convergence since there are radical discrepancies between *Oodinotrechus* and the *Agonotrechus* group.

In short, none of the trechine genera of the phyletic groups hitherto recognized

exhibit a combination of peculiarities possessed by the present genus. This may mean that *Oodinotrechus* is a genus phylogenetically isolated from all the other Asian Trechinae. On the other hand, however, it may have a remote relationship to such Chinese genera as *Libotrechus* S. UENO (p. 44 of this paper) and *Cathaiaphaenops* DEUVE (1996, pp. 42, 47) seeing that they have many peculiarities in common apart from the incredible discrepancy in general appearance and trend of modification.

Oodinotrechus kishimotoi S. UENO, sp. nov.

(Figs. 1–2)

Length: 4.20 mm (from apical margin of clypeus to apices of elytra).

Since a detailed description is given under the genus, only morphometrical data and some supplementary accounts are presented below.

Colour yellowish brown, shiny; head somewhat darker, mandibles and five proximal segments of antennae reddish brown.

Head about four-fifths as long as wide, depressed above, with frons and supraorbital areas gently convex; microsculpture distinct, mostly composed of wide meshes; mandibles sharply hooked at apices; palpi short and stout; antennae reaching basal three-eighths of elytra. Pronotum much wider than head, transverse campanulate and ample, widest at the middle, strongly contracted towards apex but only gently narrowed towards base; PW/HW 1.70, PW/PL 1.29, PW/PA 1.88, PW/PB 1.13; sides moderately arcuate before the middle, almost straight behind, and briefly convergent just before postangular denticles; apex very slightly arcuate, with front angles almost rounded off; base as described under the genus, much wider than apex, PB/PA 1.65, with each lateral end narrowly rounded to postangular denticle; microsculpture clearly visible, consisting of fine transverse lines. Elytra wider than prothorax and longer than wide in the same proportion, widest at about basal third and much more strongly narrowed towards apices than towards bases; EW/PW 1.37, EL/PL 2.41, EL/EW 1.37; sides moderately arcuate near shoulders, feebly so behind the widest part, and then moderately rounded near apices, which are obtusely subangulate; disc well convex, though narrowly depressed along suture in basal third, apical declivity rather gentle; microsculpture formed by fine transverse lines, though partially degenerated; striation as described under the genus; stria 3 with a setiferous dorsal pore at about 2/15 from base, interval 5 with a setiferous dorsal pore at about 2/5 from base. Legs fairly slender though not so long.

Male genital organ extremely small, thinly sclerotized and transparent. Aedeagus less than one-fifth as long as elytra, compressed and rather strongly arcuate; basal part fairly small, moderately bent ventrad, with large basal orifice whose sides are hardly emarginate; sagittal aileron absent; viewed dorsally, apical lobe gradually narrowed towards rounded extremity; viewed laterally, apical lobe straightly produced ventroapicad and narrowly rounded at the tip. Inner sac armed with a large spatulate copulatory piece whose apical part is narrowly produced. Styles fairly large, left style larger

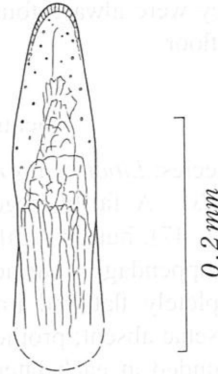


Fig. 2. *Oodinotrechus kishimotoi* S. UENO, gen. et sp. nov., from Shuiboshui Dong Cave in Libo Xian; apical part of aedeagus, dorso-apical view.

than the right and provided with three apical setae, while the right style bears only two apical setae.

Female unknown.

Type specimen. Holotype: ♂, 13-IX-1997, T. KISHIMOTO leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Limestone cave called Shuiboshui Dong, at Shuibozhai of Shuipucun in Yuping Zhen, Libo Xian, southeastern Guizhou, South China.

Notes. It is unfortunate that a left lateral view of the male genitalia of this interesting trechine cannot be illustrated in the present paper. The transparent organ smaller than a pinpoint was accidentally lost in the process of preparation of slide after a sketch was taken of a dorso-apical view of the aedeagus. Their description given above was compiled from a memo taken at the time of preliminary observation. It was not checked by a careful examination of the slide, but even such an account seems better than nothing, at least for the time being. It is to be hoped that additional specimens will be collected some day in near future and will enable us to replace the present account with a more accurate one.

Shuiboshui Dong is a long winding cave with a wide entrance, in which a surface watercourse sinks. It is situated at the northern part of the Libo caverniferous area, the northernmost of the three limestone caves from which eyeless trechine beetles have been known, and is 11.7 km distant to the north-northwest from another trechine-bearing cave, Lasuo Dong (cf. p. 49). The cave is open at the foot of a hill 490 m above sea-level. Its gallery is mostly dry in September, but the level of the underground water seems to rise 3 m or more above the floor in rainy seasons and the torrent carries a large quantity of vegetables including large tree trunks to the innermost recesses. The single known specimen of *Oodinotrechus kishimotoi* was found on a muddy slope above a narrow canyon, from beneath a stone covered with vegetable debris washed in from the outside. Several specimens of a *Sinaphaenops* were also collected in this

cave, but they were always found running on smooth walls, never from under stones lying on the floor.

Genus *Libotrechus* S. UÉNO, nov.

Type species: *Libotrechus nishikawai* S. UÉNO, nov.

Diagnosis. A fairly large trechine beetle related to *Cathaiaphaenops* DEUVE (1996, pp. 42, 47), but evidently different in the following points: body more robust, with stouter appendages; surface dull, especially on elytra; trace of eyes discernible though completely flat and imperfect; genae practically glabrous; anterior pair of supraorbital setae absent; prothorax subcordate, strongly convex on dorsum, with base obliquely rounded at each lateral end; pronotal sides finely bordered in apical two-thirds; elytra very strongly convex, very coarsely punctato-striate, and covered with very short, erect or suberect bristles, especially on lateral intervals, with side margins distinctly serrate in proximal third and ciliated throughout; scutellar striole very short; apical striole short but deep, directed to stria 7; stria 3 (or 4) with two short dorsal setae; preapical pore close to the terminus of apical striole; marginal umbilicate pores not aggregated, pore 1 of the humeral set being removed onto stria 7 and close to pore 2; visible sternites hairy on each medio-posterior part; anal sternite provided with two pair of marginal setae in both sexes; each protibia with two longitudinal grooves on the external face and densely pubescent on the anterior face; aedeagus very small, slender and arcuate, with relatively large basal bulb bearing well developed sagittal aileron and shovel-shaped apical part; copulatory piece anisotropic, largely covered with scales; styles large and broad, each bearing five or six apical setae of unequal length.

Description. A fairly large trechine beetle of anophthalmoid facies, though the frontal furrows become mal-defined behind the level of the posterior supraorbital pore; apterous and depigmented; appendages fairly stout; surface glabrous on head and pronotum, but more or less pubescent on the other parts, at least partially. Colour brown, dull shiny on head and pronotum, less shiny on elytra; mandibles and tibiae dark brown.

Head subquadrate, about as wide as long, with genae moderately and rather evenly convex and with vestiges of a few minute pubescence; eyes degenerated, completely flat and imperfect, though vestiges of ocelli are discernible through derm; frontal furrows subparallel to each other, gently convergent behind the level of antennal insertion, then slightly arcuate outwards, and ending in an inwardly curved apical portion at the level of posterior supraorbital pore, postero-lateral part of each furrow mal-defined, discontinuous to deeply impressed dorsal part, almost straight and only slightly oblique; supraorbital areas with a few minute pubescence at the anterior parts, anterior pair of supraorbital pores absent, posterior pair distant from the remnants of the postero-lateral parts of frontal furrows; neck constriction not sharply marked; labrum transverse obtapezoidal, with the apical margin nearly straight except for anteriorly produced outer corners. Mandibles fairly slender, only feebly arcuate even at the

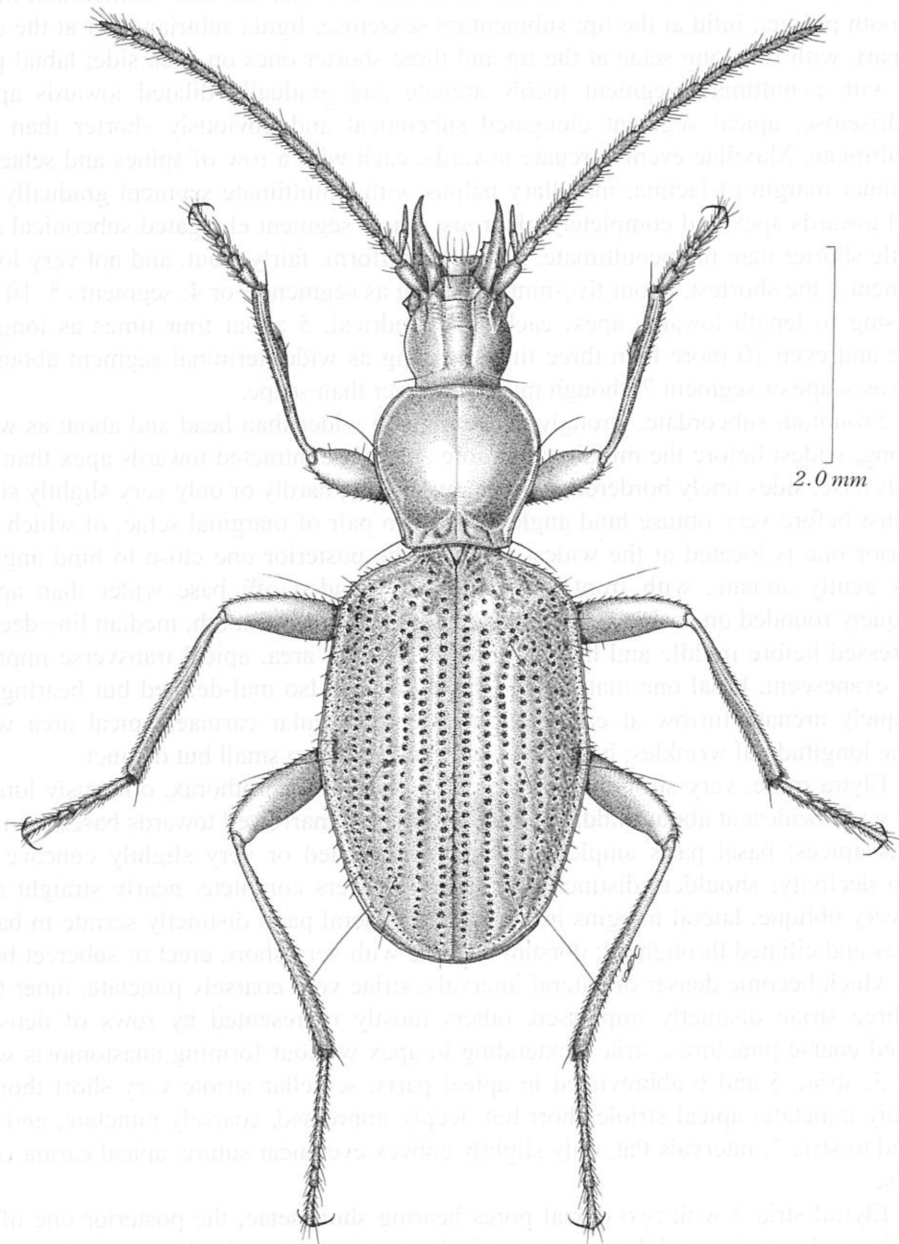


Fig. 3. *Libotrechus nishikawai* S. UENO, gen. et sp. nov., ♂, from Lasuo Dong Cave in Libo Xian.

apical parts, right mandible tridentate though the premolar tooth adjoins retinaculum. Labium not fused, with a distinct labial suture between mentum and submentum; mental tooth porrect, bifid at the tip; submentum sexsetose; ligula subtriangular at the apical part, with two long setae at the tip and three shorter ones on each side; labial palpus with penultimate segment feebly arcuate and gradually dilated towards apex, quadrisetose, apical segment elongated subconical and obviously shorter than the penultimate. Maxillae evenly arcuate inwards, each with a row of spines and setae on the inner margin of lacinia; maxillary palpus with penultimate segment gradually dilated towards apex and completely glabrous, apical segment elongated subconical and a little shorter than the penultimate. Antennae filiform, fairly stout, and not very long; segment 2 the shortest, about five-ninths as long as segment 3 or 4; segments 5–10 decreasing in length towards apex, each subcylindrical, 5 about four times as long as wide and even 10 more than three times as long as wide; terminal segment about as long as scape or segment 7, though much narrower than scape.

Pronotum subcordate, strongly convex, much wider than head and about as wide as long, widest before the middle, and more strongly contracted towards apex than towards base; sides finely bordered in apical two-thirds, hardly or only very slightly sinuate just before very obtuse hind angles, with two pair of marginal setae, of which the anterior one is located at the widest part and the posterior one close to hind angles; apex gently arcuate, with front angles almost rounded off; base wider than apex, obliquely rounded on each side just inside hind angle; disc smooth, median line deeply impressed before middle and hardly widened in basal area; apical transverse impression evanescent, basal one mal-defined, basal foveae also mal-defined but bearing an obliquely arcuate furrow at each bottom; no postangular carinae; apical area with vague longitudinal wrinkles; basal area smooth. Scutellum small but distinct.

Elytra ovate, very strongly convex, much wider than prothorax, obviously longer than wide, widest at about middle and more gradually narrowed towards bases than towards apices; basal parts ample, transversely flattened or very slightly concave on steep declivity; shoulders distinct, prehumeral borders complete, nearly straight and not very oblique; lateral margins including prehumeral parts distinctly serrate in basal halves and ciliated throughout; dorsum covered with very short, erect or suberect bristles, which become denser on lateral intervals; striae very coarsely punctate, inner two or three striae distinctly impressed, others mostly represented by rows of densely ranged coarse punctures, stria 2 extending to apex without forming anastomosis with stria 3, striae 5 and 6 abbreviated in apical parts; scutellar striole very short though usually punctate; apical striole short but deeply impressed, coarsely punctate, and directed to stria 7; intervals flat, only slightly convex even near suture, apical carina very obtuse.

Elytral stria 3 with two dorsal pores bearing short setae, the posterior one often translocated onto interval 4 or even to stria 4; preapical pore, also bearing a short seta, located at the apical end of stria 3 antero-internal to the terminus of apical striole; both apical pores adjoining apical striole. Marginal umbilicate pores not aggregated, pore 1

of the humeral set removed onto stria 7 and approaching to pore 2, pore 4 distant from marginal gutter though not isolated.

Ventral surface more or less pubescent at the median parts, especially hairy on visible sternites; anal sternite provided with two pair of marginal setae in both sexes. Legs fairly long; protibiae with two longitudinal grooves separated by a fine carina on each external face and densely pubescent all over; tarsi fairly stout, segment 1 about as long as segments 2–4 together in both meso- and metatarsi, segment 4 with a hyaline ventral apophysis in pro- and mesotarsi; in ♂, two proximal protarsomeres gently dilated, minutely denticulate inwards at the apices, and furnished beneath with adhesive appendages.

Male genital organ very small though rather heavily sclerotized; aedeagus slender, arcuate especially before middle, and membranous on dorsum in apical half; basal part fairly large, with small basal orifice and fairly large sagittal aileron; apical lobe flattened, shovel-shaped, and slightly reflexed near the extremity; copulatory piece spatulate, acuminate, and covered with scales except for a small basal area; styles broad, left style with a very small ventral apophysis, each bearing five or six apical setae, two or three of which are obviously thinner and shorter than the other three.

Range. Known so far only from a limestone cave in Libo Xian of southeastern Guizhou, South China.

Notes. Though considerably different both in facies and some important features, this new genus is doubtless related to *Cathaiaphaenops* of Hunan and Hubei. They have many basic characters in common, that is, mandibular dentition, conformation of labium, number of marginal setae on pronotum, general configuration of elytra covered with minute hairs or bristles, serrate and ciliated lateral margins of elytra, the number and position of setiferous dorsal pores, dilatation of protarsomeres in ♂, and basic conformation of male genitalia.¹⁾ On the other hand, *Libotrechus* differs from *Cathaiaphaenops*, in addition to lesser adaptive modification, in the absence of the anterior pair of supraorbital setae, almost glabrous genae, highly convex elytra with very coarsely punctate striae, clearly impressed and punctate apical striole, externally removed preapical pore, another disposition of marginal umbilicate pores, presence of two pair of marginal setae on anal sternite in both sexes, and externally grooved protibiae. These differences seem to suggest that *Libotrechus* is not a prototype of *Cathaiaphaenops* in the process of specialization adaptive to the subterranean environment but has undergone its own evolutionary history, though it may represent a stage of morphological modification of the *Cathaiaphaenops* lineage.

The new generic name *Libotrechus* means a trechine beetle of Libo Xian (=Libo County), in which lies the type cave of the type species of this new genus.

1) DEUVE (1996, p. 43) described that "1'endophallus" is "inerm" in *Cathaiaphaenops delprati*. Really, however, there is an anisotropic copulatory piece in the aedeagal inner sac of the species, though it is thin and hyaline and capped at the apical part with a patch of scales.

Libotrechus nishikawai S. UENO, sp. nov.

(Figs. 3–5)

Length: 6.35–6.70 mm (from apical margin of clypeus to apices of elytra).

Colour brown, dull shiny on head and pronotum, less shiny on elytra, not iridescent; apical halves of antennae lighter; mandibles and tibiae dark brown.

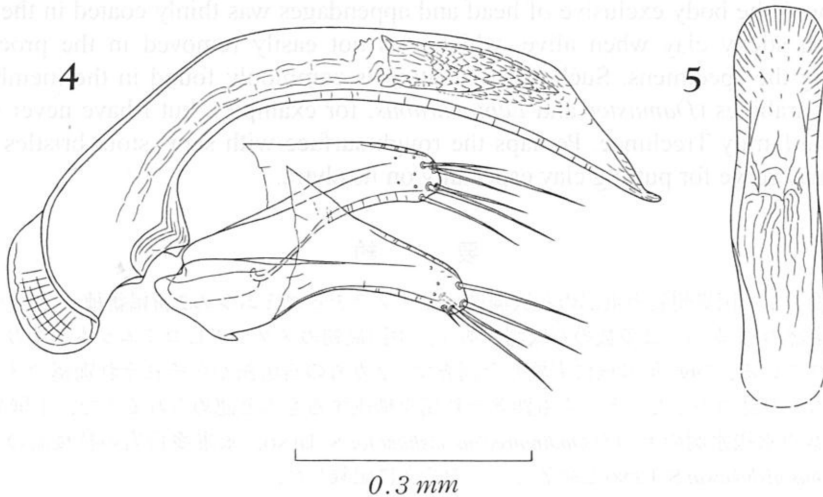
Head small, not transverse, with frontal furrows deeply impressed on dorsum; frons moderately convex, separated from vertex by an arcuate transverse depression; supraorbital areas gently convex; microsculpture distinct, mostly consisting of fine transverse meshes; genae moderately convex in front, less so behind, and not tumid at the posterior parts; mandibles fairly slender and relatively straight; palpi slender though not very long; antennae fairly stout and not very long, reaching basal three-eighths of elytra in ♂, basal third of elytra in ♀.

Pronotum subcordate, widest at about three-fifths from base, and strongly contracted towards apex; PW/HW 1.49–1.56 (M 1.53), PW/PL 0.93–1.02 (M 0.99), PW/PA 1.75–1.85 (M 1.81), PW/PB 1.47–1.56 (M 1.52); sides strongly arcuate before middle, less so behind, and hardly or only very slightly sinuate just before hind angles, which are obtuse and sometimes worn; marginal setae not long; apex gently arcuate, obviously narrower than base, PB/PA 1.18–1.19 (M 1.18), with front angles very obtuse and rounded; base slightly emarginate at middle and obliquely rounded just inside hind angles; disc strongly convex, wholly covered with fine transverse lines of microsculpture.

Elytra ovate, widest at about middle, with distinct shoulders and ample basal parts; EW/PW 1.58–1.63 (M 1.61), EL/PL 2.42–2.55 (M 2.49), EL/EW 1.56–1.60 (M 1.57); prehumeral borders nearly straight, serrate and ciliated throughout; sides either straight or very slightly emarginate behind shoulders, gently arcuate at middle, nearly straight again to the level of the seventh pore of the marginal series, and then lightly arcuate to apices, which are conjointly and narrowly rounded; disc very strongly convex, with steep basal and apical declivities; microsculpture evanescent altogether; all the striae and striae including marginal gutter very coarsely punctate, striae 3–6 free at the apical ends, 5 and 6 abbreviated, 7 extending to the terminus of apical striae, 8 also complete; apical striae lightly arcuate; stria 3 (or 4) with two dorsal pores bearing short setae at about 2/9 and 1/2 from base, respectively; preapical pore much more distant from apex than from suture, and much nearer to stria 7 than to suture.

Legs fairly long; protibiae straight and gently dilated towards apices; metatibiae about four-sevenths as long as elytra and slightly arcuate outwards in apical halves.

Aedeagus only one-fifth as long as elytra, lightly depressed, strongly arcuate before middle, gently so in apical half, and rather abruptly slanting at apical orifice; basal part fairly large, only briefly curved ventrad, with small basal orifice whose sides are obviously but not deeply emarginate; sagittal aileron fairly large and moderately sclerotized except for marginal part; viewed dorsally, apical part broad, slightly dilated, and subtruncated at the extremity; viewed laterally, apical part narrowed towards thin



Figs. 4–5. Male genitalia of *Libotrechus nishikawai* S. UENO, gen. et sp. nov., from Lasuo Dong Cave in Libo Xian; left lateral view (4), and apical part of aedeagus, dorso-apical view (5).

terminal portion, which is slightly reflexed; in profile, ventral margin deeply emarginate before middle but only shallowly so before apical orifice. Inner sac armed with a spatulate copulatory piece more than one-fourth as long as aedeagus, acuminate in apical half, and covered with sclerotized scales except for a small baso-median part. Styles large and broad, left style longer than the right, each bearing five or six setae at the apex, three of which are thicker and longer than the others.

Type series. Holotype: ♂, 12–IX–1997, S. UENO leg. Allotype: ♀, paratype: 1 ♂, 12–IX–1997, Y. NISHIKAWA leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Limestone cave called Lasuo Dong, at Bai'ai in Yongkang Xiang of Libo Xian, southeastern Guizhou, South China.

Notes. This remarkable new trechine was found in Lasuo Dong Cave lying on a hill in Yongkang Xiang at an altitude of 670 m. The cave has two openings at the two ends and is usually entered from the one at the back of the small village Bai'ai (=Baiyan). *Libotrechus nishikawai* was found only in a small, relatively dry bay about 200 m removed from the entrance, from beneath small muddy stones lying on gentle clayey slopes. It did not actively run about when exposed, but tried to crawl into narrow spaces of sticky clay. This habit makes a sharp contrast to agility of *Cathai-aphaenops delprati*, which is usually found from under stones or rotten logs and quickly moves about when exposed. Another trechine beetle, a new *Sinaphaenops*, also occurs in Lasuo Dong Cave, but the aphaenopsoid species prefers wetter places to the clayey slopes and is usually found walking on limestone walls or stalagmites.

It seems worth noting that in all the three known specimens of *Libotrechus nishikawai*, the body exclusive of head and appendages was thinly coated in the larger part with sticky clay when alive, which was not easily removed in the process of mounting the specimens. Such a clay coating is commonly found in the members of certain carabines (*Damaster* and *Leptocarabus*, for example), but I have never seen it in the subfamily Trechinae. Perhaps the rough surface with short stout bristles of the beetle may serve for putting clay especially on its elytra.

要 約

上野俊一：中国贵州省南東部の石灰洞にすむメクラチビゴミムシの2新属新種。——中国贵州省南東部の荔波县には多数の石灰洞があり，中国最初のメクラチビゴミムシもそのひとつで発見されている。1997年の秋に実施した調査で，2カ所の石灰洞からそれぞれ別属のメクラチビゴミムシが見つかった。どちらも顕著な新属を構成するものと認められるので，玉屏鎮水浦村水拔寨の水拔水洞のものを *Oodinotrechus kishimotoi* S. UENO, 永康多白岩の拉梭洞のものを *Libotrechus nishikawai* S. UENO と命名し，この論文に記載した。

Libotrechus は，湖南省北西部と湖北省南西部の石灰洞に分布する *Cathaiaphaenops* DEUVE に似ている点が多く，同系列のものであることに疑いの余地はない。しかし，洞窟生活に対する適応の度合いがそれほど大きくないので，外観はかなり異なり，体のつくりが頑丈で色が濃く，触角や肢も繊細さに欠ける。また，上翅条線の点刻がきわめて粗大で，明瞭な亜端溝にも点刻があり，剛毛式も明かに異なっている。*Oodinotrechus* のほうは，一見ナガゴミムシかトックリゴミムシの小型種に似た体形が特異であるばかりでなく，さまざまな属群から重要な標徴を寄せ集めたような観があり，雄の前付節に第二次性徴が現れないという，チビゴミムシ類としては例外的な特性もみられる。したがって，現状では真の類縁関係がよくわからないが，いくつかの重要な形質を共有することからみて，体形の極端な差異にかかわらず，*Libotrechus* などと共通の祖先から分かれてきたものかも知れない。

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