

New Genera and Species of Aphaenopsoid Trechines (Coleoptera, Trechinae) from South-Central China

Shun-Ichi UÉNO

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

Abstract Two new genera and three new species of aphaenopsoid trechine beetles are described from limestone caves of northwestern Hunan, southwestern Hubei and northwestern Guizhou, South-Central China, under the names *Toshiaphaenops ovicollis*, *T. globipennis* and *Shenaphaenops humeralis*, respectively. The two genera are similar to each other in many respects, but seem to belong to different lineages because of decisive difference in elytral conformation and other details. Their similarity may have been brought about through convergence.

Since the first Chinese species of troglobiotic trechine beetle was described from southeastern Guizhou (UÉNO & WANG, 1991), our knowledge has become rapidly enriched of the cave trechine fauna of China. Twelve eyeless species belonging to nine different genera have already been reported from Hunan (DEUVE, 1996), Guizhou (VIGNA TAGLIANTI, 1997; UÉNO, 1998 a; UÉNO & RAN, 1998), Guangxi (DEUVE, 1993; UÉNO, 1998 b) and Yunnan (UÉNO, 1997), and there are still some others from Guizhou and Hubei that await descriptions. These records appear to show that truly aphaenopsoid genera like *Sinaphaenops*, *Dongodytes* and *Junaphaenops* are confined to the southern peripheral areas of the distributional range of troglobiotic trechines and that the northern areas are occupied by semi-aphaenopsoid and anophthalmoid ones. This inference is, however, utterly wrong; remarkable aphaenopsoid species occur widely in the northern part of their distributional range now known, alongside of such semi-aphaenopsoid genera as *Cathaiaphaenops* and *Guizhaphaenops*.

In the present paper, I am going to describe three truly aphaenopsoid species from northwestern Hunan, southwestern Hubei and northwestern Guizhou, South-Central China. They are very rare and difficult to obtain, males having been known in only one of the three. However, they are no doubt classified into two different genera by external morphology alone. Although their true relationships are not clear at the moment, I believe they are worth introducing into science now seeing that it is not easy to obtain ample material of these and related species.

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

Before going into further details, I wish to thank Drs. Yoshiaki NISHIKAWA, WANG

Fuxing and Toshio KISHIMOTO for their collaboration in the field. Hearty thanks are also due to Mr. FAN Ting of the International Academic Exchange Center of the Academia Sinica and the authorities of the counties of Longshan (Hunan), Xianfeng (Hubei) and Shuicheng (Guizhou) for their kind arrangement and help of our investigations of the cave fauna.

Genus *Toshiaphaenops* S. UÉNO, nov.

Type species: *Toshiaphaenops ovicollis* S. UÉNO, sp. nov.

Relatively small aphaenopsoid trechines with narrow fore body, strongly convex pronotum and elytra and slender appendages; apterous and depigmented; surface more or less pubescent except for elytra which are completely glabrous; microsculpture vanished altogether with the exception of clypeus and labrum, on which it is formed by wide meshes. Concolorously reddish brown to dark reddish brown and polished, with somewhat lighter palpi and several apical antennomeres.

Head elongate, much longer than wide, widest before the middle and gradually narrowed posteriad towards neck constriction, which is shallow but distinct, continuing onto both dorsum and venter; frontal furrows incomplete though deeply impressed, gently arcuate in front, straightly divergent behind, and just reaching the middle; dorsum pubescent, the pubescence extending laterally onto genae and subgenae; two widely distant pairs of supraorbital setae present, the anterior one being located just behind antennal sockets and the posterior just before neck constriction, a third seta rarely present between the two on one side; a pair of subgenal setae present close to gular suture just below the posterior pair of supraorbital ones; eyes completely absent; genae only slightly convex; clypeus fairly long though not so wide, quadrisetose. Labrum transverse, shorter than clypeus, with the apical margin either slightly emarginate or slightly bisinuate. Mandibles long and slender, briefly but sharply arcuate inwards only at the apical portions; right mandible distinctly bidentate, left one devoid of distinct teeth. Mentum imperfectly fused with submentum, labial suture either traceable throughout or degenerated at the median part; mental tooth narrow but porrect, usually simple at the tip though rarely subtruncated; submentum with a transverse row of 10–12 setae; ligula obviously protuberant at the apex, with a pair of long setae on the tubercle and three shorter ones on each side; paraglossae thin and slightly arcuate, extending beyond ligula; labial palpus very slender, with very long, slightly arcuate penultimate segment bearing three setae, two inside and one outside, apical segment about two-thirds as long as the penultimate and slightly narrowed towards blunt apex from the middle. Maxillae very long, only a little shorter than mandibles, and lightly arcuate; galea with very long proximal and short apical segments; lacinia with rather sparse rows of recurved spines on the inner margin; maxillary palpus long and slender, with long glabrous penultimate segment gradually dilated towards apex, apical segment only a little shorter than the penultimate, about nine-tenths as long as the latter, similar in configuration to that of labial palpus. Antennae long and very thin, reaching

apical fourth to fifth of elytra, wholly pubescent except on the posterior face of scape; scape short and thick, about as long as pedicel, which is about five-sevenths as wide as scape; segment 3 the longest, more than seven times as long as wide; segments 4–10 gradually decreasing in length towards apex; terminal segment about as long as segment 7, more than six times as long as wide, and obviously thinner than segment 3 or 4.

Prothorax wider than head and longer than wide, though variable in shape, with laterally expanded propleura clearly visible in dorsal view. Pronotum fairly broad though much longer than wide, widest before the middle, and more or less narrower at the base than at the apex; margins finely bordered throughout, with two pair of marginal setae, of which the anterior one is located well before the widest part and the posterior one before ante-basal sinuation; dorsum well convex, either sparsely covered with fairly long hairs (*T. ovicollis*) or provided with a few hairs on each side of median line behind the middle (*T. globipennis*); sides briefly sinuate before hind angles, which are more or less rounded; basal transverse sulcus deep and continuous, clearly separating narrowly convex basal area from the convex disc; median line fine, not extending posteriorly beyond basal transverse sulcus. Scutellum small though distinct.

Elytra fused together, ovate, strongly convex, much wider than prothorax, widest at about middle, and more pointed at bases than at apices, with long oblique pre-humeral borders and devoid of distinct shoulders; sides narrowly bordered, proximally complete to basal peduncle, minutely ciliated throughout though not serrulate; dorsum completely glabrous and polished, steeply declivous in marginal parts; striae either very shallow and impunctate (*T. ovicollis*) or deeply impressed and coarsely punctate (*T. globipennis*), either evanescent at the side (*T. ovicollis*) or shallowly impressed even at the side (*T. globipennis*); scutellar striole absent; apical striole either absent (*T. ovicollis*) or rudimentary (*T. globipennis*); interval 1 very narrow, disappearing in apical part in *T. ovicollis*; stria 3 with two setiferous dorsal pores; preapical pore located at the upper part of apical declivity, either adjoining or on the site of stria 3, and widely distant from apex; only one apical pore present behind the level of the 8th pore of the marginal umbilicate series; humeral set of marginal umbilicate pores not aggregated, the 1st pore removed backwards and located on or a little behind the level of the 3rd, which is slightly distant from marginal gutter, the 4th widely distant from the other three and also from marginal gutter; the two umbilicate pores of the middle set moderately, and the 7th umbilicate pore widely distant from marginal gutter.

Ventral surface either with a few hairs on gula and prosternum (*T. ovicollis*) or glabrous on the venter of fore body (*T. globipennis*); visible sternites 2 and 3 of abdomen fused together, 3–5 each with one or two pairs of paramedian setae along the posterior margin, the inner pair being much smaller than the outer and rather frequently missing, several additional short hairs often present at the median part of each sternite; anal sternite with a pair of marginal setae in ♂, with two pair of them in ♀. Legs long and slender, wholly pubescent; protibiae not externally grooved; tarsi fairly stout, tarsomere 4 with a hyaline ventral apophysis in pro- and mesotarsi; in ♂, protarsomeres 1 and 2 moderately dilated, inwardly denticulate at the apices, and furnished

beneath with adhesive appendages; protarsomeres 3 and 4 short, each only slightly wider than long.

Male genital organ small and lightly sclerotized. Aedeagus tubular, slender and arcuate, with flattened apical lobe and relatively small basal part, the latter of which bears a large sagittal aileron; inner sac armed with an anisotropic copulatory piece and devoid of teeth-patches. Styles broad, rounded at apices, each provided with a circle of six setae; left style devoid of ventral apophysis.

Range. Known so far from two limestone caves in northwestern Hunan and southwestern Hubei in Central China.

Notes. It is difficult to determine the true systematic position of the present genus. It is similar to the members of the *Cathaiaphaenops* lineage, above all to *Junaphaenops* S. UÉNO (1997, p. 15), in the narrow fore body, strongly convex elytra with ciliated lateral margins, fused labium with more than six submental setae, and the elytral chaetotaxy including the characteristic position of the first pore of the marginal umbilicate series. On the other hand, *Toshiaphaenops* differs clearly from *Junaphaenops* in the evolutionary trend of facies, particularly configuration of the prothorax and the elytra, in the latter of which the humeral angles become effaced as in *Dongodytes*.

As will be shown on later pages, the humeral angles of the elytra are prominent in another new genus, *Shenaphaenops*, as in *Sinaphaenops* S. UÉNO et WANG (1991, p. 128; UÉNO & RAN, 1998), though this new genus is similar in many other respects to *Toshiaphaenops*. Because of the similarity in elytral conformation and in other details, *Shenaphaenops* will be regarded as a probable relative of *Junaphaenops*, but I cannot express the same view on *Toshiaphaenops*. Thus, only the remaining candidate for the relative of *Toshiaphaenops* may be *Dongodytes* DEUVE (1993, pp. 292, 295; UÉNO, 1998 b, p. 4) from northwestern Guangxi, but still, there is a very wide gap between the two genera, particularly in the chaetotaxy of the head and the elytra beside the striking difference in habitus. In short, phylogenetic position of *Toshiaphaenops* is ambiguous at the present moment, and we have to wait for further investigations of the cave trechine fauna of China to clarify the true affinity of *Toshiaphaenops* on a sounder basis.

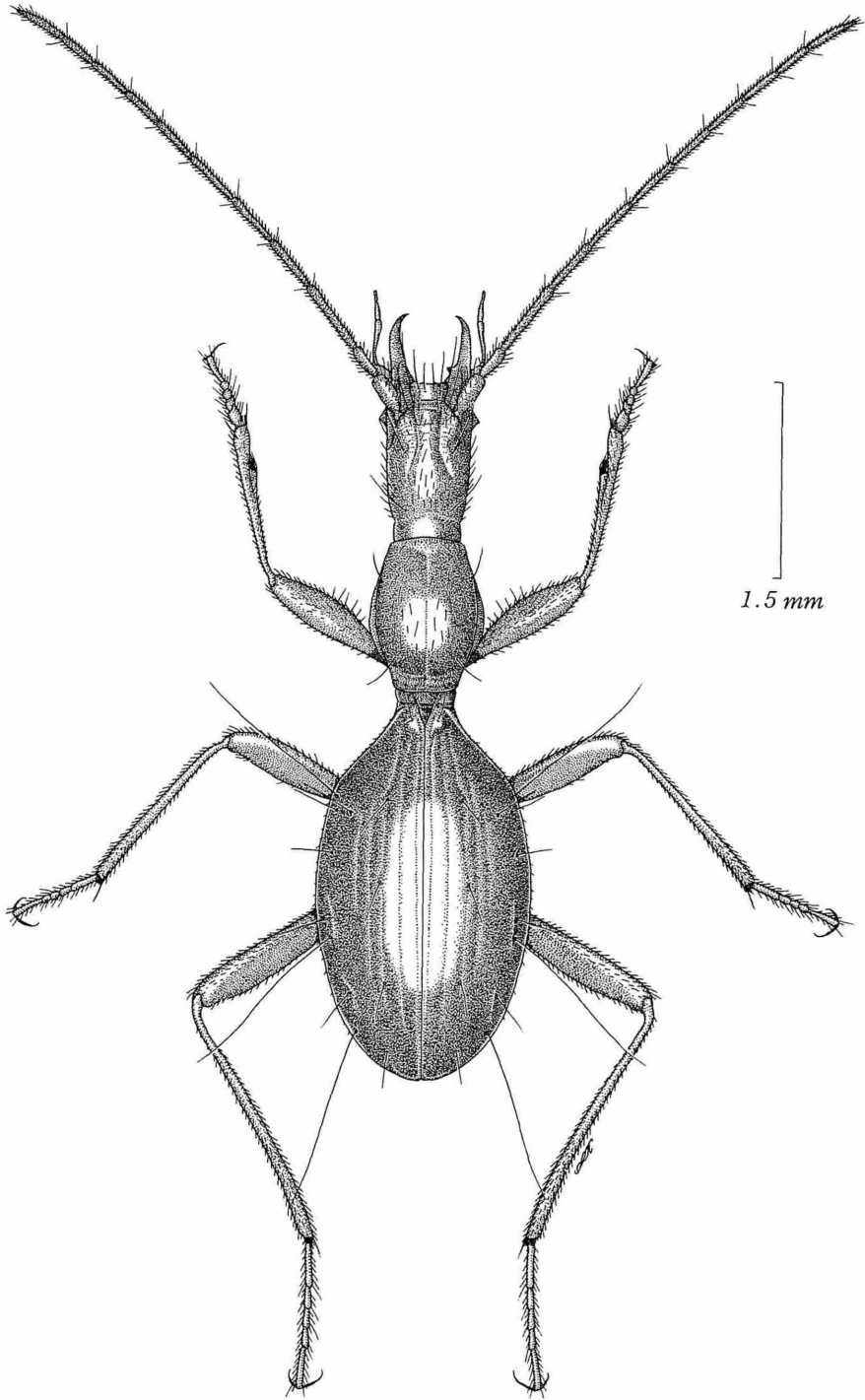
This remarkable new genus is dedicated to Toshio KISHIMOTO, who collected all the known specimens of the two species of *Toshiaphaenops*.

Toshiaphaenops ovicollis S. UÉNO, sp. nov.

(Figs. 1–3)

Length: 4.85–5.20 mm (from apical margin of clypeus to apices of elytra); 5.40–5.85 mm (including mandibles).

Fig. 1. *Toshiaphaenops ovicollis* S. UÉNO, gen. et sp. nov., ♂, from Feihu Dong Cave at Huoyan, northwestern Hunan.

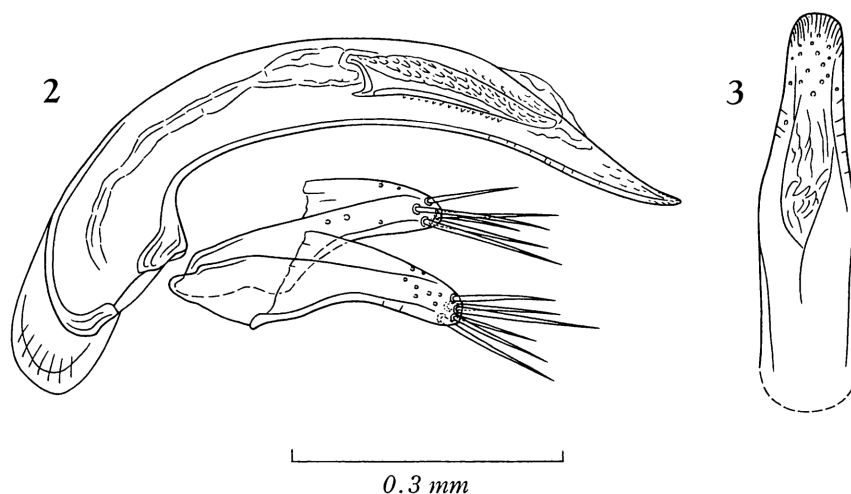


Body elongate, with ovate prothorax and elongated oval elytra. Colour dark reddish brown, exceptionally dark for a truly aphaenopsoid species, polished and not iridescent; palpi and three or four apical segments of antennae yellowish brown, more or less lighter in colour than the other parts.

Head elongate, about two-thirds as wide as long, though slightly shorter than prothorax, HL/PL 0.89–0.96 (M 0.92), subparallel-sided in apical half and then gradually narrowed to neck constriction, which is about three-fourths as wide as the widest part; neck separated from occiput by a shallow but distinct transverse impression of neck constriction, and gently dilated posteriad; dorsum gently convex, behind middle in particular, and rather densely covered with fairly long hairs; frontal furrows deeply impressed though abruptly ending posteriad at about middle; supraorbital setae lying on lines convergent posteriorly, the anterior pair being located at about apical two-fifths just behind antennal sockets and the posterior at about basal sixth just before neck constriction; in the holotype, an extra supraorbital seta present on the right side between the two ordinary ones; genae only slightly convex and rather densely covered with fairly long hairs, which spread ventrad onto subgenae; labral apical margin slightly emarginate or slightly bisinuate. Antennae very slender, reaching apical fourth to fifth of elytra.

Prothorax ovate, much wider than head, evidently longer than wide, widest at about four-ninths from base, and more gradually narrowed towards apex than towards base; PW/HW 1.34–1.38 (M 1.37), PL/PW 1.19–1.29 (M 1.23). Pronotum fairly wide, obovate, widest at about four-sevenths from base, and almost equally narrowed in front and behind; PNW/HW 1.24–1.26 (M 1.25), PL/PNW 1.31–1.40 (M 1.35); lateral margins finely bordered, the borders visible throughout from above, nearly straight or very feebly arcuate in front, moderately so at middle, slightly and briefly sinuate at about basal seventh, and then convergent towards rounded hind angles; posterior marginal seta widely distant from hind angle, being located at about basal two-ninths well before ante-basal situation; apex either straight or feebly arcuate, rounded on each side and devoid of distinct front angles; base more or less narrower than apex, nearly straight except for postangular portions; PNW/PA ca. 1.59–1.67 (M ca. 1.62), PNW/PB ca. 1.71–1.73 (M ca. 1.72), PB/PA ca. 0.93–0.97 (M ca. 0.94); dorsum strongly convex, very steeply declivous before basal transverse sulcus, sparsely covered with fairly long hairs on the disc; median line fine though distinct; apical transverse impression procurved, shallow and mal-defined; basal transverse sulcus deep, basal area narrow and convex. Propleura expanded laterad, more gradually convergent anteriorly than posteriorly, and reaching apical third and ante-basal situation.

Elytra ovate, widest at about middle, and more regularly narrowed towards apices than towards bases; EW/PW 1.78–1.86 (M 1.83), EL/PL 2.39–2.54 (M 2.48), EL/EW 1.64–1.70 (M 1.67); shoulders effaced though their position is indicated by very obtuse angle; prehumeral borders oblique and nearly straight except for small anteriormost portions which are slightly outcurved; sides narrowly bordered throughout, gently arcuate, and rather narrowly and conjointly rounded at apices, each without appreciable



Figs. 2–3. Male genitalia of *Toshiaphaenops ovicollis* S. UENO, gen. et sp. nov., from Feihu Dong Cave at Huoyan, northwestern Hunan; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

preapical emargination; dorsum strongly convex, steeply declivous in marginal parts except for briefly subpedunculate bases; striae very shallow and impunctate except stria 1 which is sharply impressed from base to the level of preapical pore, 2–3 and sometimes also 4 more or less traceable, 5 either fragmentary or obsolete, 6–8 evanescent though stria 8 is perceptible between the umbilicate pores of the middle and apical sets; intervals flat with the exception of intervals 1 and 2 which are slightly convex on the disc; stria 3 with two setiferous dorsal pores at about 1/4 and 1/2 from base, respectively, the anterior pore lying at the level of the 2nd pore of the marginal umbilicate series and the posterior between the levels of the 4th and 5th umbilicate pores; preapical pore located at 1/5–1/4 from apex.

Gula sparsely with fairly long hairs; prosternum with several hairs on each side near propleural suture. Legs long; metatibia about two-thirds or a little more as long as elytra, outwardly arcuate in apical two-fifths; tarsi fairly stout, mesotarsus about three-sevenths as long as mesotibia, metatarsus about two-thirds as long as metatibia; tarsomere 1 longer than tarsomeres 2–3 together but shorter than tarsomeres 2–4 together in both meso- and metatarsi.

Male genital organ small. Aedeagus about one-fourth as long as elytra, slender, slightly depressed, and moderately arcuate, behind middle in particular; basal part rather strongly curved ventrad, with small basal orifice whose sides are hardly emarginate; sagittal aileron very large; viewed laterally, apical part gradually tapered to apical lobe, which is slightly reflexed and pointed at the extremity; viewed dorsally, apical part symmetrical, with nearly parallel-sided apical lobe whose tip is widely but not strongly rounded; ventral margin widely emarginate in profile. Copulatory piece elongated spatulate, about one-third as long as aedeagus, dorsally covered with scales, and

slightly reflexed at the blunt apex. Styles broad and rather short, left style longer than the right, each thickened and rounded at the apex which bears a circle of six setae of different length.

Type series. Holotype: ♂, allotype: ♀, paratype: 1 ♂, 20-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 Feihu Dong, 260 m in altitude, at Huoyan in Huoyan Xiang of Longshan Xian, northwestern Hunan, Central China.

Notes. Feihu Dong Cave, the type locality of this remarkable new species, is well known for its large size and intricate structure. There are two entrances to it, one small and vertical and the other very large and opening to a huge room. In former times, there was a Buddhist's temple in this huge room, which is now open to tourists. At the back of the room, there is a vertical cliff preventing tourists from going into the deeper parts. Climbing over the cliff, we enter into a narrow winding passage, which is mostly dry but eventually opens into the large humid main passage coming down from the bottom of the vertical entrance. It was at this point that the three specimens of *Toshiaphaenops ovicollis* were obtained. All the three were found from under a piece of decayed split bamboo used by local people for making torches and abandoned on a wet slope crusted with flowstone. We searched for additional specimens both by naked eyes and by baited traps, but all that we were able to obtain was *Cathaiaphaenops delprati* DEUVE (1996, p. 42, figs. 1, 4, 7), a larger semi-aphaenopsoid species which is rather widely distributed in Feihu Dong Cave.

This large cave was first investigated biologically in August 1995 by Louis DEHARVENG and Anne BEDOS, who participated in the "Expédition spéléologique franco-chinoise ((Xiangxi 95))" under the leadership of Bruno DELPRAT. Since the cave is more than 16 km in total length and has several huge rooms with underground streams, it is impossible to make a thorough biological survey within a short time. Still other discoveries will be made in future, and I believe even a third species of the Trechinae can be expected.

Toshiaphaenops globipennis S. UENO, sp. nov.

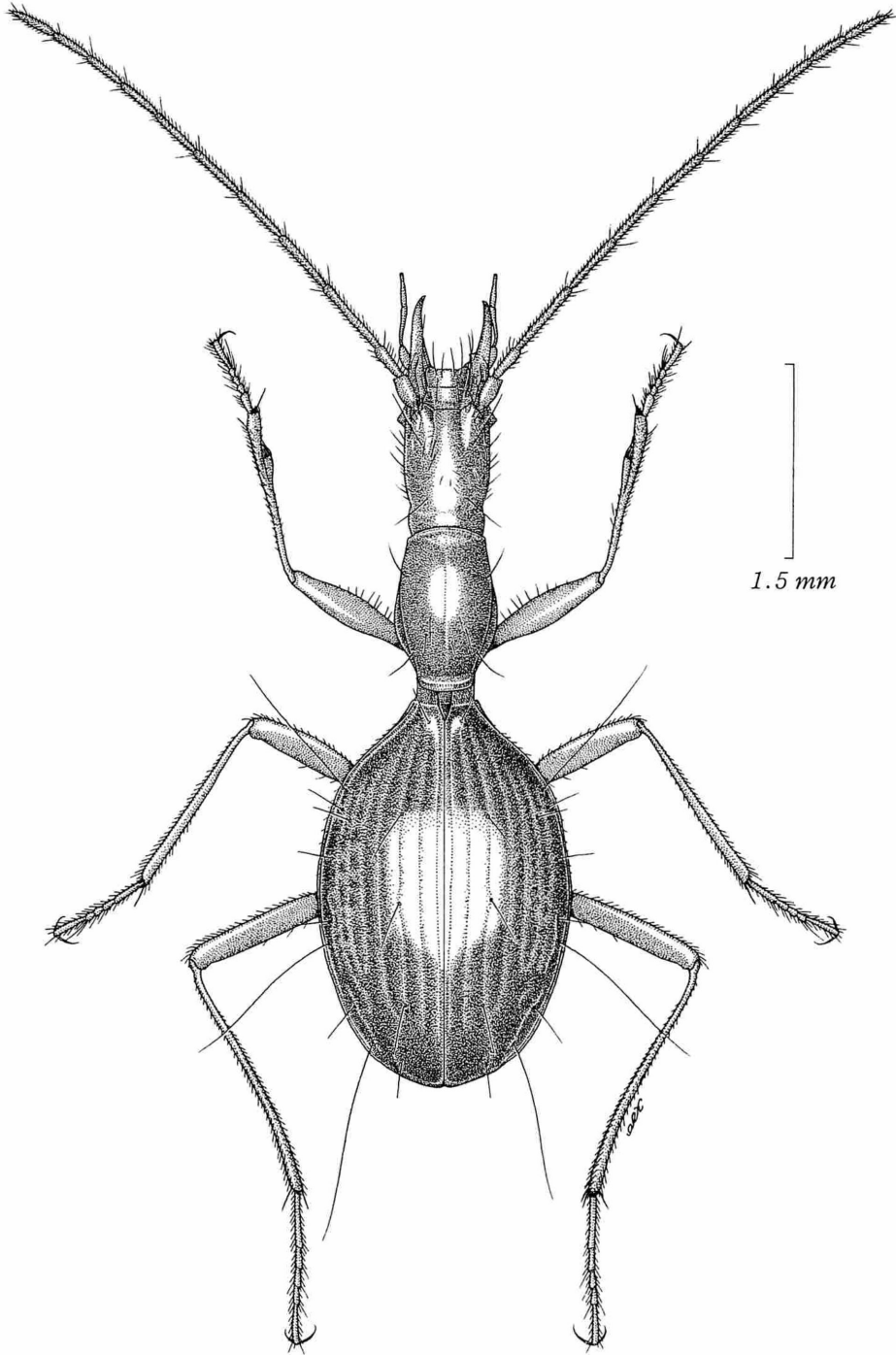
(Fig. 4)

Length: 5.35 mm (from apical margin of clypeus to apices of elytra); 6.10 mm (including mandibles).

Distinguished at first sight from the type species by the narrow prothorax and the hemispherical elytra with deeply impressed and coarsely punctate striae. The two species are also different in many other details as described below.

Slightly larger than the type species. Colour reddish brown, polished, obviously

Fig. 4. *Toshiaphaenops globipennis* S. UENO, sp. nov., ♀, from Dishui Dong Cave at Nongjiagai, southwestern Hubei.



lighter than in the type species though relatively dark among aphaenopsoid trechines; palpi and two or three apical antennomeres paler than the other parts.

Head elongate, about five-eighths as wide as long, HL/PL 0.88, widest just behind the level of antennal sockets and slightly narrowed posteriad in almost straight lines to just before neck constriction, which is not deep but distinct, extending continuously onto both dorsum and venter; neck very transverse barrel-shaped, slightly but distinctly expanded at middle in a ring; dorsum gently convex, sparsely covered with fairly long hairs; frontal furrows deeply impressed in front, feebly arcuate, and abruptly ending at about middle; supraorbital setae as in *T. ovicollis*; genae hardly convex, abruptly constricted posteriad by transverse impression of neck constriction, and rather sparsely covered with fairly long hairs which spread ventrad onto subgenae; antennae long, reaching apical fifth of elytra.

Prothorax elongate, wider than head, much longer than wide, widest at two-fifths from base, and more gradually narrowed towards apex than towards base; PW/HW 1.20, PL/PW 1.51. Pronotum elongate, widest at three-fifths from base, and a little more gradually narrowed towards apex than towards base; PNW/HW 1.15, PL/PNW 1.57; lateral margins finely bordered, the borders visible throughout from above, nearly straight in front except near front angles, gently so behind the widest part, shallowly sinuate at about basal eighth, and then slightly convergent towards rounded hind angles; posterior marginal seta widely distant from hind angle as in *T. ovicollis*, being located at about basal two-ninths; apex arcuate, with front angles very obtuse; base narrower than apex, feebly arcuate at middle and anteriorly rounded on each side at hind angle; PNW/PA ca. 1.42, PNW/PB ca. 1.71, PB/PA ca. 0.83; dorsum strongly convex, steep at the sides and particularly before basal transverse sulcus, with three hairs on each side of median line at about two-fifths from base; median line fine though sharply impressed; apical transverse impression shallow, procurved; basal transverse sulcus deep, clearly separating narrow convex basal area from the disc. Propleura not much expanded laterad though clearly visible from above except for apical two-fifths, more gradually convergent anteriorly than posteriad and posteriorly reaching ante-basal sinuation.

Elytra suborbicular with subpedunculate basal parts, widest at the middle, and a little more gradually narrowed towards apices than towards bases; EW/PW 2.40, EL/PL 2.39, EL/EW 1.50; shoulders completely effaced; prehumeral borders oblique, very slightly sinuate, with outcurved anteriormost portions; sides narrowly bordered throughout, moderately arcuate before middle, a little less so behind, and rather widely and conjointly rounded at apices, each without appreciable preapical emargination; dorsum hemispherically convex, very steeply declivous at the sides and in basal parts; striae deeply but not sharply impressed and coarsely punctate, becoming shallower at the side though even stria 7 is fragmentarily traceable, stria 1 approaching to suture posteriorly, stria 8 obsolete before the middle set of marginal umbilicate pores; apical striole rudimentary, not sharply impressed; intervals gently convex on the disc but flat at the side; stria 3 with two setiferous dorsal pores at about 2/9 and 1/2 from base, re-

spectively; preapical pore located at apical sixth.

Ventral surface glabrous in fore body; abdominal sternites 3–5 each with a few additional hairs at the median part. Legs slenderer than in *T. ovicollis*; metatibia two-thirds as long as elytra, outwardly arcuate in apical two-fifths; tarsi thin, mesotarsus about three-fifths as long as mesotibia, metatarsus about two-thirds as long as metatibia; tarsomere 1 about as long as tarsomeres 2–4 together in mesotarsus, shorter than that but longer than tarsomeres 2–3 together in metatarsus.

Male unknown.

Type specimen. Holotype: ♀, 23–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 Dishui Dong, 830 m in altitude, at Nongjiagai of Laoli Xiang in Xianfeng Xian, southwestern Hubei, Central China.

Notes. Though considerably different in details, above all in the conformation of the elytra, the present species should be congeneric with *T. ovicollis* in view of the fact that many diagnostic characters are shared by the two trechines. They are identical in the dark-coloured body practically devoid of microsculpture, conformation of buccal appendages including the mandibles and the labium, the elongate prothorax with expanded propleura and anteriorly removed posterior marginal setae, the strongly convex and glabrous elytra devoid of appreciable shoulders and with lateral margins minutely ciliated, degeneration of the scutellar and apical striae, characteristic arrangement of the preapical, apical and marginal umbilicate pores, and conformation of the protibiae. Unfortunately, male is unknown of the present species, but we can safely expect that the aedeagal features of *T. globipennis* are basically similar to those of *T. ovicollis*.

The single known specimen of *T. globipennis* was found leisurely crawling on the vertical wall about 60 cm above the floor some 150 m inside Dishui Dong Cave. This large cave is a ponor opening at the bottom of a deep valley about 5 km north-northwest of Xianfeng, and is more than 2 km long. A narrow stream flows into the cave from the large entrance, and carries various plant residue for a considerable distance, most probably in the rainy season. A new *Cathaiaphaenops* was found around the organic matters both on the floor and on the wall, but the spot at which the *Toshiaphaenops* was met was well above the stream-bed and beyond the reaches of floods. Incidentally, the air temperature on September 23rd, 1997 was 16°C near the collecting site of the beetle.

Genus *Shenaphaenops* S. UÉNO, nov.

Type species: *Shenaphaenops humeralis* S. UÉNO, sp. nov.

Erected for a small aphaenopsoid trechine beetle similar in many respects to *Toshiaphaenops*, but decisively different from the latter in the coarse body surface wholly covered with pubescence and with microsculpture at least on head and pronotum, the absence of the posterior pair of marginal setae and transverse basal sulcus on

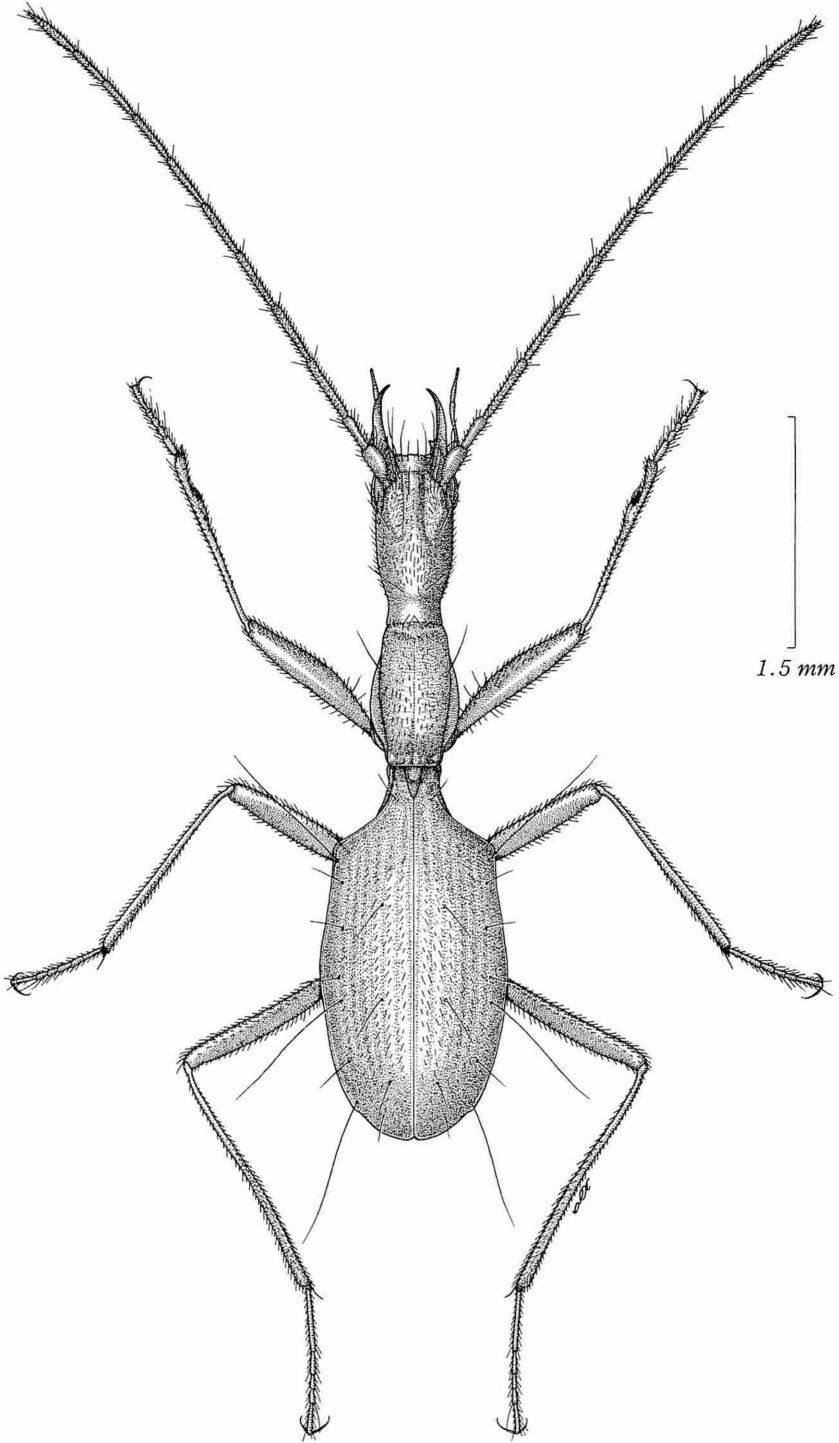
pronotum, prominent humeral angles of elytra, and the position of the first pore of the marginal umbilicate series, which is located evidently before the level of the second. Colour light reddish brown, not so dark as in *Toshiaphaenops*.

Head elongate, much longer than wide, widest behind the middle, and densely pubescent except near neck constriction; frontal furrows incomplete, deeply impressed and very feebly arcuate in anterior third before the level of anterior supraorbital setae, then outcurved and abruptly obsolete; two widely distant pairs of supraorbital setae present on lines convergent posteriorly, a pair of subgenal setae present though not so remarkable as in *Toshiaphaenops*; eyes completely absent; genae slightly convex behind middle; neck constriction shallow though distinct; clypeus fairly narrow, quadrisetose. Labrum transverse, with the apical margin bisinuate, subtruncate at the middle. Mandibles as in *Toshiaphaenops*. Mentum fused with submentum, the former with a porrect tooth in apical emargination, which is truncate at the tip, the latter bearing a transverse row of 10 setae; ligula and maxillae as in *Toshiaphaenops*; palpi as in *Toshiaphaenops*, but the penultimate segment of labial palpus bears only two inner setae. Antennae long and very thin, reaching apical sixth of elytra, though structurally similar to those of *Toshiaphaenops*.

Prothorax elongate, wider than head, much longer than wide, widest obviously behind the middle, and a little more contracted at apex than at base. Pronotum narrow, widest before the middle, finely bordered at the apex and sides, with only a pair of anterior marginal setae at the widest part and devoid of the posterior pair; lateral margins briefly sinuate just before hind angles which are rounded at the corners; basal transverse impression uneven, not forming a continuous transverse sulcus; disc pubescent and with fine transverse striations. Propleura tumid, swollen out laterad in basal two-thirds except for basal area. Scutellum small though distinct.

Elytra fused together, subpedunculate at the bases, much wider than prothorax, much longer than wide, with prominent humeral angles and long emarginate prehumeral parts; sides narrowly bordered throughout, the border continuing to apex and curving round to interval 1; dorsum strongly convex, steeply declivous in marginal parts; striae not sharply impressed particularly at the sides, coarsely and irregularly punctate or rather subvariolate, both scutellar and apical strioles absent; interval 1 very narrow, almost disappearing behind middle, other intervals more or less irregular due to variolation, each bearing an irregular row of pubescence, which partly forms two or even three rows; stria 3 with two setiferous dorsal pores, the anterior one of which is widely distant from the base; preapical pore located at the apical end of stria 3, which does not form apparent anastomosis with stria 2, and about twice more distant from apex than from suture; only one apical pore present latero-apical to preapical pore, the posterior apical one absent; humeral set of marginal umbilicate pores not aggregated, the 1st pore not adjoining marginal gutter but located inside the humeral angle evi-

Fig. 5. *Shenaphaenops humeralis* S. UENO, gen. et sp. nov., ♀, from Shen Dong Cave at Muqiao Cun in Shuicheng Xian, northwestern Guizhou.



dently before the level of the 2nd, the 3rd pore not adjoining marginal gutter though close to the 2nd, the 4th widely distant from the 3rd and also from the marginal gutter; umbilicate pores of the middle set and the 7th pore widely distant from marginal gutter but the 8th pore is closely located to the gutter.

Ventral surface including gula and coxae more or less densely pubescent; visible sternites 2 and 3 fused together, 3–5 each with a pair of paramedian setae along the posterior margin, anal sternite with two pair of marginal setae in ♀. Legs very long and slender, wholly pubescent though rather sparsely on femora; protibiae not externally grooved, each briefly arcuate at the apical portion; tarsi thin, tarsomere 4 with a long hyaline ventral apophysis in pro- and mesotarsi.

Secondary sexual and male genitalic characters unknown.

Range. Known so far from only a limestone cave in Liupanshui Shi in north-western Guizhou, South China.

Notes. Though similar in many respects to *Toshiaphaenops*, this new genus may have a closer affinity to *Junaphaenops* S. UENO (1997, p. 15) from eastern Yunnan. Both occur in the subterranean domain of the Yungui Highlands and share characteristic conformation of the elytra — highly convex on the dorsum and with prominent shoulders, a peculiarity that is rather unusual for troglobiontic trechines. In *Toshiaphaenops*, on the other hand, the elytral shoulders are completely effaced as in many advanced cave trechines including Chinese *Dongodytes*. If such a difference really reflects phylogenetic discrepancy, both *Shenaphaenops* and *Junaphaenops* must belong to the *Cathaiaphaenops* lineage whose components may be widely distributed in South-Central China, and the close resemblance between *Toshiaphaenops* and *Shenaphaenops* can be regarded as the result of parallel evolution. Unfortunately, only one female of the type species of *Shenaphaenops* has so far been obtained, and besides, our knowledge is still fragmentary as regards the trechine fauna of Chinese caves. Further investigations of the cave fauna are therefore needed for clarifying true relationships of the trechine genera hitherto known from Chinese caves, above all in northeastern Yunnan, southern Sichuan, eastern Guizhou and southwestern Hunan.

The new generic name *Shenaphaenops* is derived from a combination of the Chinese word *Shen* (meaning a god) and *Aphaenops*, since its type species was discovered in the limestone cave called Shen Dong which means the Cave of God.

Shenaphaenops humeralis S. UENO, sp. nov.

(Fig. 5)

Length: 4.35 mm (from apical margin of clypeus to apices of elytra); 4.90 mm (including mandibles).

Body elongate, with narrowly stretched fore body and relatively large elytra; surface wholly pubescent on both dorsum and venter, and more or less coarsely sculptured, particularly on elytra. Concolorously light reddish brown, shiny; palpi, apical segments of antennae, tarsi and venter of hind body yellowish brown, more or less

paler than the other parts of body.

Head elongate, slightly longer than prothorax, HL/PL 1.04, about five-ninths as wide as long, subparallel-sided in apical three-fifths and then narrowed posteriorly towards shallow neck constriction; neck gently dilated posteriad; dorsum moderately convex behind the level of anterior supraorbital setae, which are closer to side margins than to frontal furrows in dorsal view; microsculpture consisting of irregularly oblique, fine transverse lines near frontal furrows but of coarse polygonal meshes in other parts. Antennae long and very thin, reaching apical sixth of elytra; pedicel about as long as scape but about seven-tenths as wide as the latter, about a half as long as segment 3, which is about 1.2 times as long as segment 4 or 5 and about 6 times as long as wide; segments 6–10 gradually decreasing in length towards apex, each cylindrical, segment 7 nearly 4.5 times as long as wide; terminal segment about as long as segment 6, obviously longer but narrower than scape.

Prothorax elongate, widest at three-eighths from base, and more gradually narrowed towards apex than towards base; PW/HW 1.15, PL/PW 1.58. Pronotum narrow, slightly narrower than head, widest at four-sevenths from base, and not much narrowed towards the two ends; PNW/HW 0.91, PL/PNW 1.99; lateral margins finely bordered throughout, slightly arcuate ventrad near front angles and not visible from above at those portions, nearly straight before the widest part, very feebly arcuate behind there, slightly sinuate at about basal eighth, and then slightly divergent posteriad; apex feebly arcuate, postero-ventrally rounded on each side and devoid of distinct front angles; base slightly wider than apex, nearly straight at middle, and anteriorly rounded on each side at hind angle; PNW/PA ca. 1.33, PNW/PB ca. 1.25, PB/PA ca. 1.07; dorsum longitudinally convex, rather densely pubescent, closely covered with fine transverse striations and fine transverse lines of microsculpture, the latter of which fill in the spaces among the former; median line fine but distinct, briefly widened in basal area; apical transverse impression procurved, basal transverse impression fairly deep though uneven; both apical and basal areas narrow. Propleura strongly convex, more gradually convergent anteriorly than posteriad and extending to apical third in dorsal view, roundly convergent posteriad to ante-basal situation.

Elytra elongate with subpedunculate basal parts, much wider than prothorax, widest at about middle, and a little more gradually narrowed towards humeral angles than towards apices; EW/PW 2.08, EL/PL 2.31, EL/EW 1.76; humeral angles prominent, almost tuberculate; prehumeral borders almost straightly oblique before humeral angles but outwardly arcuate in front and complete to basal peduncle; sides narrowly bordered throughout, the borders somewhat widened at humeral angles, slightly sinuate behind them, feebly arcuate to distinct preapical emargination, and then almost conjointly and rather narrowly rounded at apices; dorsum strongly convex, steeply declivous at the sides and in apical areas, and rather flatly and steeply declivous before the level of humeral angles; microsculpture obliterated; striae fairly deep on the disc but not sharply carved except stria 1, which approaches closely to suture in apical half, striae 2–4 almost entire though irregular due to variolation, outer striae more fragmen-

tary, stria 8 not deepened in apical part; intervals irregularly nibbled at the sides by variolation, apical carina absent; stria 3 with two setiferous dorsal pores at about 1/3 and 2/3 from base, respectively, the anterior one lying between the levels of the 3rd and the 4th pores of the marginal umbilicate series and the posterior one just before the level of the 6th pore; preapical pore located at apical seventh.

Ventral surface and legs as described under the genus. Metatibia about three-fourths as long as elytra, outwardly arcuate in apical two-fifths. Tarsi slender; mesotarsus a little more than a half as long as mesotibia, metatarsus nearly two-thirds as long as metatibia; tarsomere 1 about as long as tarsomeres 2–4 together in both meso- and metatarsi.

Male unknown.

Type specimen. Holotype: ♀, 16–IX–1998, S. UENO leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

Type locality. Limestone cave called Shen Dong, 1,860 m in altitude, at Muqiao Cun of Laoyingshan Zhen in Shuicheng Xian, Liupanshui Shi, northwestern Guizhou, South China.

Notes. The type locality of this interesting new species, Shen Dong Cave, is a subvertical ponor opening at the lowest corner of a large doline located to the east-northeast of Shuicheng. It was open to tourists in former times, but is abandoned now, containing many rotten logs and bamboos previously used for constructing steps, ladders and bridges. From the bottom of the entrance shaft, the main passage extends rather horizontally and branches out narrower side passages, most of which are vertical. A new *Guizhaphaenops* is rather commonly found in various parts of the cave, but the present species seems extremely rare. Only the single known specimen of the latter was found from beneath a fist-sized stone lying on the wet muddy floor fed by trickling water at the bottom of the entrance shaft, together with two specimens of the *Guizhaphaenops*. It was not so agile as the larger species, but tried to escape into a crevice of the nearby side wall.

要 約

上野俊一：中国中南部産アシナガメクラチビゴミムシ類の2新属3新種。—— 中国中南部の湖南省北西部、湖北省南西部および贵州省北西部の石灰洞から、アシナガメクラチビゴミムシ類の2新属3新種を記載し、それぞれに *Toshiaphaenops ovicollis* S. UENO, *T. globipennis* S. UENO および *Shenaphaenops humeralis* S. UENO の新名を与えた。ふたつの新属は一見たがいによく似ているが、上翅の形状にいちじるしい相違があり、異なった2系統のものが収斂現象によって、同じような形態をもつようになったのではないかという考えを否定しきれない。3番めの種の雄が将来みつかった段階で、類縁関係の再検討をする必要がある。

References

DEUVE, Th., 1993. Description de *Dongodytes fowleri* n. gen., n. sp., Coléoptère troglobie des karsts du

- Guangxi, Chine (Adephaga, Trechidae). *Bull. Soc. ent. Fr.*, **98**: 291–296.
- DEUVE, Th., 1996. Descriptions de trois Trechinae anophtalmes cavernicoles dans un karst du Hunan, Chine [Coleoptera, Trechidae]. *Revue fr. Ent.*, (N.S.), **18**: 41–48.
- UÉNO, S.-I., 1997. A new aphaenopsoid trechine beetle (Coleoptera, Trechinae) from Yunnan, Southwest China. *J. speleol. Soc. Japan*, **22**: 14–23.
- 1998 a. Two new genera and species of anophthalmic trechine beetles (Coleoptera, Trechinae) from limestone caves of southeastern Guizhou, South China. *Elytra, Tokyo*, **26**: 37–50.
- 1998 b. Notes on *Dongodytes* (Coleoptera, Trechinae), with description of a new species. *J. speleol. Soc. Japan*, **23**: 1–15.
- & J. RAN, 1998. Notes on *Sinaphaenops* (Coleoptera, Trechinae), with descriptions of two new species. *Elytra, Tokyo*, **26**: 51–59.
- & F. WANG, 1991. Discovery of a highly specialized cave trechine (Coleoptera, Trechinae) in Southeast China. *Ibid.*, **19**: 127–135.
- VIGNA TAGLIANTI, A., 1997. A new genus and species of troglobitic Trechinae (Coleoptera, Carabidae) from southern China. *Int. J. Speleol.*, **25** [for 1996]: 33–41.

Elytra, Tokyo, **27** (2): 633–634, November 13, 1999

A New *Cychropsis* (Coleoptera, Carabidae) from Mt. Namcha Barwa in Southeast Tibet

Yûki IMURA

Department of Gynecology, Tôkyû General Hospital, Kita-senzoku,
1–45–6, Ôta-ku, Tokyo, 145–0062 Japan

Through the courtesy of Mr. Jan FARKAČ (Prague), I recently had an opportunity to examine the *Cychropsis* specimens collected on Mt. Namcha Barwa in Southeast Tibet. Though resembling *C. businskyi*, the species in question bears several peculiarities which seem to be of specific importance. It is therefore described as follows.

Cychropsis namchabarwana IMURA, sp. nov.

Description. Length: 15.8–18.4 mm (including mandibles). Entirely black and rather strongly polished, with a faint dark bluish tinge on the dorsal surface. Closely allied to *Cychropsis businskyi* DEUVE (1992, p. 272, figs. 16, 21), but distinguishable from it by the following points: 1) body a little larger in size and slenderer; 2) vertex much less frequently punctate; 3) antennae longer, extending beyond basal three-fifths of elytra in male; 4) pronotum with the disc