

New *Sinaphaenops* (Coleoptera, Trechinae) from Southern Guizhou,  
with Notes on *Thaumastaphaenops pulcherrimus*

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**Abstract** Three new species of aphaenopsoid trechine beetles of the genus *Sinaphaenops* are described from limestone caves in southern Guizhou, South China, under the names *S. orthogenys*, *S. trisetiger* and *S. bidraconis*. They are evidently different from the previously described species in the configuration of the head, which resembles that in the genus *Dongodytes*. *Thaumastaphaenops* MAGRINI, VANNI et ZANON, 1997, is regarded as a junior synonym of *Sinaphaenops*, and a new combination, *Sinaphaenops pulcherrimus*, is proposed.

The trechine genus *Sinaphaenops* S. UÉNO et F. WANG (1991, p. 128) is an assemblage of aphaenopsoid species that exhibit the highest modification of external morphology. All the three species hitherto described occur in the county of Libo Xian at the southeastern part of Guizhou in South China (UÉNO & RAN, 1998). Our investigations made in 2000 and 2001 have revealed that other species of the same genus occur not only in a county neighbouring Libo Xian but also in other counties of southern Guizhou. Unfortunately, these newly found species are very rare, two of the three being known at present from only single females. They are, however, quite distinctive in external morphology, and will be described in the present paper under the new names *Sinaphaenops orthogenys*, *S. trisetiger* and *S. bidraconis* in view of their zoogeographical importance for analysing the distributional pattern of Chinese cave trechines. Unlike the Libo species of the genus, these new trechines have an elongated subtriangular head, which resembles that of *Dongodytes* DEUVE (1993; UÉNO, 1998), though they are otherwise quite different from the members of the latter genus.

In 1997, MAGRINI, VANNI and ZANON described a beautiful cave trechine from a deep cave in Ziyun Xian at the southwestern part of Guizhou, and placed it in a new genus, *Thaumastaphaenops*. However, their superb description of the new genus (pp. 108–113) clearly shows that this is a very close relative of *Sinaphaenops*, whose members exhibit considerable variability in morphological features currently adopted for classifying trechine genera and subgenera. As in some other genera of Chinese trechines (cf. UÉNO, 2000 a–c), they are not only variable individually in body size and elytral configuration but also variable specifically in certain features that are usually stable in the trechine genera occurring in other parts of the world. As will be pointed

out on later pages, all the character states considered by the original authors to be diagnostic of their new genus fall in the range of variation of *Sinaphaenops*. I am therefore going to regard *Thaumastaphaenops* as a junior synonym of *Sinaphaenops* and to propose a new combination, *Sinaphaenops pulcherrimus*, mainly on the basis of the result of my examination of newly collected specimens.

There still remains a wide blank in our knowledge about the actual distributional range of *Sinaphaenops*. It does not seem to extend much farther towards the north, since an outline of the cave trechine fauna of northern Guizhou is fairly well known now (cf. VIGNA TAGLIANTI, 1997; UÉNO, 1999 a–b, 2000 a, c). It is to be hoped that caves in Luodian Xian, western parts of Pingtang Xian and southwestern counties of Guizhou will be closely investigated in near future, though it is not an easy task to fulfill this requirement, since our own investigations made, for instance, in Pingtang Xian have brought forth only one cave inhabited by *Sinaphaenops* out of the twelve caves explored, some of which seemed suitable for harbouring certain ultra-evolved trechines.

The abbreviations employed in the present paper are the same as those explained in previous papers of mine.

I wish to express my deep indebtedness to Dr. Toshio KISHIMOTO, without whose devoted collaboration I could never have obtained the satisfactory results recorded in this and other papers of mine. I also wish to thank Mr. FAN Ting of the Academia Sinica and the authorities of the governments of Pingtang Xian and Ziyun Xian, Guizhou, whose kind arrangement made our cave investigations possible.

*Sinaphaenops orthogenys* S. UÉNO, sp. nov.

(Fig. 1)

Length: 7.85 mm (from apical margin of clypeus to apices of elytra); 8.55 mm (including mandibles).

Closely similar to *S. gracilior* S. UÉNO et RAN (1998, pp. 53, 55, figs. 2, 6–7), with standard ratios all included or nearly included in the range of individual variation of the latter species, but discriminated at first sight from it by the different configuration of head and elytra.

Colour as in *S. gracilior*, though the appendages are a little darker. Head a little longer, elongated subtriangular, widest just behind the articulation of antennae and almost straightly narrowed, particularly in posterior half, towards neck constriction, which is relatively wide, about two-fifths as wide as the widest part, about three-fourths as wide as prothoracic articulation, obviously shorter than in *S. gracilior*, and not distinctly petiolate; HL/HW 2.64, HL/PL 1.30; genae very feebly convex in anterior halves and sparsely covered with fine hairs; neck convex as to form a ring; dorsum convex though depressed in front, with frontal furrows deeply impressed in anterior third, only slightly arcuate, but externally curved before disappearing at a level behind the anterior pair of supraorbital pores; microsculpture, buccal organs and antennae as

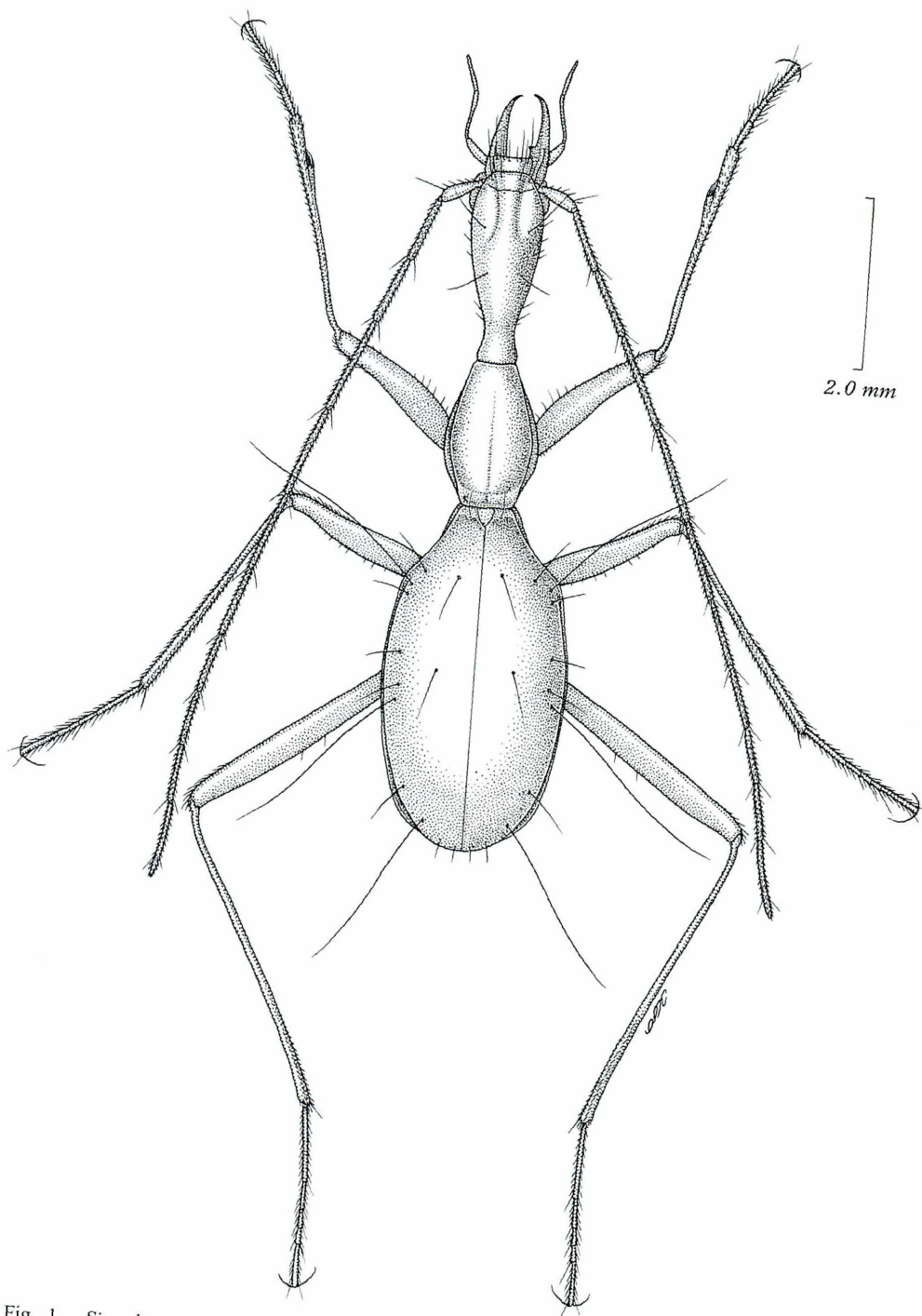


Fig. 1. *Sinaphaenops orthogenys* S. UENO, sp. nov., ♀, from Yanggong Dong Cave in Sandu Xian.

in *S. gracilior*; mental tooth simple; submentum provided with a transverse row of seven setae; antennae extending beyond elytral apices nearly by two apical antennomeres.

Prothorax similar to that in the narrowest specimen of *S. gracilior*, widest at basal third, PW/HW 1.29, PL/PW 1.58; pronotum also narrow, widest at a level a little behind middle, PNW/HW 1.11, PL/PNW 1.84, PNW/PA 2.13, PNW/PB 1.36, PB/PA 1.56; other prothoracic features as in *S. gracilior*.

Elytra obviously less ample at the basal parts, less convex, and less pointed at the apices than in *S. gracilior*, widest at about middle, with the humeral parts much less pronounced and prehumeral borders more oblique; EW/PW 1.95, EL/PL 2.31, EL/EW 1.87; shoulders very obtuse though slightly convex, prehumeral borders evidently more oblique than in *S. gracilior* and slightly arcuate outwards; sides narrowly bordered throughout and barely visible at middle in dorsal view, briefly straight behind shoulders, then slightly arcuate to a level before the eighth pore of the marginal umbilicate series, and rather widely and conjointly rounded at apices; dorsum strongly convex but less so than in *S. gracilior*, and more gently slanting anteriorly in basal areas which are devoid of delimited foveoles; suture carinate in basal fifth; two setiferous dorsal pores present on the site of stria 3 at basal 1/5 and the middle, the anterior pore lying at about the level of the first pore of the marginal umbilicate series and the posterior one between the levels of the fourth and fifth umbilicate pores; preapical pore absent; humeral set of marginal umbilicate pores similar in arrangement to that of *S. gracilior*, though the fourth pore is less distant from marginal gutter, the first pore lying before the level of the second pore though removed backwards and widely distant from marginal gutter.

Ventral surface and legs as in *S. gracilior*.

Male unknown.

*Type specimen.* Holotype: ♀, 1–XI–2000, S. UÉNO leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

*Type locality.* Limestone cave called Yanggong Dong, 730 m in altitude, at Banmen Cun of Sandong Xiang in Sandu Xian, southeastern Guizhou, South China.

*Notes.* Though hitherto known from only a single female, this species is definitely different from the previously described species in the configuration of its head, which is not clearly bottlenecked and similar to that of *Dongodytes* (DEUVE, 1993; UÉNO, 1998). Besides, the elytra are narrower at the level of the humeri, which are much less pronounced than in *S. gracilior*.

Yanggong Dong is a limestone cave well known to villagers as a fort or a retreat. It was used by them from old times to the period of the Second World War. It is located on a hill about 30 km south by east in a beeline from the town of Sandu, and is 22.7 km distant to the north by east from Shuiboshui Dong Cave, the type locality of *S. gracilior*. The entrance is open on a steep grassy slope above a doline and is concealed by vegetation. It is closed with two heavy stone discs nearly 2 m in diameter and movable on stone rails.

From just inside the entrance, the cave steeply descends for 50 m or so to the horizontal part. Stone stairs are made on the steep slope, suggesting frequent utilization of the cave by villagers. The horizontal passage is fairly wide, very humid and partly muddy, leading to a relatively dry spacious room with various remains of refugees. A narrow ascending passage branches off from this large room and leads to the top of a huge boulder pile under a large skylight. Beyond this point, the cave steeply descends to the foot of the slope of boulders, and then drops into a narrow stream passage on the lowest level.

The single known specimen of *Sinaphaenops orthogenys* was found quickly running on a flowstone under a stalagmitic wall in the horizontal passage at about two-thirds way from the bottom of the entrance slope to the large room. The air temperature at the collecting site was 14°C on November 1, 2000. No other specimens of this new species were found after hours of searches, though a short series of specimens of a new *Oodinotrechus* were taken at the lowest part of the entrance slope (UÉNO, unpubl.).

***Sinaphaenops trisetiger* S. UÉNO, sp. nov.**

(Fig. 2)

Length: 6.95 mm (from apical margin of clypeus to apices of elytra); 7.60 mm (including mandibles).

Similar in many respects to *S. orthogenys* S. UÉNO, but readily distinguished by the shorter head and prothorax, more pronounced humeral angles of elytra which are somewhat opaque due to coarse microsculpture, and the presence of three setiferous dorsal pores on elytra instead of two.

Colour as in *S. orthogenys*. Head similar to that of *S. orthogenys* in lacking hour-glass-shaped cervical part, but shorter, broader in posterior two-thirds, and a little less straightly narrowed posteriad towards evidently thicker neck constriction, which is about a half as wide as the widest part, five-sixths as wide as prothoracic articulation, and obviously shorter than in *S. orthogenys*; HL/HW 2.23, HL/PL 1.20; genae nearly straightly convergent in anterior halves behind the widest part, which is just behind antennal articulation, but slightly convex in posterior parts and a little more rapidly convergent towards neck constriction, sparsely bearing fine hairs as in *S. orthogenys*; neck thickened and forming a ring as in *S. orthogenys*; dorsum as in *S. orthogenys*, but the frontal furrows are sinuate, outwardly arcuate in posterior two-fifths and obsolete before the level of the posterior pair of supraorbital pores; microsculpture as in the other congeners; mental tooth simple though blunt at the tip; submentum provided with a transverse row of eight setae; antennae extending beyond elytral apices by one and a half apical antennomeres.

Prothorax similar in general configuration to that of *S. orthogenys*, but shorter and widest more in front (at about two-fifths from base), PW/HW 1.31, PL/PW 1.41; pronotum relatively broad, widest at three-sevenths from base, and less contracted to-

wards the two ends, particularly towards the base; PNW/HW 1.15, PL/PNW 1.62, PNW/PA 1.99, PNW/PB 1.24, PB/PA 1.60; other pronotal features as in *S. orthogenys* and *S. gracilior*.

Elytra as in *S. orthogenys*, but obviously wider at the level of humeri which are distinct and obtusely angulate, widest slightly before the middle, and more pointed at apices than at bases; EW/PW 1.93, EL/PL 2.57, EL/EW 1.89; prehumeral borders a little less oblique than in *S. orthogenys*, nearly straight, and very slightly outcurved at the anteriormost portions; sides narrowly bordered throughout though hardly visible from above at the middle parts, nearly straight and parallel to each other behind humeral angles, then very slightly divergent to the widest part, and very feebly arcuate to before the level of the seventh pore of the marginal umbilicate series; apices narrowly and conjointly rounded; dorsum strongly convex and steeply declivous in marginal parts, basal declivity obviously steeper than in *S. orthogenys*, with basal foveoles mal-delimited at the postero-lateral sides; suture obtusely carinate in basal fifth; microsculpture rather coarse, reticulation evidently less transverse than in *S. orthogenys*, partially almost isodiametric; three setiferous dorsal pores present on the site of stria 3 at 1/8, 3/10 and 3/5 from base, respectively, the proximal pore lying before the level of the first pore of the marginal umbilicate series, the middle one before the level of the fourth umbilicate pore and the apical one behind the level of the sixth umbilicate pore; preapical pore absent; humeral set of marginal umbilicate pores similar in arrangement to that of *S. orthogenys*, the first pore lying before the level of the second, though widely distant from marginal gutter.

Ventral surface and legs as in *S. orthogenys*.

Male unknown.

*Type specimen.* Holotype: ♀, 4-X-2001, S. UÉNO & T. KISHIMOTO leg. Deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

*Type locality.* Limestone cave called Xiangshui Dong (No. IV), 730 m in altitude, at Bamaochong of Pinghu Zhen in Pingtang Xian, southern Guizhou, South China.

*Notes.* With the exception of the elytral configuration, which looks like that of *S. gracilior*, and the coarse microsculpture of the elytra, this new species is similar in many respects to *S. orthogenys*. It is, however, decisively different from the two species in the presence of three setiferous dorsal pores on each elytron, and also in the shorter head and prothorax. Its type locality, Xiangshui Dong, is nearer to that of *S. gracilior* than to that of *S. orthogenys*, lying about 70 km west-northwest of Shuiboshui Dong Cave which harbours the former species.

The Xiangshui Dong cave system consists of four caves developed along a stream which enters underground from the side of a paddy field. Two upstream caves are large but short tunnels with the water course at one side. The third cave is also a tunnel at its upper part, with the upper opening at the end of a blind valley and the large lower one at the bottom of a large doline. The stream widens beyond the lower entrance to this

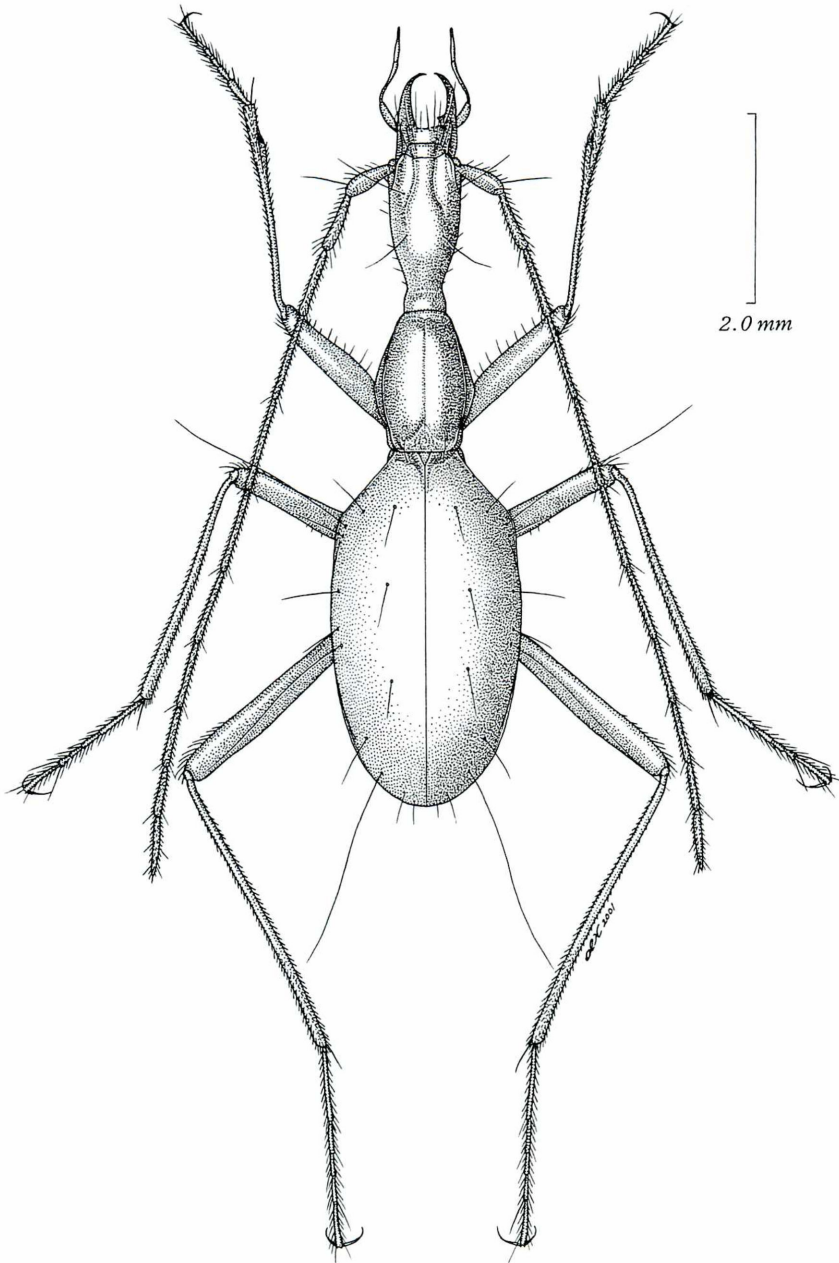


Fig. 2. *Sinaphaenops trisetiger* S. UENO, sp. nov., ♀, from Xiangshui Dong Cave in Pingtang Xian.

cave, covering the full width of the wide passage and flowing down to below the fourth or the most downstream cave, which is a fossil one and mostly separated from the present streamway. It can be entered from an entrance opening just above a cultivated field and artificially enlarged for storing lime, and gently slants down from there. The first part is a string of several small rooms, of which the lower (inner) two looked like half dried-up muddy basins. The single known specimen of *S. trisetiger* was found at this place from beneath a fist-sized stone lying on cracked but still moist mud. It was very agile when exposed, and was barely caught by collaboration of KISHIMOTO and I. The air temperature was 19°C on October 4, 2001.

After the small rooms, the passage opens to a wide muddy gallery doubtless subject to seasonal floods from the present waterway below. We searched for additional specimens of the trechine beetle also in this part of the cave, which maintained several places that looked promising. Unfortunately, however, all our efforts ended in vain.

***Sinaphaenops bidraconis* S. UÉNO, sp. nov.**

(Figs. 3–5)

Length: 6.10–7.50 mm (from apical margin of clypeus to apices of elytra); 6.75–8.25 mm (including mandibles).

Similar to *S. trisetiger* S. UÉNO in many respects, but distinguished at first sight from it by the position of the first pore of the marginal umbilicate series of elytra, which is located between the levels of the second and third umbilicate pores. Besides, the elytra are shiny and more parallel-sided, with the humeral parts a little narrower and the humeri a little less prominent though somewhat tuberculate.

Colour lighter than in *S. trisetiger*, concolorously reddish brown, shiny, with paler palpi. Head similar to that of *S. orthogenys*, widest just behind antennal articulation and almost straightly narrowed posteriad towards neck constriction, which is relatively wide and shallow, four-sevenths as wide as the widest part, and slightly narrower than prothoracic articulation; HL/HW 2.19–2.26 (M 2.23), HL/PL 1.12–1.16 (M 1.14); genae either feebly convex before middle or straight, very slightly sinuate in posterior fifth, and with a few hairs; neck slightly convex, not forming a distinct ring; dorsum depressed in anterior part, with frontal furrows feebly arcuate in front and outcurved behind the level of anterior supraorbital pores; microsculpture and buccal organ as in the other species of the genus; mental tooth broad and simple, blunt at the tip; submentum provided with a transverse row of seven or eight setae; antennae extending beyond elytral apices by two apical antennomeres.

Prothorax as in *S. orthogenys*, widest at about basal third, PW/HW 1.19–1.28 (M 1.24), PL/PW 1.50–1.61 (M 1.57); pronotum widest at about two-fifths from base, PNW/HW 0.99–1.08 (M 1.04), PL/PNW 1.78–1.93 (M 1.87), PNW/PA 1.78–2.02 (M 1.87), PNW/PB 1.18–1.31 (M 1.24), PB/PA 1.48–1.55 (M 1.51); other prothoracic features as in *S. orthogenys*.

Elytra similar to those of *S. trisetiger*, but more parallel-sided and narrower at the



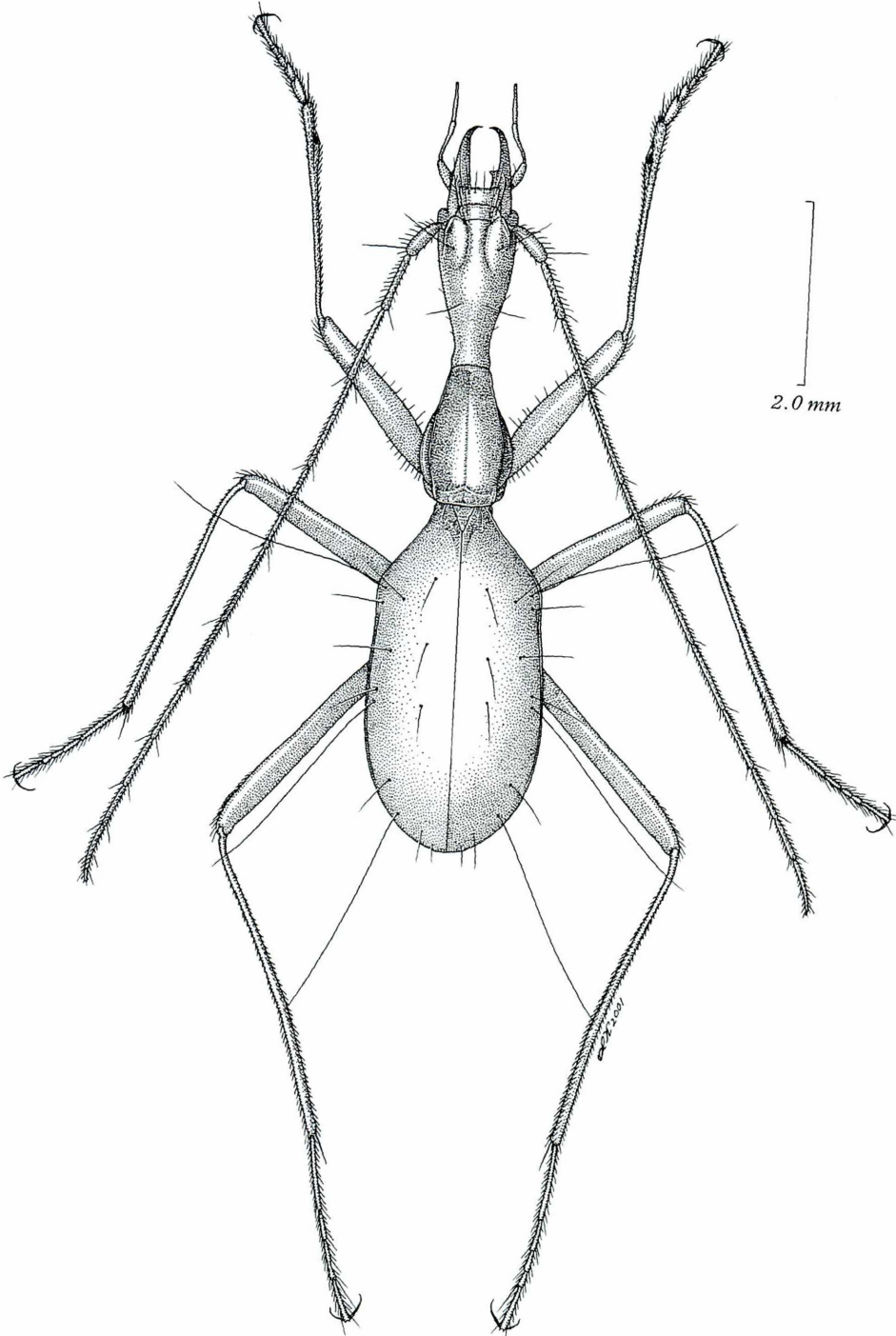
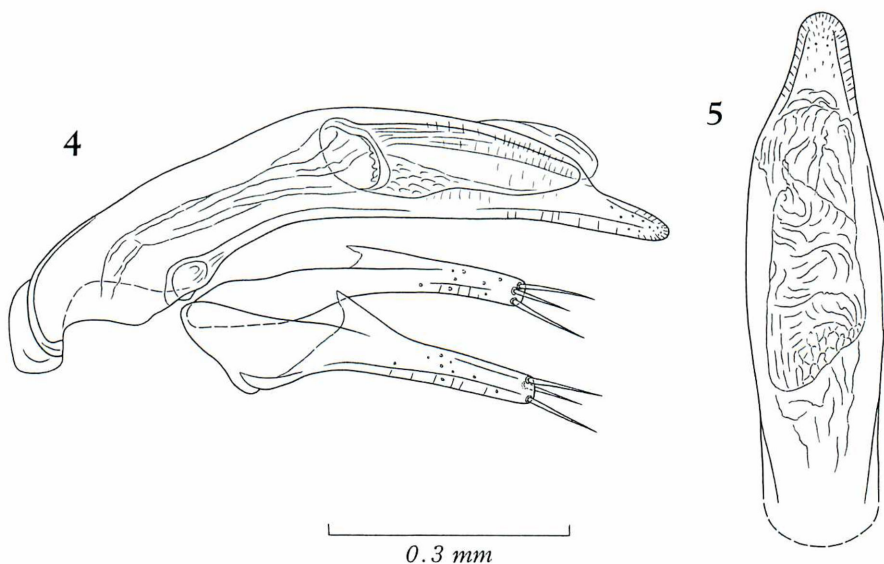


Fig. 3. *Sinaphaenops bidraconis* S. UENO, sp. nov., ♂, from Shuanglong Dong Cave in Ziyun Xian.

level of humeri, which are a little less prominent than in the latter though somewhat tuberculate, widest more or less behind middle; EW/PW 1.94–2.03 (M 1.97), EL/PL 2.30–2.58 (M 2.44), EL/EW 1.83–2.01 (M 1.95); prehumeral borders more oblique than in *S. trisetiger*, nearly straight; sides narrowly bordered throughout and barely visible from above at middle, only very slightly arcuate at middle, gently so in apical third, and rather widely and conjointly rounded at apices; dorsum strongly convex, steeply declivous at lateral parts but rather gently slanting anteriorly in basal areas, which are longitudinally foveolate near the obtusely carinate part of suture; microsculpture fine as in *S. orthogenys*, evidently different from that of *S. trisetiger*; three setiferous dorsal pores present on the site of stria 3 at 1/5 or a little in front, 1/3–2/5 and 1/2–5/8 from base, respectively; preapical pore absent; humeral set of marginal umbilicate pores markedly different in arrangement from that of *S. orthogenys* and *S. trisetiger*, the first pore translocated onto the site of interval 6 or 7 and lying between the levels of the second and third umbilicate pores, the fourth pore widely distant from marginal gutter and nearer to the fifth umbilicate pore than to the third.

Ventral surface and legs as in *S. trisetiger*, though the legs are somewhat slenderer; anal sternite provided with two pair of marginal setae in both the sexes. In ♂, protarsomeres 1 and 2 feebly dilated, minutely denticulate inwards at apices, and furnished beneath with several adhesive appendages.

Male genital organ very small and rather lightly sclerotized, differing from those of the Libo species in the narrow apical lobe of aedeagus with simply blunt tip, and



Figs. 4–5. Male genitalia of *Sinaphaenops bidraconis* S. UENO, sp. nov., from Shuanglong Dong Cave in Ziyun Xian; left lateral view (4), and apical part of aedeagus, dorso-apical view (5).

from that of *S. pulcherrimus* in the much slenderer aedeagus with narrower and longer apical lobe, whose tip is simple and not modified, and with much slenderer styles. Aedeagus about one-fifth as long as elytra, elongate, depressed, lightly twisted, and hardly arcuate in apical two-thirds though gently curved ventrad at the elongate basal part; basal orifice large, deeply emarginate at the sides, and provided with moderately developed sagittal aileron; viewed dorsally, apical part lightly inclined to the right, with apical lobe relatively narrow at the base and gradually narrowed towards the tip which is rather widely rounded; viewed laterally, apical lobe narrow, very slightly curved ventrad, and straightly produced, with the tip blunt; ventral margin nearly straight in profile from before middle to the base of apical lobe. Inner sac armed with a large anisotropic copulatory piece about two-fifths as long as aedeagus, lightly constricted before middle and narrowly rounded at the apex. Styles long and slender, left style a little longer than the right, each bearing two short stout apical setae supplemented by a short thin additional seta between the two.

*Type series.* Holotype: ♂, 13-X-2001, T. KISHIMOTO leg. Allotype: ♀, paratype: 1 ♂, 13-X-2001, S. UENO leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

*Type locality.* Limestone cave called Shuanglong Dong, 1,210 m in altitude, at Gaozhai of Niebulong Cun in Maoying Zhen, Ziyun Xian, southern Guizhou, South China.

*Notes.* This new species is closely similar to *S. trisetiger*, but is definitely different from it in the position of the first pore of the marginal umbilicate series of the elytra, which is translocated posteriorly to behind the level of the second pore. In this respect, it is similar to *S. pulcherrimus* from the southern part of the same county, but is distinguished at first sight from it by the different configuration of the head, the presence of the third setiferous dorsal pore and the absence of the preapical pore on the elytra, and some other minor details.

The type locality of *Sinaphaenops bidraconis*, Shuanglong Dong Cave, lies at the back of the small village called Gaozhai about 3 km to the east by south of the village of Maoying and about 22 km to the north by east of the town of Ziyun. It marks the northwestern periphery of the known distributional range of the genus *Sinaphaenops*, and is about 120 km west by north of Xiangshui Dong Cave, the type locality of *S. trisetiger*, and about 54.5 km distant to the north-northwest from Zharou Dong Cave, which is the westernmost known locality of *S. pulcherrimus*.

The cave was first explored and surveyed in the autumn of 1986 by a joint party of the Plongée Spéléo Club Jeunes Années and the Institute of Geology of the Academia Sinica, and the result was published in two different reports (AUDRA, 1987, p. 72; ZHANG & BARBARY (eds.), 1988, pp. 60–61). It is therefore not necessary to repeat a general sketch of the cave. The holotype was found resting in a maze of aragonite formations on a wall of a depression about 130 m removed from the entrance. The allotype and paratype were found running around several pieces of decayed bamboo used for making a torch and abandoned at the edge of microgours about 450 m removed

from the entrance. The air temperature of the habitats was 15°C on October 13, 2001.

This new species is named after its type locality, Shuanglong Dong, which means a “cave of double dragon” in Chinese.

### *Sinaphaenops pulcherrimus*

(MAGRINI, VANNI et ZANON, 1997), comb. nov.

*Thaumastaphaenops pulcherrimus* MAGRINI, VANNI et ZANON, 1997, Redia, Firenze, **80**, p. 114, figs. 1–5; type locality: Fengzi Dong Cave (erroneously spelled «Fong zhi Dong» in the original description).

Length: 5.80–6.90 mm (from apical margin of clypeus to apices of elytra); 6.45–7.60 mm (including mandibles).

This species was so carefully described by the original authors that a full re-description does not seem needed. For showing individual variation of the species, it is not useless to give here morphometrical data and some other comments based on freshly collected specimens.

Colour as in *S. bidraconis*, but the apical antennomeres and femora are usually somewhat lighter. Head shorter than in *S. bidraconis* though much longer than wide, subparallel-sided in anterior half and then roundly narrowed posteriad towards neck constriction, which is clearly marked round the cephalic capsule though not petiolate, about two-fifths as wide as the widest part and about four-fifths as wide as prothoracic articulation; HL/HW 2.06–2.27 (M 2.15), HL/PL 1.04–1.11 (M 1.09); genae gently convex; dorsum sparsely provided with fairly long hairs, one to three of which are usually ranged arcuately between anterior and posterior supraorbital setae; frons usually with a pair of short frontal setae just behind the level of antennal articulation; neck ring-like though not so convex; right mandible tridentate though seemingly bidentate according to individuals; labium completely fused though the trace of labial suture is sometimes traceable; submentum provided with a transverse row of six to ten (usually seven to nine) setae; penultimate segment of labial palpus either bisetose or trisetose; antennae very long and slender, extending beyond elytral apices by two and a half apical antennomeres.

Prothorax similar to that of *S. bidraconis*; PW/HW 1.24–1.40 (M 1.32), PL/PW 1.44–1.58 (M 1.50), PNW/HW 1.04–1.19 (M 1.09), PL/PNW 1.69–1.91 (M 1.82), PNW/PA 1.93–2.15 (M 2.02), PNW/PB 1.23–1.42 (M 1.33), PB/PA 1.44–1.59 (M 1.52). Elytra relatively narrow, widest at about or a little before the middle, with less prominent humeral angles and a little more oblique prehumeral borders than in *S. bidraconis*; EW/PW 1.76–1.91 (M 1.86), EL/PL 2.26–2.50 (M 2.42), EL/EW 1.89–2.02 (M 1.96); sides feebly arcuate from behind shoulders to the level of the eighth umbilicate pore of the marginal series; two setiferous dorsal pores present on the site of stria 3 at 1/7–1/5 and 2/5–4/9 from base, respectively; preapical pore present, located at 1/10–1/6 from apex and evidently more distant from apex than from suture; marginal umbilicate pores as in *S. bidraconis*, though the first pore of the humeral set

is usually located at the level of the second pore. Each ventrite usually provided with only a pair of paramedian setae but sometimes supplemented by a second seta on one side; anal sternite usually with two pair of marginal setae in both ♂ and ♀, but sometimes bearing a third seta on one side or on both sides (particularly in females).

Legs and male genitalia as described by the original authors, but the copulatory piece is definitely anisotropic even though “positioned horizontally... on the aedeagus floor” (cf. UÉNO & ZHAO, 1997, p. 195).

*Specimens examined.* 3 ♂♂, Zharou Dong, 11-X-2001, S. UÉNO & T. KISHIMOTO leg.; 2 ♂♂, 4 ♀♀, Zharou Dong, 14-X-2001, S. UÉNO & T. KISHIMOTO leg. (found in baited traps set by S. UÉNO & T. KISHIMOTO on 11-X-2001); 1 ♂, Liyingshan Dong, 14-X-2001, S. UÉNO & T. KISHIMOTO leg. (all NSMT).

*Localities of the specimens examined.* Limestone caves called Zharou Dong, 1,110 m in altitude, and Liyingshan Dong, 1,220 m in altitude, both at Daying Cun of Daying Xiang in Ziyun Xian, southern Guizhou, South China.

*Notes.* This species was originally described from the limestone cave called Fengzi Dong, 1,180 m in altitude, at Daying Cun (sometimes called “Dayun” in former times) of Daying Xiang. KISHIMOTO and I went to the entrance to this vertical cave on 11 October 2001, but were unable to investigate it because of the shortage of necessary equipment for going down into the chasm. It is open under a limestone cliff above the narrow outlet groove of an uvala, about 2.2 km southeast of the village of Daying and about 40 km southeast of the town of Ziyun. From Xiangshui Dong Cave in Pingtang Xian, which is the type locality of *S. trisetiger*, Fengzi Dong Cave is about 103 km distant to the west-southwest in a beeline.

Since no other caves of moderate size were known in the same uvala, we looked for them in the adjacent polje basin to the east, and found three promising ones in it, though we had time to explore only two of them, Zharou Dong Cave and Liyingshan Dong Cave. The former lies on the left side of the outlet way about 700 m north-northwest of the village of Daying, and is about 3 km distant to the northwest from Fengzi Dong Cave. The latter is open under a cliff at the opposite side; it is only 250 m distant to the east-southeast from Zharou Dong Cave but lies at a higher level (110 m higher in altitude).

Zharou Dong is a wet cave with several pools and rim pools of groundwater. Most specimens of *Sinaphaenops pulcherrimus* were found by naked eyes and also by baited traps in a small room at the innermost of the main passage, running on the narrow sloping floor thickly covered with slippery yellowish clay or on a steep wall crusted with flowstone. A single isolated specimen was taken from beneath a fist-sized stone lying on a wet floor only 40 m or so removed from the entrance. In Liyingshan Dong Cave, the single known specimen was found from under a pile of stones under the right wall less than 100 m removed from the entrance. The air temperature was 15°C in Zharou Dong Cave on October 11, 2001, and 13°C at the collecting site in Liyingshan Dong Cave on October 14, 2001.

All the ten specimens taken in the two caves delineated above agree well with the

original description of *Thaumastaphaenops pulcherrimus* and are doubtless conspecific with the type specimen from Fengzi Dong Cave, which is a large male exactly identical in size with the largest specimen examined in the present study. The standard ratios of body parts given in the above account are based solely on the measurements taken on the nine Zharou Dong specimens. Those of the single Liyingshan Dong specimen are as follows: HL/HW 2.13, HL/PL 1.07, PW/HW 1.31, PL/PW 1.51, PNW/HW 1.03, PL/PNW 1.92, PNW/PA 1.91, PNW/PB 1.37, PB/PA 1.40, EW/PW 1.86, EL/PL 2.42, EL/EW 1.97.

In view of the basic similarity of the male genitalia and the arrangement of the marginal umbilicate series of the elytra, this trechine beetle seems related to *S. bidraconis*, even though there is a considerable discrepancy in external morphology between the two species. The discrepancy is above all pronounced in the configuration of the head and the presence or absence of the preapical pore on the elytra. These are, however, of only specific importance, neither generic nor subgeneric. All the other differences are rather trivial, since they are contained in the range of variation of *Sinaphaenops*. In erecting *Thaumastaphaenops* for their new species, the original authors (p. 113) pointed out six diagnostic characters. Of these, the mandibular dentition, the number of setae on the penultimate segment of labial palpus, the supraorbital areas and the ventrites, and the position of sclerite in the aedeagal inner sac are not stable in the Chinese species of the Trechinae, as was illustrated in a previous paper of ours (UENO & RAN, 2001, pp. 11–12).

Examining a series of specimens of “*Thaumastaphaenops*” *pulcherrimus*, I came to realize that “the third supraorbital seta” described by the original authors as being diagnostic of their new genus is not a true supraorbital seta but a slightly modified hair of the dorsum. It is always clearly smaller and thinner than the ordinary supraorbital setae, and its number varies from zero to three. In certain cave trechines with relatively long hairs on the cephalic dorsum, it is sometimes difficult to distinguish supraorbital setae from other hairs. *Dongodytes* DEUVE (1993; UENO, 1998) and *Laosaphaenops* DEUVE (2000, p. 38) are the examples of this. “*Thaumastaphaenops*” *pulcherrimus* also belongs to this type, and actually there are only two pair of ordinary setae in its supraorbital areas, which are frequently supplemented by small false supraorbital hairs.

Thus, *Thaumastaphaenops* is regarded herewith as a junior synonym of *Sinaphaenops* as summarized below.

*Thaumastaphaenops* MAGRINI, VANNI et ZANON, 1997, Redia, Firenze, **80**, p. 108; type species: *Thaumastaphaenops pulcherrimus* MAGRINI, VANNI et ZANON, 1997. (*Syn. nov.*)

=*Sinaphaenops* S. UENO et F. WANG, 1991, Elytra, Tokyo, **19**, p. 128; type species: *Sinaphaenops mirabilissimus* S. UENO et F. WANG, 1991.

### Postscript

At the last stage of proof-reading of the present paper, KISHIMOTO and I had an opportunity to revisit many caves in southeastern Guizhou and succeeded in obtaining nine additional specimens including males of *Sinaphaenops trisetiger* sp. nov. (pp. 61–64) in its type cave Xiangshui Dong (IV). Though the cave system is not a small one, this trechine seems restricted to a very small portion of the fossil passage of the cave IV, and is seemingly very rare since only one additional female was taken by naked eyes on this trip. However, eight more specimens were caught by baited traps placed for four days at and near the spot at which the two living individuals had been found. It is already too late now to replace its description with a renewed one, but a preliminary examination of the genitalia of a male suggested that the affinity of *S. trisetiger* to *S. bidraconis* sp. nov. (pp. 64–68) is not so close and that the former is rather isolated in the genus *Sinaphaenops*. I prefer to record herewith only the collecting data of the newly obtained specimens of *S. trisetiger* and to include them in the type series, though full accounts of the male genitalia and the range of variation of morphometrical data have to be left to another paper.

Allotype: ♂, Xiangshui Dong Cave (IV), 730 m alt., Bamaochong, Pinghu Zhen, Pingtang Xian, S. Guizhou, S. China, 26–V–2002, S. UENO & T. KISHIMOTO leg. (found in a baited trap set by S. UENO & T. KISHIMOTO on 22–V–2002). Paratypes: 1 ♀, same locality, 22–V–2002, S. UENO & T. KISHIMOTO leg.; 3 ♂♂, 4 ♀♀ (incl. 1 teneral ♀), same collecting data as for the allotype. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

### 要 約

上野俊一：中国贵州省南部で発見された *Sinaphaenops* 属アシナガメクラチビゴミムシ類の新種、ならびに *Thaumastaphaenops pulcherrimus* の分類学的地位。—— 世界中でもっともいちじるしい形態的特殊化を遂げたアシナガメクラチビゴミムシの1属 *Sinaphaenops* は、これまで中国贵州省南東部の荔波县のみから知られていた。この論文では、荔波县の北に隣接する三都县三洞乡の仰公洞、西に隣接する平塘県平湖鎮の响水洞、さらに西に位置する紫云县猫营鎮の双龙洞から同属の新種を報告し、それぞれに *S. orthogeyss* S. UENO, *S. trisetiger* S. UENO および *S. bidraconis* S. UENO という新名を与えて記載した。また、1997年に紫云县大营乡の蜂子洞から記載された *Thaumastaphaenops pulcherrimus* MAGRINI, VANNI et ZANON を、新たに採集された材料に基づいて再検討した結果、明らかに *Sinaphaenops* 属に含まれるものと判定されたので、この属に移すとともに、*Thaumastaphaenops* を *Sinaphaenops* の下位同物異名として整理した。

なお、本稿の校正中に、*S. trisetiger* の雄を含む追加標本がおもにトラップによって採集されたが、雄交尾器の描写を含む新しい記載に差し替える時間的な余裕がないので、記録だけを論文末に追記し、詳細はのちの機会に譲った。

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