

Taxonomical Notes on Chinese Species of the Tyrine Genus *Tyrinasius* (Coleoptera, Staphylinidae, Pselaphinae)

Shûhei NOMURA

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

Abstract A tyrine genus of pselaphid beetle, *Tyrinasius* KURBATOV is recorded for the first time from China. Four new species, *T. sichuanus* and *uenoianus* from Sichuan Prov. and *T. yinae* and *sexpunctatus* from Yunnan Prov. are described.

Introduction

The genus *Tyrinasius* is defined by KURBATOV (1993) on the basis of two new species, *orcinus* from Uzbekistan and *saluki* from Kazakhstan. This genus is very distinct in its appearance as compared with the other members of the tribe Tyrini. I found this genus from Sichuan and Yunnan, Southwest China, and recognized four new species to be described below.

Genus *Tyrinasius* KURBATOV

Tyrinasius KURBATOV, 1993, Russ. ent. J., **2**: 51. Type species: *Tyrinasius orcinus* KURBATOV, by original designation.

Body broadened posteriorly, more or less flattened in elytra and abdomen, sparsely pubescent.

Head ovoid, frons narrowed and strongly convex, with a median fovea and a pair of distinct dorsal tentorial pits, postgenae broad, weakly rounded or flattened. Eyes reduced to 3 to 5 facets. Antenna short and slender. Labrum short, weakly broadened in anterior part, mandibles each broad, sharpened distally, with 3 to 5 denticles, maxilla short in basal part, maxillary palpi very large, each arcuate, 1st segment very short, 2nd large and elongate, swollen in apical part, 3rd narrowed basally, swollen distally, 4th fusiform to ovoid, with short palpal spine near apex, labium short, mentum quadrate or trapezoidal, labial palpus elongate, narrowed distally, 1st segment very short, cylindrical, 2nd the largest, with a long seta at external side of the apex, 3rd shorter than 2nd, very narrow, paraglossae short and narrow, each densely setose on anterior side.

Pronotum ovoid or subglobose, smooth on dorsal and lateral surface, without foveae nor sulci. Elytra strongly narrowed at base, each elytron with 1 to 2 basal

foveae. Legs short and slender, trochanters each elongate, narrowed basally, tarsi each with a pair of symmetrical tarsal claws.

Abdomen very large, rounded on lateral and posterior side in dorsal view, 4th to 7th tergites each transverse, smooth on dorsal surface, with a pair of paratergites, 8th tergite narrowed posteriorly, truncate at apex, 8th sternite emarginate at apex in male, arcuate in female, 9th sternite consisting of a median and a pair of lateral plates, lamellar in male, almost membranous in female. Male genitalia symmetrical, weakly sclerotized, parameres paired, more or less connected with each other at base, median lobe nearly ovoid to elongate, endophallus narrow and lamellar.

Remarks. The genus *Tyrinasius* is very distinct in the reduced eyes, the large and slender maxillary palpi, the narrowed pronotum and basal part of the elytra, and very large and more or less flattened abdomen.

Key to Chinese Species of the Genus *Tyrinasius*

1. Fifth abdominal tergite longer than 4th
(*T. orcinus* KURBATOV from Uzbekistan and *T. saluki* KURBATOV from Kazakhstan).
- Fifth abdominal tergite about as long as, or shorter than, 4th 2.
2. Fifth abdominal tergite about as long as 4th; elytra more or less depressed 3.
- Fifth abdominal tergite shorter than 4th; elytra convex 4.
3. Fourth to 6th abdominal tergites each with a pair of semicircular setiferous patches at base *T. sexpunctatus* sp. nov.
- Fourth to 5th abdominal tergites each with a pair of narrow and transverse setiferous patches at base, 6th with a pair of very narrow and indistinct setiferous patches *T. yinae* sp. nov.
4. Fourth segment of maxillary palpus nearly symmetrical, fusiform and simply articulated with 3rd *T. sichuanus* sp. nov.
- Fourth segment of maxillary palpus asymmetrical, obliquely articulated with 3rd *T. uenoianus* sp. nov.

Tyrinasius sichuanus sp. nov.

(Figs. 2 A–B, 3 A, 5 D–E, 6 A–F)

Male. Length 2.13–2.20 mm. Width 0.95–1.05 mm. Body reddish brown, maxillary palpi and tarsi light brown, broadened posteriorly, weakly flattened on dorsal surface.

Head longer than wide, ovoid, clypeus short, arcuate on anterior margin, frons strongly convex, constricted just behind antennal bases, vertex roundly convex, with a pair of dorsal tentorial pits between eyes, genae broadened anteriorly in front of eyes, postgenae broad, weakly rounded. Eyes each reduced to 3 to 5 facets. Antennae slender, reaching base of elytra, 1st segment large, longer than wide, subcylindrical, 2nd 1.1 times as long as wide, cylindrical, 3rd to 8th subequal in width, successively short-

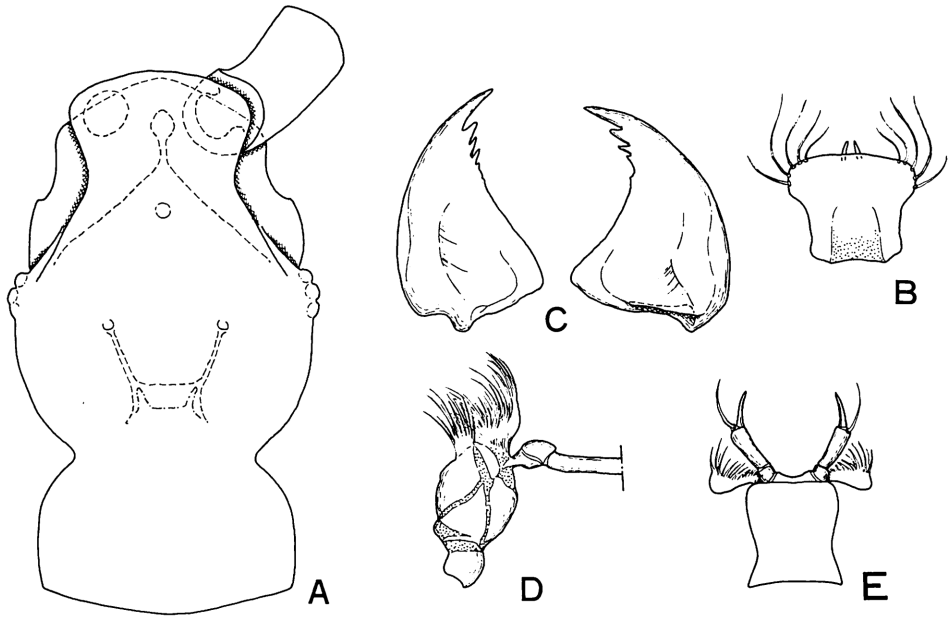


Fig. 1. Head and mouthparts of *Tyrinasius yinae* sp. nov. — A, Cranium in dorsal view; B, labrum; C, mandibles; D, left maxilla (apical part of maxillary palpus excluded); E, labium.

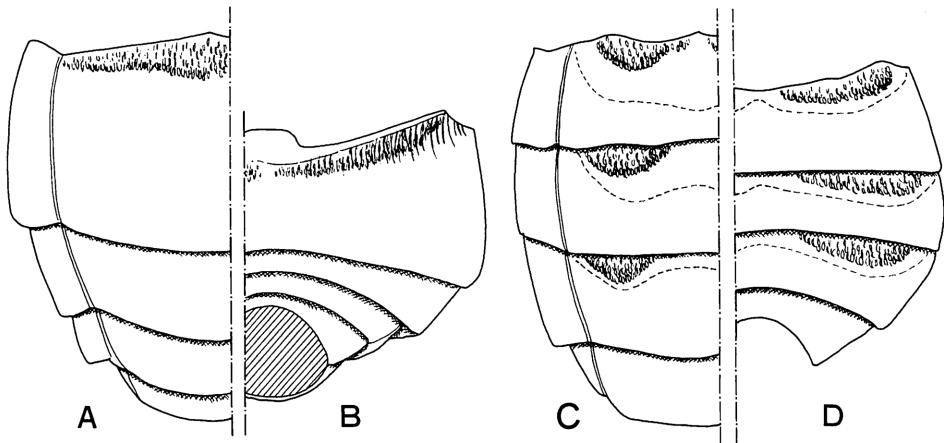


Fig. 2. Abdominal structure of *Tyrinasius*. — A, *T. sichuanus* sp. nov., 4th to 7th abdominal segments in dorsal view; B, ditto, in ventral view; C, *T. sexpunctatus* sp. nov., 4th to 7th abdominal segments in dorsal view; D, ditto, in ventral view.

ened distad, 3rd to 5th each ovoid, 6th to 8th each subglobose, 9th 1.2 times as large as 8th, subglobose, 10th 1.2 times as wide as 9th, gently transverse, 11th the largest, as long as 9th+10th, slightly wider than 10th, ovoid, weakly pointed at apex, relative length (width) of each segment from base to apex:— 2.0 (1.0): 1.2 (0.8): 1.1 (0.7): 1.0 (0.7): 1.0 (0.7): 0.8 (0.7): 0.7 (0.7): 0.7 (0.7): 1.0 (1.1): 1.2 (1.5): 2.6 (1.8). Maxillary palpi as long as head, elongate and arcuate, 1st segment very short, 2nd elongate, strongly narrowed in basal half, strongly swollen in apical half, 3rd shorter and slightly narrower than 2nd, strongly narrowed in basal 1/4, with a minute seta at apex, 4th the largest, as long as 1st+2nd, slightly wider than 2nd, ovoid, strongly narrowed at base, with very short palpal spine at apical 1/10 on inner side, sparsely covered with weakly curled setae around palpal spine.

Pronotum as long as head, as long as wide, gently convex on dorsal side, rounded on lateral sides, smooth on dorsal and lateral surfaces, sparsely covered with pubescence. Elytra slightly longer than pronotum, transverse and trapezoidal, each elytron with 2 indistinct foveae and an adsutural sulcus from inner basal fovea to posterior end. Legs short and slender, trochanters elongate, each narrowed basally, femora weakly swollen medially, tibiae slender, each weakly incurved in apical part, tarsi slightly thickened medially.

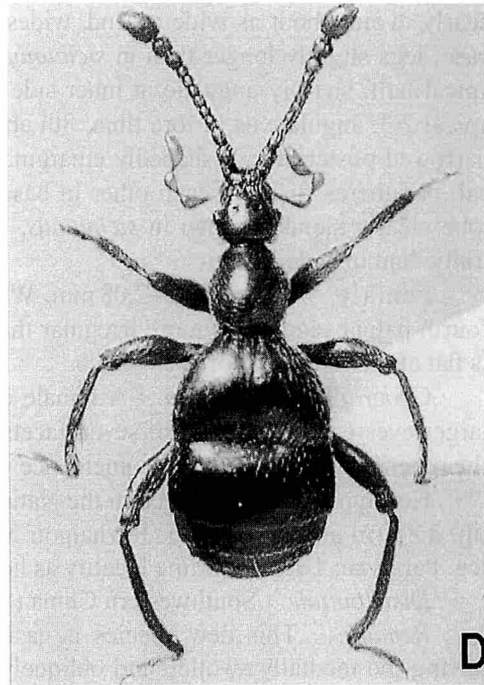
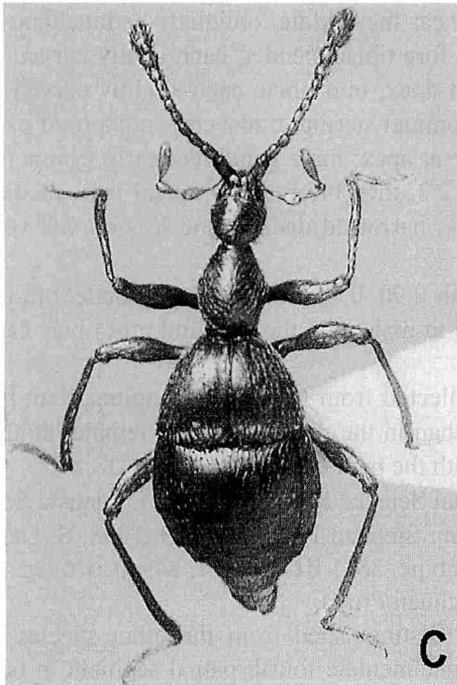
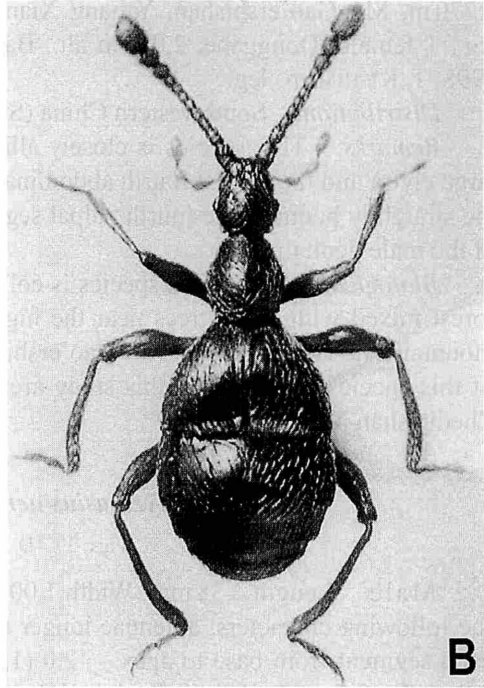
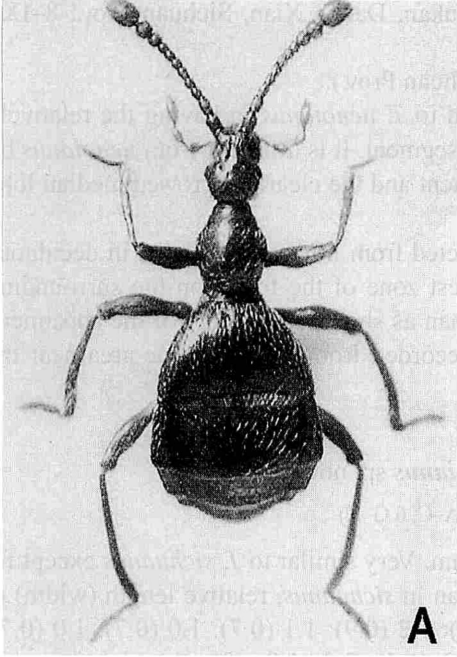
Abdomen larger than elytra, wider than long, rounded laterally and posteriorly, 4th abdominal segment the largest, transverse and nearly trapezoidal, slightly broadened posteriorly, with a pair of large and posteriorly broadened paratergites, 5th about a half as long as 4th in dorsal view, transverse and narrowed posteriorly, 6th to 7th subequal in dorsal length, each about a half as long as 5th, transverse, 8th tergite trapezoidal in exposed part, narrowed posteriorly, truncate at apex, 8th sternite narrowed posteriorly, arcuately emarginate at apex, 9th sternite consisting of a median and a pair of lateral plates, lamellar, median plate transverse and ovoid in exposed part, connected with a lateral plate on one side at basal part, lateral plates nearly symmetrical, each quadrangular, weakly sclerotized in latero-apical part.

Male genitalia weakly sclerotized; parameres V-shaped in ventral view, each narrowed distally, median lobe elongate, thickened and ovoid in basal part, narrowed and curved ventrally in apical part, obtusely projected rightwards at apex, with a large and ovoid membranous part on dorsal side, endophallus long and slender, nearly straight.

Female. Length 2.10–2.13 mm. Width 0.98 mm. Very similar to male and almost indistinguishable in appearance; metasternum flattened at median part; 8th abdominal sternite transverse, straight on posterior margin; 9th sternite almost membranous.

Holotype male (preserved in the National Science Museum, Tokyo), Geda Liangzi, 3,500 m alt., Zheduoshan Mts., Daofu Xian, Sichuan Prov., 8–IX–1998, T. KISHIMOTO leg. Paratypes: 1 female, same data as holotype; 1 male, Tiemengou,

Fig. 3. Habitus of *Tyrinasius* spp. — A, *T. sichuanus* sp. nov., male; B, ditto, female; C, *T. uenoianus* sp. nov., male; D, ditto, female.



3,770 m, Mt. Gao'ershishan, Yajiang Xian, Sichuan Prov., 30-IX-1996, S. NOMURA leg.; 1 female, Donggahe, 2,970 m alt., Baitukan, Danba Xian, Sichuan Prov., 8-IX-1998, T. KISHIMOTO leg.

Distribution. Southwestern China (Sichuan Prov.).

Remarks. This species is closely allied to *T. uenoianus* in having the relatively large elytra and the largest fourth abdominal segment. It is different from *uenoianus* by the straightly pedunculate fourth palpal segment and the clearly narrowed median lobe of the male genitalia.

Biological notes. This species is collected from litter accumulated in deciduous forest mixed with *Abies* trees near the highest zone of the forest on the surrounding mountains at Tiemengou on Mt. Gao'ershishan as shown in Fig. 6. All the specimens of this species examined in this study are recorded from the subalpine area near the Zheduoshan Mountains.

***Tyrinasius uenoianus* sp. nov.**

(Figs. 3 C-D, 5 A-C, 6 G-K)

Male. Length 2.38 mm. Width 1.00 mm. Very similar to *T. sichuanus* except for the following characters: antennae longer than in *sichuanus*, relative length (width) of each segment from base to apex:— 2.0 (1.0): 1.2 (0.9): 1.1 (0.7): 1.0 (0.7): 1.0 (0.7): 0.8 (0.7): 0.7 (0.7): 0.6 (0.7): 1.1 (1.2): 1.2 (1.5): 3.0 (1.8); fourth palpal segment nearly ovoid, about as wide as 2nd, widest near the middle, obliquely pedunculate at base; legs slightly longer than in *sichuanus*, fore tibiae slender, each gently curved in apical half, sharply angulate at inner side of apex, mid tibiae each slightly curved in apical 2/3, angulate as in fore tibia; 8th abdominal sternite transverse in exposed part, narrowed posteriorly, V-shapedly emarginate at apex; male genitalia nearly symmetrical, parameres fused to each other in basal 2/3, then bifurcate in apical part, median lobe clearly slenderer than in *sichuanus*, less narrowed distally and less curved ventrally than in *sichuanus*.

Female. Length 2.05–2.08 mm. Width 0.90–0.93 mm. Similar to male, but the fourth palpal segment is more irregular than in male, and the fore and mid tibiae each is flat at the inner side of apex.

Geographical variation. A female collected from Nibashan, Yingjing Xian has larger eyes each composed of seven facets than in the paratopotypical female, though the other characters are all in coincidence with the paratopotype.

Holotype male (preserved in the National Science Museum, Tokyo), Yuanshi Senlin, 2,850 m alt., Jiuzhaigou, Jiuzhaigou Xian, Sichuan Prov., 30-VIII-1998, S. UENO leg. Paratype: 1 female, same locality as holotype, 28-VIII-1998, T. KISHIMOTO leg.

Distribution. Southwestern China (Sichuan Prov.).

Remarks. This new species is easily distinguished from the other species by having the medially swollen and obliquely pedunculate fourth palpal segment in both sexes.

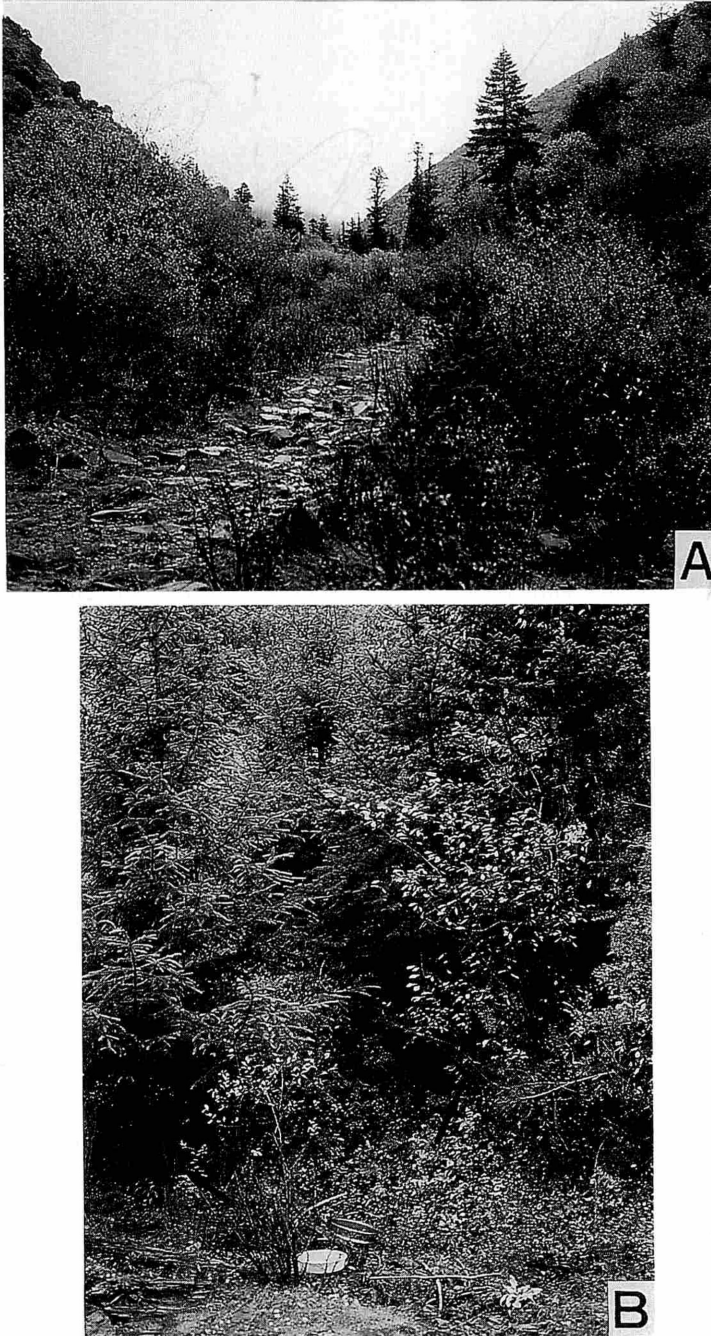


Fig. 4. Habitat of *Tyrinasius sichuanus* sp. nov., Tiemengou, near Mt. Gao'ershishan. — A, Forest landscape; B, collected points (arrows).

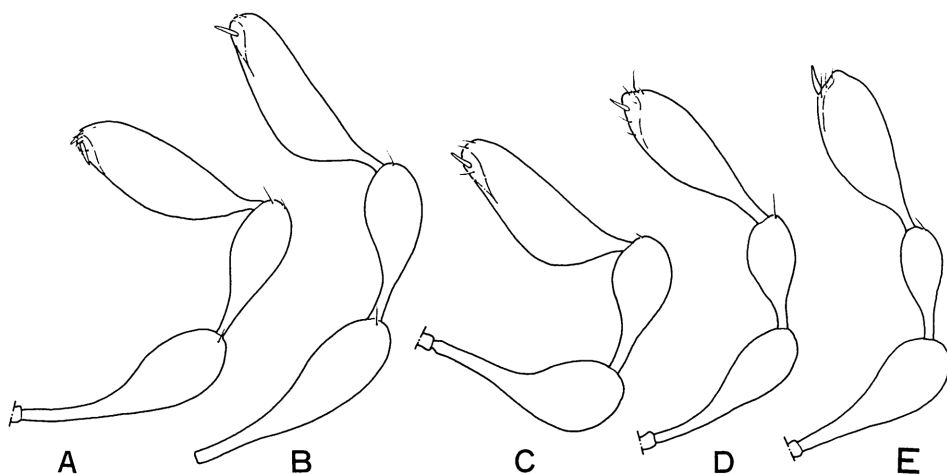


Fig. 5. Maxillary palpi. — A, *Tyrinasius uenoianus* sp. nov., male from Jiuzhaigou; B, ditto, female; C, ditto, female from Mt. Nibashan; D, *T. sichuanus* sp. nov., male; E, ditto, female.

Etymology. The name of this species is given after the collector of the holotype, Dr. Shun-Ichi UÉNO.

***Tyrinasius yinae* sp. nov.**

(Figs. 1 A–D, 7 A–C, 8 A–B, 9 A–F)

Male. Length 1.78–1.93 mm. Width 0.83–0.88 mm. Body reddish to dark brown, maxillary palpi and tarsi light brown, broadened posteriorly, gently flattened dorsad in elytra and abdomen.

Head longer than wide, clypeus very short, arcuate on anterior margin, invisible in dorsal view, frons narrowed and strongly convex at bases of antennae, with a short median longitudinal sulcus from the point between antennal bases to frontal fovea, vertex weakly convex, smooth on dorsal surface, with a pair of dorsal tentorial pits behind eyes, postgenae broad and rounded. Eyes small, each ovoid and consisting of 4 to 5 facets. Antennae short and thick, reaching elytral base, 1st segment thick, subcylindrical, 2nd slightly smaller than 1st, longer than wide, cylindrical, 3rd to 8th subequal in width, successively shortened toward apex, 9th larger than 8th, transverse, 10th thick and large, transverse, 11th the largest, as long as 8th+9th+10th, nearly ovoid and flattened at base, relative length (width) of each segment from base to apex:— 1.8 (1.0): 1.0 (0.8): 0.7 (0.7): 0.6 (0.7): 0.6 (0.7): 0.5 (0.7): 0.5 (0.7): 0.5 (0.7): 0.9 (0.8): 1.0 (1.2): 2.6 (1.5). Maxillary palpi large and arcuate, 1st segment very short, 2nd large and elongate, narrowed in basal half, thickened in apical half, 3rd slightly narrower than 2nd, ovoid and pedunculate at base, 4th the widest, slightly shorter than 2nd, ovoid and pedunculate at base, with short palpal spine just inside apex, sparsely covered with curled setae around palpal spine.

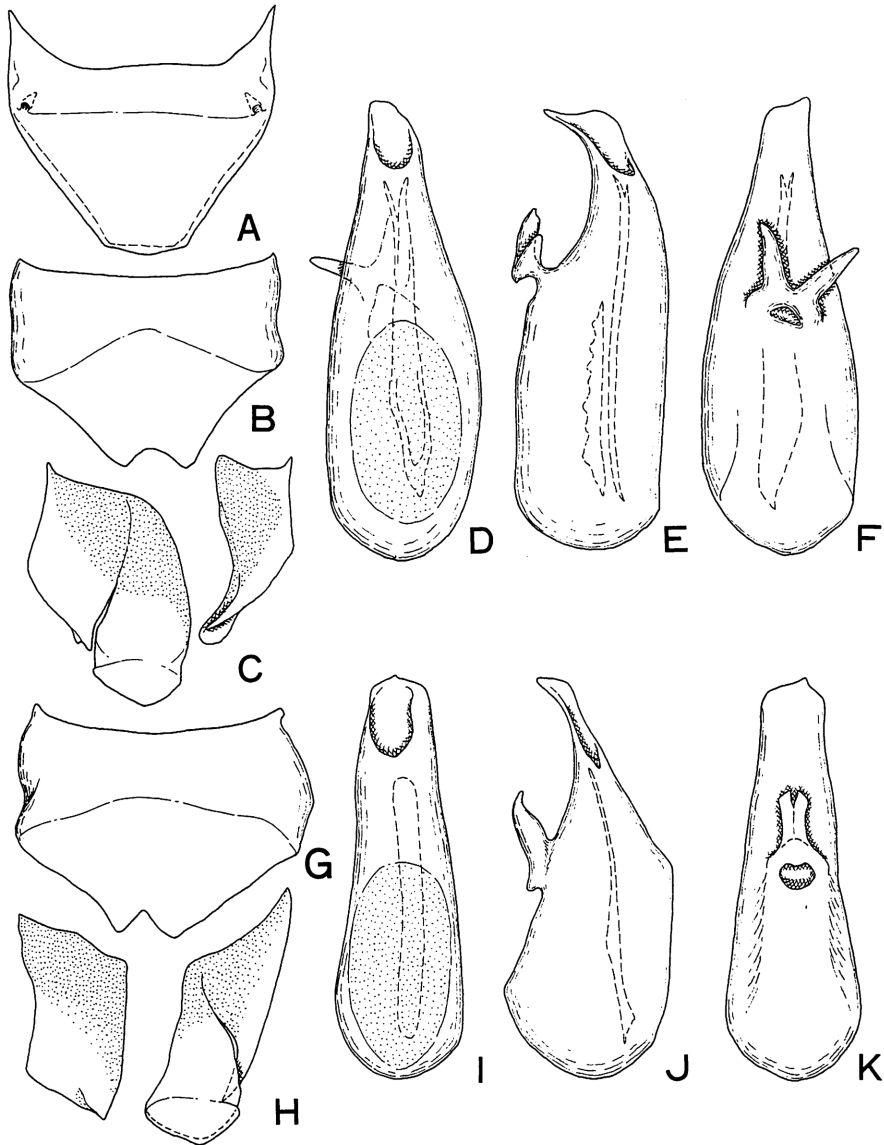


Fig. 6. Eighth to 9th abdominal segments and male genitalia of *Tyrinasius sichuanus* sp. nov. (A-F) and *T. uenoianus* sp. nov. (G-K). — A, Eighth abdominal tergite; B, G, 8th sternite; C, H, 9th sternite; D, I, aedeagus in dorsal view; E, J, ditto, in lateral view; F, K, ditto, in ventral view.

Pronotum about as long as head, as long as wide, rounded at lateral sides, smooth and sparsely pubescent on dorsal and lateral surfaces. Elytra very short, about as long as pronotum, transverse and trapezoidal, with convex humeri, each elytron with a large fovea at base, broadly depressed around basal foveae, convex along suture. Legs short and slender, tibiae each slender, slightly curved, covered with dense hairs on inner side in apical part. Metasternum strongly convex at center, then depressed between metacoxae.

Abdomen very large, about twice as long as elytra, 4th to 6th segments subequal in dorsal length, 5th the widest, each of 4th to 6th tergites transverse and slightly convex, with a narrow and transverse basal groove, a pair of narrow and transverse setiferous patches at base and a pair of broad paratergites, setiferous patches very narrow and indistinct in 6th, each of 4th to 6th sternites with a pair of short and transverse basal grooves, 7th tergite slightly shorter than 6th, narrowed posteriorly, 8th tergite nearly triangular in exposed part, truncate at apex, with a pair of deep foveae at both lateral ends, 8th sternite transverse in exposed part, arcuately emarginate at apex, 9th sternite membranous in basal part, median plate ovoid in exposed part, lateral plates each triangular.

Male genitalia weakly sclerotized and very thick, parameres small, connecting to each other at base, each narrowed and sharpened toward apex, median lobe ovoid and bulbous, weakly narrowed and curved ventrally toward apex, with very narrow basal foramen at apical 3/7, broad apical orifice and very large and indistinct membranous part on dorsal side, endophallus broad and elongate, with a pair of short spiniform sclerites in apical part.

Female. Length 1.83–1.98 mm. Width 0.85–0.90 mm. Very similar to male, but metasternum weakly convex at center, and the 8th abdominal sternite without emargination on posterior margin.

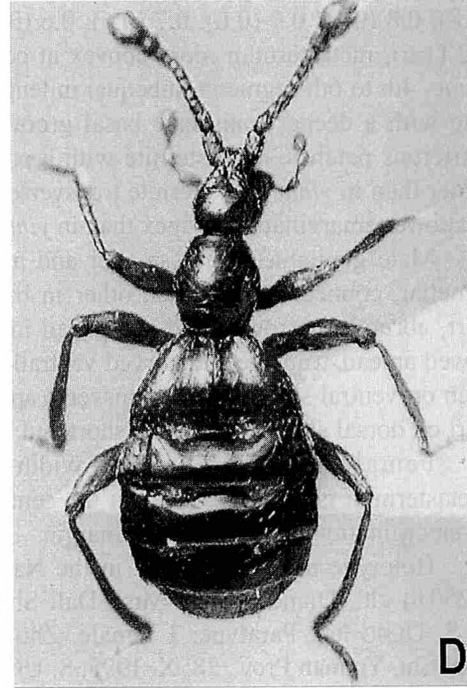
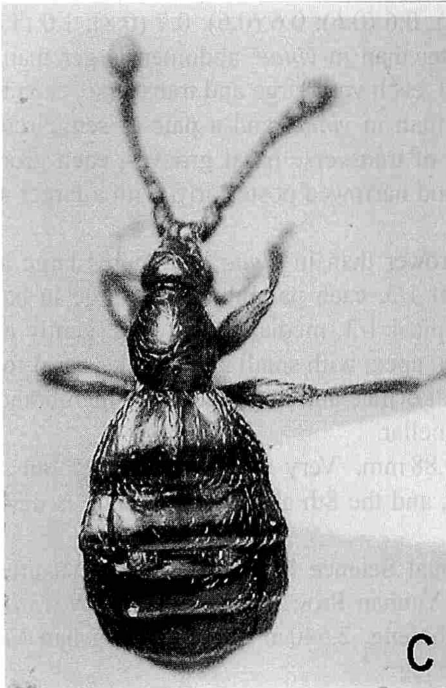
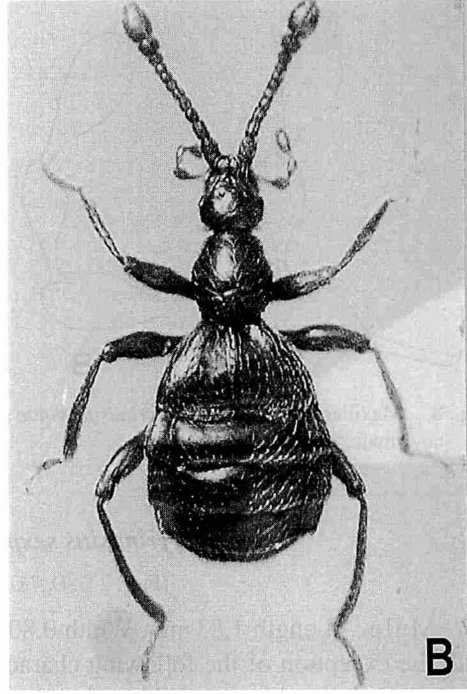
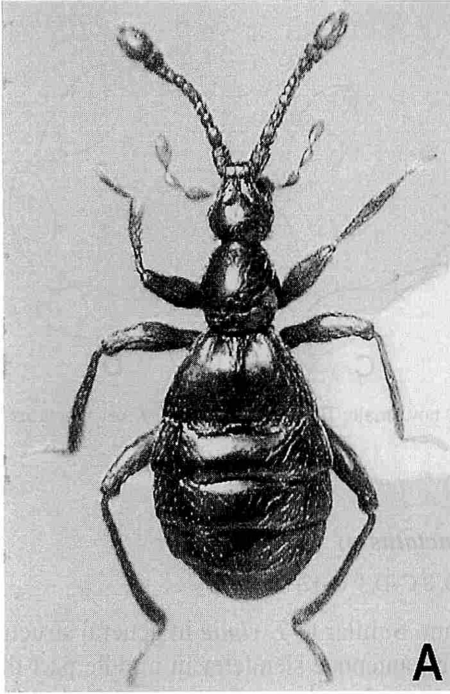
Holotype male (preserved in the National Science Museum, Tokyo), Mt. Jizushan, 2,650 m alt., Binchuan Xian, Yunnan Prov., 25–X–1995, Y. WATANABE and N. XIAO leg. Paratypes: 12 males, 9 females, same data as holotype; 2 females, same as holotype but S. UENO leg.

Distribution. Southwestern China (Yunnan Prov.).

Remarks. This species is similar to *T. sexpunctatus* in having very short and small elytra and the large abdomen with subequal fourth to sixth segments in length. It is distinguished from *sexpunctatus* by the sixth abdominal tergite with a pair of very narrow and indistinct setiferous patches at the base.

Etymology. This new species is dedicated to Dr. Wen-ying YIN of the Shanghai Institute of Entomology, Academia Sinica for her kind help for our project in Yunnan.

Fig. 7. Habitus of *Tyrinasius* spp. — A, *T. yinae* sp. nov., male; B, ditto, female; C, *T. sexpunctatus* sp. nov., male; D, ditto, female.



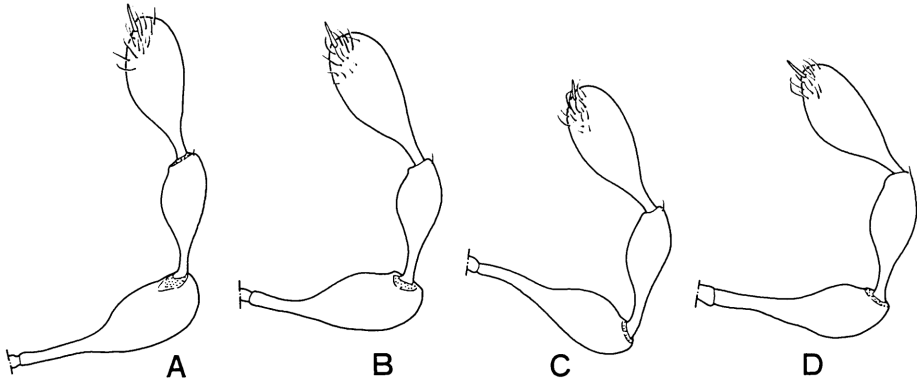


Fig. 8. Maxillary palpi. — A, *Tyrinasius yinae* sp. nov., male; B, ditto, female; C, *T. sexpunctatus* sp. nov., male; D, ditto, female.

***Tyrinasius sexpunctatus* sp. nov.**

(Figs. 2 C–D, 7 C–D, 8 C–D, 9 G–K)

Male. Length 1.83 mm. Width 0.80 mm. Similar to *T. yinae* in general structure with the exception of the following characters: antennae slenderer in middle part than in *yinae*, relative length (width) of each segment from base to apex:— 2.0 (1.0): 1.0 (0.8): 0.8 (0.6): 0.7 (0.6): 0.7 (0.6): 0.6 (0.6): 0.6 (0.6): 0.6 (0.6): 0.7 (0.8): 1.0 (1.1): 2.2 (1.6); metasternum more convex at center than in *yinae*; abdomen larger than in *yinae*, 4th to 6th segments subequal in length, each very large and transverse, each tergite with a deeper transverse basal groove than in *yinae*, and a pair of semicircular setiferous patches, each sternite with a pair of transverse basal grooves, each groove wider than in *yinae*, 8th sternite transverse and narrowed posteriorly, with a larger and shallower emargination at apex than in *yinae*.

Male genitalia clearly smaller and narrower than in *yinae*; parameres large and lamellar, connected with each other in basal 1/3, each paramere very large in basal part, abruptly narrowed and sharpened in apical 1/3, median lobe ovoid, gently narrowed apicad, truncate and curved ventrally at apex, with small and circular basal foramen on ventral side, narrow, transverse apical orifice and large indistinct membranous part on dorsal side, endophallus short and lamellar.

Female. Length 2.00 mm. Width 0.88 mm. Very similar to male, but the metasternum is weakly convex at the center, and the 8th abdominal sternite is devoid of emargination on the posterior margin.

Holotype male (preserved in the National Science Museum, Tokyo), Yuzufeng, 3,250 m alt., Diancangshan Mts., Dali Shi, Yunnan Prov., 6–IX–1993, Y. WATANABE & S. UENO leg. Paratype: 1 female, Zhonghefeng, 2,540 m alt., Diancangshan Mts., Dali Shi, Yunnan Prov., 28–X–1995, S. UENO leg.

Distribution. Southwestern China (Yunnan Prov.).

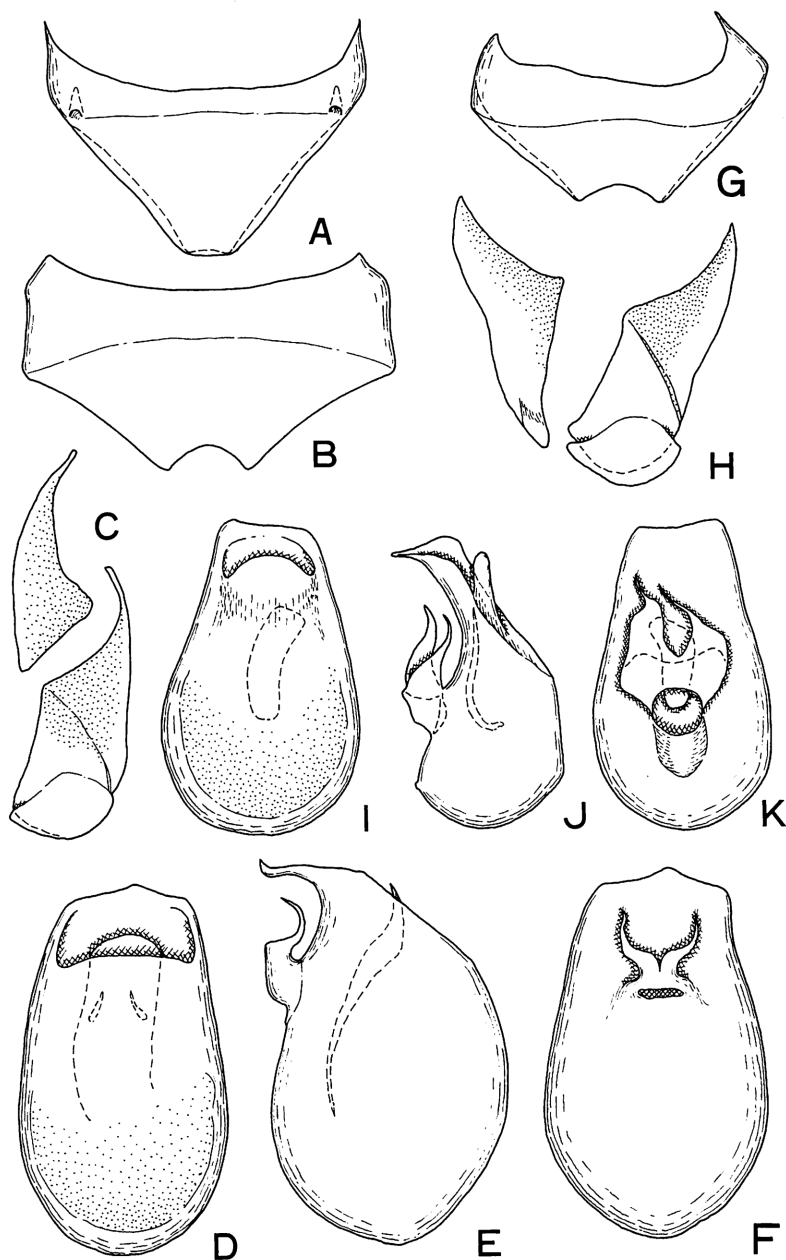


Fig. 9. Eighth to 9th abdominal segments and male genitalia of *Tyrinasius yinae* sp. nov. (A–F) and *T. sexpunctatus* sp. nov. (G–K). — A, Eighth abdominal tergite; B, G, 8th sternite; C, H, 9th sternite; D, I, male genitalia in dorsal view; E, J, ditto, in lateral view; F, K, ditto, in ventral view.

Remarks. This new species is distinct in having the fourth to sixth abdominal tergites each with a pair of semicircular setiferous patches at the base, which look like six pale yellow spots.

Acknowledgement

I wish to express my sincere thanks to Dr. Wen-ying YIN of the Shanghai Institute of Entomology, Academia Sinica for her kind assistance and encouragement in the course of my field work. My cordial thanks are due to Dr. Shun-Ichi UÉNO for his continuous guidance and help in various ways. I am also indebted to Dr. Yasuaki WATANABE and Dr. Toshio KISHIMOTO for their kind offer of the invaluable materials.

This study is supported in part by the Grant-in-aid No. 07041131 for Field Research of the Monbusho International Scientific Research Program, Japan.

要 約

野村周平：中国産 *Tyrinasius* 属（コウチュウ目 ハネカクシ科 アリヅカムシ亜科）に関する分類学的ノート。—— 従来，中央アジアのウズベキスタンおよびカザフスタンから各1種が知られるのみであった Tyrini 族の *Tyrinasius* 属を初めて中国より記録した。四川省から *T. sichuanus* および *uenoianus*，雲南省から *T. yinae* および *sexpunctatus* の計4新種を新たに記載した。

本研究は文部省科学研究費（国際学術研究）課題番号07041131の助成を受けている。

Reference

- KURBATOV, S. A., 1993. Le nouveau genre de Pselaphidae (Coleoptera) de l'Asie Centrale. *Russ. ent. J.*, **2**: 51-52.