

Ten new species of cavernicolous *Tribasodites* from China and Thailand, and a list of East Asian cave-inhabiting Pselaphinae (Coleoptera: Staphylinidae)

Zi-Wei YIN¹⁾, Shûhei NOMURA²⁾ & Li-Zhen LI^{1,3)}

¹⁾Department of Biology, College of Life and Environmental Sciences, Shanghai Normal University, 100 Guilin Road, Shanghai, 200234, P. R. China

²⁾Department of Zoology, National Museum of Nature and Science, 4-1-1, Amakubo, Tsukuba-shi, Ibaraki, 305-0005 Japan

³⁾Corresponding author; e-mail: pselaphinae@gmail.com

Abstract. The *Tribasodites bedosae* Yin & Li, 2011 species-group is designated to accommodate the cavernicolous species placed in the genus *Tribasodites* Jeannel, 1960. This group includes three previously described species from the Chinese province of Guangxi, *Tribasodites bedosae* Yin & Li, 2011, *T. deharvengi* Yin & Li, 2011, and *T. tiani* Yin & Li, 2011, and ten new species discovered in China and Thailand: *T. hubeiensis* sp. nov. from Hubei, central China, *T. abnormalis* sp. nov., *T. cehengensis* sp. nov., *T. liboensis* sp. nov., *T. setosiventris* sp. nov., and *T. xingyiensis* sp. nov. from Guizhou, southwestern China, *T. bama* sp. nov., *T. kawadai* sp. nov., *T. uenoi* sp. nov. from Guangxi, southwestern China, and *T. thailandicus* sp. nov. from Chiang Mai, northern Thailand. The new species are described, and the male habitus and important diagnostic features are illustrated. Distributions of members of the *T. bedosae* group are approximately mapped based on the label data. A key for identification of males is given. A species list of East Asian cave-inhabiting Pselaphinae is provided.

Key words. Batrisina, *Tribasodites*, taxonomy, new species, cavernicole, karst, China, Thailand

Introduction

Currently in East Asia, fourteen species placed in eight genera of the ant-loving beetle subfamily Pselaphinae are known to be associated with cave habitats; these are scattered in the tribes Batrisini (5 genera, 8 species), Iniocyphini (2 genera, 4 species), and Bythinini (1 genus, 2 species) (JEANNEL 1958, NOMURA & WANG 1991, SHIBATA et al. 2013, TANABE &

NAKANE 1989, TANOKUCHI 1990, YIN et al. 2011a). The cavernicolous fauna of Batrisini is classified into three genus-groups: the *Batrisus*-, the *Tribasodes*-, and the *Batrisocenus*-groups (sensu NOMURA & IDRIS 2003). The *Batrisus* group includes two genera, *Batrisodellus* Jeannel, 1958 (2 species) and *Speobatrisodes* Jeannel, 1958 (1 species), which are known only from Japan (JEANNEL 1958, TANABE & NAKANE 1989). Other cavernicolous species known to occur in southern part of East Asia are placed in the genera *Tribasodes* Jeannel, 1958, *Tribasodites* Jeannel, 1960, and *Tribasodellus* Nomura & Yin, 2011 of the *Tribasodes* group. *Tribasodes kamedai* Nomura, 2012 from the Okinawa Island, southwestern Japan was the most recently described species in Asia (NOMURA 2012; YIN et al. 2011a, 2011b).

In China, four species placed in two genera have been known since the end of the 20th century. The first, *Batrisodellus callissimus* Nomura & Wang, 1991, was described from several limestone caves in Guangxi (NOMURA & WANG 1991). Ten years later, this species was transferred to a new genus, *Tribasodellus* Yin & Nomura, 2011 (YIN et al. 2011b). In the same year, three new cavernicolous species of *Tribasodites*, *T. bedosae* Yin & Li, 2011, *T. deharvengi* Yin & Li, 2011, and *T. tiani* Yin & Li, 2011, were described based on material collected during the 2005 and 2007 Sino-French biological surveys in Mulun and Yachang Nature Reserves, Guangxi (YIN et al. 2011a). In addition, an undescribed cavernicolous genus containing a few species of the *Batrisocenus* group is known to occur in southern part of the country (Nomura, unpublished data).

A large number of caves are known in the karst regions of eastern, central, and southwestern China; thus the number of species will no doubt significantly grow in the future when these areas are properly sampled.

In the collections of the National Museum of Nature and Science, Tokyo, and the Muséum d'Histoire Naturelle de la Ville de Genève, the authors spotted a series of unidentified batrisines collected in the caves in central to southern China and northern Thailand, and identified ten new species of the genus *Tribasodites*. All these species represent typical suite of morphological adaptations to life in caves and are closely related to the three previously described congeners from Guangxi. Thus, a new '*Tribasodites bedosae* species-group' is designated to accommodate these cavernicolous members placed in *Tribasodites*.

Material and methods

The collecting data of the material are quoted verbatim. Labels contain 'Shi', 'Xian', 'Zhen', 'Cun', and 'Dong', which are phonetic notation for the transcription of the Mandarin dialect, equaling 'City', 'County', 'Town', 'Village', and 'Cave', respectively. Authors' notes are placed in braces ({}). A single slash (/) separates data on different labels. Each type specimen is provided with an additional type label: 'HOLOTYPE {red}' (or 'PARATYPE {yellow}'), *Tribasodites* + specific name sp. n., det. Yin & Nomura, 2014, NSMT (or MHNG)?.

The terminology follows CHANDLER (2001), except we use 'ventrite' instead of 'sternite' when describing meso- and metathoracic structures.

The following abbreviations are used: AL – length of the abdomen along the midline; AW – maximum width of the abdomen; EL – length of the elytra along the sutural line; EW – maximum width of the elytra; HL – length of the head from the anterior clypeal margin to

the occipital constriction; HW – width of the head across eyes; PL – length of the pronotum along the midline; PW – maximum width of the pronotum. Length of the body is a combination of HL + PL + EL + AL.

Studied material is deposited in Muséum d'Histoire Naturelle, Genève, Switzerland (MHNG) and National Museum of Nature and Science, Tokyo, Japan (NSMT).

Taxonomy

Tribasodites Jeannel, 1960

Tribasodites Jeannel, 1960: 411.

Type species. *Tribasodites antennalis* Jeannel, 1960

Diagnosis. Head rectangular; with median longitudinal carina on vertex; lacking frontal rostrum; ocular-mandibular carinae distinct. Pronotum with median and lateral longitudinal sulci, lateral sulci usually carinate at inner margins, disc with additional pair of thin carinae between median and lateral sulci; with median antebasal impression and lateral antebasal foveae separated by antebasal spines; acute small spines often present on lateral margins (lacking in several cavernicolous species). Elytra each with three basal foveae, discal striae extending past half elytral length; subhumeral foveae present, marginal striae from foveae to elytral posterior margin. Abdomen with tergite IV (first visible tergite) longer than the next, inner marginal carinae extending throughout whole length of tergite, outer carinae slightly shorter than inner carinae, extending to near posterior margin of tergite; tergites V–VI each with single thin marginal carina.

Differential diagnosis. The genus *Tribasodites* can be separated from the allied genus *Tribasodes* by the lack of a basal depression on the abdominal tergite IV, and by having the sexual character on the frons or the antennomeres VIII–XI in general. On the other hand, *Tribasodites* can be easily separated from the genus *Tribasodellus* by the transverse and laterally protuberant and/or spinose pronotum, while *Tribasodellus* has the pronotum longer than wide, feebly arcuate laterally and lacking spines.

Tribasodites bedosae species-group

Diagnosis. Cavernicolous *Tribasodites* with slender habitus and elongate antennae and legs. Males of all, except *T. abnormalis* sp. nov., have strongly modified antennomeres VIII–XI. A few species have strongly reduced eyes. Metaventricle modified, often with a pair of rows of dense setae anterior to metacoxae, or setae tufted instead of arranged in rows, or occasionally only sparsely covered. Aedeagus usually with median lobe split apically, with broad dorsal lobe, parameres attached to base of the median lobe, with distinct basoventral projection. Females lack any modification, and can be properly identified only if associated with the males, or sometimes by a combination of the forms of tergite VIII, sternite VIII, and genital complex.

Included species. Thirteen species from China and Thailand are included: *T. abnormalis* sp. nov., *T. bama* sp. nov., *T. bedosae* Yin & Li, 2011, *T. cehengensis* sp. nov., *T. deharvengi* Yin & Li, 2011, *T. hubeiensis* sp. nov., *T. kawadai* sp. nov., *T. liboensis* sp. nov., *T. setosi-*

ventris sp. nov., *T. thailandicus* sp. nov., *T. tiani* Yin & Li, 2011, *T. uenoi* sp. nov., and *T. xingyiensis* sp. nov.

Comments. Except for *T. abnormalis* sp. nov., which has simple antennae and modified vertex, all males of this group are morphologically similar to each other. They can be separated only based on a combination of the following features: (1) shape of the aedeagus, (2) presence/absence of the pronotal lateral spines, (3) setation on metaventrite, (4) shape of the antennomeres VIII–XI, and (5) their distribution. An identification key is provided below.

Tribasodites hubeiensis sp. nov.

(Figs 1, 12A–C, 13A)

Type locality. China, Hubei, Yichang Shi, Huanghua Xiang, Xingping Cun, Qingrenquan Dong.

Type material. HOLOTYPE: ♂, ‘Qingrenquan Dong (180 m), Xingping Cun, Huanghua Xiang, Yichang Shi, [Hubei, CHINA], 24.vi.2010, Hiroshi Miyama’ (NSMT). PARATYPES: 2 ♀♀, same label data as holotype (NSMT); 1 ♂, ‘Shikumen Dong, Songping Cun, Yezhou Zh., Jianshi Xian, [Hubei, CHINA], 26.vi.2010, Hiroshi Miyama’ (NSMT).

Diagnosis. *Male:* vertex simple, lacking modification; antennomeres VIII–XI modified; each eye composed of about 50 facets; pronotum with distinct lateral spines; metaventrite raised above metacoxae to form ridges, with dense setae along ridges; aedeagus with apical portion of the median lobe split to two parts, the dorsal part much shorter than the ventral part. *Female:* each eye composed of about 15 facets; may be identified by the association with male.

Description. *Male.* Body (Fig. 1A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.97 mm. HL 0.59–0.60 mm, HW 0.62–0.63 mm; median longitudinal carina extending from base to level of eyes; each eye composed of about 50 facets; antennomeres VIII–IX modified (Fig. 1B). Pronotum slightly wider than long, PL 0.60–0.63 mm, PW 0.66–0.68 mm; with distinct discal and lateral spines. Elytra slightly wider than long, EL 0.90–0.91 mm, EW 0.94–0.95 mm; discal striae extending to apical 4/5 elytral length. Metaventrite (Fig. 1C) strongly raised above metacoxae, with pair of rows of dense setae; metacoxae and metatrochanters simple. Abdomen narrower than elytra, AL 0.85–0.86 mm, AW 0.88–0.84 mm. Aedeagus (Figs 1D, E) asymmetric, length 0.66 mm.

Female. Similar to male in general; each eye with about 15 facets; antennae and metaventrite simple. Tergite VIII (Fig. 12A) and sternite VIII (Fig. 12B) transverse; width of genital complex excluding lateral arms (Fig. 12C) 0.12 mm. Measurements: BL 2.65 mm; HL 0.57–0.58 mm, HW 0.56–0.57 mm, PL 0.57–0.58 mm, PW 0.63–0.64 mm, EL 0.77–0.80 mm, EW 0.87–0.88 mm, AL 0.71–0.72 mm, AW 0.79–0.82 mm.

Etymology. The new species is named after the province where the type locality lies; adjective.

Distribution. Central China: Hubei (Fig. 13A).

Tribasodites abnormalis sp. nov.

(Figs 2, 13A)

Type locality. China, Guizhou, Libo Xian, Wengang X., Liangzhaixin, Bonong Dong.

Type material. HOLOTYPE: ♂, ‘Bonong Dong Cave (740 m), Liangzhaixin, Wengang X., Libo Xian, [Guizhou, CHINA] / {locality repeated in Chinese character} 31.x.2000, T. Kishimoto lg.’ (NSMT).

Diagnosis. *Male:* vertex modified, covered with patches of dense setae; antennomeres VIII–XI simple; each eye composed of about 25 facets; pronotum lacking lateral spines; metaventrite

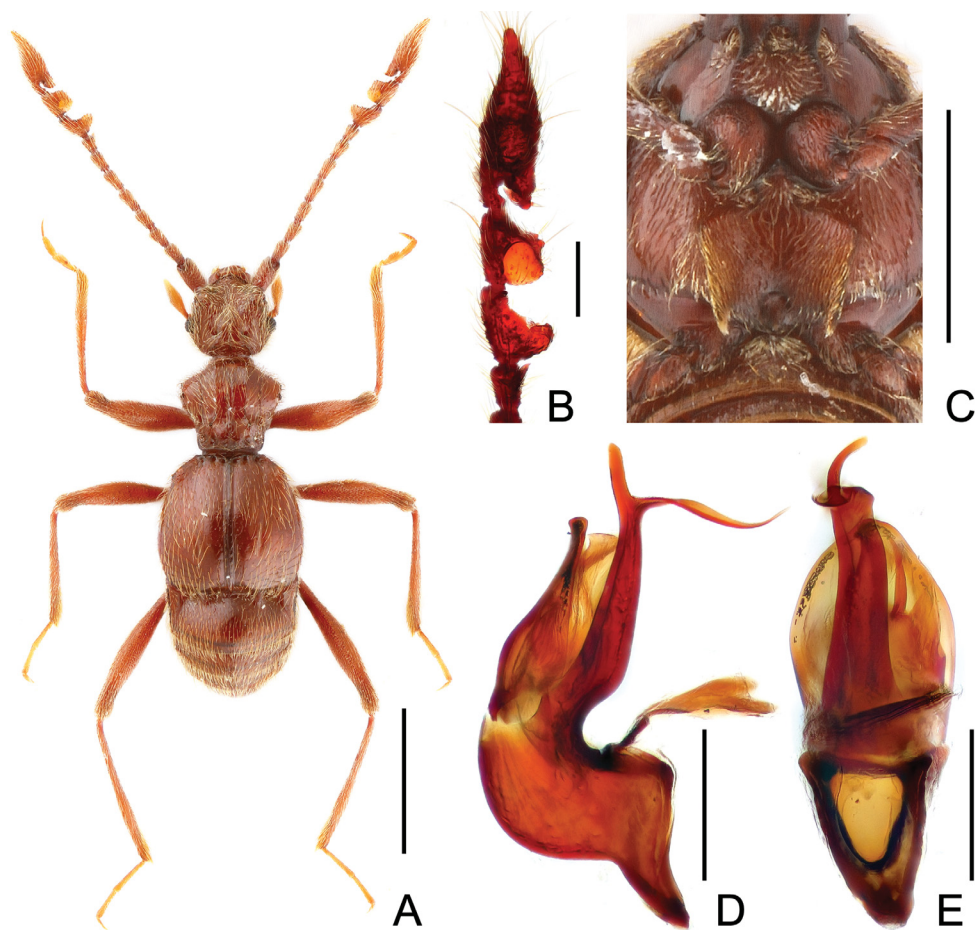


Fig. 1. *Tribasodites hubeiensis* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrite. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

raised above metacoxae to form ridges, setae mostly dense at posterior portion of the ridges; aedeagus with apical portion of the median lobe not split to two parts.

Description. *Male.* Body (Fig. 2A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.93 mm. HL 0.58 mm, HW 0.59 mm; median longitudinal carina extending from base to level of eyes; each eye composed of about 25 facets; antennomeres VIII–IX simple (Fig. 2B). Pronotum about as long as wide, PL 0.62 mm, PW 0.60 mm; lacking discal and lateral spines. Elytra slightly wider than long, EL 0.84 mm, EW 0.89 mm; discal striae short, extending through 1/3 of elytral length. Metaventrite (Fig. 2C) raised above metacoxae, with longitudinal carinae covered with dense setae; metacoxae and metatrochanters simple. Abdomen narrower

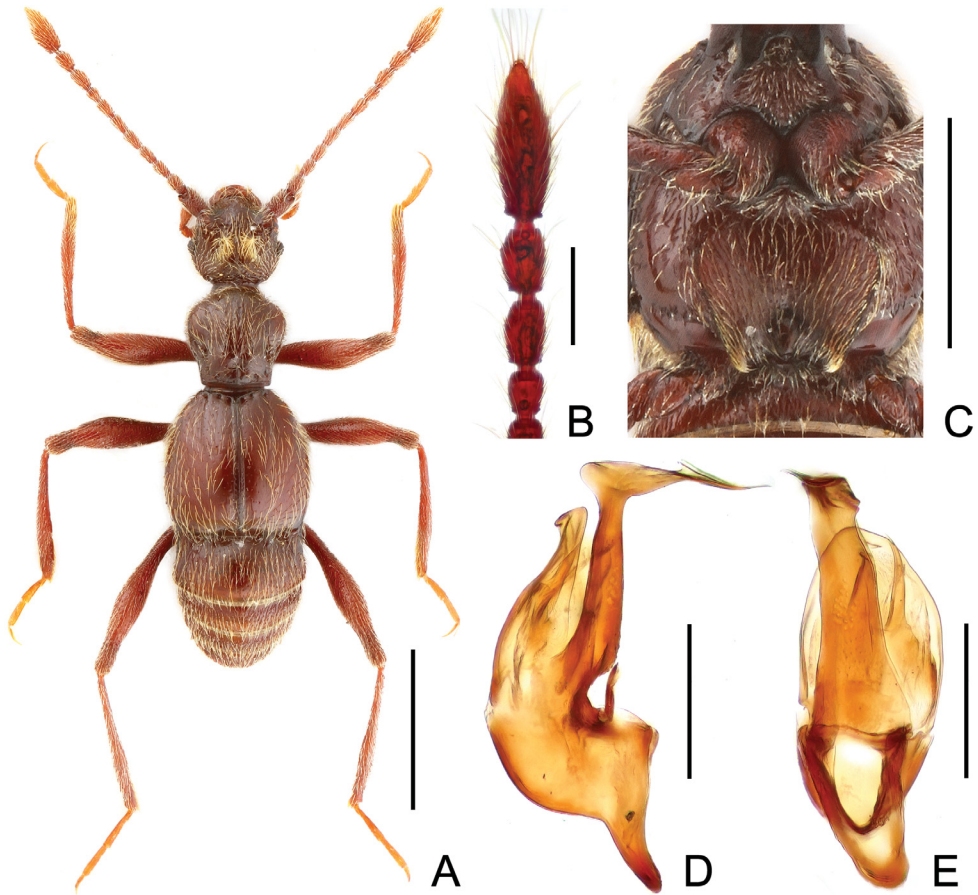


Fig. 2. *Tribasodites abnormalis* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrals. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

than elytra, AL 0.89 mm, AW 0.82 mm. Aedeagus (Figs 2D, E) asymmetric, length 0.56 mm.

Female. Unknown.

Etymology. The species epithet refers to the simple male antennae, a unique feature within the group; adjective.

Distribution. Southwest China: Guizhou (Fig. 13A).

***Tribasodites cehengensis* sp. nov.**

(Figs 3, 12D–F, 13A)

Type locality. China, Guizhou, Ceheng Xian, Rongdu Zhen, Rongdu Cun, Hetou Dong.

Type material. HOLOTYPE: ♂, 'Hetou Dong, 1030 m, Rongdu Cun, Rongdu Zhen / Ceheng Xian, SW, GUIZHOU, 24-V-2006, M. Nakanishi' (NSMT). PARATYPES: 2 ♂♂, same label data as holotype (NSMT); 1 ♂ 1 ♀, same label data, except 'R. Oshitani' (NSMT).

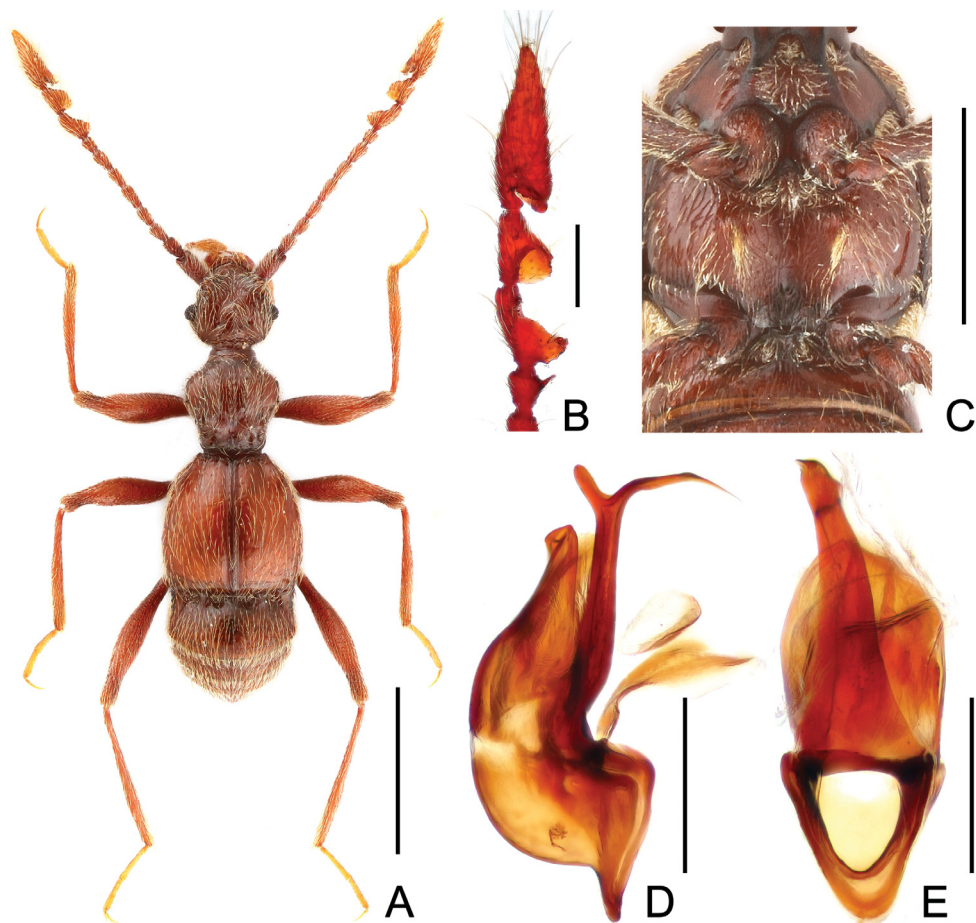


Fig. 3. *Tribasodites cehengensis* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrite. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

Diagnosis. *Male*: vertex simple, lacking modification; antennomeres VIII–XI modified; each eye composed of about 40 facets; pronotum with distinct small lateral spines; metaventrite raised above metacoxae to form humps, with dense setae at anterior half of the humps; aedeagus with apical portion of the median lobe split to two parts, the dorsal part much shorter than the ventral part. *Female*: each eye composed of about 15 facets; may be identified by the association with male.

Description. *Male*. Body (Fig. 3A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.82–2.89 mm. HL 0.58–0.60 mm, HW 0.59–0.60 mm; median longitudinal carina extending from base to level of eyes; each eye composed of about 40 facets; antennomeres VIII–IX modified (Fig. 3B). Pronotum about as long as wide, PL 0.58–0.59 mm, PW 0.57–0.60 mm; with small discal and lateral spines. Elytra slightly wider than long, EL 0.85–0.86 mm, EW

0.89–0.90 mm; discal striae extending to apical 4/5 elytral length. Metaventricle (Fig. 3C) raised above metacoxae, with pair of short rows of dense setae; metacoxae and metatrochanters simple. Abdomen narrower than elytra, AL 0.78–0.87 mm, AW 0.80–0.82 mm. Aedeagus (Figs 3D, E) asymmetric, length 0.52 mm.

Female. Similar to male in general; each eye with about 15 facets; antennae and metaventricle simple. Tergite VIII (Fig. 12D) and sternite VIII (Fig. 12E) transverse; width of genital complex excluding lateral arms (Fig. 12F) 0.14 mm. Measurements: BL 2.73 mm; HL 0.58 mm, HW 0.58 mm, PL 0.61 mm, PW 0.58 mm, EL 0.78 mm, EW 0.86, AL 0.76 mm, AW 0.81 mm.

Etmology. The new species is named after its type locality, Ceheng Xian; adjective.

Distribution. Southwest China: Guizhou (Fig. 13A).

Tribasodites liboensis sp. nov.

(Figs 4, 13A)

Type locality. China, Guizhou, Libo Xian, Yongkang Xiang, Bimang Dong.

Type material. HOLOTYPE: ♂, 'Bimang Dong Cave (730 m), Yongkang Xiang, Libo Xian, [Guizhou, CHINA] / {locality repeated in Chinese character} 27.v.2002, T. Kishimoto leg.' (NSMT).

Diagnosis. *Male:* vertex simple, lacking modification; antennomeres VIII–XI modified; each eye composed of about 45 facets; pronotum with small lateral spines; metaventricle raised above metacoxae to form ridges, with a thin row of setae along each ridge; aedeagus with apical portion of the median lobe split to two parts, dorsal part slightly shorter than ventral part.

Description. *Male.* Body (Fig. 4A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.96 mm. HL 0.61 mm, HW 0.63 mm; median longitudinal carina extending from base to level of eyes; each eye composed of about 45 facets; antennomeres VIII–IX modified (Fig. 4B). Pronotum as long as wide, PL 0.64 mm, PW 0.64 mm; with distinct discal and lateral spines. Elytra slightly wider than long, EL 0.90 mm, EW 0.96 mm; discal striae extending to half elytral length. Metaventricle (Fig. 4C) raised above metacoxae, with pair of straight rows of dense setae; metacoxae setose and protuberant at ventral margin, metatrochanters simple. Abdomen narrower than elytra, AL 0.81 mm, AW 0.87 mm. Aedeagus (Figs 4D, E) asymmetric, length 0.56 mm.

Female. Unknown.

Etmology. The new species is named after its type locality, Libo Xian; adjective.

Distribution. Southwest China: Guizhou (Fig. 13A).

Tribasodites setosiventris sp. nov.

(Figs 5, 12G–I, 13A)

Type locality. China, Guizhou, Libo Xian, Yuping Zhen, Shuipu Cun, Shuiboshui Dong.

Type material. HOLOTYPE: ♂, 'Shuiboshui Dong cave, Shuipucun, Yuping Zhan, Libo Xian, Guizhou / [Guizhou, CHINA] {locality repeated in Chinese character}, 25.ix.1998, S. Uéno leg.' (NSMT). PARATYPES: 2 ♀♀, same label data as holotype (NSMT); 4 ♂♂ 12 ♀♀, same label data, except 'T. Kishimoto leg. (NSMT); 1 ♂, same label data, except '13.ix.1997, Fuxing Wang leg. (NSMT); 3 ♂♂ 7 ♀♀, also at Shuipucun, except 'Shuijiang Dong cave (520 m) {locality repeated in Chinese character}, 25.ix.1998, Toshio Kishimoto leg.' (NSMT); 1 ♀, same label data, except 'S. Uéno leg.' (NSMT); 3 ♂♂ 3 ♀♀, same label data, except '29.x.2000, T. Kishimoto leg.' (NSMT).

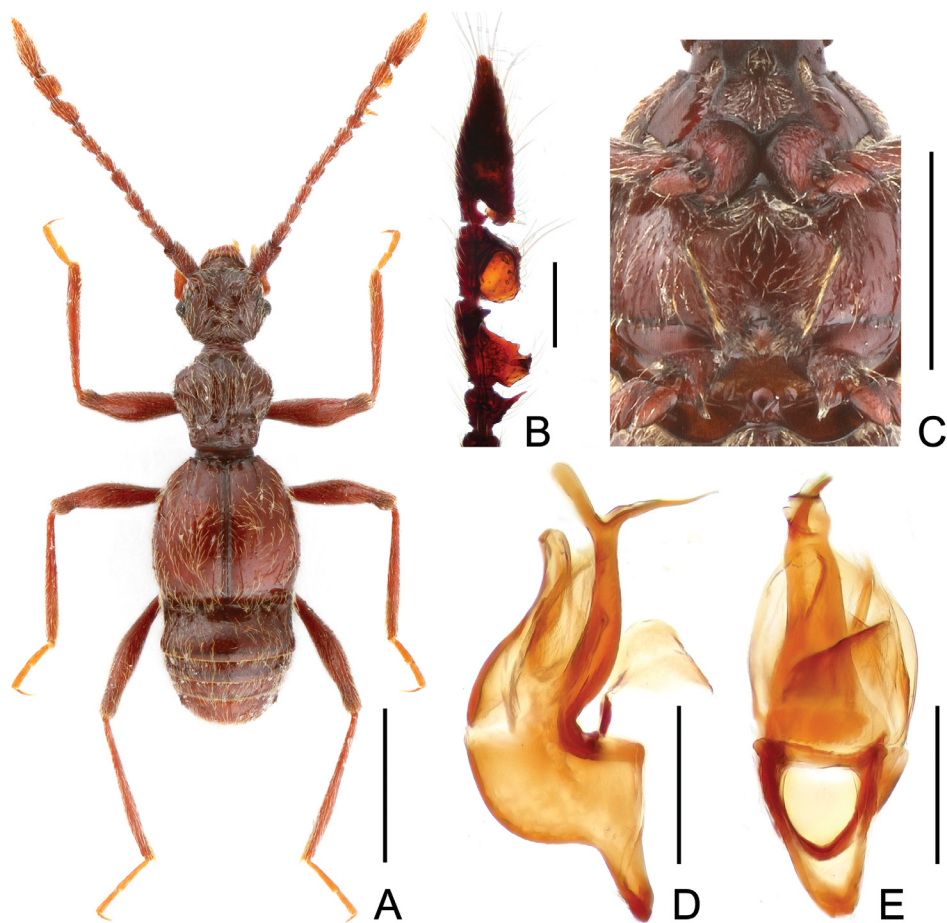


Fig. 4. *Tribasodites liboensis* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrite. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

Diagnosis. *Male*: vertex simple, lacking modification; antennomeres VIII–XI modified; each eye composed of about 50 facets; pronotum with small lateral spines; metaventrite raised above metacoxae to form ridges, with a row of dense setae along each ridge; aedeagus with apical portion of the median lobe split to two parts, dorsal part shorter than ventral part. *Female*: Each eye with about 8 facets; may be identified by the association with male.

Description. *Male*. Body (Fig. 5A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.84–2.97 mm. HL 0.61–0.63 mm, HW 0.58–0.59 mm; median longitudinal carina extending from base to level of eyes; each eye composed of about 50 facets; antennomeres VIII–IX modified (Fig. 5B). Pronotum about as long as wide, PL 0.61–0.62 mm, PW 0.60–0.61 mm; with small discal and lateral spines. Elytra slightly wider than long, EL 0.87–0.88 mm, EW

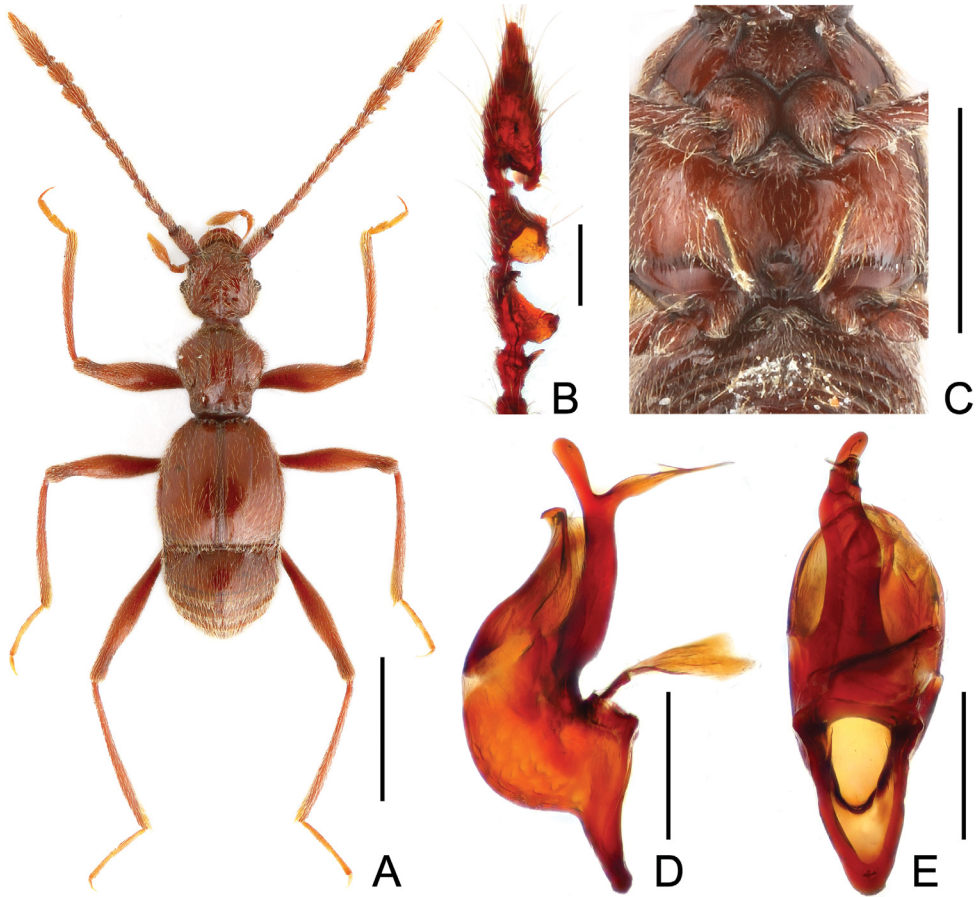


Fig. 5. *Tribasodites setosiventris* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrite. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

0.94–0.91 mm; discal striae extending to apical 2/3 elytral length. Metaventrite (Fig. 5C) strongly raised above metacoxae, with pair of rows of dense setae; metacoxae and meta-trochanters simple. Abdomen narrower than elytra, AL 0.75–0.84 mm, AW 0.79–0.81 mm. Aedeagus (Figs 5D, E) asymmetric, length 0.62 mm.

Female. Similar to male in general; each eye with about 8 facets; antennae and metaventrite simple. Tergite VIII (Fig. 12G) and sternite VIII (Fig. 12H) transverse; width of genital complex excluding lateral arms (Fig. 12I) 0.17 mm. Measurements: BL 2.75–2.76 mm; HL 0.61–0.63 mm, HW 0.57–0.58 mm, PL 0.61–0.62 mm, PW 0.59–0.60 mm, EL 0.83–0.84 mm, EW 0.88–0.90 mm, AL 0.68–0.69 mm, AW 0.83–0.85 mm.

Etymology. The new species is named after the distinct rows of setae on metaventrite; adjective.

Distribution. Southwest China: Guizhou (Fig. 13A).

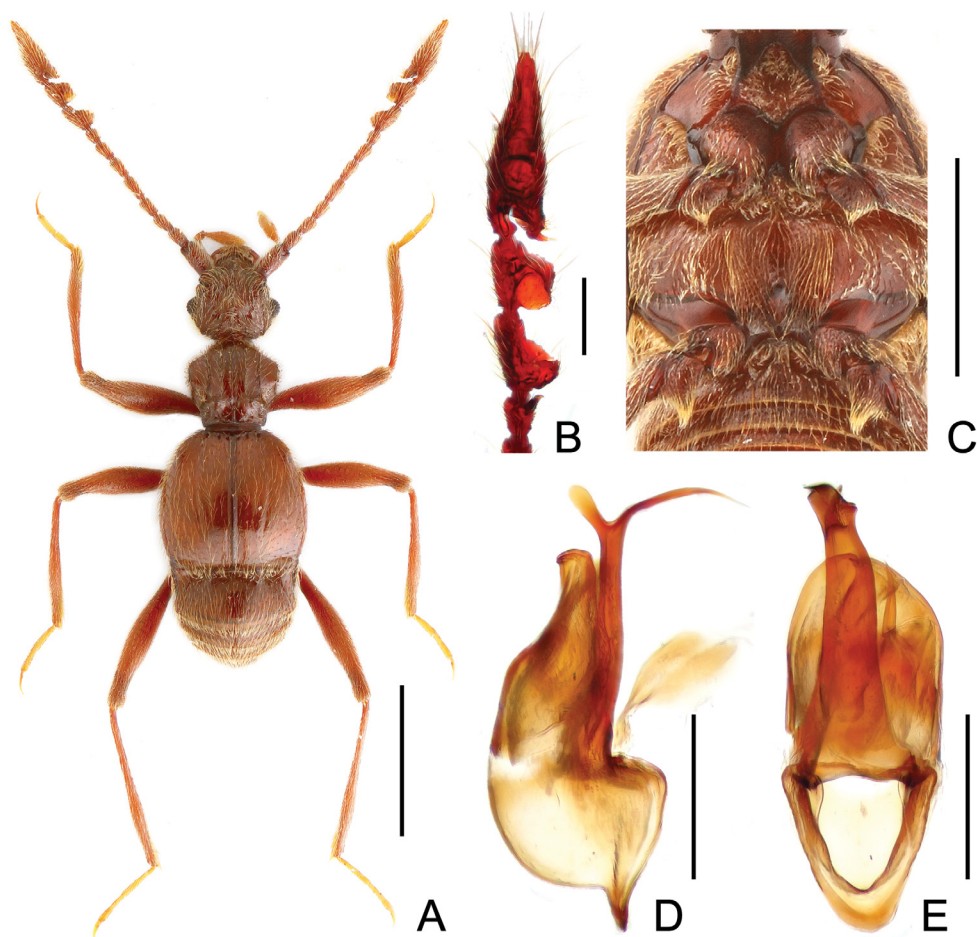


Fig. 6. *Tribasodites xingyiensis* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrite. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

Tribasodites xingyiensis sp. nov.

(Figs 6, 12J–L, 13A)

Type locality. China, Guizhou, Xing'yi Shi, Jingnan Zhen, Shanjiao Cun, Feilong Dong.

Type material. HOLOTYPE: ♂, 'Feilong Dong, 1400 m alt., Shanjiao Cun, Jingnan Zhen, Xing'yi Shi, SW. Guizhou, 25-V-2006, M. Nakanishi' (NSMT). PARATYPES: 1 ♀, same label data as holotype, except 'H. Oshitani' (NSMT); 2 ♂♂ 'Yemao Dong, 1820 m alt., Lukan Cun, Qishe Zhen, Xing'yi Shi, SW. GUIZHOU, 26-V-2006, M. Nakanishi' (NSMT).

Diagnosis. *Male*: vertex simple, lacking modification; antennomeres VIII–XI modified; each eye composed of about 45 facets; pronotum with small lateral spines; metaventrite slightly raised above metacoxae, sparsely covered with long setae; aedeagus with apical portion of

the median lobe split to two parts, dorsal part much shorter than ventral part. *Female*: Each eye with about 15 facets; may be identified by the association with male.

Description. *Male*. Body (Fig. 6A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.76–2.80 mm. HL 0.59–0.64 mm, HW 0.61–0.63 mm; median longitudinal carina extending from base to level of eyes; each eye composed of about 45 facets; antennomeres VIII–IX modified (Fig. 6B). Pronotum about as long as wide, PL 0.57–0.59 mm, PW 0.58–0.60 mm; with small discal and lateral spines. Elytra slightly wider than long, EL 0.86–0.88 mm, EW 0.94–0.97 mm; discal striae extending to apical 4/5 elytral length. Metaventrite (Fig. 6C) raised above metacoxae, only with sparse setae; metacoxae simple, metatrochanters protuberant ventrally and with setose tuft. Abdomen narrower than elytra, AL 0.71–0.72 mm, AW 0.80–0.83 mm. Aedeagus (Figs 6D, E) asymmetric, length 0.52 mm.

Female. Similar to male in general; each eye with about 15 facets; antennae and metaventrite simple. Tergite VIII (Fig. 12J) and sternite VIII (Fig. 12K) transverse; width of genital complex excluding lateral arms (Fig. 12L) 0.17 mm. Measurements: BL 2.79 mm; HL 0.59 mm, HW 0.60 mm, PL 0.59 mm, PW 0.59 mm, EL 0.79 mm, EW 0.89 mm, AL 0.82 mm, AW 0.83 mm.

Etymology. The new species is named after the type locality, Xing'yi City; adjective.

Distribution. Southwest China: Guizhou (Fig. 13A).

Tribasodites bama sp. nov.

(Figs 7, 12M–O, 13A)

Type locality. China, Guangxi, Bama Xian, Jiabao, Jiabao Dong.

Type material. HOLOTYPE: ♂, 'Jiabao Dong cave, Jiabao, Bama Xian, [Guizhou, China], {locality repeated in Chinese character}' 6.ix.1997, T. Kishimoto' (NSMT). PARATYPES: 3 ♂♂ 3 ♀♀, same label data as holotype (NSMT); 2 ♀♀, same label data, except '10.ix.1997, Yoshiaki Noshikawa lg.' (NSMT); 2 ♀♀, same label data, except '21-IX-1998, Y. Nishikawa' (NSMT).

Diagnosis. *Male*: vertex simple, lacking modification; antennomeres VIII–XI modified; each eye composed of about 45 facets; pronotum with small lateral spines; metaventrite slightly raised above metacoxae to form short ridges, covered with short, dense setae along ridges; aedeagus with apical portion of the median lobe split to two parts, dorsal part much shorter than ventral part. *Female*: Each eye with about 10 facets; may be identified by the association with male.

Description. *Male*. Body (Fig. 7A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.81–2.86 mm. HL 0.59–0.60 mm, HW 0.55–0.57 mm; median longitudinal carina extending from base to level of eyes; each eye composed of about 45 facets; antennomeres VIII–IX modified (Fig. 7B). Pronotum about as long as wide, PL 0.61–0.62 mm, PW 0.58–0.59 mm; with small discal and lateral spines. Elytra slightly wider than long, EL 0.86–0.88 mm, EW 0.92–0.93 mm; discal striae extending to apical 2/3 elytral length. Metaventrite (Fig. 7C) strongly raised above metacoxae, with pair of rows of dense setae; metacoxae and metatrochanters simple. Abdomen narrower than elytra, AL 0.73–0.78 mm, AW 0.78–0.79 mm. Aedeagus (Figs 7D, E) asymmetric, length 0.56 mm.

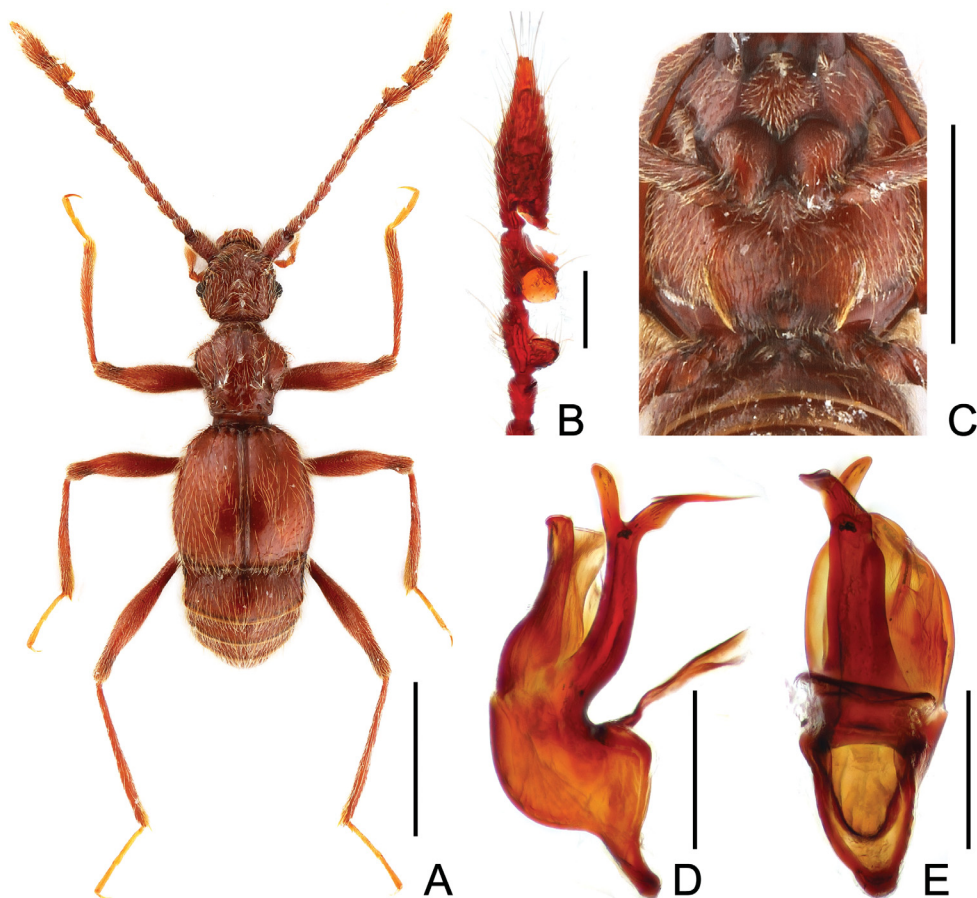


Fig. 7. *Tribasodites bama* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrite. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

Female. Similar to male in general; each eye with about 10 facets; antennae and metaventrite simple. Tergite VIII (Fig. 12M) and sternite VIII (Fig. 12N) transverse; width of genital complex excluding lateral arms (Fig. 12O) 0.14 mm. Measurements: BL 2.70–2.78 mm; HL 0.59–0.60 mm, HW 0.57–0.59 mm, PL 0.57–0.63 mm, PW 0.59–0.63 mm, EL 0.81–0.86 mm, EW 0.89–0.91 mm, AL 0.69–0.73 mm, AW 0.81–0.84 mm.

Etymology. The species is named after the type locality, Bama Xian; noun in apposition.

Distribution. South China: Guangxi (Fig. 13A).

***Tribasodites kawadai* sp. nov.**

(Figs 8, 12P–R, 13A)

Type locality. China, Guangxi, Leye Xian, Bagao, Tiankeng Dong.

Type material. HOLOTYPE: ♂, 'Tiankeng Dong (cave), Bagao, Leye Xian, [NW-Guangxi, CHINA] / {locality repeated in Chinese character} 12-13.ix.2004, A. Kawada' (NSMT). PARATYPE: 1 ♀, same label as holotype (NSMT).

Diagnosis. *Male:* vertex simple, lacking modification; antennomeres VIII–XI modified; each eye composed of about 15 facets; pronotum lacking lateral spines; metaventricle slightly raised above metacoxae to form humps, with short row of dense setae on each hump; aedeagus with apical portion of the median lobe split to two parts, dorsal part as long as ventral part. *Female:* Each eye with about 8 facets; may be identified by the association with male.

Description. *Male.* Body (Fig. 8A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.96 mm, HL 0.59 mm, HW 0.59 mm; median longitudinal carina vague, extending from base to level of eyes; each eye composed of about 15 facets; antennomeres VIII–IX modified (Fig. 8B). Pronotum slightly longer than wide, PL 0.67 mm, PW 0.64 mm; lacking discal and lateral spines. Elytra slightly wider than long, EL 0.86 mm, EW 0.92 mm; discal striae extending to more than half elytral length. Metaventricle (Fig. 8C) slightly raised above metacoxae, with pair of short rows of dense setae; metacoxae and metatrochanters simple. Abdomen narrower than elytra, AL 0.84 mm, AW 0.94 mm. Aedeagus (Figs 8D, E) asymmetric, length 0.81 mm.

Female. Similar to male in general; each eye with about 8 facets; antennae and metaventricle simple. Tergite VIII (Fig. 12P) and sternite VIII (Fig. 12Q) transverse; width of genital complex excluding lateral arms (Fig. 12R) 0.17 mm. Measurements: BL 2.99 mm; HL 0.64 mm, HW 0.60 mm, PL 0.67 mm, PW 0.62 mm, EL 0.82 mm, EW 0.92 mm, AL 0.86 mm, AW 0.86 mm.

Etymology. The new species is named after A. Kawada, collector of the holotype.

Distribution. South China: Guangxi (Fig. 13A).

***Tribasodites uenoi* sp. nov.**

(Figs 9, 12S–U, 13A)

Type locality. China, Guangxi, Tongle Zhen, Danzhan Tun, Jiafu Cun, Guanhan Dong.

Type material. HOLOTYPE: ♂, 'Guanhan Dong, Danzhan Tun, Jiafu Cun, Tongle Zhen, Leye Xian, [Guangxi, China] / {locality repeated in Chinese character} 6.x.2004, S. Uéno leg.' (NSMT). PARATYPES: 1 ♂ 6 ♀♀, same label data as holotype (NSMT); 1 ♀, 'Shan'yang Dong, 560 m, Youli, Yongping Xiang, Leye Xian, [Guangxi, CHINA] / {locality repeated in Chinese character} 7.x.2004, S. Sone leg.' (NSMT).

Diagnosis. *Male:* vertex simple, lacking modification; antennomeres VIII–XI modified; each eye composed of about 8 facets; pronotum lacking lateral spines; metaventricle raised above metacoxae to form humps, with short row of dense setae on each hump; aedeagus with apical portion of the median lobe split to two parts, dorsal part longer than ventral part. *Female:* Each eye with about 6 facets; may be identified by the association with male.

Description. *Male.* Body (Fig. 9A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.70–2.90 mm, HL 0.55–0.57 mm, HW 0.52–0.54 mm; median longitudinal carina thin, extending from base to level of eyes; each eye composed of about 8 facets; antennomeres VIII–IX

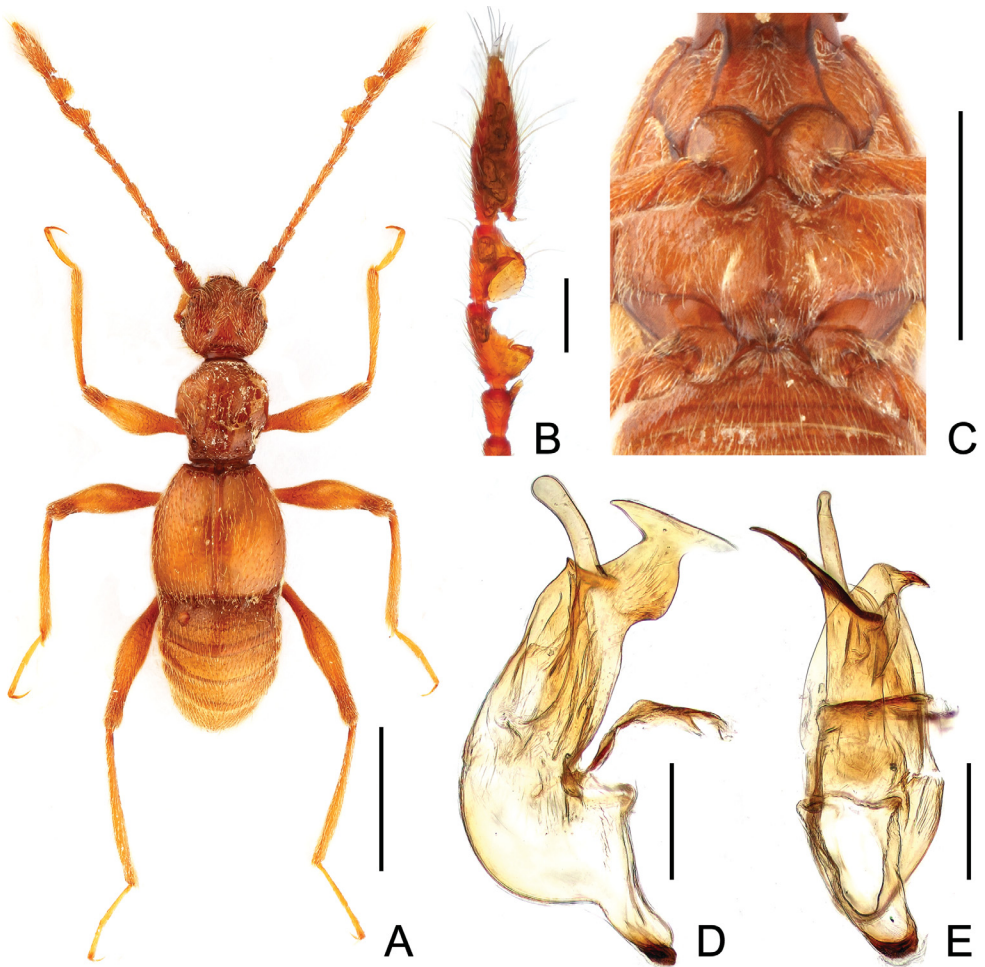


Fig. 8. *Tribasodites kawadai* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrite. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

modified (Fig. 9B). Pronotum slightly longer than wide, PL 0.62–0.65 mm, PW 0.58–0.59 mm; lacking discal and lateral spines. Elytra slightly wider than long, EL 0.79–0.82 mm, EW 0.83–0.88 mm; discal striae extending to more than half elytral length. Metaventrite (Fig. 9C) slightly raised above metacoxae, with pair of short rows of dense setae; metacoxae and metatrochanters simple. Abdomen narrower than elytra, AL 0.74–0.86 mm, AW 0.76–0.83 mm. Aedeagus (Figs 9D, E) asymmetric, length 0.78 mm.

Female. Similar to male in general; each eye with about 6 facets; antennae and metaventrite simple. Tergite VIII (Fig. 12S) and sternite VIII (Fig. 12T) transverse; width of genital

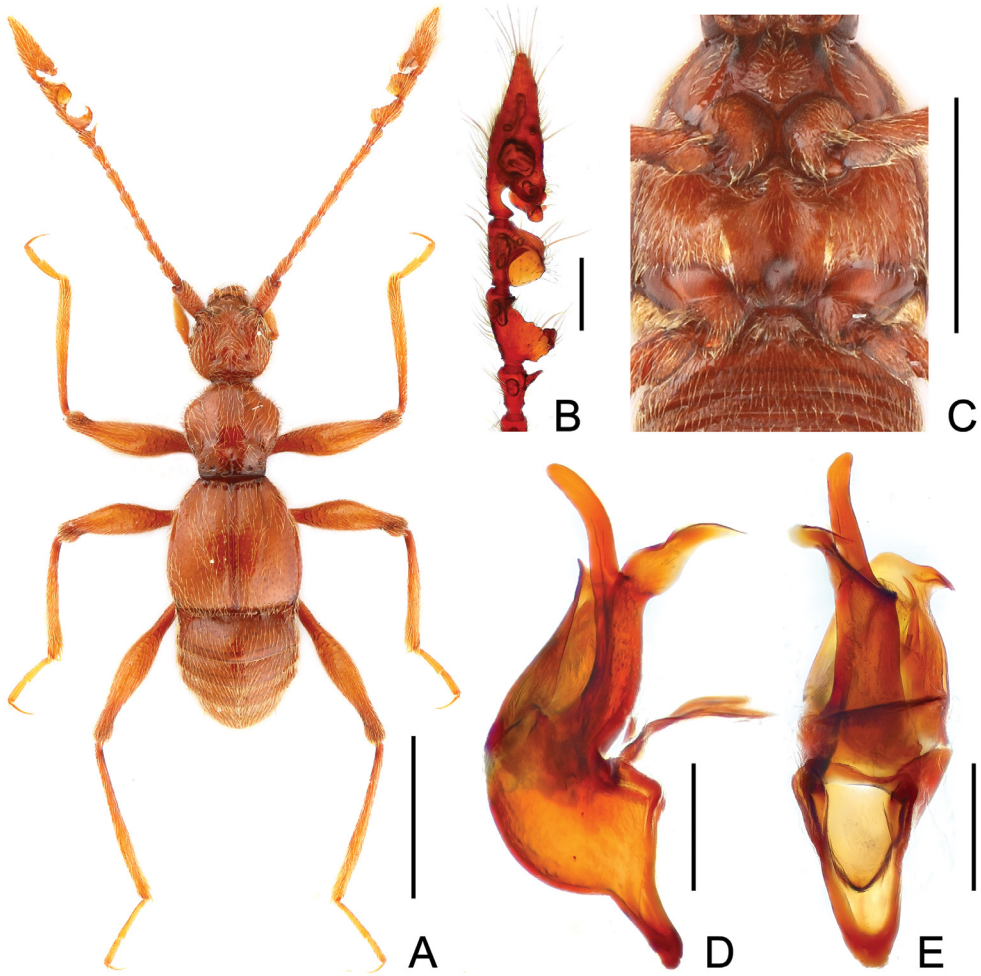


Fig. 9. *Tribasodites uenoi* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrite. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

complex excluding lateral arms (Fig. 12U) 0.14 mm. Measurements: BL 2.77–2.78 mm; HL 0.58–0.59 mm, HW 0.56–0.58 mm, PL 0.62–0.63 mm, PW 0.58–0.60 mm, EL 0.76–0.78 mm, EW 0.86–0.87 mm, AL 0.77–0.82 mm, AW 0.81–0.82 mm.

Etymology. The new species is named after S. Uéno, collector of the holotype and most of the paratypes.

Distribution. South China: Guangxi (Fig. 13A).

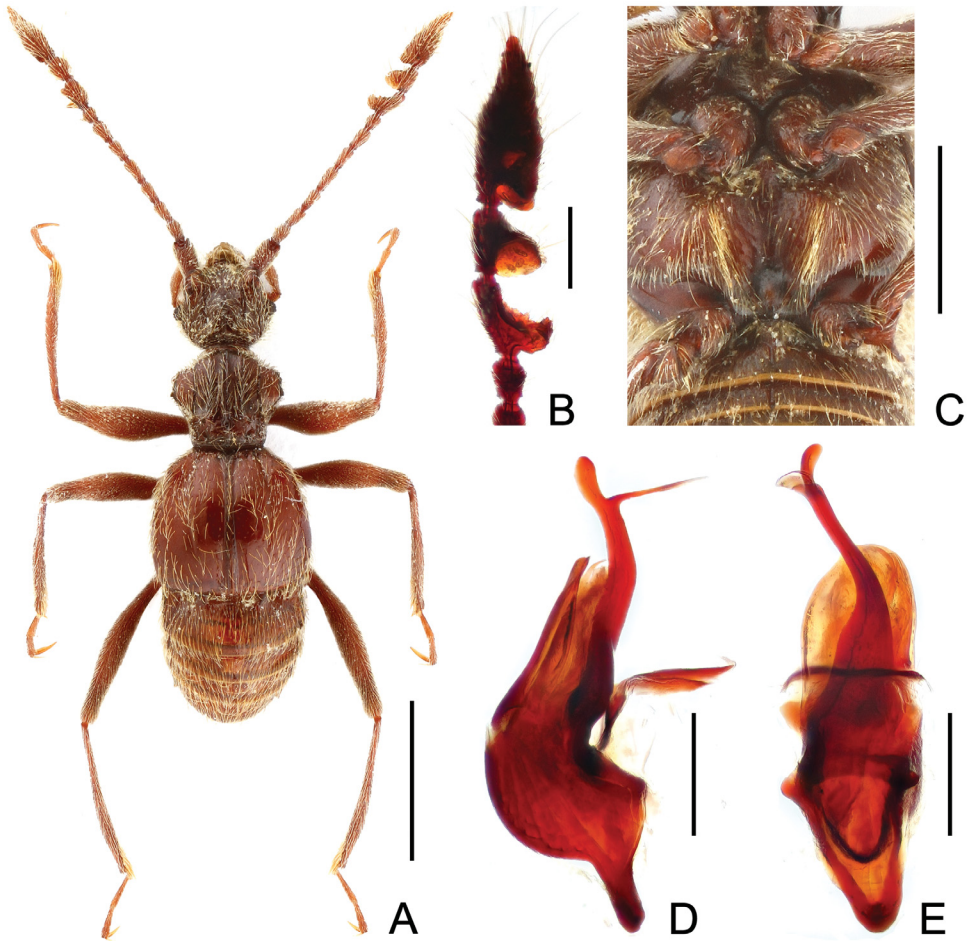


Fig. 10. *Tribasodites thailandicus* sp. nov., male. A – habitus. B – left antenna. C – meso- and metaventrite. D – aedeagus, in lateral view. E – aedeagus, in ventral view. Scales: A = 1.0 mm; C = 0.5 mm; B, D, E = 0.2 mm.

***Tribasodites thailandicus* sp. nov.**

(Figs 10, 13B)

Type locality. Thailand, Chiang Mai, Chiang Dao, Ban Na Lao.

Type material. HOLOTYPE: ♂, 'Pselaphien. Perte de Ban Na Lao, CHIAND DAO, THAILAND / {reverse side of the same label}; P. Leclerc, THAI 85, 11.7.85' (MHNG). Additional collection data in the MHNG notebook for Thai expedition in 1985, sample 89 on page 5: 'N{orth} Doi Chang Dao, Ban Na Lao, alt. 800 m, at sight, P{hilippe} L{eclerc}' (Cuccodoro, pers. comm.).

Diagnosis. *Male*: vertex simple, lacking modification; antennomeres VIII–XI modified; each eye composed of about 35 facets; pronotum with distinct lateral spines; metaventrite slightly

raised above metacoxae, with short rows of setae at posterior portion; aedeagus with apical portion of the median lobe split to two parts, dorsal part shorter than ventral part.

Description. *Male.* Body (Fig. 10A) reddish brown, mouth parts, antennae and tarsi paler; BL 2.92 mm. HL 0.52 mm, HW 0.64 mm; median longitudinal carina distinct, extending from base to level of eyes; each eye composed of about 35 facets; antennomeres VIII–IX strongly modified (Fig. 10B). Pronotum wider than long, PL 0.63 mm, PW 0.71 mm; with distinct discal and lateral spines. Elytra slightly wider than long, EL 0.88 mm, EW 1.00 mm; discal striae extending to apical 2/3 elytral length. Metaventrite (Fig. 10C) slightly raised above metacoxae, with pair of rows of dense setae; metacoxae simple, metatrochanters protuberant at ventral margin. Abdomen narrower than elytra, AL 0.89 mm, AW 0.89 mm. Aedeagus (Figs 10D, E) asymmetric, length 0.78 mm.

Female. Unknown.

Etymology. The species epithet indicates the type locality of the new species; adjective.

Comments. The French ‘Perte de’ on the label, meaning ‘some kind of a hole where a stream disappears underneath the ground’, is not mentioned in the notebook (see above). This information was probably added by the collector when producing the label. Consequently, in combination with the morphology of this species, it is reasonable to assume that the male adult was collected in a cave.

Distribution. Thailand: Chiang Mai (Fig. 13B).

Key to males of the *Tribasodites bedosae* species-group

Comments. *Tribasodites tiani* was described based on a single female, thus it is excluded from the following key. This species may be separated from the other congeners by the relatively large median portion of the female genital complex, as well as its distribution (Fig. 13A). Supplementary illustrations of antennae and metaventrites of *T. bedosae* and *T. deharvengi* are provided (Fig. 11) in this paper for comparative purpose.

- | | | |
|-------|---|-------------------------------|
| 1 | Pronotum with lateral margins lacking spines. | 2 |
| – | Pronotum with spinose lateral margins. | 4 |
| 2 (1) | Head with modified vertex (Fig. 2A); antennomeres VIII–XI simple, lacking modifications (Fig. 2B); Southwest China: Guizhou. | <i>T. abnormalis</i> sp. nov. |
| – | Head with simple vertex; antennomeres VIII–XI each modified. | 3 |
| 3 (2) | Aedeagus split at apex, ventral portion strongly broadened in lateral view (Fig. 8D); South China: Guangxi. | <i>T. kawadai</i> sp. nov. |
| – | Aedeagus split at apex, ventral portion narrowed toward apex in lateral view (Fig. 9D); South China: Guangxi. | <i>T. uenoi</i> sp. nov. |
| 4 (1) | Metacoxae protuberant at ventral margins (Fig. 4C); Southwest Chiba: Guizhou. ... | <i>T. liboensis</i> sp. nov. |
| – | Metacoxae flat at ventral margins. | 5 |
| 5 (4) | Metatrochanters modified, either with tuft of dense setae, or protuberant at ventral margins. | 6 |
| – | Metatrochanters simple. | 7 |



Fig. 11. Antennae (A, B) and metaventrite (C, D) of *Tribasodites bedosae* Yin & Li, 2011 (A, C) and *T. deharvengi* Yin & Li, 2011 (B, D). Scales: A, B = 0.2 mm; C, D = 0.5 mm.

- 6 (5) Metatrochanters with tuft of dense setae at ventral margins (Fig. 6C); Southwest China: Guizhou. *T. xingyiensis* sp. nov.
 – Metatrochanters protuberant at ventral margins (Fig. 10C); North Thailand: Chiang Mai. *T. thailandicus* sp. nov.
- 7 (5) Metaventrite with setae sparse or clustered, not arranged in rows. 8
 – Metaventrite with setae arranged in two distinct rows. 10
- 8 (7) Apical split of aedeagal median lobe with dorsal portion much longer than ventral portion in lateral view (YIN et al. 2011a: Fig. 6); South China: Guangxi.
 *T. bedosae* Yin & Li, 2011
 – Apical split of aedeagal median lobe with dorsal portion much shorter than ventral portion in lateral view. 9
- 9 (8) Antennomeres XI relatively stouter (Fig. 11B); metaventrite with sparse setae not clustered (Fig. 11D); South China: Guangxi. *T. deharvengi* Yin & Li, 2011
 – Antennomeres XI relatively slenderer (Fig. 3B); metaventrite with clustered setae (Fig. 3C); Southwest China: Guizhou. *T. cehengensis* sp. nov.
- 10 (7) Rows of setae short, present only at posterior half of metaventrite (Fig. 7C); South China: Guangxi. *T. bama* sp. nov.
 – Rows of setae extending throughout at least 2/3 length of metaventrite (Figs 1C, 5C). 11
- 11 (10) Head and pronotum slightly wider than long, HL/HW and PL/PW < 1 (Fig. 1A); Central China: Hubei. *T. hubeiensis* sp. nov.
 – Head slightly longer than wide, HL/HW > 1, pronotum about as long as wide, PL/PW \approx 1 (Fig. 5A); Southwest China: Guizhou. *T. setosiventris* sp. nov.

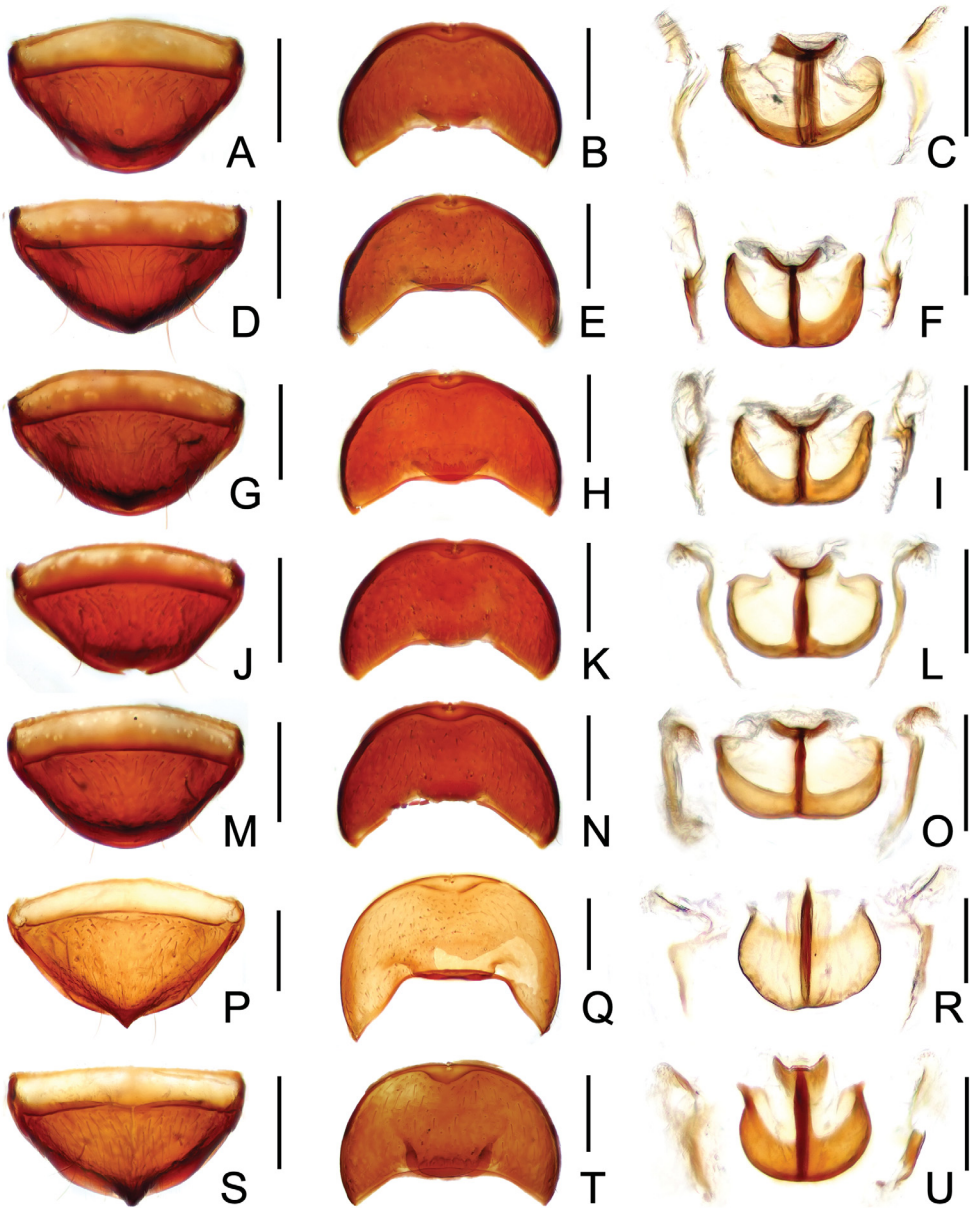


Fig. 12. Female tergite VIII (A, D, G, J, M, P, S), sternite VIII (B, E, H, K, N, Q, T) and genital complex (C, F, I, L, O, R, U) of *Tribasodites* species. A–C – *T. hubeiensis* sp. nov. D–F – *T. cehengensis* sp. nov. G–I – *T. setosiventris* sp. nov. J–L – *T. xingyiensis* sp. nov. M–O – *T. bama* sp. nov. P–R – *T. kawadai* sp. nov. S–U – *T. uenoi* sp. nov. Scales: 0.2 mm.

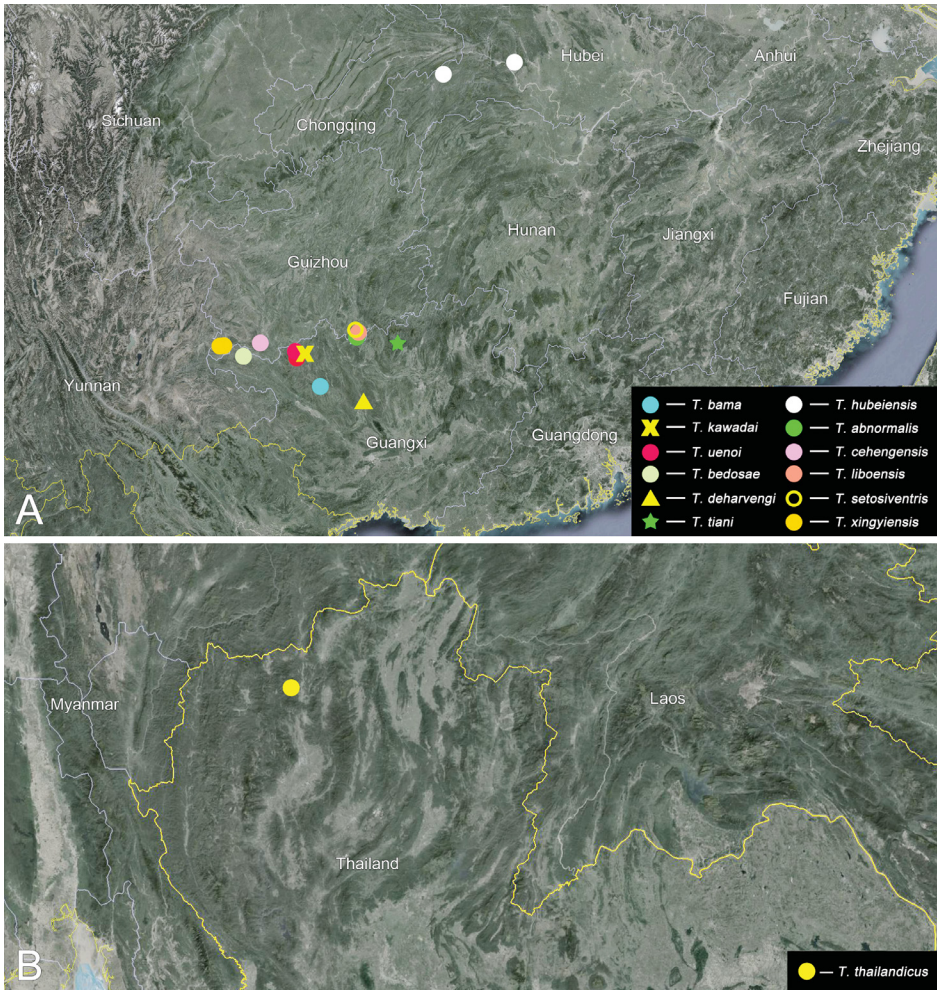


Fig. 13. Distribution of the *Tribasodites bedosae* species-group in China (A) and Thailand (B).

Check-list of cave-inhabiting Pselaphinae of East Asia

Supertribe Batrisitae Reitter, 1882

Tribe Batrisini Reitter, 1882 (5 genera, 18 species)

Subtribe Batrisina Reitter, 1882

Batrisodellus cerberus Tanabe & Nakane, 1989

Japan: Kyushu

Batrisodellus coprea Tanabe & Nakane, 1989

Japan: Honshu

Speobatrisodes punctaticeps Jeannel, 1958

Japan: Shikoku

Tribasodes kamedai Nomura, 2012

Japan: Okinawa

<i>Tribasodellus callissimus</i> (Nomura & Wang, 1991)	China: Guangxi
<i>Tribasodites abnormalis</i> sp. nov.	China: Guizhou
<i>Tribasodites bama</i> sp. nov.	China: Guangxi
<i>Tribasodites bedosae</i> Yin & Li, 2011.	China: Guangxi
<i>Tribasodites cehengensis</i> sp. nov.	China: Guizhou
<i>Tribasodites deharvengi</i> Yin & Li, 2011.	China: Guangxi
<i>Tribasodites hubeiensis</i> sp. nov.	China: Hubei
<i>Tribasodites kawadai</i> sp. nov.	China: Guangxi
<i>Tribasodites liboensis</i> sp. nov.	China: Guizhou
<i>Tribasodites setosiventris</i> sp. nov.	China: Guizhou
<i>Tribasodites thailandicus</i> sp. nov.	Thailand: Chiang Mai
<i>Tribasodites tiani</i> Yin & Li, 2011	China: Guangxi
<i>Tribasodites uenoi</i> sp. nov.	China: Guangxi
<i>Tribasodites xingyiensis</i> sp. nov.	China: Guizhou

Supertribe Goniaceritae Reitter, 1882

Tribe Iniocyphini Park, 1951 (2 genera, 3 species)

Subtribe Natypleurina Newton & Thayer, 1992

<i>Nipponobythus latifrons</i> Jeannel, 1958	Japan: Honshu, Shikoku
<i>Nipponobythus plagiatus</i> Jeannel, 1958	Japan: Shikoku
<i>Takaorites coiffaiti</i> (Jeannel, 1958)	Japan: Honshu
<i>Takaorites longicornis</i> (Jeannel, 1958)	Japan: Shikoku

Tribe Bythinini Raffray, 1890 (1 genus, 2 species)

<i>Bythoxenites japonicus</i> (Yoshida & Nomura, 1952)	Japan: Honshu
<i>Bythoxenites rimicola</i> Tanokuchi, 1990	Japan: Shikoku

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