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On the Lathrobiina of Taiwan

(Coleoptera: Staphylinidae: Paederinae)

With 243 figures

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Summary

Primarily based on material collected by Aleš Smetana, Ottawa, in the 1990s, 29 species of Lathrobiina from Taiwan are described and illustrated: *Lathrobium alishanum* sp. n. (Chiayi Hsien: Alishan), *L. involutum* sp. n. (Taichung Hsien: Hsuehshan), *L. anmaicum* sp. n. (Taichung Hsien: Anmashan), *L. utriculatum* sp. n. (Kaohsiung Hsien: Peinantashan), *L. extraculum* sp. n. (Pingtung Hsien: Peitawushan), *L. follitum* sp. n. (Pingtung Hsien: Peitawushan), *L. houhuanicum* sp. n. (Nantou Hsien: Houhuanshan), *L. nenkaoticum* sp. n. (Nantou Hsien: Nenkaoshan), *L. tarokoense* sp. n. (Hualien Hsien: Taroko National Park), *L. alesi* sp. n. (Taichung Hsien: Hsuehshan), *Platydomene sinuosa* sp. n. (Ilan Hsien), *Lobrathium* (*Lobrathium*) *nigripenne* sp. n. (Chiayi Hsien: Alishan), *L. (L.) bilobatum* sp. n. (Taiwan: widespread), *L. (L.) extensum* sp. n. (Taichung Hsien), *L. (L.) bipenicillatum* sp. n. (Ilan Hsien: Chyr Duan), *L. (L.) penicillatum* sp. n. (Nantou: Shanlinchi), *L. (L.) pedes* sp. n. (Hualien and Ilan Hsien), *L. stimulans* sp. n. (Kaohsiung: Peinantashan), *L. sororium* sp. n. (Kaohsiung: Kuanshan), *L. duplehamatum* sp. n. (Nantou Hsien), *L. smetanai* sp. n. (Kaohsiung: Peinantashan), *L. furcillatum* sp. n. (Pingtung Hsien: Peitawushan), *L. cornutissimum* sp. n. (Kaohsiung: Peinantashan), *L. bisagittatum* sp. n. (Ilan and Taoyuan Hsien), *L. digitatum* sp. n. (Chiayi and Nantou Hsien: Yushan), *L. bidigitatum* sp. n. (Kaohsiung: Peinantashan), *L. spoliatum* sp. n. (Taichung Hsien: Hsuehshan), *L. kuanicum* sp. n. (Kaohsiung Hsien: Kuanshan), and *L. coalitum* sp. n. (Nantou: Nenkaoshan). Several additional *Lobrathium* species were identified, but remain unnamed, since they are represented only by females. Two apparently monophyletic species groups are established, the *Lathrobium involutum* group with ten locally endemic species, all of them newly described, and the *Lobrathium stimulans* group including thirteen named species with more or less restricted distributions, only one of which was described previously. Several species of the *L. stimulans* group lack the submarginal line of the elytra, traditionally one of the key characters separating *Lobrathium* MULSANT & REY, 1878 from most other lathrobiine genera, but evidently secondarily reduced in these species. A key to the *Lobrathium* species of Taiwan is provided. The genus *Lobrathium*, as well as *Lobrathium sibynicum* ZHENG, 1988 are recorded from Taiwan for the first time. The following binomina are established: *Lobrathium taiwanense* (WATANABE, 1998), comb. n. (ex *Lathrobium*), and *Tetartopeus bimaculatus* (LI, TANG & ZHU, 2007), comb. n. (ex *Lobrathium*). Additional records - the first records since the original description - are reported for *Lathrobium shaolaiense* WATANABE, 1998.

Key words

Coleoptera, Staphylinidae, Paederinae, *Lathrobium*, *Lobrathium*, *Platydomene*, *Tetartopeus*, Palearctic region, Taiwan, species groups, new species, new combinations, new records, key to species.

Zusammenfassung

Aus Material, das vor allem von Aleš Smetana, Ottawa, in den 1990er Jahren auf Taiwan gesammelt wurde, werden 29 Arten von Lathrobiina beschrieben und abgebildet: *Lathrobium alishanum* sp. n. (Chiai Hsien: Alishan), *L. involutum* sp. n. (Taichung Hsien: Hsuehshan), *L. anmaicum* sp. n. (Taichung Hsien: Anmashan), *L. utriculatum* sp. n. (Kaohsiung Hsien: Peinantashan), *L. extraculum* sp. n. (Pingtung Hsien: Peitawushan), *L. follitum* sp. n. (Pingtung Hsien: Peitawushan), *L. houhuanicum* sp. n. (Nantou Hsien: Houhuanshan), *L. nenkaicum* sp. n. (Nantou Hsien: Nenkaoshan), *L. tarokoense* sp. n. (Hualien Hsien: Taroko National Park), *L. alesi* sp. n. (Taichung Hsien: Hsuehshan), *Platydomene sinuosa* sp. n. (Ilan Hsien), *Lobrathium (Lobrathium) nigripenne* sp. n. (Chiai Hsien: Alishan), *L. (L.) bilobatum* sp. n. (Taiwan: weit verbreitet), *L. (L.) extensum* sp. n. (Taichung Hsien), *L. (L.) bipeniculatum* sp. n. (Ilan Hsien: Chyr Duan), *L. (L.) penicillatum* sp. n. (Nantou: Shanlinchi), *L. (L.) pedes* sp. n. (Hualien und Ilan Hsien), *L. stimulans* sp. n. (Kaohsiung: Peinantashan), *L. sororium* sp. n. (Kaohsiung: Kuanshan), *L. duplehamatum* sp. n. (Nantou Hsien), *L. smetanai* sp. n. (Kaohsiung: Peinantashan), *L. furcillatum* sp. n. (Pingtung Hsien: Peitawushan), *L. cornutissimum* sp. n. (Kaohsiung: Peinantashan), *L. bisagittatum* sp. n. (Ilan und Taoyuan Hsien), *L. digitatum* sp. n. (Chiai und Nantou Hsien: Yushan), *L. bidigitatum* sp. n. (Kaohsiung: Peinantashan), *L. spoliatum* sp. n. (Taichung Hsien: Hsuehshan), *L. kuanicum* sp. n. (Kaohsiung Hsien: Kuanshan) und *L. coalitum* sp. n. (Nantou: Nenkaoshan). Weitere unbeschriebene *Lobrathium*-Arten wurden identifiziert, aber nicht beschrieben, da keine Männchen verfügbar sind. Zwei offensichtlich monophyletische Artengruppen werden charakterisiert, die *Lathrobium involutum*-Gruppe mit zehn lokalendemischen, allesamt neu beschriebenen Arten sowie die *Lobrathium stimulans*-Gruppe mit dreizehn benannten Arten, auch überwiegend lokalendemisch, von denen zuvor nur eine beschrieben war. Einigen Arten der *L. stimulans*-Gruppe fehlt die feine submarginale Linie der Elytren, bisher eines der Hauptmerkmale, die zur Trennung von *Lobrathium* MULSANT & REY, 1878 und anderen Lathrobiinengattungen herangezogen wurden; offenbar handelt es sich um eine sekundäre Reduktion. Für die *Lobrathium*-Arten Taiwans wird eine Bestimmungstabelle erstellt. Die Gattung *Lobrathium* sowie *Lobrathium sibiricum* ZHENG, 1988 werden erstmals von Taiwan nachgewiesen. Zwei Namen werden neu kombiniert: *Lobrathium taiwanense* (WATANABE, 1998), comb. n. (ex *Lathrobium*) und *Tetartopeus bimaculatus* (LI, TANG & ZHU, 2007), comb. n. (ex *Lobrathium*). Für *Lathrobium shaolaiense* WATANABE, 1998 werden - erstmals seit der Originalbeschreibung - weitere Nachweise gemeldet.

Introduction

Taiwan is known as a diversity and speciation hotspot with a high proportion of endemics for several taxa of Staphylinidae that have been revised recently, e.g., Quediina of the Staphylinini (SMETANA 1995, 1996), *Othius* STEPHENS, 1829 of the Othiini (ASSING 1999), and *Leptusa* KRAATZ, 1856 of the Aleocharinae (ASSING 2002, PACE 1995, 1996). Nevertheless, according to SMETANA (2004) and an updated version by SCHÜLKE (unpublished), the inventory of the staphylinid fauna currently includes "only" some 750 species, disregarding the Scydmaeninae, which were added to the Staphylinidae only recently. However, numerous taxa have not been revised and the true diversity can be expected to be significantly higher, probably comprising several thousand species, a hypothesis also confirmed by the results of the present paper.

While the habitats at lower elevations of Taiwan are inhabited mainly by taxa with Oriental affiliations, the montane and subalpine regions primarily host a Palearctic fauna with numerous endemics. For details on the (zoo-)geography, climate, habitats, and other data pertaining to Taiwan, including colour photographs, see SMETANA (1995).

The speciose paederine genus *Lathrobium* GRAVENHORST, 1802 is represented in the Palearctic region by more than 250 species and subspecies in three subgenera (ASSING 2009, SMETANA 2004). Only four species have become known from Taiwan, all of them apparently local endem-

ics: *L. shaolaiense* WATANABE, 1998, *L. taiwanense* WATANABE, 1998, *L. tsuifengense* WATANABE, 2005, and *L. yasutoshii* WATANABE, 2005.

The genus *Lobrathium* Mulsant & Rey, 1878, which was treated as a subgenus of *Lathrobium* until recently, previously comprised 67 species and two subspecies in the Palearctic region (Assing 2007, 2008). However, the Eastern Palearctic species have not been revised. It does not seem unlikely that some of the Eastern Palearctic species currently attributed to *Lathrobium* and *Platydomene* Ganglbauer, 1895 in fact refer to *Lobrathium*. The genus was previously unknown from Taiwan.

Platydomene Ganglbauer, 1895, which too had been regarded as a subgenus of *Lathrobium* until less than 30 years ago, is represented in the Palearctic region by 17 species (plus three subspecies) (Assing 2003, Smetana 2004). Only one of them, *P. taiwanensis* Watanabe, 1991, is distributed - and endemic - in Taiwan.

Apart from four *Lathrobium* and one *Platydomene* species, only three further species of Lathrobiina have been reported from Taiwan, *Domene scabripennis* Rougemont, 1995 (endemic), as well as the widespread *Pseudolathra lineata* Herman, 2003 and *P. unicolor* (Kraatz, 1859) (Smetana 2004).

The present paper is primarily based on outstanding material of Lathrobiina including several hundreds of specimens collected during numerous field trips between 1990 and 1998 conducted by Aleš Smetana, Ottawa, and recently made available to me by Aleš Smetana and Lee H. Herman, New York. This material included almost 40 species, the vast majority referring to the genera *Lobrathium* and *Lathrobium*, only two of which were previously described, one from Taiwan and one from China. Eight of these species are not described here because they are either represented only by females (seven *Lobrathium* species) or because a description would require a more comprehensive revisory approach (one *Tetartopeus* species). In addition, two specimens were received from Stanislav Vít, Genève, one of them representing an undescribed species of *Lathrobium* and one of *Lobrathium*. Thus, including the new taxa described in this paper, the subtribe Lathrobiina is now represented in Taiwan by 37 described species.

Material, methods, and depositories

The material referred to in this study is deposited in the following public institution and private collections:

MHNG	Muséum d'histoire naturelle Genève (G. Cuccodoro)
cAss	author's private collection
cSme	private collection A. Smetana, Ottawa

The holotypes in the private collection of A. Smetana will eventually be deposited in the MHNG (Smetana, pers. comm.).

The morphological studies were carried out using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). For the photographs a digital camera (Nikon Coolpix 995) was used.

Head length was measured from the anterior margin of the frons to the posterior margin of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra, and the length of the aedeagus from the apex of the ventral process to the base of the median lobe.

Results

The species of the *Lathrobium involutum* group

Remarkably, the *Lathrobium* material examined in the course of the present study contained as many as ten species of a previously unknown, but diverse species group. This group, hereafter referred to as the *L. involutum* group, evidently forms a monophylum, as can be inferred particularly from the derived morphology of the aedeagus, as well as from the similar external and secondary sexual characters. The species of the *L. involutum* group are characterised as follows:

Habitus and coloration similar to the European *L. testaceum* KRAATZ and allied species. Coloration more or less uniformly yellowish red, reddish, or reddish-brown. Body size small, 4-6 mm.

Head usually weakly oblong and approximately as wide as pronotum (e.g., Figs 2, 12, 17, 25); punctation moderately coarse; interstices with shallow to pronounced microsculpture. Eyes composed of few ommatidia and of distinctly reduced size (Fig. 10), usually approximately 1/6-1/4 the length of postocular region in dorsal view. Antennae of moderate length.

Pronotum slender, usually approximately 1.25-1.30 times as long as wide; punctation similar to that of head or slightly less coarse; interstices without microsculpture.

Elytra of conspicuously reduced length, 0.55-0.65 times as long as pronotum (e.g., Figs 1, 12, 17, 25). Hind wings completely reduced. Legs short, metatarsus little more than half as long as metatibia.

Abdomen broader than elytra; punctation dense and fine; interstices with evident microsculpture; posterior margin of tergite VII without palisade fringe; tergite VIII with sexual dimorphism.

♂: posterior margin of tergite VIII weakly convex (Fig. 69); sternites III-VI unmodified; sternite VII with very weakly to moderately concave posterior margin, its pubescence at most weakly modified (e.g., Figs 3, 13, 18, 26); sternite VIII approximately as long as wide or weakly oblong, posterior excision small to moderate, and in more or less distinctly asymmetric position (i.e., not situated in the middle of posterior margin) (e.g., Figs 4, 14, 52); aedeagus with capsule and ventral process more or less symmetric; ventral process more or less slender and laterally compressed; internal sac with two larger and more or less asymmetric, often with additional smaller structures; largest internal structure basally bulbous (shaped like a kidney, bagpipe, or balloon) and apically spine-like (usually bent or helical); the smaller of the two large structures basally of various shapes, apically spine- or hook-like (e.g., Figs 5-6, 15, 20, 28).

♀: tergite VIII with posterior margin of species-specific shape, weakly concave to strongly produced (e.g., Figs 7, 21, 29, 38), latero-ventral parts often remarkably extended, meeting or overlapping ventrally, and enveloping all of abdomen (Fig. 64); sternite VIII distinctly oblong, in most species much longer than tergite VIII, and more or less produced posteriorly (e.g., Figs 8, 22, 30); tergite IX weakly separated in the middle; tergite X 1.5-2.5 times as long as tergite IX in the middle (e.g., Figs 9, 23, 31).

At present, the *L. involutum* group comprises ten species, all of them described below for the first time (*L. alishanum*, *L. involutum*, *L. anmaicum*, *L. utriculatum*, *L. extraculum*, *L. follitum*, *L. houhuanicum*, *L. nenkaoicum*, *L. tarokoense*, *L. alesi*). As far as is currently known, all of them are endemic to individual mountain ranges in Taiwan, where they were found in the leaf litter, moss, and other debris of various types of forests at high elevations (2100-3900 m). Except for *L. follitum* and *L. extraculum*, both of which were recorded from the Peitawushan, the species of the *L. involutum* group appear to have allopatric distributions.

In view of the external similarity of the species of the *L. involutum* group, detailed descriptions are given only for two representatives; the remainder of the descriptions focus on the distinguishing characters, usually the primary and secondary characters. In general, an identification is possible also based on the female secondary sexual characters. Nevertheless, a key to species would be of little use, since external characters are usually insufficient for a reliable identification and since the female sexual characters of three species are unknown.

***Lathrobium (Lathrobium) involutum* sp. n.** (Figs 1-9)

Type material:

Holotype ♂: "Taiwan, Taichung Hsien, Hseuhshan, above Shan-Liu-Gieu Hut, 3220 m, 7.V.91, A. Smetana [T69] / Holotypus ♂ *Lathrobium involutum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 15 exs.: same data as holotype (cSme, cAss); 7 exs.: "Taiwan, Taichung Hsien, Hseuhshan, above Shan-Liu-Gieu Hut, 3150 m, 8.V.91, A. Smetana [T71]" (cSme, cAss); 13 exs.: "Taiwan, Taichung Hsien, Hseuhshan, above Shan-Liu-Gieu Hut, 3200 m, 8.V.91, A. Smetana [T72]" (cSme, cAss); 27 exs.: "Taiwan, Taichung Hsien, Hseuhshan, Hseuhshan Main Peak, 3650 m, 9.V.91, A. Smetana [T73]" (cSme, cAss); 4 exs.: "Taiwan, Taichung Hsien, Hseuhshan, Hseuhshan Mn. Pk., 3750-3884 m, 9.V.91, A. Smetana [T74]" (cSme, cAss); 1 ex.: "Taiwan, Taichung Hsien, Hseuhshan, above Shan-Liu-Gieu Hut, 3350 m, 10.V.91, A. Smetana [T75]" (cAss).

Description:

Body length 4.8-6.0 mm; habitus as in Fig. 1. Coloration: body uniformly pale-reddish.

Head weakly oblong, 1.05-1.10 times as long as wide; punctation moderately coarse and of variable density, sparser in median dorsal area; interstices with very shallow microreticulation; lateral contours behind eyes weakly convex in dorsal view; eyes small, not protruding from lateral contours of head and approximately 1/5-1/4 the length of postocular region in dorsal view. Antenna rather stout; antennomeres II and III of subequal length and approximately 1.5 times as long as wide; IV-VII approximately as long as wide; VIII-X weakly transverse.

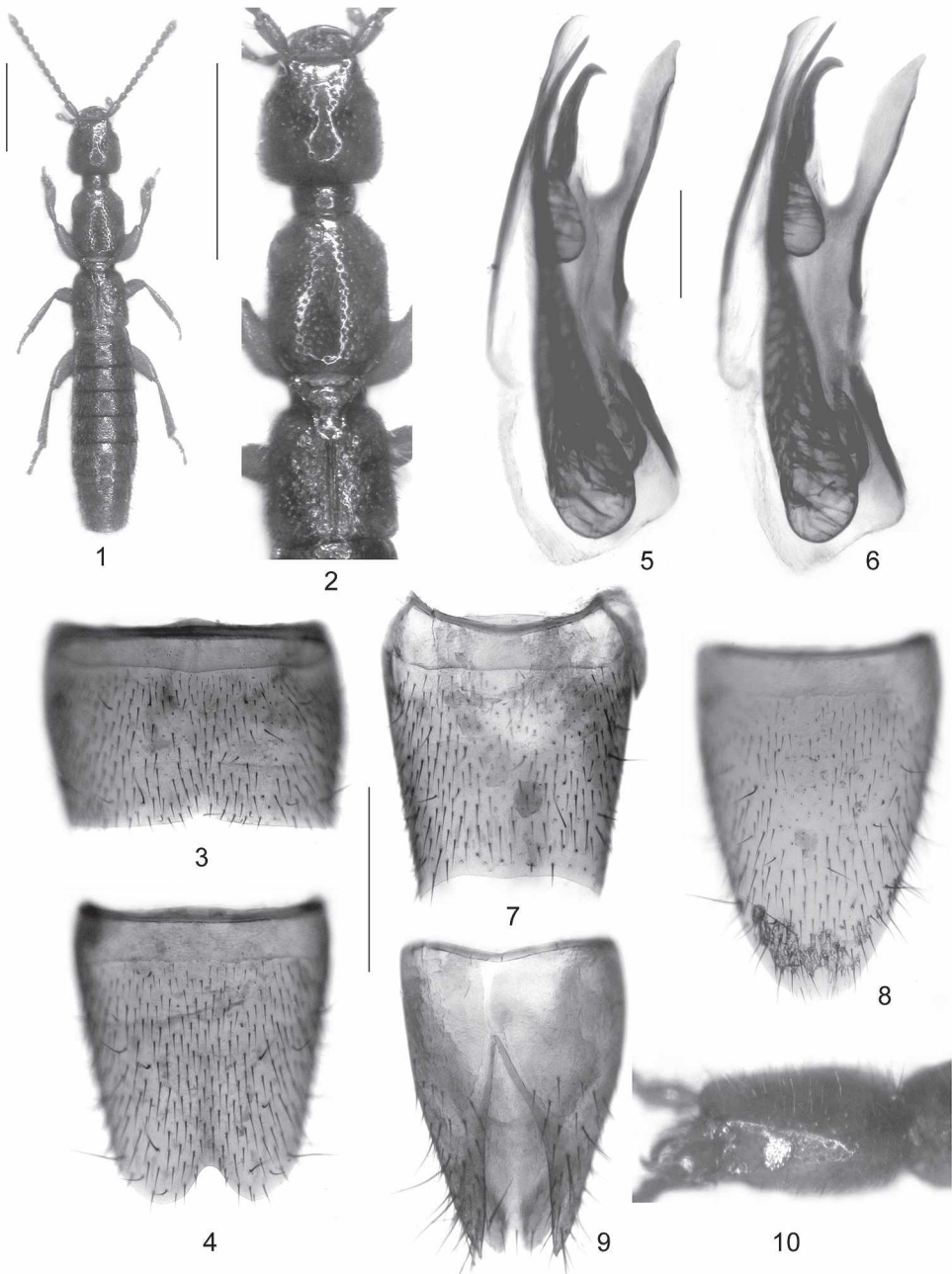
Pronotum slender, approximately 1.3 times as long as wide and about as wide as head (Fig. 2); lateral margins often weakly sinuate slightly before middle; punctation similar to that of head, but often slightly less coarse; interstices without microsculpture.

Elytra short, 0.55-0.60 times as long as pronotum (Fig. 2); punctation fine, shallow, weakly defined; interstices without apparent microsculpture, but sometimes somewhat rugosely sculptured. Hind wings completely reduced.

Abdomen 1.10-1.25 times as wide as elytra; punctation fine and very dense; interstices with distinct microsculpture and rather matt; posterior margin of tergite VII without palisade fringe.

♂: sternite VII with posterior margin weakly concave in the middle, pubescence weakly modified (Fig. 3); tergite VIII with weakly convex posterior margin; sternite VIII almost 1.1 times as long as wide, excision almost V-shaped, its depth approximately 1/10 the length of sternite (Fig. 4); aedeagus approximately 0.95 mm long, with ventral process, internal structures, and dorsal plate of distinctive morphology (Figs 5-6).

♀: tergite VIII with broadly and weakly concave posterior margin (Fig. 7), latero-ventrally extended into pronounced flaps, which meet and even overlap ventrally and envelop all of the abdomen; sternite VIII distinctly oblong, approximately 1.3 times as long as broad, much longer than tergite VIII, and distinctly produced posteriorly (Fig. 8); tergite IX narrowly membranous in the middle (Fig. 9); tergite X approximately twice as long as tergite IX in the middle.



Figs 1-10: *Lathrobium involutum* sp. n. (1-9) and *L. alishanum* sp. n. (10): habitus (1); forebody (2); male sternite VII (3); male sternite VIII (4); aedeagus in lateral view (5-6); female tergite VIII (7); female sternite VIII (8); female tergites IX-X (9); head in lateral view (10). Scale bars: 1-2: 1.0 mm; 3-4, 7-10: 0.5 mm; 5-6: 0.2 mm.

Comparative notes:

This new species is readily distinguished from the four previously described congeners from Taiwan particularly by the different morphology of the aedeagus. In addition, it is separated from them as follows:

from *L. taiwanense* (Taichung Hsien: Hsiao-hsüeh Shan) by much smaller size (*L. taiwanense* 7.9 mm), much coarser and sparser punctuation of head and pronotum, the differently shaped head (*L. taiwanense*: suborbicular), smaller eyes, more oblong pronotum (*L. taiwanense*: 1.19 times as long as broad), stouter antennae, and the different shape and chaetotaxy of the male sternite VII and VIII;

from *L. shaolaiense* (Taichung Hsien: Shao-lai Shan) by much smaller size (*L. shaolaiense*: 7.9 mm), smaller eyes (*L. shaolaiense*: approximately 1/3 as long as postocular region in dorsal view), more oblong pronotum (*L. shaolaiense*: 1.13 times as long as broad), and the absence of pronounced impressions on the male sternites V-VIII;

from *L. yasutoshii* (Taichung Hsien: Lishan) by smaller size (*L. yasutoshii*: 6.4-9.1 mm), paler coloration, smaller eyes (*L. yasutoshii*: slightly less than 1/3 the length of postocular region in dorsal view), more oblong pronotum (*L. yasutoshii*: 1.13 times as long as broad), and the different modifications of the male sternites VII and VIII;

from *L. tsuifengense* (Nantou Hsien: Tsuifeng) by smaller size (*L. tsuifengense*: 6.5-8.1 mm), smaller eyes (*L. tsuifengense*: more than 1/3 as long as postocular region in dorsal view), the more oblong pronotum (*L. tsuifengense*: 1.18 times as long as broad), and the different shape and chaetotaxy of the male sternites VII and VIII.

For illustrations of the habitus, the male secondary sexual characters, and the aedeagus of the compared species see WATANABE (1998, 2005).

Etymology:

The specific epithet (adjective, past participle of *involvere*) refers to the remarkable morphology of the female tergite VIII.

Distribution and natural history:

As can be inferred from the adaptive reductions of eye size, pigmentation, wings, and of the palisade fringe at the posterior margin of the abdominal tergite VII, as well as from the evidently restricted distributions of other species of the *L. involutum* group, the species is probably endemic to the Hsuehshan mountain range, Taichung, central Taiwan. The type specimens were sifted from leaf litter, moss, and other debris in an old coniferous forest and in stands of rhododendron and juniper at altitudes of 3150-3884 m.

***Lathrobium (Lathrobium) alishanum* sp. n.** (Figs 10-15)**Type material:**

Holotype ♂: "Taiwan - Chiayi Co., Alishan, Road 18, km 92.5, Nat. Sc. Area, 2100 m, Cryptomeria litter, 11.IV.2009, leg. Vít [4] / Holotypus ♂ *Lathrobium alishanum* sp. n., det. V. Assing 2009" (cAss).

Description:

Body length 5.7 mm; habitus as in Fig. 11. Coloration: body uniformly reddish.

Head weakly oblong, 1.08 times as long as wide (Fig. 12); dorsal surface with moderately coarse punctation, punctation of posterior 2/3 rather sparse (interstices on average 2-3 times as wide as diameter of punctures), that of anterior 1/3 somewhat denser (interstices approximately as wide as diameter of punctures); interstices with distinct microreticulation; lateral contours behind eyes weakly convex in dorsal view; eyes small (Fig. 10), not protruding from lateral contours of head and approximately 1/4 the length of postocular region in dorsal view. Antenna similar to that of *L. involutum*.

Pronotum slender, 1.27 times as long as wide and 1.05 times as wide as head (Fig. 12); lateral margins weakly sinuate slightly before middle; punctation similar to that of head; interstices without microsculpture.

Elytra short, 0.55 times as long as pronotum (Fig. 12); punctation shallow, weakly defined; interstices without apparent microsculpture. Hind wings completely reduced.

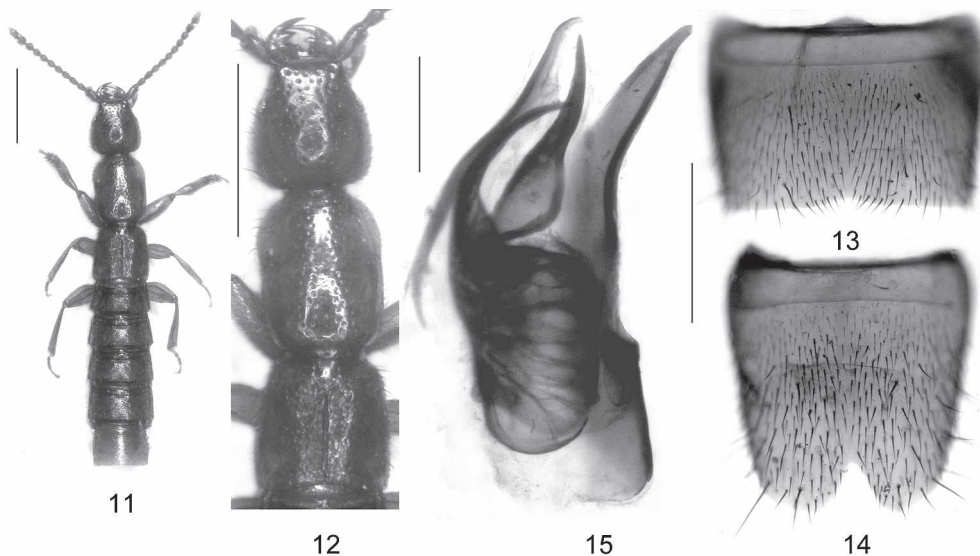
Abdomen approximately 1.15 times as wide as elytra; punctation fine and very dense; interstices with microsculpture and rather matt; posterior margin of tergite VII without palisade fringe.

♂: sternite VII with posterior margin weakly concave in the middle, in posterior median area with weakly modified pubescence (Fig. 13); tergite VIII with weakly convex posterior margin; sternite VIII weakly oblong, posterior excision V-shaped, its depth approximately 1/5 the length of sternite (Fig. 14); aedeagus approximately 0.8 mm long, with ventral process, internal structures, and dorsal plate of highly distinctive morphology (Fig. 15).

♀: unknown.

Comparative notes:

Lathrobium alishanum is highly similar to *L. involutum*, but distinguished by slightly larger size, more pronounced microsculpture of the head, the deeper posterior excision of the male sternite VIII, and particularly by the shape of the aedeagus. From other previously described congeners from Taiwan, it is readily separated by much smaller size alone.



Figs 11-15: *Lathrobium alishanum* sp. n.: habitus (11); forebody (12); male sternite VII (13); male sternite VIII (14); aedeagus in lateral view (15). Scale bars: 11-12: 1.0 mm; 13-14: 0.5 mm; 15: 0.2 mm.

Etymology:

The specific epithet (adjective) is derived from the name of the mountain range where the type locality is situated.

Distribution and natural history:

The type locality is situated in the Alishan mountain range, Chiai Hsien, central Taiwan. The holotype was collected by sifting *Cryptomeria* litter at an altitude of 2100 m.

***Lathrobium (Lathrobium) anmaicum* sp. n.** (Figs 16-23)

Type material:

Holotype ♂: "Taiwan, Taichung Hsien, Anmashan, 2225 m, 2.V.1990, A. Smetana [T38] / Holotypus ♂ *Lathrobium anmaicum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 1 ♀: same data as holotype (cAss); 1 ♂: "Taiwan, Taichung Hsien, Anmashan, 2225 m, 11.V.1992, A. Smetana [T123]" (cAss); 1 ♀: "Taiwan, Taichung Hsien, Anmashan, Creek, 2185 m, 12.V.92, A. Smetana [T126]" (cSme); 1 ♀: "Taiwan, Taichung Hsien, Anmashan, 2230 m, 1.V.1990, A. Smetana [T33]" (cSme).

Description:

Body length 4.8-5.7 mm; habitus as in Fig. 16. Externally highly similar to *L. involutum*, except for the slightly smaller eyes and the somewhat more pronounced microsculpture on the head (Fig. 17). Reliably distinguished only based on the primary and secondary sexual characters:

♀: sternite VII almost truncate posteriorly, pubescence not distinctly modified (Fig. 18); sternite VIII approximately 1.05 times as long as broad, posterior excision in somewhat asymmetric position, its depth slightly more than 1/10 the length of sternite (Fig. 19); aedeagus approximately 0.95 mm long, with ventral process of different shape; both internal structures helically contorted, dorsal plate of characteristic shape in lateral view (Fig. 20).

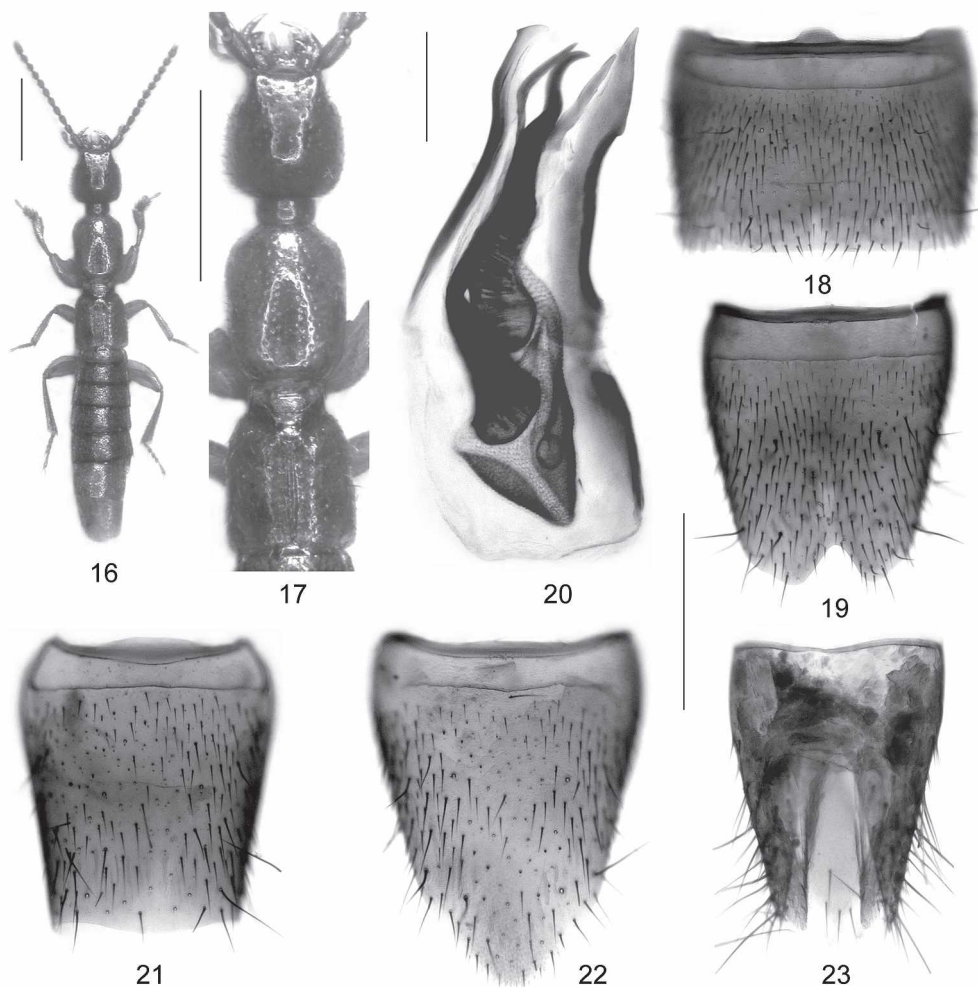
♂: tergite VIII with broadly and weakly convex posterior margin (Fig. 21), as in *L. involutum* latero-ventrally extended into pronounced flaps; sternite VIII distinctly oblong, approximately 1.25 times as long as broad, much longer than tergite VIII, and distinctly produced posteriorly (Fig. 22); segments IX-X of similar morphology as in *L. involutum* (Fig. 23).

Comparative notes:

The similar external characters, as well as the similar general morphology of the male primary and secondary sexual characters and particularly the synapomorphically derived morphology of the female tergite VIII suggest that *L. anmaicum* is closely related to *L. involutum* from the nearby Hseuhshan. For characters separating these two species and distinguishing them from other Taiwanese congeners see the description above, the comparative notes below *L. involutum*, and the following sections, respectively.

Etymology:

The specific epithet (adjective) is derived from the name of the mountain where the types were collected.



Figs 16-23: *Lathrobium anmaicum* sp. n.: habitus (16); forebody (17); male sternite VII (18); male sternite VIII (19); aedeagus in lateral view (20); female tergite VIII (21); female sternite VIII (22); female tergites IX-X (23). Scale bars: 16-17: 1.0 mm; 18-19, 21-23: 0.5 mm; 20: 0.2 mm.

Distribution and natural history:

The species is probably endemic to the Anmashan range in Taichung Hsien, central Taiwan. The type specimens were sifted from humus, leaf litter, and other debris, mostly around tree bases, in a broadleaved evergreen forest, a mature evergreen forest, and a natural mixed forest at altitudes of 2185-2230 m.

Lathrobium (Lathrobium) utriculatum sp. n. (Figs 24-31)

Type material:

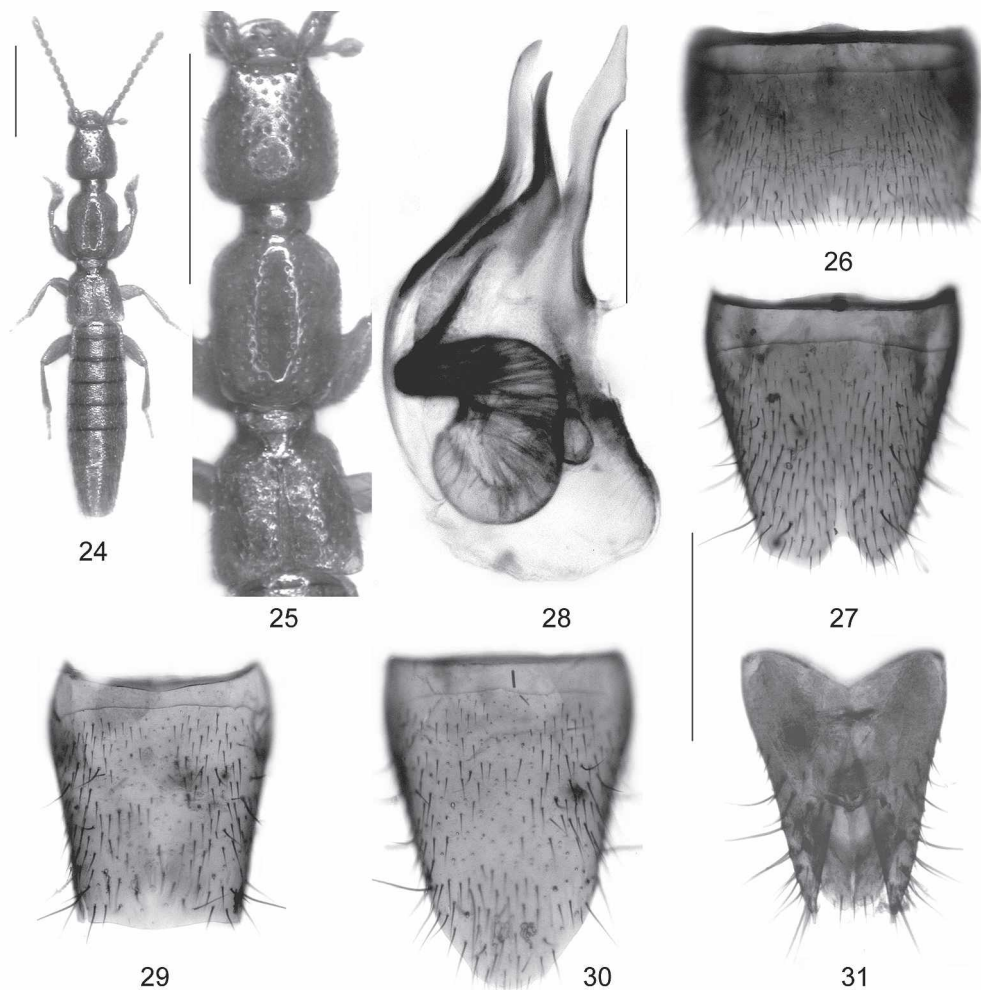
Holotype ♂: "Taiwan, Kaohsiung Hsien, Peinantashan trail, ridge at 2800 m, 3.VII.1993, A. Smetana [T134] / Holotypus ♂ *Lathrobium utriculatum* sp. n., det. V. Assing 2010" (cSme).

Paratypes: 2 ♂♂, 3 ♀♀: same data as holotype (cSme, cAss).

Description

Body length 4.1-5.0 mm; habitus as in Fig. 24. Externally highly similar to *L. involutum*, except for smaller average body size and the pronounced microsculpture on the head (Fig. 25). Reliably distinguished only based on the primary and secondary sexual characters:

♂: sternite VII truncate posteriorly, pubescence not distinctly modified (Fig. 26); sternite VIII only indistinctly oblong, posterior excision in somewhat asymmetric position, small, its depth approximately 1/10 the length of sternite (Fig. 27); aedeagus small, approximately 0.65 mm long, with slender ventral process, long and S-shaped (lateral view) dorsal plate, and internal structures of distinctive shape (Fig. 28).



Figs 24-31: *Lathrobium utriculatum* sp. n.: habitus (24); forebody (25); male sternite VII (26); male sternite VIII (27); aedeagus in lateral view (28); female tergite VIII (29); female sternite VIII (30); female tergites IX-X (31). Scale bars: 24-25: 1.0 mm; 26-27, 29-31: 0.5 mm; 28: 0.2 mm.

♀: tergite VIII with posterior margin weakly convex (Fig. 29), latero-ventral parts extended, but slightly less so than in *L. involutum*, meeting ventrally, but not overlapping; sternite VIII distinctly oblong, approximately 1.30-1.35 times as long as broad, much longer than tergite VIII, and distinctly produced posteriorly (Fig. 30); tergite X more than twice as long as tergite IX in the middle (Fig. 31).

Comparative notes:

Based on the similar external and the secondary sexual characters, as well as particularly on the synapomorphically derived morphology of the aedeagus, *L. utriculatum* belongs to the *L. involutum* group. From other species of this group, it is reliably distinguished only by the shape and internal structures of the aedeagus.

Etymology:

The specific epithet (adjective derived from the Latin noun *uter*: tube, hose) refers to the shape of the basal internal structure of the aedeagus, which somewhat resembles a bagpipe or a wineskin.

Distribution and natural history:

As can be inferred from the restricted distributions of the closely related congeners, as well as from the adaptive reductions of pigmentation, eye size, wings, and palisade fringe, the species is probably endemic to the Peinantashan range in Kaoshiung Hsien, central Taiwan. The type specimens were sifted from moss and other debris around bases of trees in a coniferous forest with bamboo undergrowth at an altitude of 2800 m. One of the dissected females had a mature egg in the ovaries.

Lathrobium (Lathrobium) extraculum sp. n. (Figs 32-40)

Type material:

Holotype ♂: "Taiwan, Pingtung Hsien, Peitawushan ridge, 2800-2910 m, 28.IV.1992, A. Smetana [T105] / Holotypus ♂ *Lathrobium extraculum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 3 ♂♂, 4 ♀♀: same data as holotype (cSme, cAss); 2 ♀♀: "Taiwan, Pingtung Hsien, Peitawushan, above Kuai-Ku Hut, 2750 m, 29.IV.1992, A. Smetana [T107]" (cSme).

Description:

Body length 4.5-5.5 mm; habitus as in Fig. 32. Externally highly similar to *L. involutum*, except for the pronounced microsculpture on the head (Fig. 33). Reliably distinguished only based on the primary and secondary sexual characters:

♂: posterior margin of sternite VII weakly concave, pubescence not distinctly modified (Fig. 34); sternite VIII 1.05-1.10 times as long as wide, posterior excision in slightly asymmetric position, small, its depth slightly more than 1/10 the length of sternite (Fig. 35); aedeagus 0.90-0.95 mm long, with spear shaped ventral process and with internal structures of distinctive shape, long internal structure shaped like a corkscrew apically (Figs 36-37).

♀: tergite VIII with posterior margin obtusely angled in the middle (Fig. 38), latero-ventral parts extended, but much less so than in *L. involutum*, not meeting ventrally; sternite VIII distinctly oblong, approximately 1.30-1.35 times as long as broad, much longer than tergite VIII, and distinctly produced posteriorly (Fig. 39); tergite X 1.8-1.9 times as long as tergite IX in the middle (Fig. 40).

Comparative notes:

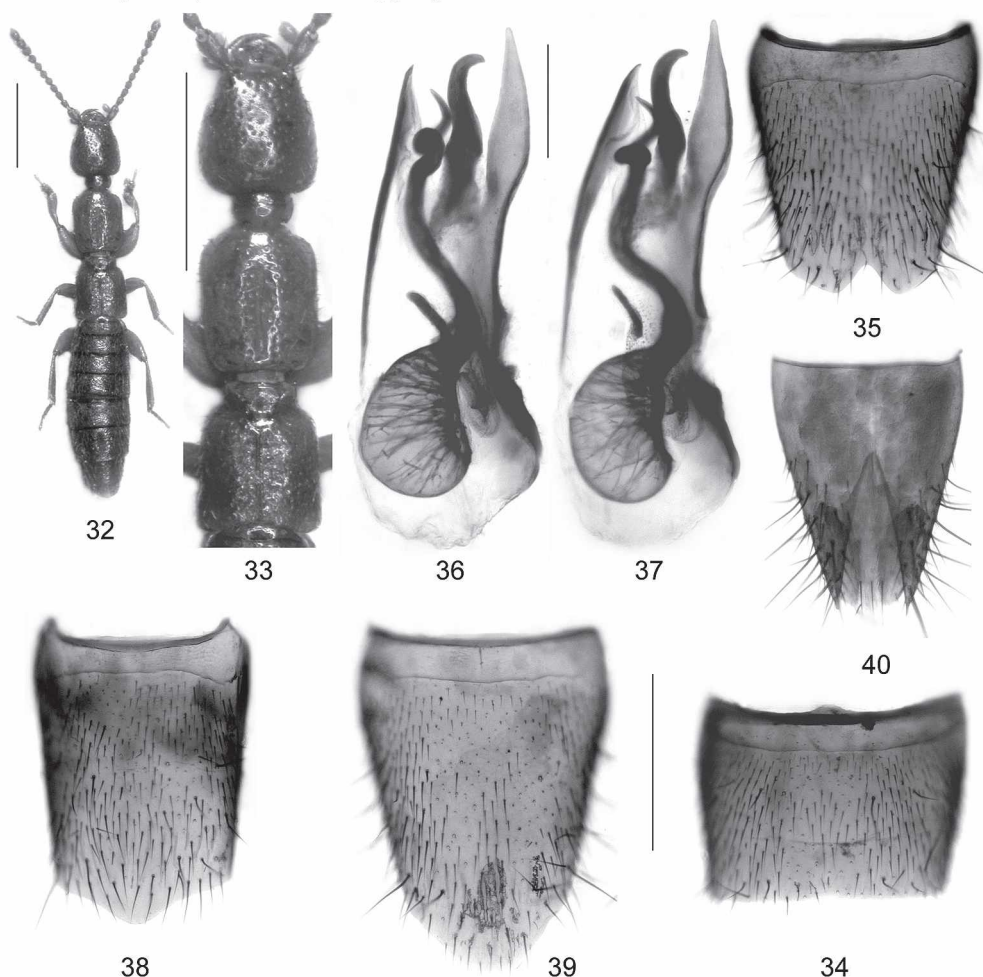
Based on the similar external and the secondary sexual characters, as well as particularly on the derived morphology of the aedeagus, *L. extraculum* belongs to the *L. involutum* group. From other species of this group, it is reliably distinguished only by the shape and internal structures of the aedeagus and by the shape of the female tergite VIII.

Etymology:

The specific epithet (Latin, noun in apposition: corkscrew) refers to the conspicuous shape of the long internal structure of the aedeagus.

Distribution and natural history:

The species was collected in two localities in the Peitawushan, Pingtung Hsien, southern Taiwan, where it is probably endemic. The type specimens were sifted from leaf litter, moss, and other



Figs 32-40: *Lathrobium extraculum* sp. n.: habitus (32); forebody (33); male sternite VII (34); male sternite VIII (35); aedeagus in lateral view (36-37); female tergite VIII (38); female sternite VIII (39); female tergites IX-X (40). Scale bars: 32-33: 1.0 mm; 34-35, 38-40: 0.5 mm; 36-37: 0.2 mm.

debris in a fir forest with bamboo, juniper, and rhododendron undergrowth and in a broadleaved forest at altitudes of 2750-2910 m.

***Lathrobium (Lathrobium) follitum* sp. n.** (Figs 41-48)

Type material:

Holotype ♂: "Taiwan, Pingtung Hsien, Peitawushan, above Kuai-Ku Hut, 2750 m, 22.V.91, A. Smetana [T89] / Holotypus ♂ *Lathrobium follitum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 1 ♂, 3 ♀: "Taiwan, Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2130 m, 27.IV.1992, A. Smetana [T101]" (cSme, cAss); 1 ♀: "Taiwan, Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2135 m, 30.IV.1992, A. Smetana [T108]" (cSme); 1 ♀: "Taiwan, Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2120 m, 27.IV.1992, A. Smetana [T104]" (cSme); 1 ♀: "Taiwan, Pingtung Hsien, Peitawushan, Kuai-Ku Hut, 2325 m, 23.V.91, A. Smetana [T88]" (cSme).

Description:

Body length 4.8-5.7 mm; habitus as in Fig. 41. Externally highly similar to *L. involutum*, except for the darker average coloration, the somewhat broader body, the pronounced microsculpture on the head, the less oblong pronotum, and the broader elytra (Fig. 42). Coloration of forebody reddish to brown; elytra sometimes weakly bicoloured, brown with yellowish-brown posterior margins.

Pronotum approximately 1.25 times as long as wide.

♂: posterior margin of sternite VII weakly concave, pubescence not distinctly modified (Fig. 43); sternite VIII approximately as long as wide, posterior excision shallow, broad, and situated almost in the middle of posterior margin, its depth barely 1/10 the length of sternite (Fig. 44); aedeagus almost 1.0 mm long, with very long, slender, subapically hooked ventral process and with internal structures of distinctive shape, long internal structure with enormous basal portion (Fig. 45).

♀: tergite VIII distinctly oblong, 1.40-1.45 times as long as wide, posterior margin distinctly produced in the middle (Fig. 46), latero-ventral parts weakly developed, not meeting ventrally; sternite VIII 1.35-1.40 times as long as broad, only indistinctly longer than tergite VIII, distinctly produced and almost angled posteriorly (Fig. 47); tergite X approximately twice as long as tergite IX in the middle (Fig. 48).

Comparative notes:

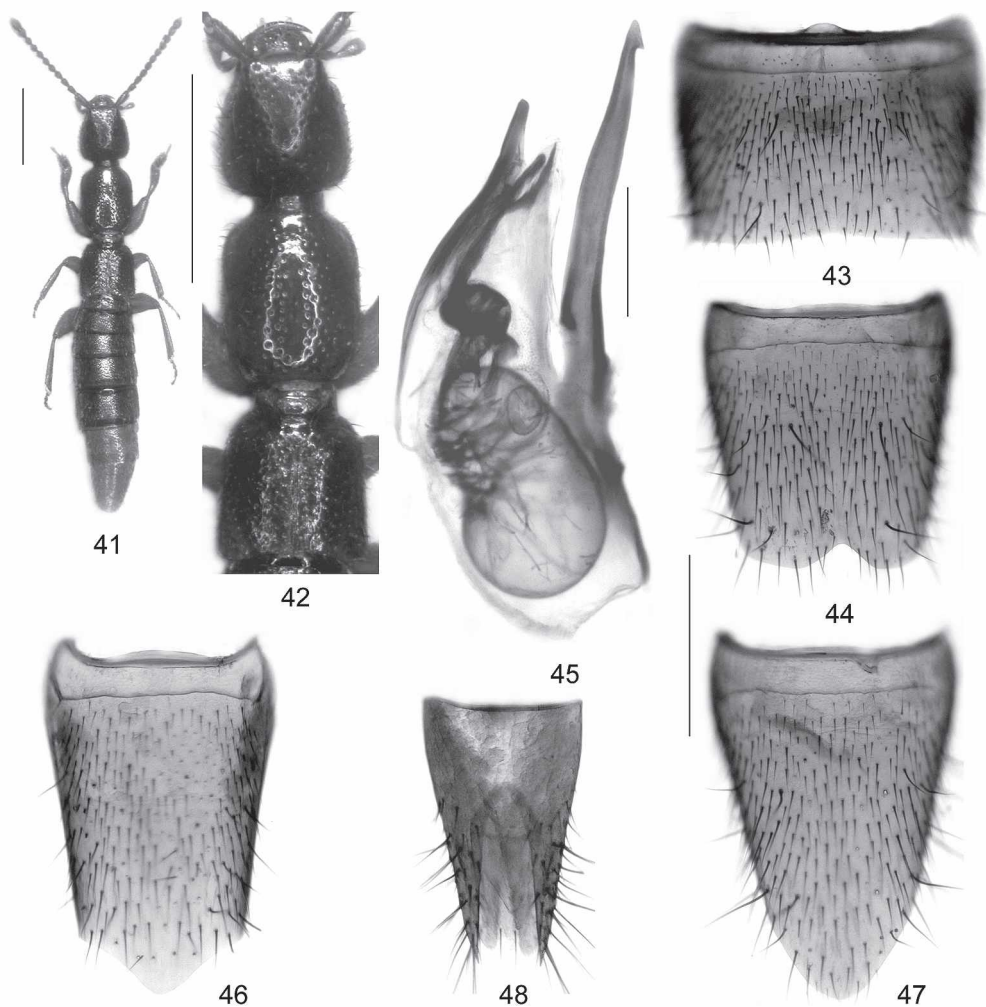
Based on the similar external and sexual characters, *L. follitum* belongs to the *L. involutum* group. From other species of this group, it is distinguished particularly by the completely different morphology of the aedeagus (ventral process, internal structures) and by the shape of the female tergite VIII. It is additionally separated from most of them by the slightly broader body.

Etymology:

The specific epithet (Latin, adjective derived from follis: bellows, balloon, etc.) refers to the enormous basal portion of the long internal structure of the aedeagus.

Distribution and natural history:

The species is probably endemic to the Peitawushan, Pingtung Hsien, southern Taiwan; its distribution at least partially overlaps with that of *L. extraculum*. As far as is currently known, the



Figs 41-48: *Lathrobium follitum* sp. n.: habitus (41); forebody (42); male sternite VII (43); male sternite VIII (44); aedeagus in lateral view (45); female tergite VIII (46); female sternite VIII (47); female tergites IX-X (48). Scale bars: 41-42: 1.0 mm; 43-44, 46-48: 0.5 mm; 45: 0.2 mm.

Peitawushan is the only mountain range hosting two species of the *L. involutum* group. The type specimens were sifted from leaf litter, moss, moist to wet vegetation, and other debris in a natural broadleaved forest at altitudes of 2120-2750 m.

***Lathrobium (Lathrobium) houhuanicum* sp. n. (Figs 49-57)**

Type material:

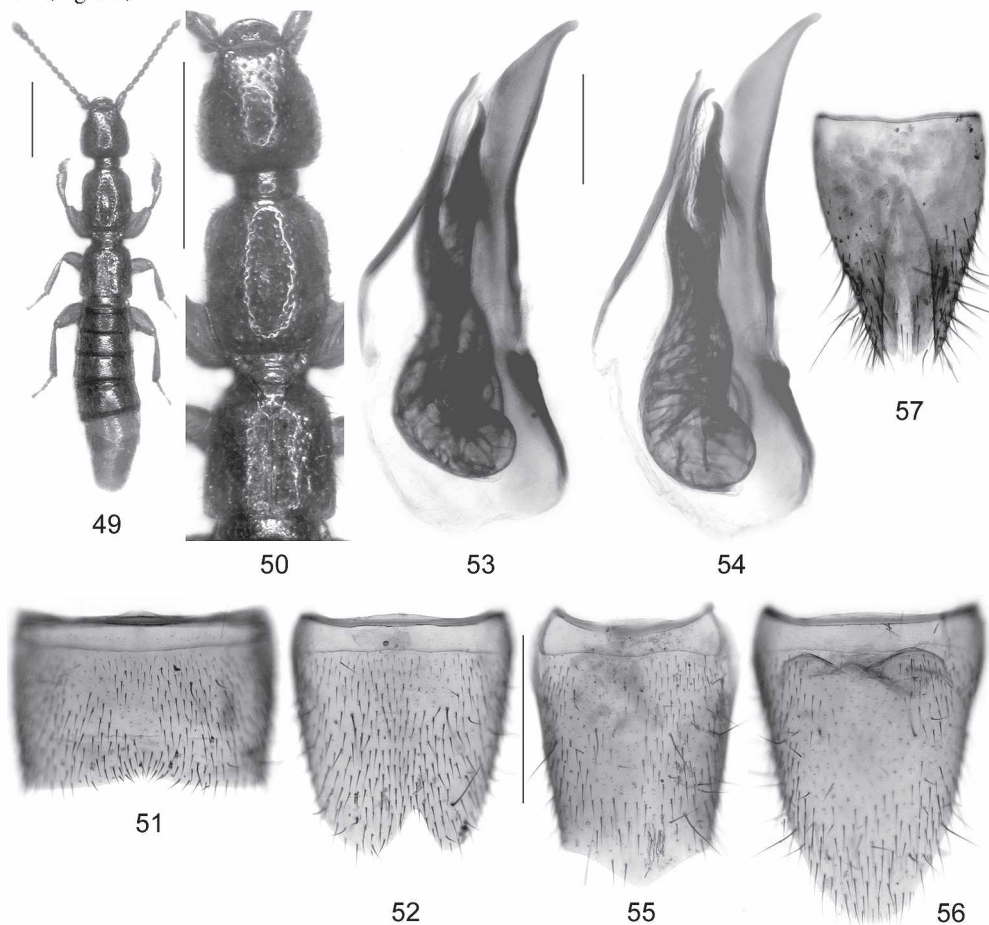
Holotype ♂: "Taiwan, Nantou Hsien, Houhuanshan, Kuenyang, 3050 m, 29.IV.90, A. Smetana [T30] / Holotypus ♂ *Lathrobium houhuanicum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 1 ♂, 1 ♀: "Taiwan, Nantou Hsien, Houhuanshan, Kuenyang, 3050 m, 27.IV.90, A. Smetana [T29]" (cSme, cAss).

Description:

Body length 4.9-5.7 mm; habitus as in Fig. 49. Externally highly similar to *L. involutum*, except for the somewhat broader body, the more pronounced microsculpture on the head, the less oblong pronotum, and the broader elytra. Pronotum approximately 1.25-1.30 times as long as wide (Fig. 50).

♂: posterior margin of sternite VII weakly concave, pubescence in postero-median portion weakly modified (Fig. 51); sternite VIII approximately as long as wide, posterior excision relatively deep and in asymmetric position (i.e., not in the middle), its depth 1/6-1/5 the length of sternite (Fig. 52); aedeagus approximately 0.9 mm long, with slender and apically acute ventral process, and with internal structures of distinctive shape (Figs 53-54).

♀: tergite VIII approximately 1.2 times as long as wide, posterior margin obtusely angled in the middle (Fig. 55), latero-ventral flaps pronounced, meeting ventrally, but not overlapping; sternite VIII approximately 1.25 times as long as broad and 1.15 times as long as tergite VIII, distinctly produced posteriorly (Fig. 56); tergite X approximately 2.5 times as long as tergite IX in the middle (Fig. 57).



Figs 49-57: *Lathrobium houhuanicum* sp. n.: habitus (49); forebody (50); male sternite VII (51); male sternite VIII (52); aedeagus in lateral view (53-54); female tergite VIII (55); female sternite VIII (56); female tergite IX-X (57). Scale bars: 49-50: 1.0 mm; 51-52, 55-57: 0.5 mm; 53-54: 0.2 mm.

Comparative notes:

Based on the similar external and sexual characters, *L. houhuanicum* undoubtedly belongs to the *L. involutum* group. From other species of this group, it is distinguished particularly by the morphology of the aedeagus (ventral process, internal structures), from most of them also by the shape of the female tergite VIII.

Etymology:

The specific epithet (adjective) is derived from the name of the mountain where the type specimens were discovered.

Distribution and natural history:

The species is probably endemic to the Houhuanshan, Nantou Hsien, central Taiwan, where the types were sifted from leaf litter, moss, grass, and other debris, partly around the bases of large trees, in a fir forest with bamboo undergrowth at an altitude of 3050 m.

***Lathrobium (Lathrobium) nenkaoicum* sp. n.** (Figs 58-66)**Type material:**

Holotype ♂: "Taiwan, Nantou Hsien, Nenkaoshan, Tenchi Hut, 2900 m, 5.V.1992, A. Smetana [T114] / Holotypus ♂ *Lathrobium nenkaoicum* sp. n., det. V. Assing 2010" (cAss).

Paratype ♀: same data as holotype (cSme).

Description:

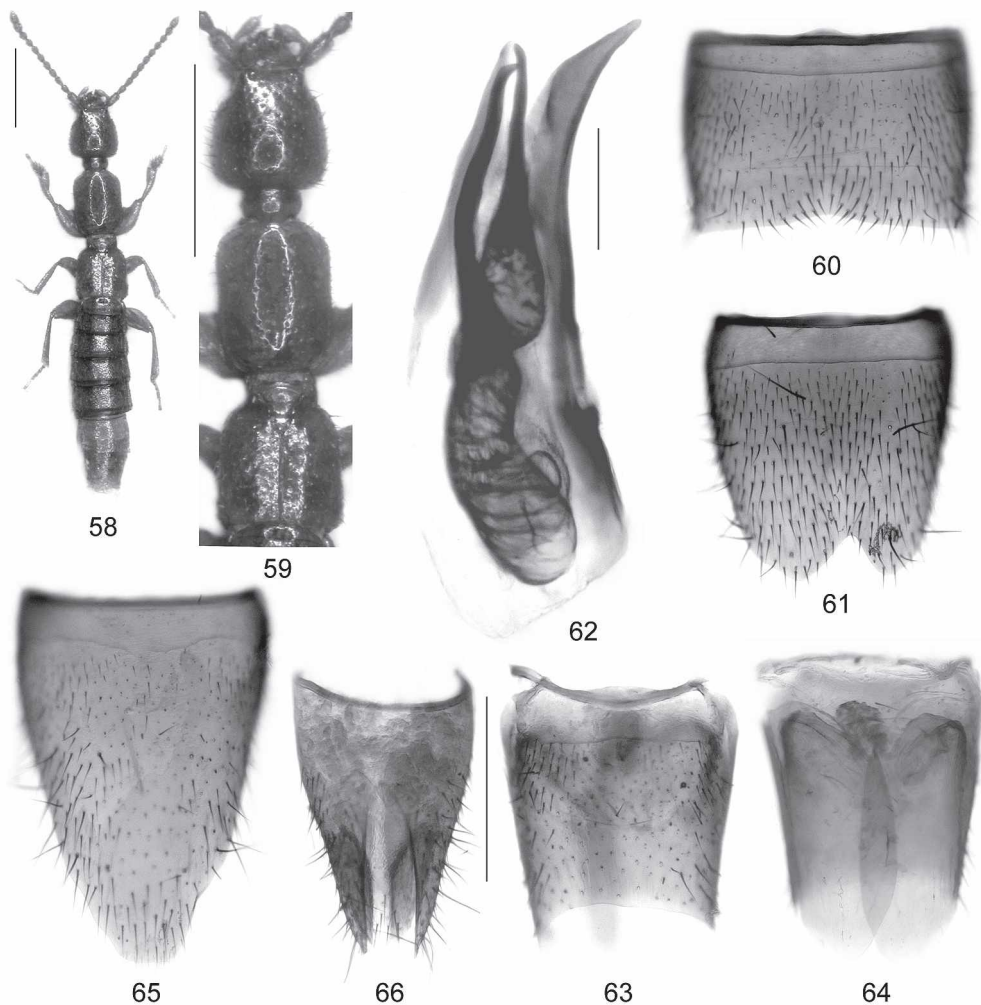
Body length 5.0-5.5 mm; habitus as in Fig. 58. Externally highly similar to *L. involutum*, except for the on average more pronounced microsculpture on the head and the slightly smaller eyes (Fig. 59); reliably distinguished only by the sexual characters:

♂: posterior margin of sternite VII weakly concave in the middle, pubescence in postero-median portion weakly modified, i.e., with few blackish and longer setae on either side (Fig. 60); sternite VIII approximately as long as wide, posterior excision relatively deep and in asymmetric position (i.e., not in the middle), its depth approximately 1/6 the length of sternite (Fig. 61); aedeagus approximately 1.05 mm long, with slender and apically acute ventral process, and with internal structures of distinctive shape (Fig. 62).

♀: tergite VIII with posterior margin broadly concave (Fig. 63), latero-ventral extensions pronounced, completely enveloping abdomen and overlapping ventrally (Fig. 64); sternite VIII approximately 1.3 times as long as broad and much longer than tergite VIII, distinctly produced posteriorly and apically truncate (Fig. 65); tergite X approximately 2.5 times as long as tergite IX in the middle (Fig. 66).

Comparative notes:

The similar male primary and secondary sexual characters suggest that *L. nenkaoicum* is most closely allied to *L. houhuanicum*, a hypothesis also supported by the vicinity of the localities where the two species were found. The Nenkaoshan is separated from the Houhuanshan only by some 20-30 km. *Lathrobium nenkaoicum* is distinguished from *L. houhuanicum* by the different shape of the ventral process of the larger aedeagus (longer, more slender, less abruptly narrowed apically), the differently shaped internal structures (particularly the short internal structure), the almost straight dorsal plate (lateral view) (*L. houhuanicum*: basal portion angled), the completely different shape of the female tergite VIII, and the differently shaped female sternite VIII.



Figs 58-66: *Lathrobium nenkaoticum* sp. n.: habitus (58); forebody (59); male sternite VII (60); male sternite VIII (61); aedeagus in lateral view (62); female tergite VIII (63); female tergite VIII in ventral view (64); female sternite VIII (65); female tergites IX-X (66). Scale bars: 58-59: 1.0 mm; 60-61, 63-66: 0.5 mm; 62: 0.2 mm.

Etymology:

The specific epithet (adjective) is derived from the name of the mountain where the type specimens were discovered.

Distribution and natural history:

The type locality is situated in the Nenkaoshan, Nantou Hsien, central Taiwan, where the two specimens were sifted from leaf litter, moss, and other debris in a fir forest with bamboo and shrub undergrowth at an altitude of 2900 m.

***Lathrobium (Lathrobium) tarokoense* sp. n.** (Figs 67-73)**Type material:**

Holotype ♂: "Taiwan, Hualien Hsien, Taroko N. P., Ridge SE Nanhushi Hut, 2700 m, 11.V.90, A. Smetana [T52] / Holotypus ♂ *Lathrobium tarokoense* sp. n., det. V. Assing 2010" (cSme).
Paratypes: 2 ♂♂: same data as holotype (cSme, cAss).

Description:

Body length 4.3-4.8 mm; habitus as in Fig. 67. External characters as in *L. involutum* (Fig. 68), except for the somewhat smaller body size.

♂: tergite VIII as in Fig. 69; posterior margin of sternite VII very weakly concave, pubescence in postero-medial portion not distinctly modified (Fig. 70); sternite VIII very weakly oblong, 1.05-1.10 times as long as wide, posterior excision moderately deep and in almost symmetric position (i.e., almost in the middle), its depth approximately 1/8 the length of sternite (Fig. 71); aedeagus 0.75-0.85 mm long, in lateral view with rather broad ventral process, and with internal structures of distinctive shape (Figs 72-73).

♀: unknown.

Comparative notes:

Like the preceding species, *L. tarokoense* belongs to the *L. involutum* group, as can be inferred from the similar external and sexual characters. It is distinguished from other species of this group particularly by the morphology of the aedeagus (ventral process, internal structures) and, except for *L. utriculatum*, by smaller body size. For characters separating it from *L. alesi*, whose aedeagus is somewhat similar to that of *L. tarokoense*, see the following section.

Etymology:

The specific epithet (adjective) is derived from the name of the national park where the type locality is situated.

Distribution and natural history:

Like the other species of the *L. involutum* group, *L. tarokoense* probably has a restricted distribution. The type locality is situated in the Taroko National Park in Hualien Hsien, eastern central Taiwan. The three males were sifted from moist moss, leaf litter, and other debris in a primary, mostly coniferous forest at an altitude of 2900 m.

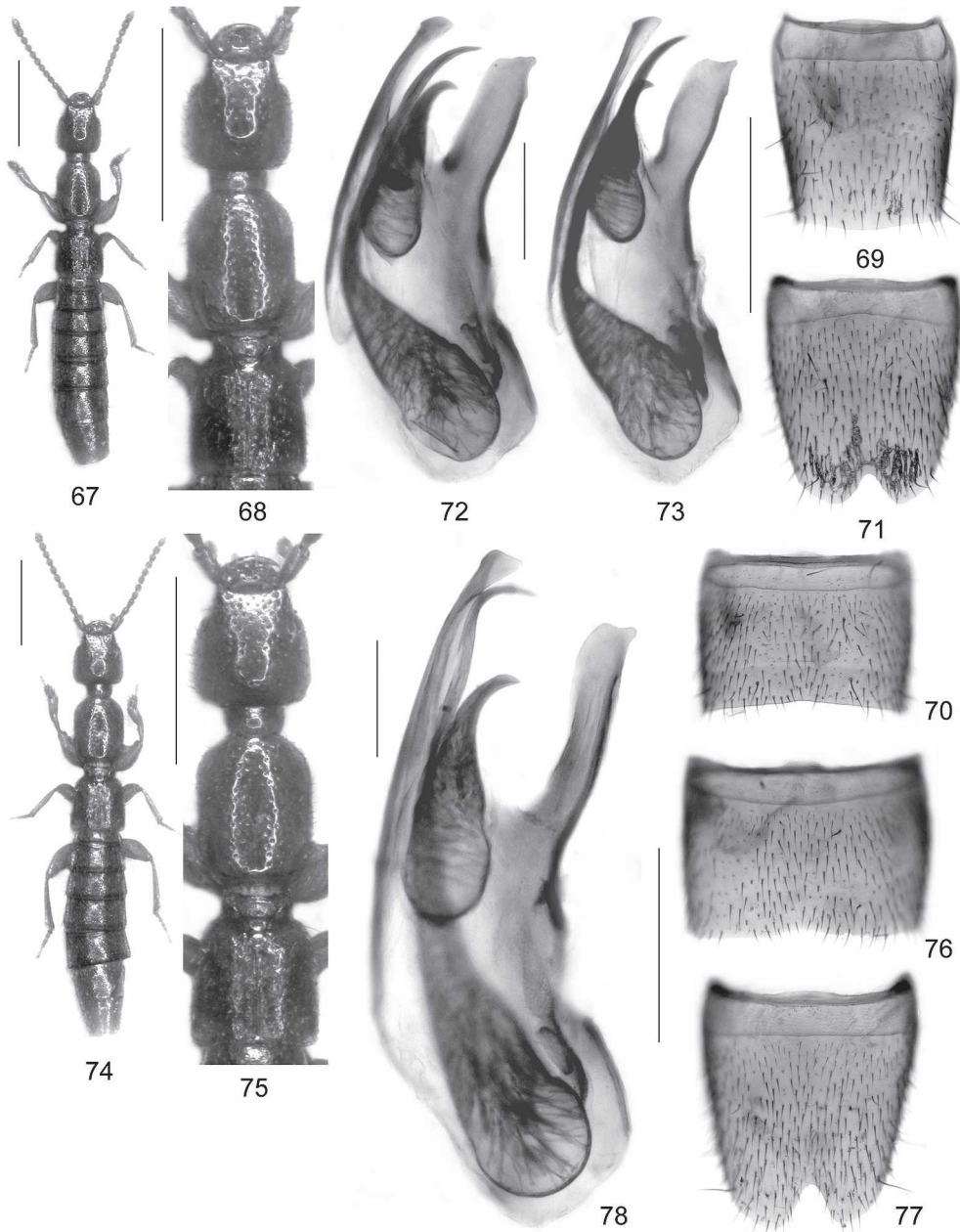
***Lathrobium (Lathrobium) alesi* sp. n.** (Figs 74-77)**Type material:**

Holotype ♂: "Taiwan, Taichung Hsien, Hsuehshan, nr. Hsuehshan-Tun-Feng, 3170 m, 7.V.91, A. Smetana [T68] / Holotypus ♂ *Lathrobium alesi* sp. n., det. V. Assing 2010" (cAss).

Description:

Body length 5.3 mm; habitus as in Fig. 74. External characters as in *L. involutum* (Fig. 75), distinguished only by the sexual characters.

♂: posterior margin of sternite VII very weakly concave, pubescence unmodified (Fig. 76); sternite VIII very weakly oblong, approximately 1.05 times as long as wide, posterior excision relatively



Figs 67-78: *Lathrobium tarokoense* sp. n. (67-73) and *L. alesi* sp. n. (74-77): habitus (67, 74); forebody (68, 75); male tergite VIII (69); male sternite VII (70, 76); male sternite VIII (71, 77); aedeagus in lateral view (72-73, 78). Scale bars: 67-68, 74-75: 1.0 mm; 69-71, 76-77: 0.5 mm; 72-73, 78: 0.2 mm.

deep and in distinctly asymmetric position (i.e., not in the middle), its depth approximately 1/5 the length of sternite (Fig. 77); aedeagus 1.02 mm long, with ventral process and internal structures of distinctive shape (Fig. 78).

♀: unknown.

Comparative notes:

Based on the similar morphology of the aedeagus (ventral process, internal structures), *L. alesi* is apparently closely related to *L. tarokoense*, from which it is separated by larger body size, the shape and position of the posterior excision of the male sternite VIII, the longer and more slender ventral process, as well as by the slightly different shape of the internal structures of the aedeagus.

Etymology:

It is a pleasure for me to dedicate this species to Aleš Smetana, Ottawa, distinguished specialist of Staphylinidae and collector of the vast majority of species and specimens dealt with in this paper, also in recognition of his undisputed and widely acknowledged merits in Staphylinidae research and in gratitude for the opportunity to study his superb Lathrobiina material from Taiwan.

Distribution and natural history:

The known distribution is confined to the Hsuehshan in northern central Taiwan, where the holotype was sifted from moist moss, lush vegetation, and other debris in a primary coniferous (mostly *Abies*) forest at an altitude of 3170 m.

Lathrobium (Lathrobium) shaolaiense WATANABE, 1998

Material examined:

Taiwan: 5 exs., Taichung Hsien, Anmashan, 2225 m, 2.V.1990, leg. Smetana (cSme, cAss); 1 ex., same data, but 11.V.1992 (cSme); 1 ex., same data, but 14.V.1992 (cSme); 4 exs., Anmashan, 2230 m, 12.V.1992, leg. Smetana (cSme); 1 ex., same data, but 1.V.1990 (cSme); 1 ex., same data, but 4.V.1990 (cAss); 2 exs., Anmashan, Creek, 2185 m, 12.V.1992, leg. Smetana (cSme); 1 ♀ [identification uncertain], Nantou Hsien, Meifeng, 2130 m, 10.VII.1993, leg. Smetana (cSme); 1 ♀, same data, but 2.V.1998 (cSme).

Comment:

The original description is based on a single male holotype from "Mt. Shao-lai Shan, Ta-hsüeh Shan Mts., Taichung Hsien" (WATANABE 1998). The aedeagus of the above material is in good agreement with the illustrations provided with the original description, according to which *L. shaolaiense* refers to the *L. pollens* group.

Whether or not the two females from Meifeng in fact refer to this species requires clarification; in external characters they are similar to the material from Anmashan. The majority of the above specimens are females.

Platydome sinuosa sp. n. (Figs 79-85)

Type material:

Holotype ♂ [slightly teneral]: "Taiwan, ChyrDuan, Ilan. Hsien, 1200 m, Fauch. bord route, L. LeSage, LL90-08 / Holotypus ♂ *Platydome sinuosa* sp. n. det. V. Assing 2010" (cAss).

Description:

Body length 8.3 mm. Habitus as in Fig. 79. Coloration: head and pronotum dark-brown; elytra yellowish brown; abdomen dark-brown with paler apex; legs brown; antennae dark-brown, with antennomeres I and II reddish-brown.

Head of subquadrate shape with rounded posterior angles, approximately as wide as long (Fig. 80); punctation dense and relatively coarse, with the interstices distinctly narrower than the diameter of the punctures, except for the more sparsely punctured median dorsal area and frons; interstices without microsculpture; eyes moderately large, slightly more than 1/3 the length of postocular portion in dorsal view. Antenna slender, 3.5 mm long; antennomere II slightly more than twice as long as wide; III slightly longer than II and almost 3 times as long as wide; IV-IX somewhat shorter than III and approximately twice as long as wide; X slightly less than twice as long as wide; XI with somewhat coniform apex (Fig. 81).

Pronotum approximately 1.25 times as long as broad and 0.9 times as wide as head (Fig. 80); punctation similar to that of head; along midline with narrow impunctate band; interstices without microsculpture.

Elytra approximately (0.97 x) as long as pronotum (Fig. 80); punctation well-defined, relatively coarse, and irregular. Hind wings fully developed. Legs not conspicuously slender.

Abdomen with fine and dense punctation and with shallow microsculpture; posterior margin of tergite VII with palisade fringe; posterior margin of tergite VIII strongly convex.

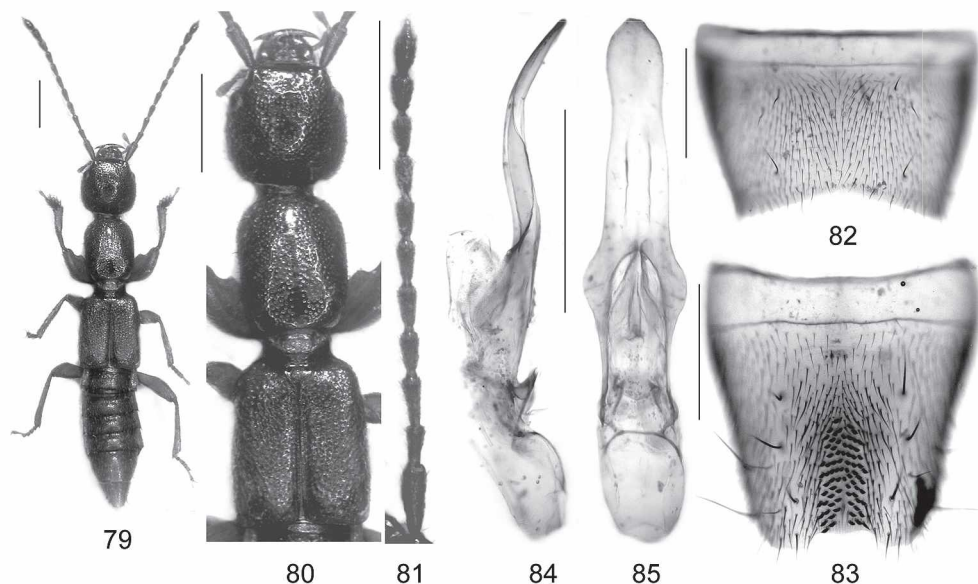
♂: sternite VII posteriorly broadly concave and with row of relatively long black marginal setae (Fig. 82); sternite VIII in the middle with oblong triangular impression, this impression with numerous peg-setae, posterior excision relatively shallow, posterior margin in the middle of this excision with obtusely angled projection (Fig. 83); aedeagus with long, in lateral view S-shaped ventral process (Figs 84-85).

♀: unknown.

Comparative notes:

The new species is readily distinguished from all its congeners by the morphology of the aedeagus, as well as by the shape and chaetotaxy of the male sternites VII and VIII. The only other *Platydomene* species previously known from Taiwan is *P. taiwanensis* WATANABE, 1991, which is of testaceous coloration and which has much shorter elytra and reduced hind wings, a head of elipsoid shape, much shorter eyes, and a much more oblong pronotum. According to SMETANA (2004), the only other representatives of the genus known from the Eastern Palearctic region are *P. anguina* (SHARP, 1874), *P. carinicollis* (SHARP, 1889), *P. funebris* (SHARP, 1889), and *P. nobilis* (SAWADA, 1965), all of them recorded only from Japan. Very recently, seven additional species were described from Japan, *P. hakusana*, *P. kojimai*, *P. nikkoensis*, and *P. hirogawarana* by WATANABE (2008), as well as *P. daibosatsuensis*, *P. flavipes*, and *P. iidesana* by WATANABE (2009). All these species are distinguished from *P. sinuosa* by the shape of the aedeagus and additionally as follows:

Platydomene anguina has a forebody of reddish coloration and shorter elytra; *P. carinicollis* is of reddish coloration, has a suborbiculate and (posteriorly) finely punctured head, elytra with a basally almost linear arrangement of the punctures, and differently modified male sternites VII and VIII; *P. funebris* is somewhat smaller and of blackish coloration; in *P. nobilis* the coloration is darker (dark-brown to black), antennomere III is as long as II, the hind wings are completely reduced, and the male secondary sexual characters are of completely different morphology. *Platydomene hakusana*, *P. kojimai*, *P. nikkoensis*, *P. hirogawarana*, *P. daibosatsuensis*, *P. flavipes*, and *P. iidesana* all have distinctly shorter elytra.



Figs 79-85: *Platydomena sinuosa* sp. n.: habitus (79); forebody (80); antenna (81); male sternite VII (82); male sternite VIII (83); aedeagus in lateral and in ventral view (84-85). Scale bars: 79-81: 1.0 mm; 82-85: 0.5 mm.

For illustrations of the male sexual characters of all the compared species, except for those described by SHARP (1874, 1889), see SAWADA (1965) and WATANABE (1991, 2008, 2009).

Etymology:

The specific epithet (Latin, adjective: curved) alludes to the shape of the aedeagus in lateral aspect.

Distribution and natural history:

The type locality is situated in Ilan Hsien, northeastern Taiwan, at an altitude of 1200 m. The holotype is slightly teneral.

Genus *Lobrathium* Mulsant & Rey, 1878

Lobrathium is represented in Taiwan by two species groups, one with seven species of the subgenus *Lobrathium* and one of uncertain subgeneric affiliations comprising at least approximately twenty endemic micropterous species. The latter is established below.

Only one of the seven species of the subgenus *Lobrathium*, *L. sibynium*, was described previously (from Sichuan); the remainder is described below. Six of the seven species have a more or less distinct reddish spot near the posterior margin of the elytra, a male sternite VII without peg-setae, a more or less strongly bilobed or undivided ventral process of the aedeagus, one, *L. nigripenne*, has uniformly blackish elytra, a male sternite VII with peg-setae, and an undivided, not conspicuously slender ventral process of the aedeagus, suggesting that these species may not represent a monophylum. Five species have long elytra and long hind wings and are probably capable of flight. One species, *L. bilobatum*, is wing di- or polymorphic and one, *L. pedes*, is micropterous.

The second complex of species with uncertain subgeneric affiliations, hereafter referred to as the *L. stimulans* group, includes only one previously described species (*L. taiwanense*). Twelve species are newly described; seven additional species are represented by females only and consequently not named. Remarkably, ten species (six named and four unnamed) lack the submarginal line of the elytra, one of the key characters for the identification of the genus distinguishing from lathrobiine genera such as *Lathrobium* and *Domene*. However, the absence of this submarginal line is most likely a secondary reduction, as can be inferred from the similar external and sexual characters, particularly the bilobed ventral process of the aedeagus, quite evidently a derived condition in the genus, as well as from the fact that one of the unnamed species (sp. 3) has a submarginal line of distinctly reduced length, apparently a transitional condition.

The species of the *L. stimulans* group are characterised by moderately large to large body size, a relatively large head, a compact pronotum, more or less reduced length of the elytra and the hind wings, the reduced palisade fringe at the posterior margin of the abdominal tergite VII, a characteristic bilobed aedeagus, which may be secondarily fused apically (*L. coalitum*, see Figs 239-240), an anteriorly (sometimes very narrowly) divided female tergite IX (e.g., Figs 218, 227, 234, 243) (undivided in Taiwanese species of the subgenus *Lobrathium*), and often an apically conspicuously acute female tergite X (e.g., Figs 152, 161, 170, 233). They may represent a distinct subgenus, but this can be clarified only based on a comprehensive revision of all Eastern Palearctic *Lobrathium* species.

Key to the named *Lobrathium* species of Taiwan

The key does not account for *L. taiwanense* (Taichung Hsien), since the type material was not examined. For illustrations of the male sexual characters see WATANABE (1998).

1. Elytra with more or less distinct reddish-yellow to reddish spot near posterior margin (sometimes weakly pronounced in *L. sibynium*). 2
- Elytra without spot near posterior margin. 7
2. Elytra conspicuously short, at most 0.7 times as long as pronotum (Fig. 135). ♂: sternite VIII with median impression with approximately 15-20 peg-setae anteriorly and without pubescence posteriorly, on either side of impression with numerous long dark setae, posterior excision large, deep, and U-shaped (Fig. 139); aedeagus approximately 1.1 mm long, ventral process of distinctive shape, slender, apically curved, and with subapical tooth in ventral view (Figs 140-141). ♀: tergite IX strongly emarginate anteriorly (Fig. 144). Ilan and Hualien Hsien (NE- and E-Taiwan). *L. pedes* sp. n.
- Elytra longer, at least 0.8 times as long as elytra. Sexual characters different. 3
3. Slender species with long appendages. Antennae slender (Fig. 109), approximately 2.5 mm long. Pronotum approximately 1.35 times as long as broad (Fig. 108). ♂: median impression of sternite VIII with two oblong clusters of numerous peg-setae, posterior excision broadly U-shaped (Fig. 111); segments IX-X remarkably long and slender (Fig. 112); aedeagus 1.95 mm long, conspicuously long and slender (Figs 113-114). ♀: segments IX-X conspicuously long and slender (Fig. 117). Taichung Hsien: Anmashan. *L. extensum* sp. n.
- Habitus less slender. Antennae at most approximately 2.0 mm long. Pronotum in most species less oblong. Sexual characters different. 4

4. ♂: sternite VIII on either side of median impression with conspicuous tuft of long black setae (Figs 121, 128). 5
- ♂: sternite VIII without such tufts of long black setae. 6
5. Small species, body length 4.8-6.0 mm. Coloration: body blackish-brown to black, elytra without bluish hue. ♂: median impression of tergite VIII large, without pubescence (except posterior portion) or peg-setae, posterior excision large, deep, and broadly V-shaped (Fig. 121); aedeagus small, approximately 0.9 mm long, ventral process of very distinctive morphology, slender and furcate apically (lateral view) (Figs 122-123). ♀: anterior margin of tergite IX emarginate in the middle. Ilan Hsien (NE-Taiwan). *L. bipeniculatum* sp. n.
- Larger species, body length 5.5-7.0 mm. Coloration darker: body blackish, elytra sometimes with weak bluish hue. ♂: median impression of sternite VIII with a cluster of numerous peg-setae, posterior excision large, deep, and U-shaped (Fig. 128); aedeagus approximately 1.1 mm long, with very broad and apically bifid ventral process in ventral view (Figs 129-130). ♀: anterior margin of tergite IX not emarginate in the middle (Fig. 133). Nantou Hsien (central Taiwan). *L. penicillatum* sp. n.
6. Elytra of very variable length, 0.8-1.0 times as long as pronotum. ♂: aedeagus approximately 1.3 mm long, ventral process separated into two long and slender lobes (ventral view), in lateral view with distinct tooth approximately in the middle (Figs 102-104); median impression of sternite VIII narrow and with 25-40 peg-setae, posterior excision moderately large and U-shaped (Fig. 101). Widespread in Taiwan. *L. bilobatum* sp. n.
- Elytra approximately as long as pronotum. ♂: aedeagus approximately 1.1 mm long; ventral process undivided and apically acute in ventral view, without tooth in lateral view (Figs 93-94); median impression of sternite VIII broad and with much more numerous peg-setae, posterior excision smaller (Fig. 92). China: Sichuan; Taiwan: Chiai, Taichung, Hualien Hsien. *L. sibynium* ZHENG
7. Elytra long, approximately as long as pronotum; hind wings fully developed (Fig. 86). Body smaller, barely 6.0 mm long. Coloration of body black. Head slender, not unusually large. Pronotum slender, approximately 1.35 times as long as broad (Fig. 86). ♂: sternite VII with posterior margin broadly and rather deeply concave in the middle, in posterior median area with impression, on either side of this impression with approximately seven peg-setae (Fig. 87); sternite VIII oblong, along the middle with oblong impression, this impression with numerous peg-setae, posterior excision concave, its depth approximately 1/10 the length of sternite (Fig. 88); aedeagus with ventral process not bilobed (Figs 89-90). Known only from the Alishan (Chiai Hsien), but probably more widespread. *L. nigripenne* sp. n.
- Elytra much shorter, at most approximately 0.8 times as long as pronotum; hind wings of reduced length or completely reduced. Body larger, 6.0-11.0 mm long. Coloration usually dark-brown to blackish-brown. Head large. Pronotum compact, approximately 1.2 times as long as broad. ♂: sternite VII without peg-setae (e.g., Figs 110, 120); sternite VIII of different shape and chaetotaxy; aedeagus usually with distinctly bilobed ventral process (secondarily fused in *L. coalitum*). 8
8. Elytra with fine submarginal line of variable length (lateral view). 9
- Elytra without submarginal line. 15

9. Elytra with moderately marked humeral angles, at least 0.7 times as long as pronotum, and usually approximately as broad as abdomen, at most only slightly narrower (e.g., Figs 164-165, 172-173). ♂: sternite VIII without peg-setae. ♀: posterior margin of tergite VIII in most species acutely produced in the middle (e.g., Fig. 170) (exception: *L. smetanai*). 10
- Elytra with almost obsolete humeral angles, at most 0.7 times as long as pronotum, and distinctly narrower than abdomen (Figs 179-180, 187-188, 195-196). ♂: sternite VIII with peg-setae in median impression. ♀: posterior margin of tergite VIII not acutely produced in the middle. 13
10. ♂: sternites V-VI without impressions; aedeagus as in Figs 175-176. ♀: posterior margin of tergite VIII weakly angled in the middle (Fig. 177); lateral sclerites of tergite IX anteriorly broadly separated; tergite X anteriorly very broad and reaching anterior margin of tergite IX, more convex in cross section. Kaohsiung Hsien: Peinantashan. *L. smetanai* sp. n.
- ♂: sternites V-VI often with shallow impressions; aedeagus of different morphology. ♀: posterior margin of tergite VIII acutely produced in the middle (Figs 152, 161, 170). 11
11. Body on average larger, 9.5-11.0 mm. Eyes relatively smaller (Fig. 165). Punctuation of elytra arranged in irregular series (Fig. 165). ♂: aedeagus as in Figs 168-169. Nantou Hsien. ... *L. duplehamatum* sp. n.
- Body length 8.0-10.0 mm. Eyes larger (Figs 146, 156). Punctuation of elytra not arranged in series (e.g., Fig. 146). 12
12. ♂: posterior margin of tergite VIII angled in the middle (Fig. 154); aedeagus with shorter and stouter apical lobes (Figs 150-151). ♀: posterior projection of tergite VIII more slender, abruptly narrowed towards apex (Fig. 152); sternite VIII posteriorly distinctly produced (Fig. 153). Kaohsiung Hsien: Peinantashan. *L. stimulans* sp.n.
- ♂: posterior margin of tergite VIII convex; aedeagus with longer and more slender apical lobes (Figs 159-160). ♀: posterior projection of tergite VIII broader, less abruptly narrowed (Fig. 161); posterior margin of sternite VIII less distinctly produced in the middle (Fig. 162). Kaohsiung Hsien: Kuanshan. *L. sororium* sp. n.
13. Head and pronotum with coarser and less dense punctuation (Fig. 196). Elytra narrower, more coarsely punctate, and more glossy (Fig. 196). Abdomen slender, only slightly (approximately 1.05 x) broader than elytra (Fig. 195). ♂: posterior margin of tergite VIII in the middle with small, but conspicuous narrow and acute process (Fig. 198); sternite VIII with long and moderately narrow median impression, this impression with two long clusters of numerous peg-setae, posterior excision not very deep and broadly V-shaped (Fig. 199); aedeagus of highly characteristic morphology (Figs 200-202). ♀: unknown. N-Taiwan: Ilan and Taoyuan Hsien. *L. bisagittatum* sp. n.
- Head and pronotum with much less coarse and denser punctuation. Elytra broader, less coarsely punctate, and less glossy. Abdomen distinctly (approximately 1.15 x) broader than elytra. ♂: posterior margin of tergite VIII without acute process in the middle; sternite VIII of different shape and chaetotaxy; aedeagus of different morphology. 14
14. ♂: sternite VIII with distinctly more than 40 peg-setae, posterior excision deep and almost V-shaped (Fig. 182); aedeagus as in Figs 183-184. ♀: sternite VIII as in Fig. 186. Pingtung Hsien: Peitawushan. *L. furcillatum* sp. n.

- ♀: sternite VIII with approximately 40 peg-setae; posterior excision moderately deep and U-shaped (Fig. 189); aedeagus with longer and more slender apical lobes (Figs 190-191).
♀: sternite VIII as in Fig. 193. Kaohsiung Hsien: Peinantashan. *L. cornutissimum* sp. n.
- 15. ♂: sternite VIII without peg-setae. 16
- ♂: sternite VIII with peg-setae. 17
- 16. ♂: aedeagus with slender, acute and subapically hooked apical lobes (Figs 231-232). ♀: posterior margin of tergite VIII strongly and convexly produced in the middle (Fig. 233).
Kaohsiung Hsien: Kuanshan. *L. kuanicum* sp. n.
- ♂: aedeagus of completely different morphology, much broader in ventral view, apical lobes apically truncate and hooked (Figs 223-224). ♀: posterior margin of tergite VIII obtusely angled posteriorly (Figs 225). Taichung Hsien: Hsuehshan. *L. spoliatum* sp. n.
- 17. ♂: sternite VIII posteriorly broadly impressed, this impression with subcircular to hexagonal cluster of peg-setae, posterior excision broadly concave (Fig. 237); aedeagus of characteristic morphology, apical lobes fused apically (Figs 238-240). ♀: posterior margin of tergite moderately convexly produced (Fig. 241); sternite VIII not oblong, posterior margin moderately produced and in the middle briefly concave (Fig. 242). Nantou Hsien: Nenkaoshan.
..... *L. coalitum* sp. n.
- ♂: sternite VIII of different morphology and chaetotaxy; apical lobes of aedeagus not fused apically. ♀: posterior margin of tergite VIII indistinctly to obtusely angled in the middle; sternite VIII of different shape. 18
- 18. ♂: apical lobes of aedeagus shorter, stouter, and more narrowly separated, subapical portion of ventral process projecting laterad (Figs 207-208); sternite VIII as in Fig. 206. Chia and Nantou Hsien: Yushan, Alishan, Kuanshan. *L. digitatum* sp. n.
- ♂: apical lobes of aedeagus slightly longer, more slender, and more broadly separated, and subapical portion of ventral process not projecting laterad (Fig. 214); sternite VIII as in Fig. 213. Kaohsiung Hsien: Peinantashan. *L. bidigitatum* sp. n.

***Lobrathium (Lobrathium) nigripenne* sp. n.** (Figs 86-90)

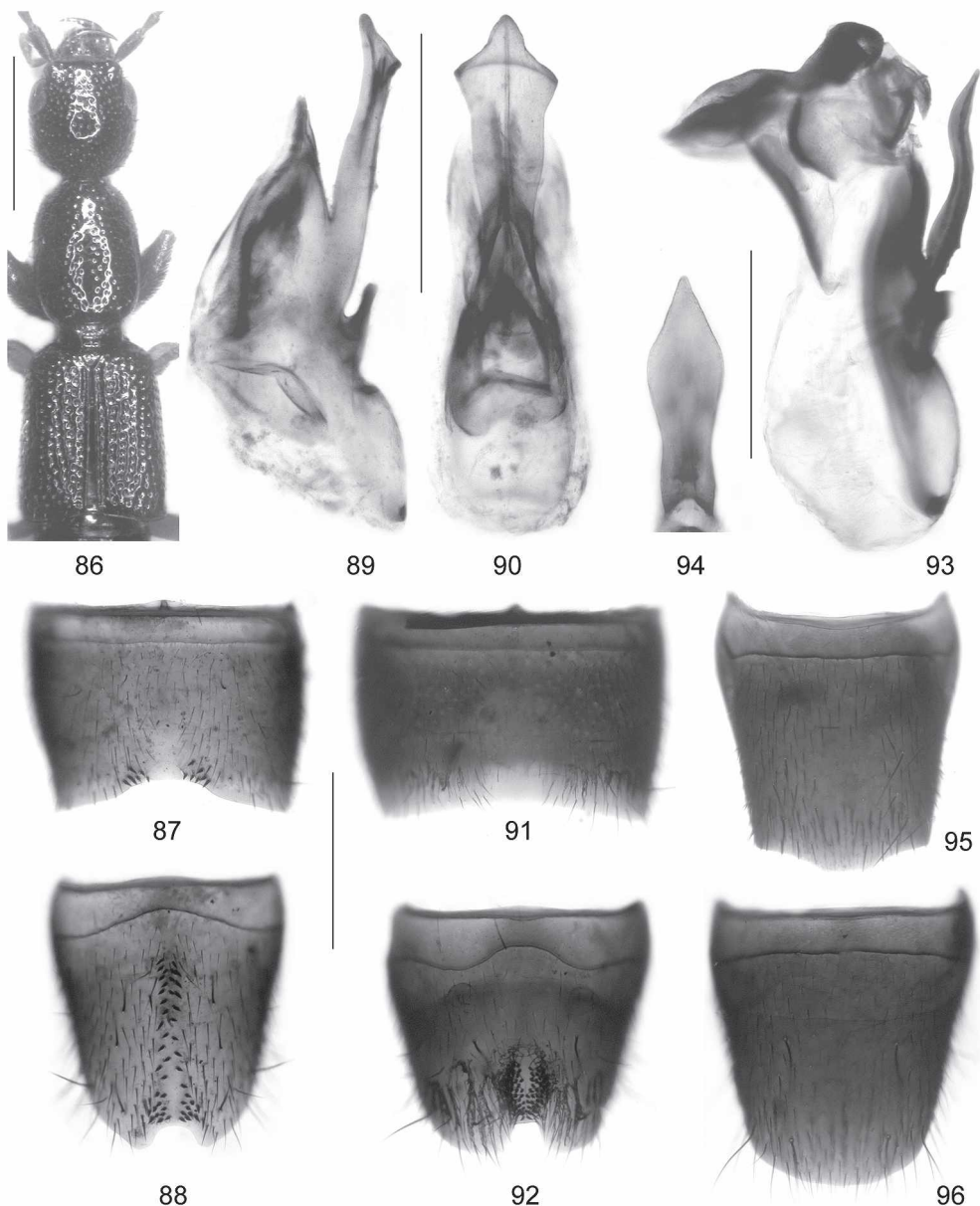
Type material:

Holotype ♂: "Taiwan - Chiayi Co., Alishan, Road 129, km 15.5, after Tanaigu Track, 600 m, leaf litter, 13.IV.2009, leg. Vit [7] / Holotypus ♂ *Lobrathium nigripenne* sp. n., det. V. Assing 2009" (cAss).

Description:

Body length 5.7 mm. Coloration: body blackish; legs yellowish brown, with the profemora blackish-brown; antennae dark-brown.

Head 1.08 times as long as wide, widest across eyes (Fig. 86); lateral contours between posterior margin of eyes and neck convex, posterior angles obsolete; dorsal surface with coarse and moderately dense punctation; interstices glossy, without microsculpture; eyes large and bulging, slightly more than half the length of postocular region from posterior margin of eyes to neck in dorsal view. Antenna slender; antennomeres II and III of subequal length and approximately twice as long as wide; IV-VI approximately 1.5 times as long as wide; X weakly oblong.



Figs 86-96: *Lobrathium nigripenne* sp. n. (86-90) and *L. sibynium* ZHENG (91-96): forebody (86); male sternite VII (87, 91); male sternite VIII (88, 92); aedeagus in lateral view (89, 93), aedeagus in ventral view (90); ventral process of aedeagus in ventral view (94); female tergite VIII (95); female sternite VIII (96). Scale bars: 86: 1.0 mm; 87-96: 0.5 mm.

Pronotum 1.37 times as long as wide and 0.96 times as wide as head (Fig. 86); lateral margins weakly and regularly convex in dorsal view; punctation similar to that of head; interstices without microsculpture.

Elytra approximately as long as pronotum (Fig. 86); punctation very coarse and arranged in more or less regular rows; interstices without microsculpture and glossy. Hind wings fully developed.

Abdomen with pronounced and coarsely punctate anterior impressions on tergites III-VI; punctation of remainder of tergal surfaces fine and moderately dense; interstices with very shallow microsculpture; posterior margin of tergite VII with palisade fringe.

♂: sternite VII with posterior margin broadly and moderately deeply concave in the middle, in posterior median area with impression, on either side of this impression with approximately seven peg-setae (Fig. 87); tergite VIII with distinctly convex posterior margin; sternite VIII oblong, along the middle with oblong impression, this impression with numerous peg-setae, posterior excision concave, its depth approximately 1/10 the length of sternite (Fig. 88); aedeagus with ventral process of distinctive morphology (Figs 89-90).

♀: unknown.

Comparative notes:

The new species is readily distinguished from all its congeners by the morphology of the aedeagus, as well as by the shape and chaetotaxy of the male sternites VII and VIII. In addition, it is separated from other geographically close *Lobrathium* species, for which illustrations of the male sexual characters are unavailable, as follows:

In *L. hongkongense* (BERNHAEUER, 1931) from Hong Kong, the elytra are of different coloration (blue metallic hue, with the posterior fourth reddish-yellow) (BERNHAEUER 1931).

In *L. partitum* (SHARP, 1874), which has been recorded from China and Japan, the elytra are bi-coloured with the anterior half bluish-black and the posterior half bright yellow (SHARP 1874).

In *L. regulare* (SHARP, 1889), which, too, has been reported from China and Japan, the antennae are of yellowish coloration, the lateral margins of the pronotum are straight, and the elytra are shorter than the pronotum (SHARP 1889).

In *L. rotundiceps* (KOCH, 1939), whose description is based on a single female from northwestern China, the coloration of the body is reddish-brown, the elytra are reddish at the suture and at the base, the head is of suborbicular shape, and the lateral margins of the pronotum are sinuate in the middle in dorsal view (KOCH 1939).

For illustrations of the the male secondary sexual characters and the aedeagus of other *Lobrathium* species distributed in China and Japan see ZHENG (1988) and ITO (1995, 1996a, 1996b, 2007), respectively.

Etymology:

The specific epithet (Latin, adj.) refers to the uniformly blackish elytra, one of the characters distinguishing this species from similar congeners distributed in Taiwan.

Distribution and natural history:

The type locality is situated in the Alishan mountain range, Chiai Hsien, central Taiwan, not far from the type locality of *Lathrobium alishanum*. The holotype was sifted from leaf litter at an altitude of 600 m.

***Lobrathium (Lobrathium) sibynium* ZHENG, 1988 (Figs 91-96)**

Material examined:

3 exs.: "Taiwan, Chiayi Hsien, Alishan, Sister Ponds, 2180 m, 26.IV.1990, A. Smetana [T24]" (cSme, cAss); 1 ex.: "Taiwan, Taichung Hsien, Anmashan, 2150 m, 13.V.92, A. Smetana [T129]" (cSme); 1 ex. [slightly teneral]: "Taiwan, Taichung Hsien, Sungmao, 1550 m, 14.V.1990, A. Smetana [T58]" (cSme); 1 ♀: "Taiwan, Hualien Hsien, Taroko N.P., 2200 m, 11.V.1990, A. Smetana [T53]" (cSme).

Comment:

The aedeagus of the above material is identical to the illustrations of the aedeagus provided with the original description of *L. sibynium* from Sichuan. According to ZHENG (1988), the reddish elytral spot occupies approximately one third of the elytral surface, whereas it is very small, sometimes even indistinct, in the material from Taiwan, but this difference is probably an expression of intra- rather than interspecific variation.

The species is separated from all other *Lobrathium* species known from Taiwan by the sexual characters (Figs 91-96), from most species also by the slender and long elytra, which are approximately as long as the pronotum.

The above specimens were collected from moss and vegetation at the margin of ponds in an old coniferous forest, in old flood debris and leaf litter on river banks, as well as by sifting leaf litter on a road margin in a mixed forest at altitudes of 1550-2200 m.

***Lobrathium (Lobrathium) bilobatum* sp. n. (Figs 97-106)**

Type material:

Holotype ♂: "Taiwan, Chiayi Hsien, Alishan, Sister Ponds, 2180 m, 26.IV.1990, A. Smetana [T24] / Holotypus ♂ *Lobrathium bilobatum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 16 exs.: same data as holotype (cSme, cAss); 1 ex.: "Taiwan, Chiayi Hsien, Tjuchung, 2200 m, 27.IV.1990, A. Smetana [T26]" (cAss); 14 exs. [partly teneral]: "Taiwan, Ilan Hsien, Taipingshan, 1880 m, 14.VII.93, A. Smetana [T152]" (cSme, cAss); 27 exs. [partly teneral]: "Taiwan, Ilan Hsien, Taipingshan, 1820 m, 15.VII.93, A. Smetana [T153]" (cSme, cAss); 26 exs. [partly teneral]: "Taiwan, Ilan Hsien, Taipingshan, 1820 m, 15.VII.93, A. Smetana [T154]" (cSme, cAss); 2 exs.: Taiwan, Nantou Hsien, Meifeng, 2130 m, 12.V.1991, A. Smetana [T78]" (cAss); 1 ex.: "Taiwan, Nantou Hsien, Meifeng, 2130 m, 4.V.1998, A. Smetana [T199]" (cSme); 3 exs.: "Taiwan, Kaohsiung [sic] Hsien, Kuanshan trail at Kaunshanchi Riv., 2400 m, 20.VII.93, A. Smetana [T158]" (cSme, cAss); 1 ex.: "Taiwan, Kaohsiung Hsien, Crk. 2 km E Tien Chi, Hwy. 20, 2400 m, 22.VII.93, A. Smetana [T161]" (cSme); 1 ex. [teneral]: "Taiwan, Kaohsiung Hs., Rd. abv. Tona For. Sta., km 16-17, 1700-1800 m, 28.IV.1998, A. Smetana [190]" (cSme); 3 exs.: "Taiwan, Taichung Hsien, Anmashan, 2150 m, 13.V.92, A. Smetana [T129]" (cSme, cAss); 3 exs.: "Taiwan, Taichung Hsien, Anmashan, 2120 m, 1.V.1990, A. Smetana [T36]" (cSme, cAss); 1 ex.: "Taiwan, Taoyuan Hsien, Takuanshan For., 17.IV.90, 1650 m, A. Smetana [T5]" (cAss); 7 exs.: "Taiwan, Hualien Hsien, Taroko N.P., Chungyangtienshi (Riv.), Waterfall, 2300 m, 10.V.1990, A. Smetana [T50]" (cSme, cAss); 2 exs.: "Taiwan, Hualien Hsien, Taroko N.P., Nanhushi Hut, 2200 m, 11.V.1990, A. Smetana [T53]" (cSme).

Description:

Body length 6.0-7.5 mm. Habitus as in Fig. 97. Coloration: body blackish-brown to black; elytra with well-defined reddish-yellow spot of subcircular, semi-circular, or oval shape (of the size of

the eyes or somewhat larger) near posterior margin; legs reddish to reddish-brown; antennae reddish-brown.

Head approximately as long as wide, widest across eyes (Fig. 98); posterior angles weakly marked, rounded; dorsal surface with coarse and relatively dense punctation, median dorsal portion and frons with sparser punctation; interstices glossy, without microsculpture; eyes relatively large, more than half the length of postocular region from posterior margin of eyes to neck in dorsal view. Antenna as in Fig. 99, approximately 2 mm long.

Pronotum 1.20-1.25 times as long as wide and usually slightly (approximately 0.95 x) narrower than head; punctation similar to that of head, but somewhat sparser; midline usually narrowly impunctate, rarely punctate like lateral portions; interstices without microsculpture.

Elytra of remarkably variable length, 0.8-1.0 times as long as pronotum; submarginal line present; punctation very coarse and dense, well-defined, and arranged in more or less irregular series. Hind wings in specimens with long elytra fully developed.

Abdomen approximately as broad as (specimens with short elytra) or somewhat narrower (specimens with long elytra) than elytra; punctation of anterior impressions of tergites I-IV coarse, of remainder of tergal surfaces fine and moderately dense; interstices with very shallow microsculpture; posterior margin of tergite VII with palisade fringe.

♂: posterior margin of tergite VIII indistinctly angled in the middle (Fig. 100); sternite VII with rather large median impression without pubescence, posterior margin weakly concave; sternite VIII with oblong median impression, this impression with 25-40 peg-setae, posterior excision moderately large and U-shaped (Fig. 101); aedeagus approximately 1.3 mm long, ventral process separated into two long and slender lobes (ventral view), in lateral view with distinct tooth approximately in the middle (Figs 102-104).

♀: posterior margin of tergite VIII obtusely angled in the middle (Fig. 105); sternite VIII somewhat longer than tergite VIII, posterior margin broadly convex (Fig. 106); segments IX-X not conspicuously slender; tergite IX undivided anteriorly; tergite X anteriorly truncate, of ovoid shape, and approximately 3.5 times as long as tergite IX in the middle.

Comparative notes:

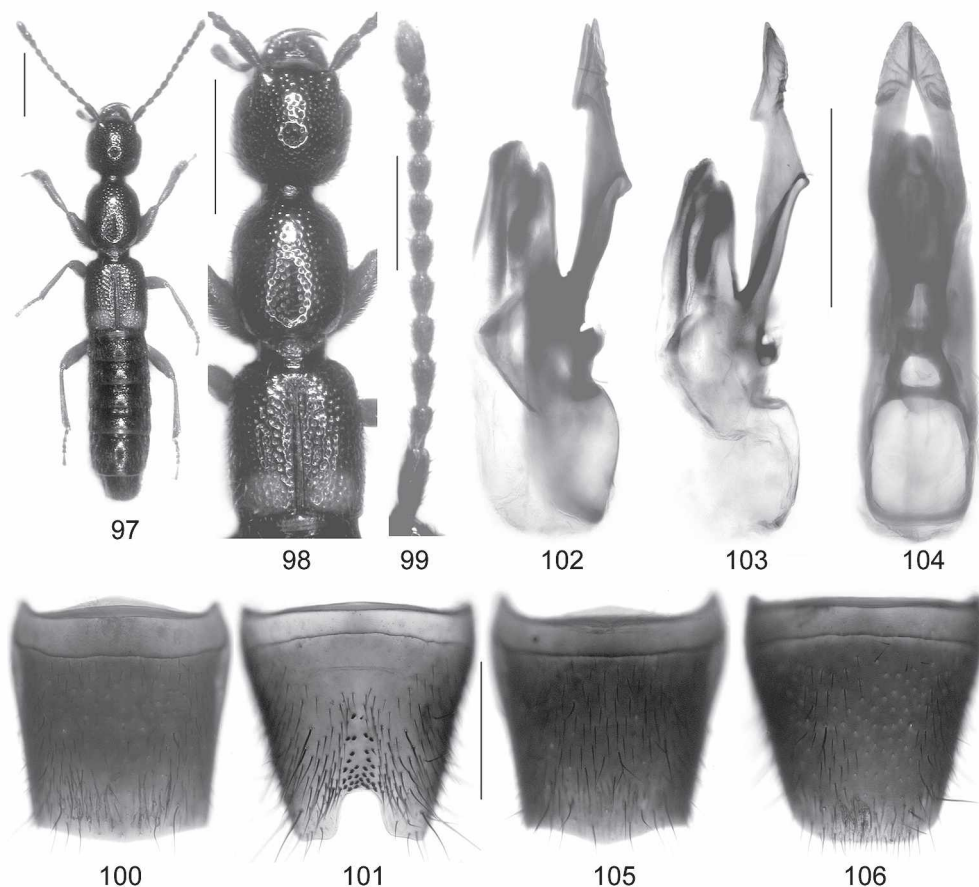
This species is distinguished from all its congeners particularly by the morphology of the bilobed aedeagus, as well as by the shape and chaetotaxy of the male sternites VII-VIII. Among the Taiwanese representatives of the genus, *L. bilobatum* is characterised especially by the variable length of the elytra.

Etymology:

The specific epithet (Latin, adjective) refers to the distinctive shape of the ventral process of the aedeagus, which is subdivided into two long lobes.

Distribution and natural history:

Lobrathium bilobatum is apparently the most common and widespread species of the genus in Taiwan and has been collected in several provinces (Chiayi, Ilan, Nantou, Hualien, Kaohsiung, Taoyuan, Taichung) at altitudes of 1700-2400 m. The material was found in moss and vegetation at the margin of ponds in an old coniferous forest, under plastic sheets covering bags of fertilizer, by sifting wet moss and leaf litter along edges of ponds, streams, and near waterfalls, and by sifting - mostly moist to wet - humus, leaf litter, and debris in various types of forests. A considerable proportion of the specimens collected in April is teneral.



Figs 97-106: *Lobrathium bilobatum* sp. n.: habitus (97); forebody (98); antenna (99); male tergite VIII (100); male sternite VIII (101); aedeagus in lateral and in ventral view (102-104); female tergite VIII (105); female sternite VIII (106). Scale bars: 97-99: 1.0 mm; 100-106: 0.5 mm.

***Lobrathium (Lobrathium) extensum* sp. n.** (Figs 107-117)

Type material:

Holotype ♂ [somewhat teneral]: "Taiwan, Taichung Hsien, Anmashan, 2120 m, 1.V.1990, A. Smetana [T36] / Holotypus ♂ *Lobrathium extensum* sp. n., det. V. Assing 2010" (cAss). Paratype: 1 ♀: same data as holotype (cSme).

Description:

Body length 7.0-8.3 mm. Habitus as in Fig. 107. Coloration: body blackish-brown to black; elytra with moderately large reddish-yellow spot of subtriangular shape (i.e., reaching further anteriorly laterally than near suture) near posterior margin; legs reddish to reddish-brown; antennae reddish-brown.

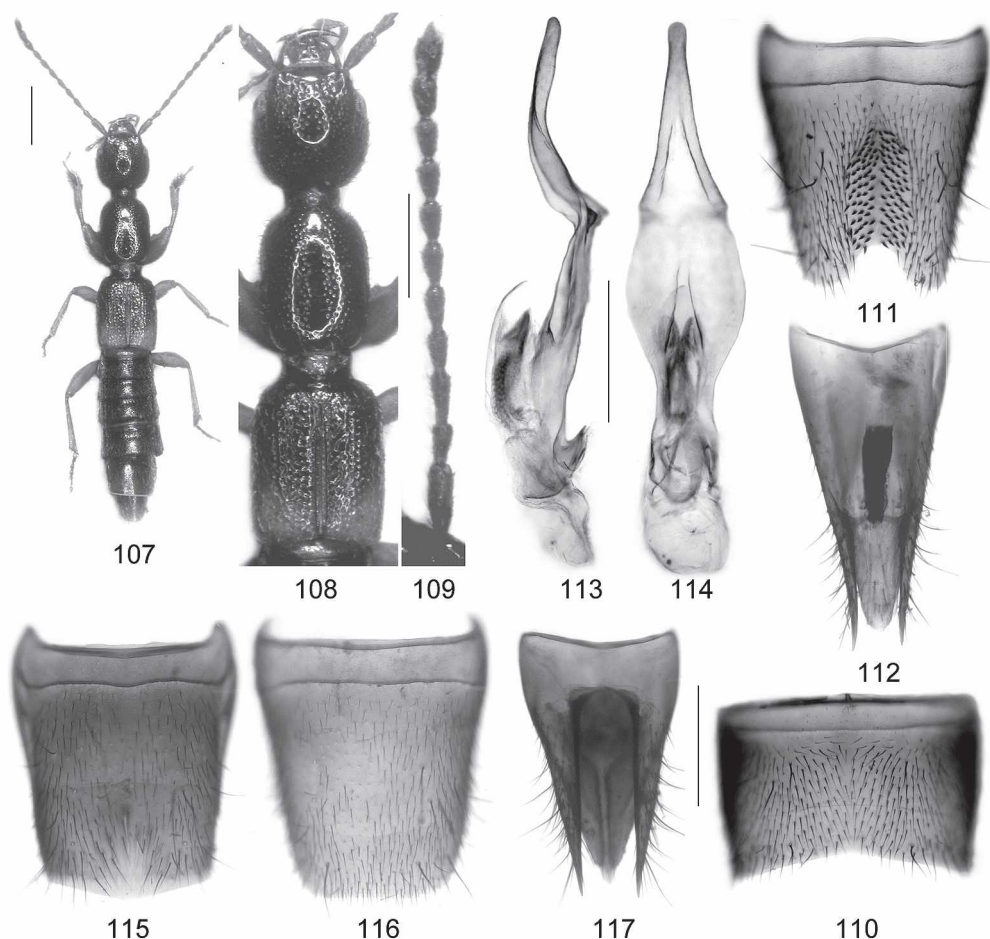
Head approximately 1.05 times as long as wide, widest behind eyes; lateral contours regularly convex behind eyes in dorsal view, i.e., posterior angles obsolete (Fig. 108); punctation coarse and

relatively dense, sparser in median dorsal portion and on frons; interstices without microsculpture; eyes relatively small and weakly convex, 0.30-0.35 times the length of postocular region from posterior margin of eyes to neck in dorsal view. Antenna slender, approximately 2.5 mm long; antennomere X more than 1.5 times as long as wide (Fig. 109).

Pronotum slender, approximately 1.35 times as long as broad and approximately 0.95 times as broad as head (Fig. 108); punctation similar to that of head or slightly finer; midline rather broadly impunctate; interstices without microsculpture.

Elytra approximately 0.9 times as long as pronotum (Fig. 108); submarginal line present, but of variable length; punctation moderately coarse, not conspicuously dense, well-defined, and arranged in more or less irregular series.

Abdomen approximately as broad as elytra; punctures of anterior impressions of tergites I-IV rather large, but shallow and sparse, punctation of remainder of tergal surfaces fine and dense; interstices with microsculpture; posterior margin of tergite VII with palisade fringe.



Figs 107-117: *Lobrathium extensum* sp. n.: habitus (107); forebody (108); antenna (109); male sternite VII (110); male sternite VIII (111); male tergites IX-X (112); aedeagus in lateral and in ventral view (113-114); female tergite VIII (115); female sternite VIII (116); female tergites IX-X (117). Scale bars: 107-108: 1.0 mm; 109-117: 0.5 mm.

♂: posterior margin of tergite VIII obtusely angled in the middle; sternite VII with shallow median impression posteriorly, pubescent everywhere, posterior margin broadly concave (Fig. 110); sternite VIII with oblong median impression, this impression with two oblong clusters of numerous peg-setae, posterior excision broadly U-shaped (Fig. 111); segments IX-X remarkably long and slender (Fig. 112); aedeagus 1.95 mm long, conspicuously long and slender (Figs 113-114).

♀: posterior margin of tergite VIII indistinctly angled in the middle (Fig. 115); sternite VIII approximately as long as wide and as long as tergite VIII, posterior margin broadly convex, in the middle truncate (Fig. 116); segments IX-X slender; tergite IX undivided anteriorly; tergite X truncate anteriorly, very long, approximately 5 times as long as tergite IX in the middle (Fig. 117).

Comparative notes:

This species is distinguished from all its congeners particularly by the morphology of the conspicuously long aedeagus, as well as by the shape and chaetotaxy of the male sternites VII-VIII and of the male segments IX-X. From other Taiwanese *Lobrathium* species with a reddish elytral spot, it is additionally separated by the longer and more slender antennae, the slender pronotum, as well as by the slender female segments IX-X.

Etymology:

The specific epithet (Latin, adjective: stretched) refers to the conspicuously long aedeagus and the elongated male abdominal segments IX-X.

Distribution and natural history:

The type locality is situated in the Anmashan, Taichung Hsien, northern central Taiwan, at an altitude of 2120 m. The specimens were sifted from leaves accumulated after long lasting rains along a road margin in a mixed forest. The holotype is somewhat teneral.

Lobrathium (Lobrathium) bipeniculatum sp. n. (Figs 118-123)

Type material:

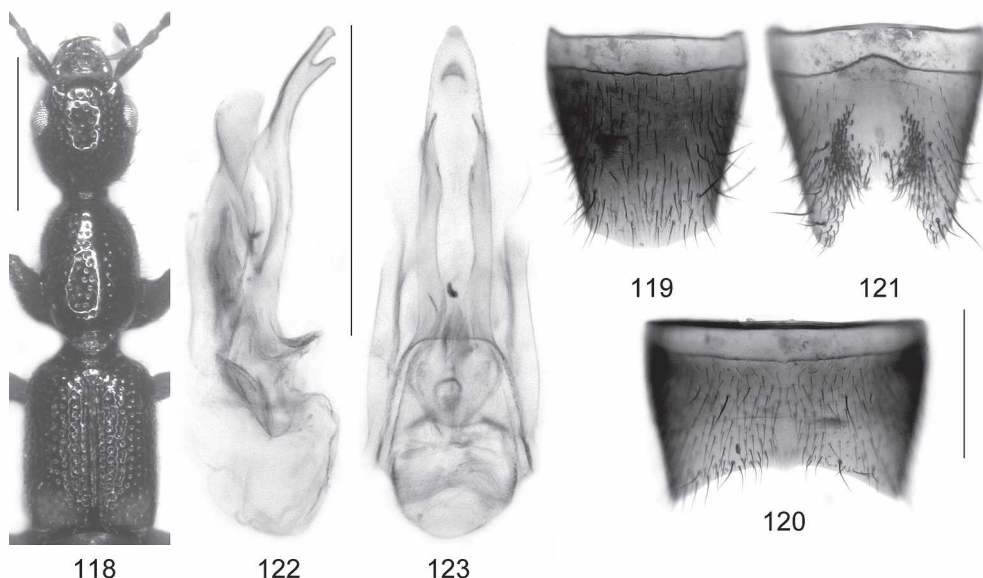
Holotype ♂ [teneral]: "Taiwan, Ilan Hsien, Chyr Duan, 1100 m, 18.IV.90, A. Smetana [T8] / Holotypus ♂ *Lobrathium bipeniculatum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 2 ♂ ♂, 1 ♀ [2 ♂ ♂ teneral]: same data as holotype (cSme, cAss).

Description:

Small species, body length 4.8-6.0 mm. Coloration: body blackish-brown to black; elytra with moderately large reddish-yellow spot of subtriangular shape near posterior margin; middle and hind legs yellowish-brown, profemora dark-brown, protibiae and -tarsi brown; antennae reddish-brown, antennomere I infusate.

Head approximately 1.05 times as long as wide, widest across eyes; behind eyes convexly tapering posteriad in dorsal view, posterior angles practically obsolete (Fig. 118); punctuation very coarse and of variable density, moderately sparse to dense; interstices without microsculpture; eyes large and bulging, 0.7-0.8 times the length of postocular region from posterior margin of eyes to neck in dorsal view. Antenna moderately slender, approximately 1.8 mm long; antennomere X approximately 1.5 times as long as wide.

Pronotum slender, approximately 1.35 times as long as broad and 0.90-0.95 times as broad as head (Fig. 118); punctuation as coarse as that of head and moderately sparse; impunctate midline of variable width; interstices without microsculpture.



Figs 118-123: *Lobrathium bipeniculatum* sp. n.: forebody (118); male tergite VIII (119); male sternite VII (120); male sternite VIII (121); aedeagus in lateral and in ventral view (122-123). Scale bars: 118: 1.0 mm; 119-123: 0.5 mm.

Elytra long, approximately 1.05 times as long as pronotum (Fig. 118); submarginal line present; punctuation coarse, dense, well-defined, and arranged in more or less irregular series.

Abdomen slightly narrower than elytra; anterior impressions of tergites I-IV with dense and coarse punctuation, punctuation of remainder of tergal surfaces moderately fine and moderately dense; interstices with or without shallow microsculpture, glossy; posterior margin of tergite VII with palisade fringe.

♂: posterior margin of tergite VIII indistinctly angled in the middle (Fig. 121); sternite VII with shallow and small median impression without pubescence, posterior margin rather strongly concave, in the middle with small convex projection (Fig. 120); sternite VIII highly distinctive, with large, oblong median impression, this impression without pubescence (except posterior portion) or peg-setae, on either side with extensive and conspicuous cluster of long black setae, posterior excision large, deep, and broadly V-shaped (Fig. 121); aedeagus approximately 0.9 mm long, ventral process of very distinctive morphology, slender and furcate apically (lateral view) (Figs 122-123).

♀: posterior margin of tergite VIII convexly produced in the middle; sternite VIII somewhat longer than tergite VIII, posterior margin broadly and weakly convex; segments IX-X not particularly slender; tergite IX undivided anteriorly, anterior margin emarginate in the middle; tergite X of subovoid shape, not particularly slender.

Comparative notes:

This species is distinguished from all its congeners particularly by the morphology of the ventral process of the aedeagus, as well as by the shape and chaetotaxy of the male sternites VII-VIII. From other Taiwanese *Lobrathium* species with a reddish elytral spot, it is additionally separated by the glossy abdomen and the combination of small size, coarse punctuation of the head and pronotum, and long elytra.

Etymology:

The specific epithet is an adjective derived from the Latin noun *peniculus* (brush) and refers to the conspicuous chaetotaxy of the male sternite VIII.

Distribution and natural history:

The type locality is situated in Ilan Hsien, northeastern Taiwan, at an altitude of 1100 m. The material was collected at the edge of a pond by pushing *Carex* tufts into the water. Three of the type specimens are teneral.

***Lobrathium (Lobrathium) penicillatum* sp. n.** (Figs 124-133)**Type material:**

Holotype ♂: "Taiwan, Nantou Hsien, Shanlinchi, 1650 m, 19.V.1991, A. Smetana [T87] / Holotypus ♂ *Lobrathium penicillatum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 2 ♂♂, 5 ♀♀ [1 ♂ teneral]: same data as holotype (cSme, cAss).

Description:

Body length 5.5-7.0 mm. Habitus as in Fig. 124. Coloration: body blackish; elytra sometimes with weak bluish hue, with moderately large (size similar to that of eyes) reddish-yellow spot of subcircular to oval shape near posterior margin; legs blackish brown with paler tarsi; antennae dark-brown, antennomere I blackish, apical 2-4 antennomeres usually reddish to reddish-brown.

Head approximately as long as wide or weakly oblong, widest across eyes; behind eyes convexly tapering posteriad in dorsal view, posterior angles almost obsolete (Fig. 125); punctuation coarse and dense, sparser in median dorsal portion and on frons; interstices without microsculpture; eyes large and bulging, 0.7-0.8 times the length of postocular region from posterior margin of eyes to neck in dorsal view. Antenna moderately slender, approximately 1.8 mm long; antennomere X almost 1.5 times as long as wide (Fig. 126).

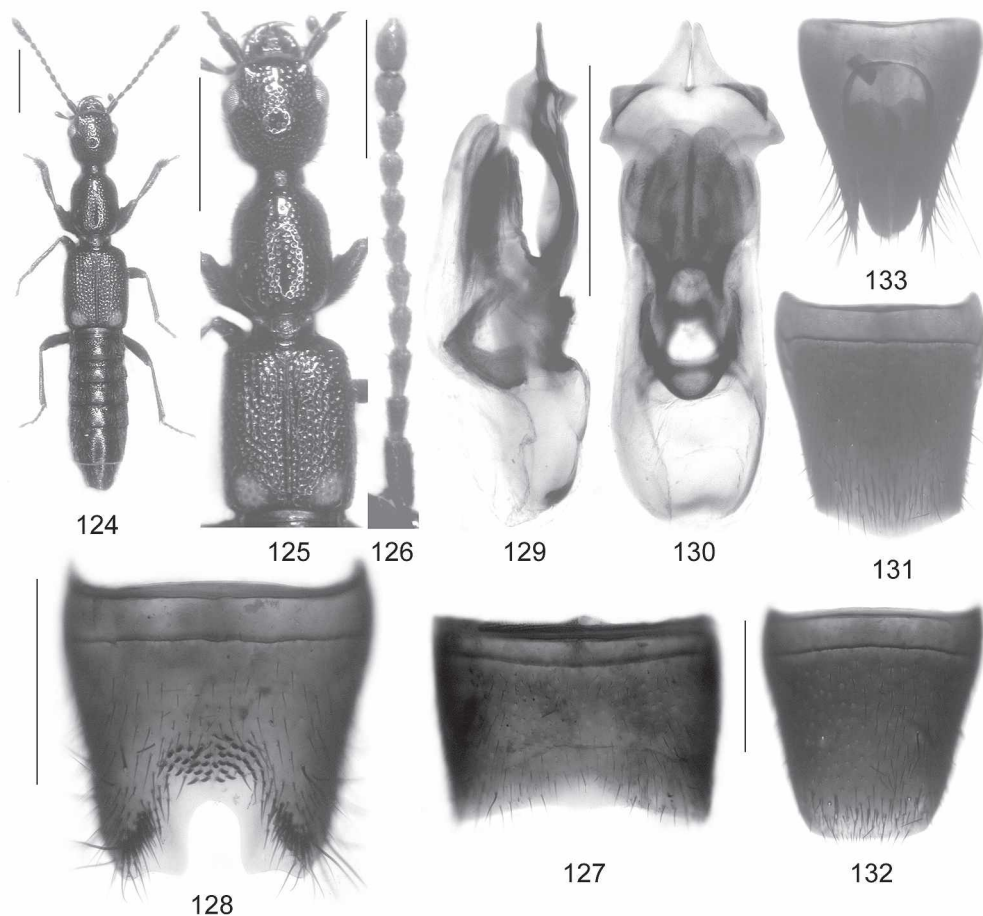
Pronotum slender, approximately 1.3 times as long as broad and 0.9 times as broad as head (Fig. 125); punctuation as coarse as that of head or nearly so and moderately sparse, sparser than that of head; impunctate midline more or less narrow; interstices without microsculpture.

Elytra long, 1.05-1.10 times as long as pronotum (Fig. 125); submarginal line present; punctuation coarse, dense, well-defined, not distinctly arranged in series.

Abdomen slightly narrower than elytra; punctures in anterior impressions of tergites I-IV large, those of anterior impression of tergite III deep and defined, those of anterior impressions of tergites IV-VI shallow and ill-defined; remainder of tergal surfaces with fine and moderately dense punctuation; interstices with microsculpture; posterior margin of tergite VII with palisade fringe.

♂: posterior margin of tergite VIII obtusely angled in the middle; sternite VII with median impression, posterior margin weakly concave, in the middle with weakly convex projection (Fig. 127); sternite VIII posteriorly with deep impression, this impression with a cluster of numerous peg-setae, on either side of impression with conspicuous tuft of long black setae; posterior excision large, deep, and U-shaped (Fig. 128); aedeagus approximately 1.1 mm long, with very broad and apically bifid ventral process in ventral view (Figs 129-130).

♀: posterior margin of tergite VIII similar to that of ♂ (Fig. 131); sternite VIII approximately as long as tergite VIII, posterior margin broadly and weakly convex, in the middle truncate



Figs 124-133: *Lobrathium penicillatum* sp. n.: habitus (124); forebody (125); antenna (126); male sternite VII (127); male sternite VIII (128); aedeagus in lateral and in ventral view (129-130); female tergite VIII (131); female sternite VIII (132); female tergites IX-X (133). Scale bars: 124-125: 1.0 mm; 126-133: 0.5 mm.

(Fig. 132); segments IX-X not particularly slender; tergite IX undivided anteriorly, anterior margin not emarginate in the middle; tergite X of ovoid shape, relatively broad, approximately 5 times as long as tergite IX in the middle (Fig. 133).

Comparative notes:

This species is distinguished from all its congeners particularly by the morphology of the ventral process of the aedeagus, as well as by the shape and chaetotaxy of the male sternite VIII. From other Taiwanese *Lobrathium* species with a reddish elytral spot, it is additionally separated by the dark coloration of the legs, and the combination of very long elytra and well-delimited elytral spot of subcircular shape.

Etymology:

The specific epithet is an adjective derived from the Latin noun *penicillus* (paint-brush) and refers to the conspicuous chaetotaxy of the male sternite VIII.

Distribution and natural history:

The type locality is situated in Nantou Hsien, central Taiwan, at an altitude of 1650 m. The specimens were sifted from deep layers of wet debris, twigs, leaves, and vegetation on a stream bank in a primary broadleaved forest. One of the type specimens is teneral.

***Lobrathium (Lobrathium) pedes* sp. n.** (Figs 134-144)**Type material:**

Holotype ♂: "Taiwan, Hualien Hsien, Taroko N. P., Nanhushi Hut, 2220 m, 8.V.1990, A. Smetana [T48] / Holotypus ♂ *Lobrathium pedes* sp. n., det. V. Assing 2010" (cSme). Paratypes: 1 ♂, 1 ♀: same data as holotype (cAss); 2 ♂♂, 1 ♀ [all teneral]: "Taiwan, Ilan Hsien, Taipingshan, 1820 m, 15.VII.93, A. Smetana [T154]" (cSme).

Description:

Body length 5.5-7.0 mm. Habitus as in Fig. 134. Coloration: body blackish; elytra with relatively small, more or less transversely oval reddish-yellow spot near posterior margin; middle and hind legs reddish-brown, forelegs dark-brown with blackish profemora.

Head approximately as long as wide or weakly transverse, weakly tapering behind eyes; posterior angles rounded but noticeable (Fig. 135); punctation coarse and moderately dense, sparser in median dorsal portion and on frons; interstices without microsculpture; eyes moderately large, approximately half the length of postocular region from posterior margin of eyes to neck in dorsal view. Antenna moderately slender, approximately 1.8 mm long; antennomere X almost 1.5 times as long as wide (Fig. 136).

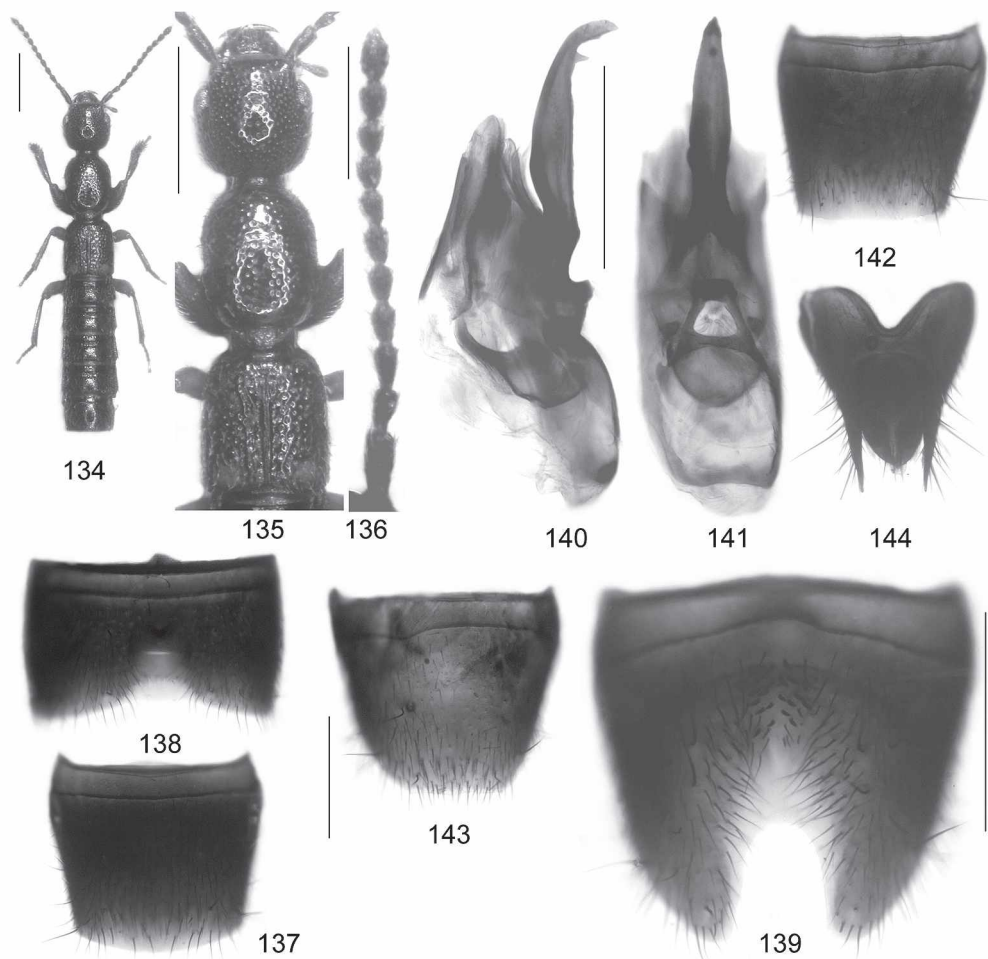
Pronotum approximately 1.25 times as long as broad and 0.95 times as broad as head (Fig. 135); punctation as coarse as that of head, but somewhat sparser; impunctate midline narrow; interstices without microsculpture.

Elytra short, 0.65-0.70 times as long as pronotum; humeral angles weakly marked (Fig. 135); submarginal line present; punctation coarse, dense, well-defined, partly arranged in very irregular series at most.

Abdomen slightly broader than elytra; punctures in anterior impressions of tergites I-IV large, but mostly shallow and rather ill-defined; remainder of tergal surfaces with fine and moderately dense punctation; interstices with shallow microsculpture; posterior margin of tergite VII with fine rudiment of a palisade fringe.

♂: posterior margin of tergite VIII broadly convex (Fig. 137); sternite VII posteriorly with median impression, posterior margin moderately concave, in the middle truncate to indistinctly convex (Fig. 138); sternite VIII with median impression of oblong triangular shape, this impression with approximately 15-20 peg-setae anteriorly and without pubescence posteriorly, on either side of impression with numerous long dark setae, posterior excision large, deep, and U-shaped (Fig. 139); aedeagus approximately 1.1 mm long, ventral process of distinctive shape, slender, apically curved, and with subapical tooth in ventral view (Figs 140-141).

♀: posterior margin of tergite VIII similar to that of ♂ (Fig. 142); sternite VIII approximately as long as tergite VIII, posterior margin broadly convex, in the middle truncate (Fig. 143); segments IX-X relatively short; tergite IX undivided anteriorly, anterior margin strongly emarginate in the middle; tergite X of broadly ovoid shape, approximately 4 times as long as tergite IX in the middle (Fig. 144).



Figs 134-144: *Lobrathium pedes* sp. n.: habitus (134); forebody (135); antenna (136); male tergite VIII (137); male sternite VII (138); male sternite VIII (139); aedeagus in lateral and in ventral view (140-141); female tergite VIII (142); female sternite VIII (143); female tergites IX-X (144). Scale bars: 134-135: 1.0 mm; 136-144: 0.5 mm.

Comparative notes:

This species is distinguished from all its congeners particularly by the morphology of the ventral process of the aedeagus, as well as by the shape and chaetotaxy of the male sternites VII-VIII. From other Taiwanese *Lobrathium* species with a reddish elytral spot, it is additionally separated by the shorter elytra and by the female secondary sexual characters, particularly the anteriorly strongly emarginate tergite IX.

Etymology:

The specific epithet (Latin), a noun in apposition, denotes "pedestrian" and refers to the reduced wings.

Distribution and natural history:

The known distribution is confined to two localities in Ilan and Hualien Hsien, eastern and northeastern Taiwan. The type specimens were collected by sifting leaf litter on a stream bank in an old coniferous forest and by sifting wet moss on large rocks in a creek in a secondary forest at altitudes of 1820 and 2220 m. One specimen found in July is teneral.

***Lobrathium* (subgenus?) *stimulans* sp. n.** (Figs 145-154)**Type material:**

Holotype ♂: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2390-2490 m, 5.VII.1993, A. Smetana [T138] / Holotypus ♂ *Lobrathium stimulans* sp. n., det. V. Assing 2010" (cSme). Paratypes: 7 ♂♂, 6 ♀♀: same data as holotype (cSme, cAss); 4 ♂♂, 1 ♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2080 m, 6.VII.93, A. Smetana [T141]" (cSme, cAss); 4 ♂♂, 4 ♀♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93, A. Smetana [T136]" (cSme, cAss); 1 ♂, 1 ♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2250 m, 4.VII.93, A. Smetana [T137]" (cSme, cAss); 1 ♂: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2065 m, 6.VII.93, A. Smetana [T140]" (cAss); 4 ♀♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.V.1995, A. Smetana [T171]" (cSme); 1 ♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2080 m, 2.V.1995, A. Smetana [T169]" (cSme).

Description:

Body length 8.0-10.0 mm. Habitus as in Fig. 145. Coloration: body blackish-brown; legs and antennae reddish-brown to dark-brown.

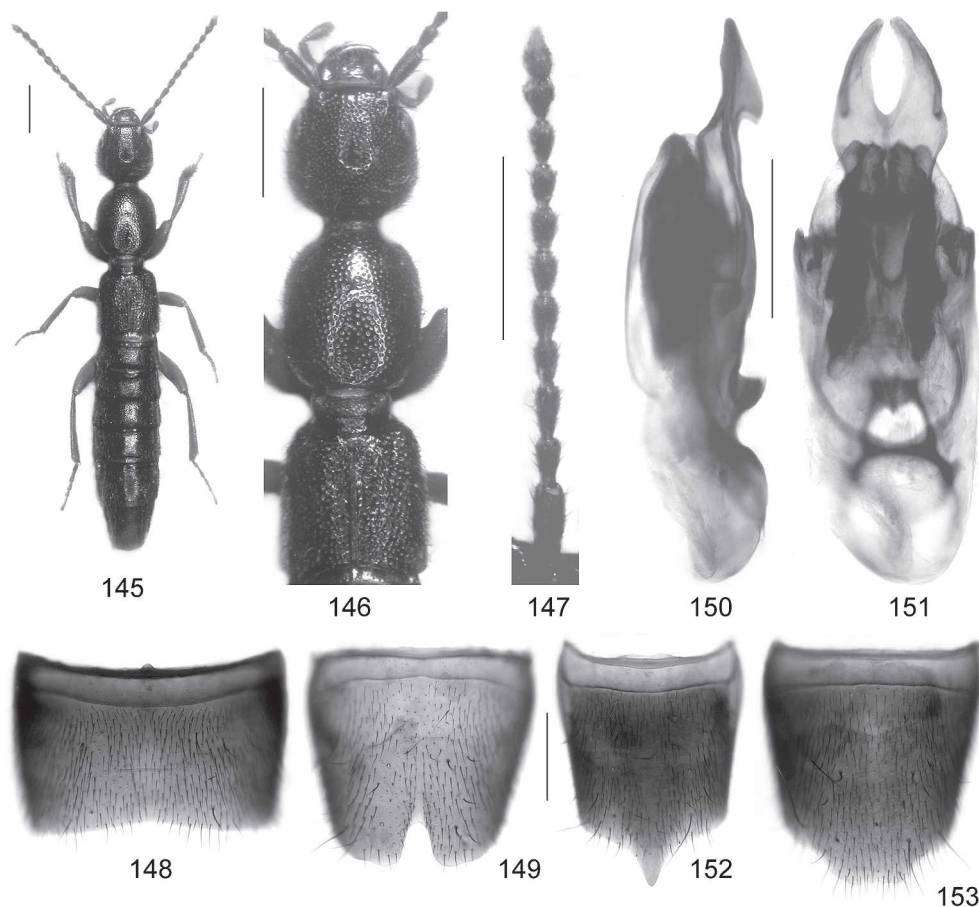
Head as long as wide or indistinctly oblong, lateral margins behind eyes subparallel or weakly diverging (Fig. 146); punctation well-defined, very dense (interstices narrower than punctures), and not very coarse; median dorsal portion with sparse punctation; interstices without microsculpture; eyes of moderate size, approximately half as long as the distance from posterior margin of eye to posterior constriction of head in dorsal view, or slightly larger. Antennae moderately slender; antennomere III slightly longer than II; IV-IX approximately 1.5 times as long as wide (Fig. 147).

Pronotum approximately 1.2 times as long as wide and slightly broader than head (Fig. 146); punctation slightly coarser and somewhat less dense than that of head; midline more or less narrowly impunctate, at least in posterior 1/2-3/4; interstices without microsculpture.

Elytra short, approximately 0.7 times as long as pronotum, humeral angles moderately marked (Fig. 146); punctation dense, irregular (not arranged in rows) and coarse, but often partly weakly defined, rugose and/or confluent; lateral parts with fine submarginal line. Hind wings reduced.

Abdomen slightly broader than elytra; punctation fine and dense; interstices with shallow microreticulation; posterior margin of tergite VII with or without very narrow rudiment of a palisade fringe.

♂: posterior margin of tergite VIII weakly angled in the middle (Fig. 154); sternites V and VI with indistinct median impression; sternite VII with distinct narrow impression along middle, posterior margin weakly concave and with row of long black submarginal setae (Fig. 148); sternite VIII with distinct impression along middle, without peg-setae; posterior excision relatively deep and narrow (Fig. 149); aedeagus as in Figs 150-151.



Figs 145-153: *Lobrathium stimulans* sp. n.: habitus (145); forebody (146); antenna (147); male sternite VII (148); male sternite VIII (149); aedeagus in lateral and in ventral view (150-151); female tergite VIII (152); female sternite VIII (153). Scale bars: 145-147: 1.0 mm; 148-153: 0.5 mm.

♀: posterior margin of tergite VIII in the middle with acute projection (Fig. 152); posterior margin of sternite VIII distinctly produced in the middle (Fig. 153); lateral sclerites of tergite IX broadly separated anteriorly, tergite X anteriorly truncate and reaching anterior margin of tergite IX, very slender, and apically acute.

Comparative notes:

From *L. taiwanense*, the only previously described endemic *Lobrathium* species from Taiwan, the new species is distinguished particularly by the darker coloration, by the presence of impressions on the male sternites V-VIII, and by the completely different shape of the aedeagus. For illustrations of *L. taiwanense* see WATANABE (1998).

Etymology:

The specific epithet (Latin; present participle of *stimulare*) refers to the acutely produced posterior margins of the female tergites VIII and IX.

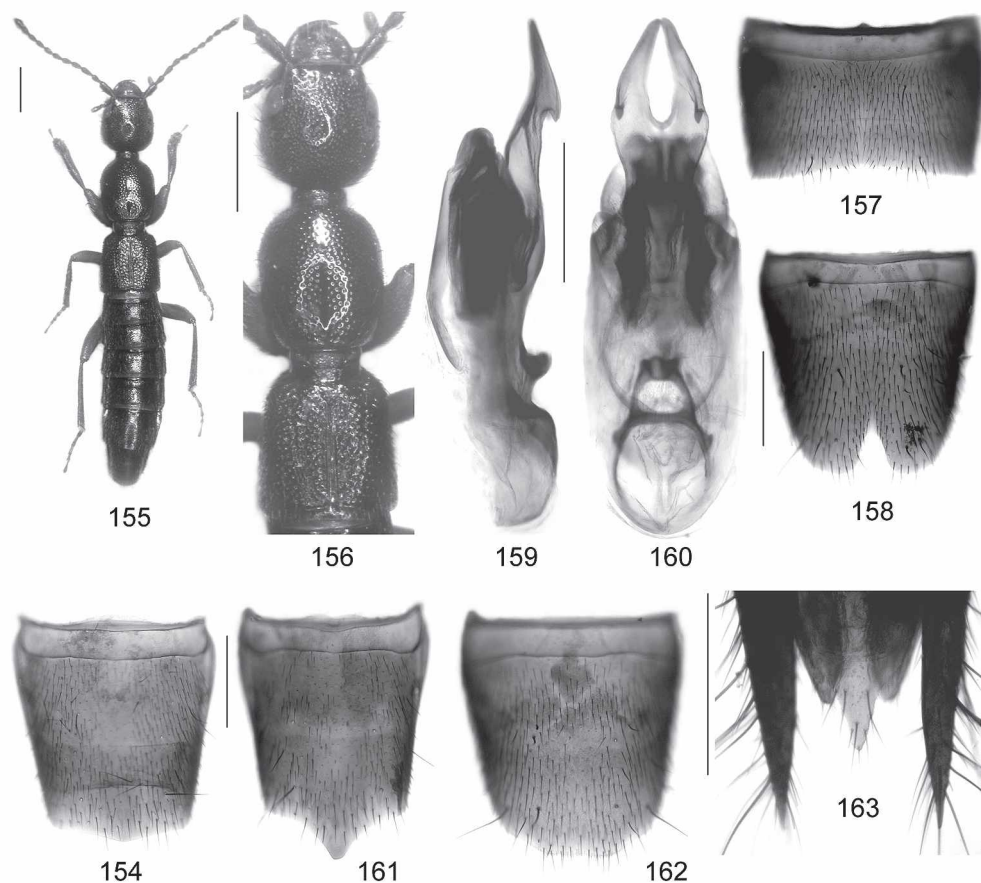
Distribution and natural history:

The known distribution is confined to several localities in the Peinantashan, Kaohsiung Hsien, southern Taiwan. The type specimens were sifted from wet leaf litter, moss, and other debris, partly around tree bases, in a secondary broadleaved forest, beneath broadleaved bushes, along forest roads, and at base of small waterfall at altitudes of 2065-2500 m.

Lobrathium sororium sp. n. (Figs 155-163)

Type material:

Holotype ♂: "Taiwan, Kaohsiung [sic] Hsien, Kuanshan trail at Kaunshanchi Riv., 2400 m, 20.VII.93, A. Smetana [T158] / Holotypus ♂ *Lobrathium sororium* sp. n., det. V. Assing 2010" (cSme). Paratypes: 5 ♂♂, 1 ♀: same data as holotype (cSme, cAss); 2 ♀♀: "Taiwan, Kaohsiung Hsien, Kuanshan trail above Kaunshanchi Riv., 2550 m, 22.VII.93, A. Smetana [T160]" (cSme).



Figs 154-163: *Lobrathium stimulans* sp. n. (154) and *L. sororium* sp. n. (155-163): male tergite VIII (154); habitus (155); forebody (156); male sternite VII (157); male sternite VIII (158); aedeagus in lateral and in ventral view (159-160); female tergite VIII (161); female sternite VIII (162); apices of female tergites IX and X (163). Scale bars: 155-156: 1.0 mm; 154, 157-163: 0.5 mm.

Description:

External morphology and coloration as in *L. stimulans* (Figs 155-156), distinguished only by the sexual characters:

♂: posterior margin of tergite VIII convex, not angled in the middle; sternites V-VIII similar to those of *L. stimulans* (Figs 157-158); aedeagus with longer and more slender apical lobes (Figs 159-160).

♀: posterior projection of tergite VIII broader, less abruptly narrowed (Fig. 161); posterior margin of sternite VIII less distinctly produced in the middle (Fig. 162); segments IX-X similar to those of *L. stimulans* (Fig. 163), but tergite X anteriorly less broad.

Comparative notes:

As can be inferred from the synapomorphically derived conditions of the secondary sexual characters in both sexes, as well as from the similar morphology of the aedeagus, *L. sororium* is probably the adelphotaxon of *L. stimulans*. For characters separating both species see the description above.

Etymology:

The specific epithet (Latin, adj.: sisterly) refers to the hypothesised close relationship of this species to *L. stimulans*.

Distribution and natural history:

Lobrathium sororium was collected in two localities in the Kuanshan, Kaohsiung Hsien, southern Taiwan, at altitudes of 2400 and 2550 m. The type specimens were sifted from leaf litter, moist to wet moss, and other debris along a river bank and in a mixed forest.

***Lobrathium duplehamatum* sp. n.** (Figs 164-171)**Type material:**

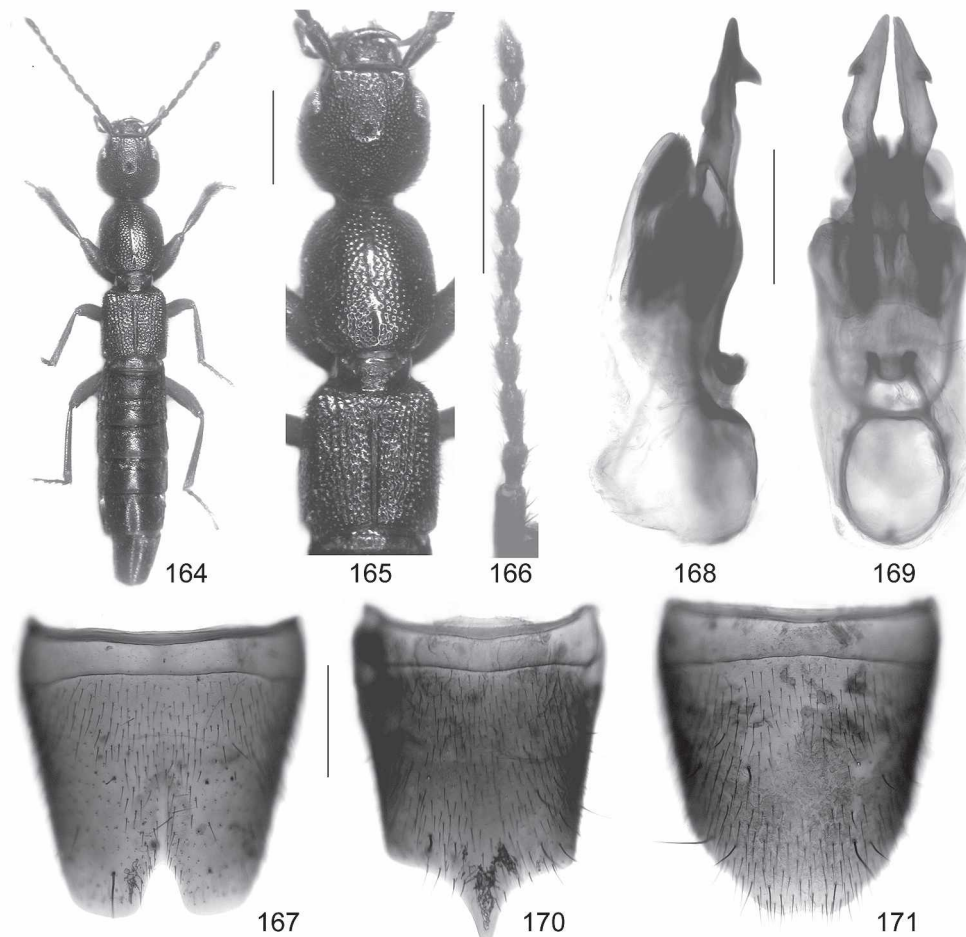
Holotype ♂: "Taiwan, Nantou Hsien, Meifeng, 2130 m, 4.V.1998, A. Smetana [T199] / Holotypus ♂ *Lobrathium duplehamatum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 1 ♂: same data as holotype (cAss); 1 ♂: "Taiwan, Nantou Hsien, Meifeng, 2130 m, 2.V.1998, A. Smetana [T196]" (cSme); 1 ♂: "Taiwan, Nantou Hsien, Meifeng, 2130 m, 10.VII.93, A. Smetana [T146]" (cSme); 1 ♂: "Taiwan, Nantou Hsien, Meifeng, 2130 m, 10.-17.VII.93, yellow pan traps, A. Smetana [T147]" (cSme); 1 ♀: "Taiwan, Nantou Hsien, Meifeng, 2130 m, 12.V.1991, A. Smetana [T78]" (cSme); 2 ♂♂: "Taiwan, Nantou Hsien, Nenkaoshan trail, 2050-2150 m, 8.V.1992, A. Smetana [T120]" (cSme, cAss).

Description:

Large species, 9.5-11.0 mm. Habitus as in Fig. 164. Coloration as in *L. stimulans*.

Head approximately as broad as long or weakly oblong, posterior angles practically obsolete, broadly rounded (Fig. 165); punctuation similar to that in *L. stimulans*; eyes of moderate size, approximately half as long as the distance from posterior margin of eye to posterior constriction of head. Antenna as in *L. stimulans* (Fig. 166).

Pronotum approximately 1.2 times as long as broad, as wide as head or indistinctly wider (Fig. 165); punctuation similar to that of *L. stimulans*, but impunctate midline on average longer and broader.



Figs 164-171: *Lobrathium duplehamatum* sp. n.: habitus (164); forebody (165); antenna (166); male sternite VIII (167); aedeagus in lateral and in ventral view (168-169); female tergite VIII (170); female sternite VIII (171). Scale bars: 164-166: 1.0 mm; 167-171: 0.5 mm.

Elytra little more than 0.7 times as long as pronotum; humeral angles marked (Fig. 165); lateral parts with fine submarginal line; punctation coarse and arranged in more or less irregular, oblique, confluent rows, especially in antero-median portion; interstices without microsculpture.

Abdomen usually indistinctly broader than elytra; punctation fine and rather dense; interstices with fine microreticulation; posterior margin of tergite VII without discernible palisade fringe.

♂: posterior margin of tergite VIII weakly angled in the middle; sternites V-VI without impressions; sternite VII posteriorly with shallow oblong impression in the middle, posterior margin weakly concave; sternite VIII posteriorly with narrow impression along the middle, without pegsetae, posterior excision relatively deep and narrow (Fig. 167); aedeagus with apical lobes strongly hooked (Figs 168-169).

♀: tergite VIII of similar shape as in *L. stimulans* (Fig. 170); posterior margin of sternite VIII strongly convex, in the middle weakly concave (Fig. 171); tergite X of similar morphology as in *L. stimulans*, very slender and apically acute.

Comparative notes:

Based on the similarly derived secondary sexual characters, as well as the similar general morphology of the aedeagus, *L. duplehamatum* is closely allied to *L. stimulans*. It is distinguished from *L. stimulans* and *L. sororium* particularly by larger size, relatively smaller eyes, the somewhat serial arrangement of the elytra punctures, and by the morphology of the aedeagus.

Etymology:

The specific epithet (Latin, adj.) is composed of *duple* (from *duplex*: double) and *hamatum* (hooked) and refers to the shape of the apical lobes of the aedeagus.

Distribution and natural history:

The species is known from two localities in Nantou Hsien, central Taiwan, where the type specimens were found at an altitude of 2050–2150 m. They were sifted from leaf litter, bamboo, moss, humus, and other debris in a primary broadleaved evergreen forest, in a mature evergreen forest, mixed forests. One specimen was collected in a pan trap.

***Lobrathium smetanai* sp. n.** (Figs 172–178)**Type material:**

Holotype ♂: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2000 m, 7.VII.93, A. Smetana [T144] / Holotypus ♂ *Lobrathium smetanai* sp. n., det. V. Assing 2010" (cAss). Paratypes: 1 ♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2020 m, 7.VII.93, A. Smetana [T143]" (cSme).

Description:

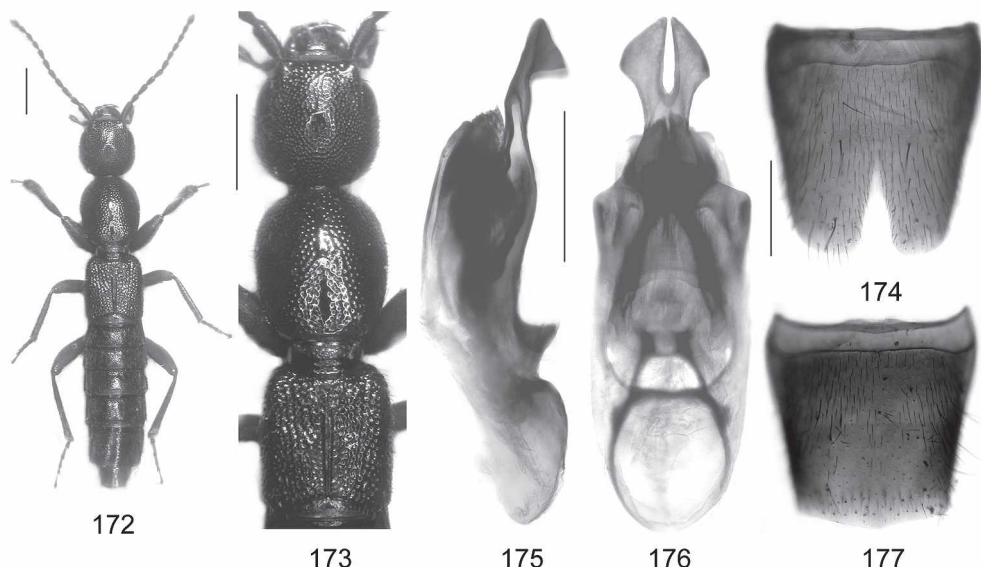
External characters as in *L. duplehamatum*, except for the somewhat larger eyes and the completely rounded posterior angles of the head (Figs 172–173).

♂: posterior margin of tergite VIII weakly angled in the middle; sternites V–VI without impressions; sternite VII posteriorly with shallow oblong impression in the middle, posterior margin weakly concave; sternite VIII posteriorly with narrow impression along the middle, without peg-setae, posterior excision deep, narrow, and V-shaped (Fig. 174); aedeagus with apical lobes of distinctive shape (Fig. 176).

♀: posterior margin of tergite VIII weakly angled in the middle, not acutely produced (Fig. 177); sternite VIII of similar shape as in *L. stimulans*, posteriorly produced and distinctly longer than tergite VIII (Fig. 178); lateral sclerites of tergite IX anteriorly broadly separated; tergite X anteriorly very broad and reaching anterior margin of tergite IX, more convex in cross-section, less slender and apically somewhat less acute than in the three preceding species.

Comparative notes:

Based on the morphology of the primary and secondary sexual characters (shape of male sternites VII and VIII, rather massive aedeagus with subapically hooked apical lobes, shape of female sternite VIII), *L. smetanai* is closely related to *L. stimulans*. It is distinguished from the three preceding species of the subgroup by the deeper and distinctly V-shaped posterior excision of the male sternite VIII, the shape of the aedeagus, especially of the apical lobes, as well as by the posteriorly not acutely produced female tergite VIII. From *L. stimulans* and *L. sororium*, it is additionally separated by larger size, darker coloration, and the irregularly serial arrangement of the elytral punctuation.



Figs 172-177: *Lobrathium smetanai* sp. n.: habitus (172); forebody (173); male sternite VIII (174); aedeagus in lateral and in ventral view (175-176); female tergite VIII (177). Scale bars: 172-173: 1.0 mm; 174-177: 0.5 mm.

Etymology:

This species is dedicated to Aleš Smetana, who collected not only the types of this species, but the also almost all of the remaining specimens dealt with in this paper.

Distribution and natural history:

The type specimens were collected in the Peinantashan range, Kaohsiung Hsien, southern Taiwan, by sifting leaf litter and other debris in a mature broadleaved forest at an altitude of approximately 2000 m.

Lobrathium furcillatum sp. n. (Figs 179-186)

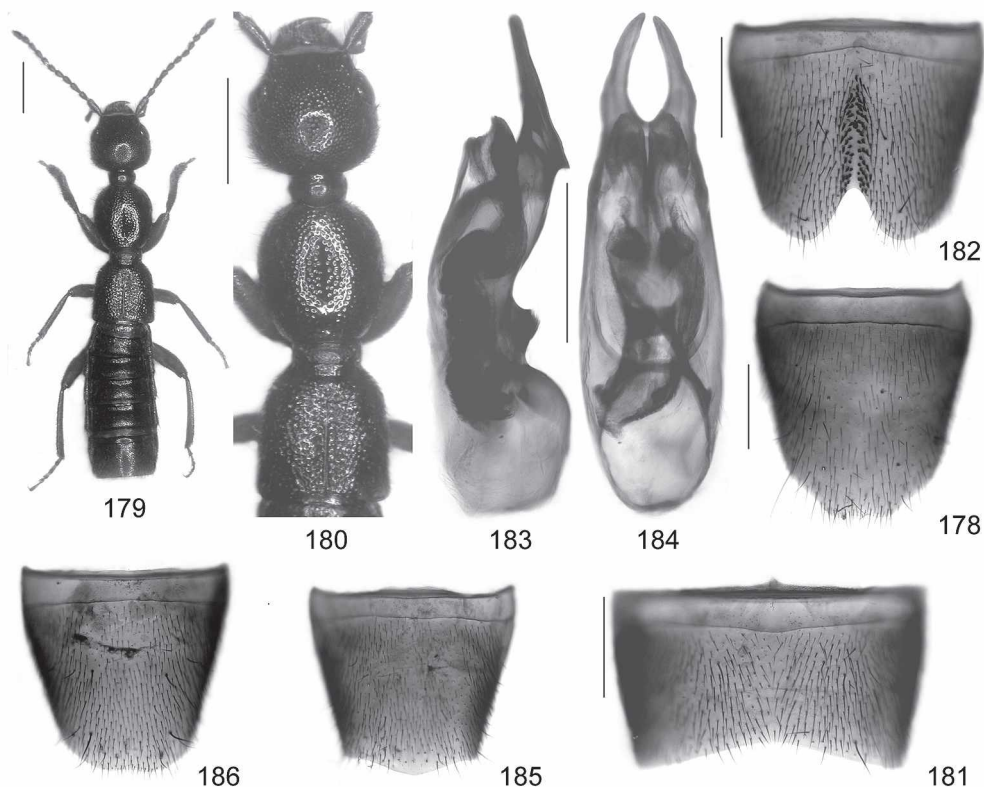
Type material:

Holotype ♂: "Taiwan, Pingtung Hsien, Peitawushan above Kuai-Ku Hut, 2680 m, 29.IV.1992, A. Smetana [T106] / Holotypus ♂ *Lobrathium furcillatum* sp. n., det. V. Assing 2010" (cAss). Paratypes: 1 ♀: same data as holotype (cSme); 1 ♀: "Taiwan, Pingtung Hsien, Peitawushan [sic] Kuai-Ku Hut, 2325 m, 20.V.1991, A. Smetana [T190]" (cSme).

Description:

Body length: 8.5-9.0 mm. Habitus as in Fig. 179. Coloration: body dark-brown to blackish-brown; legs and antennae brown.

Head as long as wide; posterior angles weakly marked, rounded (Fig. 180); punctuation well-defined, very dense (interstices narrower than punctures), and relatively fine; median dorsal portion with sparse punctuation; interstices without microsculpture; eyes relatively large, more than half as long as the distance from posterior margin of eye to posterior constriction of head in dorsal view. Antennae of similar morphology as that of *L. stimulans*.



Figs 178-186: *Lobrathium duplehamatum* sp. n. (178) and *L. furcillatum* sp. n. (179-186): female sternite VIII (178, 186); habitus (179); forebody (180); male sternite VII (181); male sternite VIII (182); aedeagus in lateral and in ventral view (183-184); female tergite VIII (185). Scale bars: 179-180: 1.0 mm; 178, 181-186: 0.5 mm.

Pronotum approximately 1.2 times as long as wide and about as wide as head (Fig. 180); punctation somewhat coarser and less dense than that of head; midline narrowly impunctate; interstices without microsculpture.

Elytra short, approximately 0.65 times as long as pronotum; humeral angles almost obsolete (Fig. 180); punctation very dense, coarse, and not arranged in rows; interstices without microsculpture; lateral parts with fine submarginal line of reduced length. Hind wings completely reduced.

Abdomen distinctly (approximately 1.15 x) broader than elytra; punctation fine and dense; interstices with microreticulation; posterior margin of tergite VII without palisade fringe.

♂: posterior margin of tergite VIII convex; posterior margin of sternite VII strongly concave and with row of long black submarginal setae (Fig. 181); sternite VIII with narrow impression along middle, this impression furnished with numerous peg-setae, posterior excision deep and almost V-shaped (Fig. 182); aedeagus as in Figs 183-184, apically distinctly furcate.

♀: posterior margin of tergite VIII obtusely angled in the middle (Fig. 185); sternite VIII longer than tergite VIII, posterior margin convex, in the middle weakly concave (Fig. 186); segments IX-X slender, but less so than in the species closely allied to *L. stimulans*; tergite X acute basally, almost reaching anterior margin of tergite IX, and rather slender apically.

Comparative notes:

This species is distinguished from all the preceding representatives of the *L. stimulans* group by the shorter elytra with almost obsolete humeral angles, the shorter and less pronounced submarginal carina of the elytra, the broader abdomen (in relation to the elytra), the strongly concave posterior margin of the male sternite VII, the presence of peg-setae on the male sternite VIII, the more slender and less strongly hooked apical lobes of the aedeagus, the less oblong female sternite VIII, and the less slender female segments IX-X.

Etymology:

The specific epithet is an adjective derived from the Latin noun *furcula* (fork) and refers to the shape of the apical lobes of the aedeagus.

Distribution and natural history:

The type specimens were collected in the Peitawushan, Pingtung Hsien, southern Taiwan, at altitudes of 2325 and 2680 m. They were sifted from layers of fallen flowers and moist rhododendron leaves in rhododendron stands and from moist to wet leaf litter and other debris in remnants of original forest.

***Lobrathium cornutissimum* sp. n.** (Figs 187-194)**Type material:**

Holotype ♂: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2500 m, 3.V.1995, A. Smetana [T171] / Holotypus ♂ *Lobrathium cornutissimum* sp. n., det. V. Assing 2010" (cAss). Paratypes: 1 ♀: same data as holotype (cSme); 1 ♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2450 m, 2.V.1995, A. Smetana [T170]" (cSme); 4 ♀♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2390-2490 m, 5.VII.1993, A. Smetana [T138]" (cSme, cAss); 1 ♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.93, A. Smetana [T136]" (cSme).

Description:

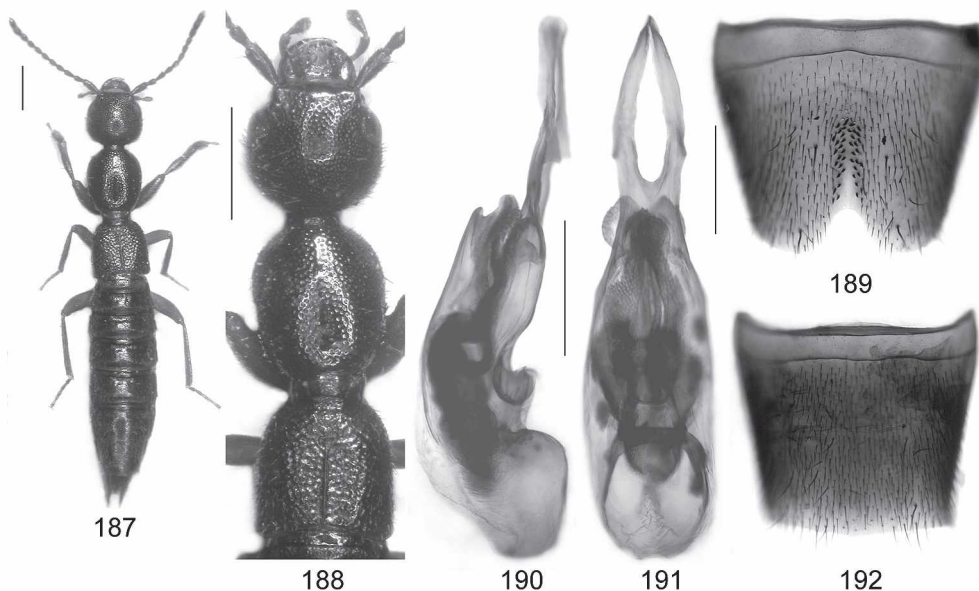
Body length 8.0-9.5 mm. External characters as in *L. furcillatum* (Figs 187-188), but submarginal line of elytra even shorter (obsolete in anterior 1/3 of elytra). Reliably distinguished only by the sexual characters:

♂: posterior margin of tergite VIII convex; sternite VII without median impression, posterior margin distinctly concave and with row of long black submarginal setae; sternite VIII with narrow impression along middle, this impression furnished with approximately 40 peg-setae, posterior excision moderately deep and broadly U-shaped (Fig. 189); aedeagus as in Figs 190-191, apical lobes very long and slender.

♀: posterior margin of tergite VIII very indistinctly angled in the middle (Fig. 192); sternite VIII longer than tergite VIII, posterior margin of similar shape as in *L. furcillatum*, but slightly more concave in the middle (Fig. 193); segments of similar morphology as in *L. furcillatum*, tergite X broadly truncate basally and reaching anterior margin of tergite IX (Fig. 194).

Comparative notes:

For characters separating this species from the highly similar *L. furcillatum* see the description above. From other preceding species of the *L. stimulans* group it is distinguished by the same characters as *L. furcillatum* (see the comparative notes in the preceding section).



Figs 187-192: *Lobrathium cornutissimum* sp. n.: habitus (187); forebody (188); male sternite VIII (189); aedeagus in lateral and in ventral view (190-191); female tergite VIII (192). Scale bars: 187-188: 1.0 mm; 189-192: 0.5 mm.

Etymology:

The specific epithet is the superlative of the Latin adjective *cornutum* (with horns) and refers to the conspicuously long apical lobes of the aedeagus.

Distribution and natural history:

The species was found in several localities in the Peinantashan, Kaohsiung Hsien, southern Taiwan, at altitudes of 2390-2500 m. The specimens were sifted from wet leaf litter, moss, and other debris in a mature mixed forest and beneath bushes at the margin of an abandoned forest road.

Lobrathium bisagittatum sp. n. (Figs 195-202)

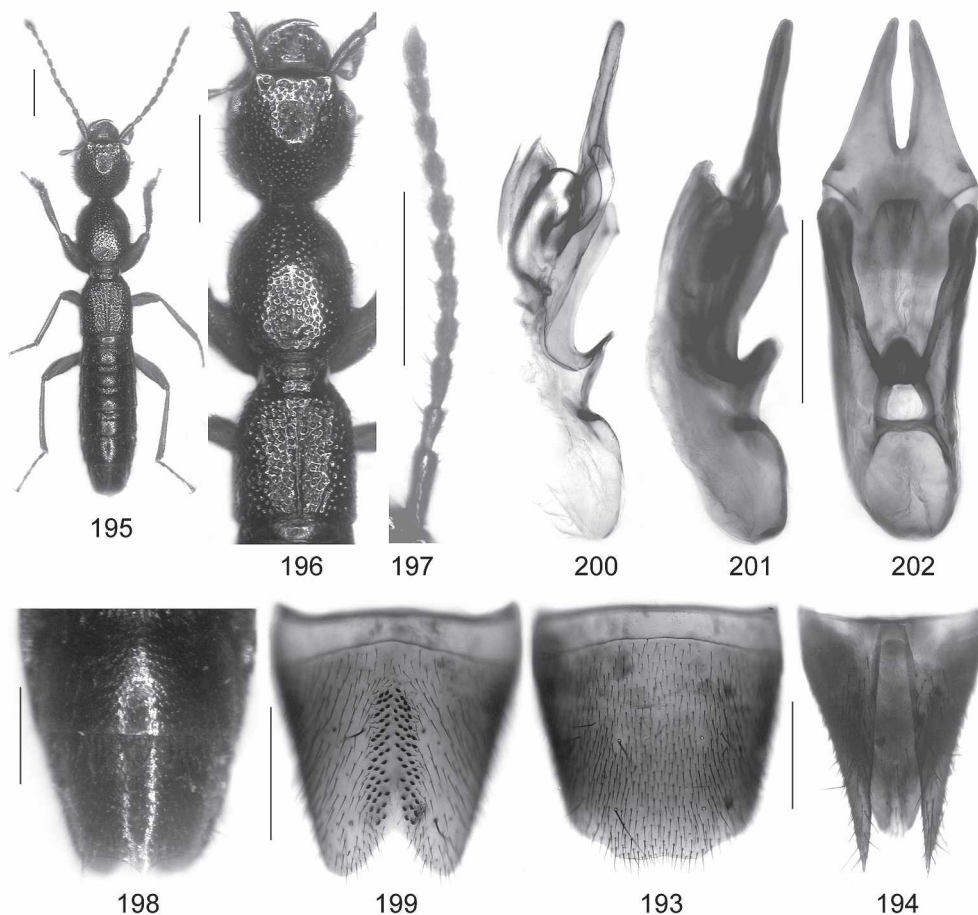
Type material:

Holotype ♂: "Taiwan, Ilan Hsien, Taipingshan, 1820 m, 15.VII.93, A. Smetana [T153] / Holotypus ♂ *Lobrathium bisagittatum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 1 ♂: same data as holotype (cSme); 1 ♂: "Taiwan, Ilan Hsien, Taipingshan, 1950 m, 13.VII.93, A. Smetana [T150]" (cSme); 1 ♂: "Taiwan, Taoyuan Hsien, Takuanshan For., 17.IV.90, 1600 m, A. Smetana [T3]" (cAss).

Description:

Body length: 8.0-9.0 mm. Habitus as in Fig. 195. Coloration as in *L. furcillatum*.

Head weakly oblong, approximately 1.05 times as long as wide; posterior angles obsolete, broadly rounded (Fig. 196); punctuation relatively coarse and dense (but less so than in *L. furcillatum*),



Figs 193-202: *Lobrathium cornutissimum* sp. n. (193-194) and *L. bisagittatum* sp. n. (195-202): female sternite VIII (193); female tergites IX-X (194); habitus (195); forebody (196); male abdominal segments VII-VIII in dorsal view (198); male sternite VIII (199); aedeagus in lateral and in ventral view (200-202). Scale bars: 195-197: 1.0 mm; 193-194, 198-202: 0.5 mm.

sparser in median dorsal area and on frons; interstices without microsculpture. Eyes moderately large, approximately half the distance from posterior margin of eyes to posterior constriction in dorsal view. Antennae of similar morphology as that of *L. stimulans* (Fig. 197).

Pronotum approximately 1.2 times as long as broad and approximately as broad as head or nearly so (Fig. 196); punctuation slightly coarser and slightly less dense than that of head; midline narrowly impunctate.

Elytra short, approximately 0.7 times as long as pronotum; humeral angles practically obsolete (Fig. 196); lateral parts with fine submarginal carina; punctuation very coarse and dense; interstices without microsculpture. Hind wings completely reduced.

Abdomen approximately 1.05 times as wide as elytra; punctuation fine and dense; interstices with fine microreticulation; posterior margin of tergite VII without palisade fringe.

♂: posterior margin of tergite VIII in the middle with small, but conspicuous narrow and acute process (Fig. 198); sternite VII indistinctly depressed in the middle, posterior margin weakly

concave; sternite VIII with long and moderately narrow median impression, this impression with two long clusters of numerous peg-setae, posterior excision not very deep and broadly V-shaped (Fig. 199); aedeagus of highly characteristic morphology (Fig. 200-202).

♀: unknown.

Comparative notes:

This species is distinguished from *L. furcillatum* and *L. cornutissimum* by the coarser and less dense punctuation of the head and the pronotum, the narrower, more coarsely punctate, and more glossy elytra, the more slender abdomen, and by the male sexual characters, particularly the median process at the posterior margin of the male tergite VIII and the distinctive shape of the aedeagus. In external appearance (slender habitus, coarse punctuation, glossy forebody), it is similar to some of the following species, but separated from them by the presence of lateral submarginal carinae of the elytra and by the sexual characters.

Etymology:

The specific epithet is composed of the Latin prefix bi- (two) and an adjective derived from the Latin noun sagitta (arrow) and alludes to the shape of the apical lobes of the aedeagus.

Distribution and natural history:

The species was collected in the Taipingshan and the Takuanshan, Ilan and Taoyuan Hsien, northern Taiwan, at altitudes of 1600-1950 m. The material was sifted from thick layers of moss on fallen trees, leaf litter, and other debris, partly near a stream, in a coniferous forest and a secondary, mostly coniferous forest. The specimens found in July are partly teneral.

Lobrathium digitatum sp. n. (Figs 203-210)

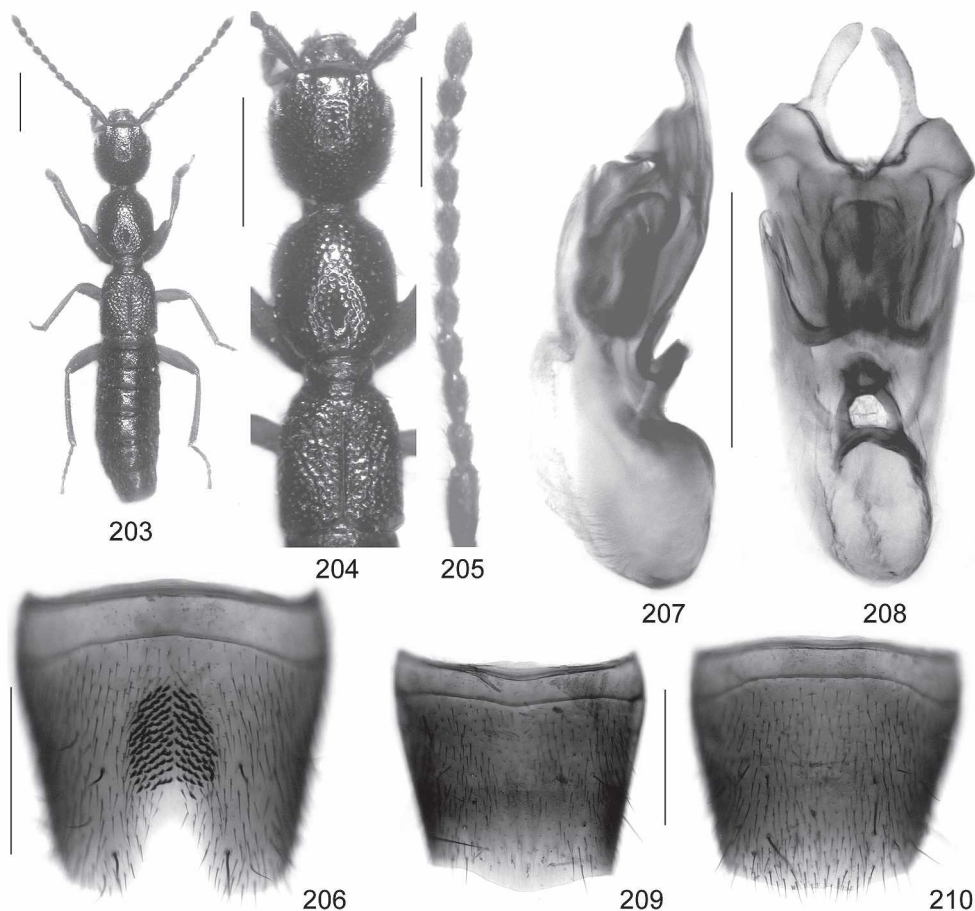
Type material:

Holotype ♂: "Taiwan, Chiayi Hsien, Yushan N. P., Ta-Ta Chia, 2750 m, 27.IV.1990, A. Smetana [T27] / Holotypus ♂ *Lobrathium digitatum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 1 ♂, 1 ♀: same data as holotype (cAss); 1 ♂: "Taiwan, Chiayi Hsien, Yushan N. P., Mun-Li Cliff, 2700 m, 27.IV.1990, A. Smetana [T28]" (cAss); 1 ♀: "Taiwan, Chiayi Hsien, Yushan N. P., Mun-Li Cliff, 2700 m, 13.V.91, A. Smetana [T79]" (cSme); 2 ♀ ♀: "Taiwan, Nantou Hsien, Yushan N. P., Mun-Li Cliff, 2700 m, 18.V.91, A. Smetana [T86]" (cSme); 1 ♀: "Taiwan, Chiayi Hsien, Alishan, Sister Ponds, 2180 m, 26.IV.1990, A. Smetana [T24]" (cSme); 2 ♀ ♀: "Taiwan, Kaohsiung Hsien, Kuanshan trail above Kaunshanchi Riv., 2550 m, 22.VII.1993, A. Smetana [T160]" (cSme).

Description:

Body length: 6.0-8.0 mm. Habitus as in Fig. 203. Coloration: body, including antennae, dark-brown to blackish-brown; legs reddish-brown to brown.

Head oblong, 1.05-1.10 times as long as broad; posterior angles practically obsolete, broadly rounded (Fig. 204); punctuation well-defined, very dense (interstices narrower than punctures), and relatively coarse; median dorsal portion and frons with sparser punctuation; interstices without microsculpture; eyes relatively large, slightly more than half the distance from posterior margin of eyes to posterior constriction in dorsal view. Antennae of similar morphology as that of *L. stimulans*, but somewhat less slender, with antennomeres II and III shorter (Fig. 205).



Figs 203-210: *Lobrathium digitatum* sp. n.: habitus (203); forebody (204); male sternite VIII (205); aedeagus in lateral and in ventral view (207-208); female tergite VIII (209); female sternite VIII (210). Scale bars: 203-204: 1.0 mm; 205-210: 0.5 mm.

Pronotum approximately 1.2 times as long as wide, or nearly so, and about as wide as head (Fig. 204); punctuation somewhat coarser and less dense than that of head; midline more or less narrowly impunctate; interstices without microsculpture.

Elytra short, but of rather variable length, 0.65-0.75 times as long as pronotum (Fig. 204); humeral angles practically obsolete; punctuation dense, coarse, irregular, and partly confluent; interstices without microsculpture; lateral parts without fine submarginal line. Hind wings completely reduced. Legs moderately slender; metatibia 1.2-1.3 mm long.

Abdomen 1.10-1.15 times as broad as elytra; punctuation fine and dense; interstices with shallow microreticulation; posterior margin of tergite VII without palisade fringe.

♂: posterior margin of tergite VIII weakly convex; sternite VII posteriorly somewhat depressed, posterior margin weakly concave; sternite VIII with distinct median impression, this impression with two clusters of numerous peg-setae, posterior excision moderately deep and broadly U-shaped (Fig. 206); aedeagus of characteristic morphology, apically with two finger-shaped processes (Figs 207-208).

♀: posterior margin of tergite VIII indistinctly angled in the middle (Fig. 209); sternite VIII broader than long, approximately as long as tergite VIII, posteriorly weakly produced, posterior margin weakly concave in the middle (Fig. 210); segments IX-X not particularly slender; tergite X of ovoid shape, acute basally, reaching anterior margin of tergite IX, and broadly convex apically.

Comparative notes:

This species is distinguished from all the preceding representatives of the *L. stimulans* group by the absence of the fine submarginal line of the elytra, the less broad head, the somewhat coarser punctuation of the head and pronotum, the broader impression of the male sternite VIII with more numerous peg-setae, the conspicuous morphology of the aedeagus, the posteriorly weakly produced female sternite VIII, and the apically broadly convex female tergite X.

Etymology:

The specific epithet is an adjective derived from the Latin noun *digitus* (finger) and refers to the shape of the apical lobes of the aedeagus.

Distribution and natural history:

The type specimens were collected in the Yushan (Chiai and Nantou Hsien), the Alishan (Chiai Hsien), and the Kuanshan (Kaohsiung Hsien), southern central Taiwan, at altitudes of 2180-2700 m. They were collected from moss and vegetation at the edge of small ponds, by sifting moss, leaf litter, and other debris in an old coniferous forest, in a primary, mainly coniferous forest with lush undergrowth, and in a mixed forest. The specimens from the Alishan and the Kuanshan are all females, so that the possibility that they in fact refer to other species cannot be ruled out with certainty.

Lobrathium bidigitatum sp. n. (Figs 211-218)

Type material:

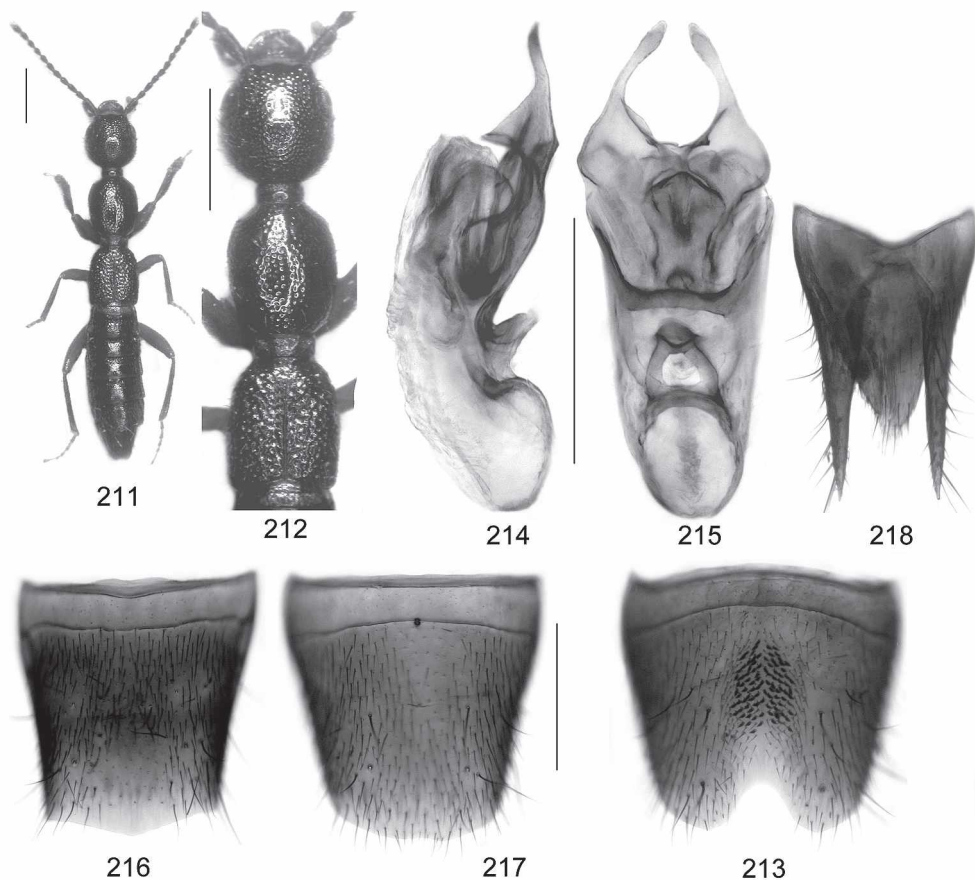
Holotype ♂: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2450 m, 2.V.1995, A. Smetana [T170] / Holotypus ♂ *Lobrathium bidigitatum* sp. n., det. V. Assing 2010" (cAss). Paratype: 1 ♀: "Taiwan, Kaohsiung Hsien, Peinantashan trail, 2500 m, 4.VII.1993, A. Smetana [T136]" (cSme).

Description:

Habitus and forebody as in Figs 211-212. External morphology as in *L. digitatum*, distinguished only by the sexual characters:

♂: posterior margin of tergite VIII almost truncate in the middle; sternite VII as in *L. digitatum*; sternite VIII with broad median impression, this impression with two clusters of numerous peg-setae, which are less extensive than in *L. digitatum*, posterior excision moderately deep and broadly U-shaped (Fig. 213); aedeagus of similar morphology as in *L. digitatum*, but apical lobes slightly longer, more slender, and more broadly separated, and subapical portion of ventral process not projecting laterad (Figs 214-215).

♀: posterior margin of tergite VIII weakly angled in the middle (Fig. 216); sternite VIII broader than long, approximately as long as tergite VIII, posteriorly weakly produced, posterior margin indistinctly concave in the middle (Fig. 217); segments IX-X of similar shape as in *L. digitatum* (Fig. 218).



Figs 211-218: *Lobrathium bidigitatum* sp. n.: habitus (211); forebody (212); male sternite VIII (213); aedeagus in lateral and in ventral view (214-215); female tergite VIII (216); female sternite VIII (217); female tergites IX-X (218). Scale bars: 211-212: 1.0 mm; 213-218: 0.5 mm.

Comparative notes:

As can be inferred from the similar external and sexual characters, particularly the derived morphology of the aedeagus, *L. bidigitatum* is very closely related to *L. digitatum*, from which it is best distinguished based on the shape of the apical lobes of the aedeagus.

Etymology:

The specific epithet is an adjective derived from the Latin prefix bi- (two) and the noun digitus (finger) and refers to the shape of the apical lobes of the aedeagus.

Distribution and natural history:

The type specimens were collected in the Peinantashan, Kaohsiung Hsien, southern Taiwan, at altitudes of 2450-2500 m. They were sifted from wet leaf litter, moss, and other debris in a mature mixed forest and beneath bushes along an abandoned forest road.

***Lobrathium spoliatum* sp. n.** (Figs 219-227)**Type material:**

Holotype ♂: "Taiwan, Taichung Hsien, Hsuehshan [sic], nr. Hsuehshan-Tun-Feng, 3170 m, 11.V.91, A. Smetana [T76] / Holotypus ♂ *Lobrathium spoliatum* sp. n., det. V. Assing 2010" (cSme). Paratypes: 2 ♀♀: same data as holotype (cSme); 1 ♂, 2 ♀♀: "Taiwan, Taichung Hsien, Hsuehshan, nr. Hsuehshan-Tun-Feng, 3170 m, 7.V.91, A. Smetana [T68]" (cSme, cAss).

Description:

Body length: 7.5-9.0 mm. Habitus as in Fig. 219. Coloration: body, including antennae, dark-brown; legs brown to dark-brown.

Head approximately as long as broad or weakly oblong; posterior angles practically obsolete, broadly rounded (Fig. 220); punctuation well-defined, dense (interstices narrower than punctures), and relatively coarse; median dorsal portion with sparser punctuation; interstices without microsculpture; eyes relatively small, 0.35-0.40 times as long as the distance from posterior margin of eyes to posterior constriction in dorsal view. Antennae of similar morphology as that of *L. stimulans*, but somewhat less slender (Fig. 221).

Pronotum approximately 1.2 times as long as wide and about as wide as head (Fig. 220); punctuation similar to that of head, but somewhat sparser; midline more or less narrowly impunctate; interstices without microsculpture.

Elytra short, approximately 0.65 times as long as pronotum; humeral angles almost obsolete (Fig. 220); punctuation dense, coarse, and irregular; interstices without microsculpture; lateral parts without fine submarginal line. Hind wings completely reduced. Legs moderately slender, metatibia 1.5-1.6 mm long.

Abdomen 1.10-1.15 times as broad as elytra; punctuation fine and dense; interstices with shallow microreticulation; posterior margin of tergite VII without palisade fringe.

♂: posterior margin of tergite VIII weakly convex; sternite VII not depressed in the middle, posterior margin almost truncate; sternite VIII without distinct median impression and without clusters of peg-setae, posterior excision moderately deep and almost V-shaped (Fig. 222); aedeagus of characteristic morphology, apical lobes hooked at apex (Figs 223-224).

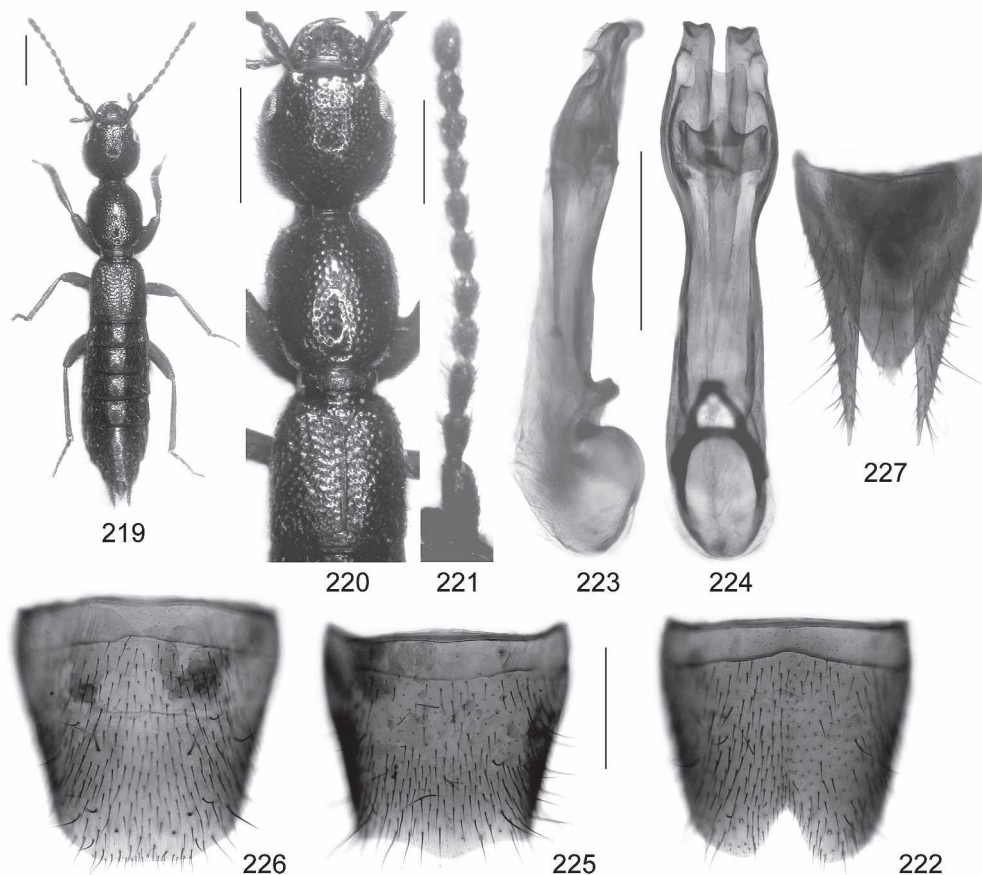
♀: posterior margin of tergite VIII obtusely angled in the middle (Fig. 225); sternite VIII weakly oblong, longer than tergite VII, posterior margin broadly convex (Fig. 226); tergite IX anteriorly very narrowly separated; tergite X not reaching anterior margin of tergite IX, apically slender, but not conspicuously acute (Fig. 227).

Comparative notes:

This species is distinguished from all the preceding representatives of the *L. stimulans* group by the shape of the aedeagus and by the morphology of the female segments IX and X. In addition, it is separated from all of them, except *L. digitatum* and *L. bidigitatum*, by the absence of the fine submarginal line of the elytra, and from *L. digitatum* and *bidigitatum* by the smaller eyes, the longer legs, and the absence of a distinct impression and of clusters of peg-setae on the male sternite VIII.

Etymology:

The specific epithet (Latin, adjective: robbed) alludes to the absence of peg-setae and of a median impression on the male sternite VIII.



Figs 219-227: *Lobrathium spoliatum* sp. n.: habitus (219); forebody (220); antenna (221); male sternite VIII (222); aedeagus in lateral and in ventral view (223-224); female tergite VIII (225); female sternite VIII (226); female tergites IX-X (227). Scale bars: 219-220: 1.0 mm; 221-227: 0.5 mm.

Distribution and natural history:

The type specimens were collected in the Hsuehshan, Taichung Hsien, northern central Taiwan, by sifting moist moss, lush vegetation, and other debris in a primary coniferous forest (mostly fir) at an altitude of 3170 m. One of the dissected females had a mature egg in the ovaries.

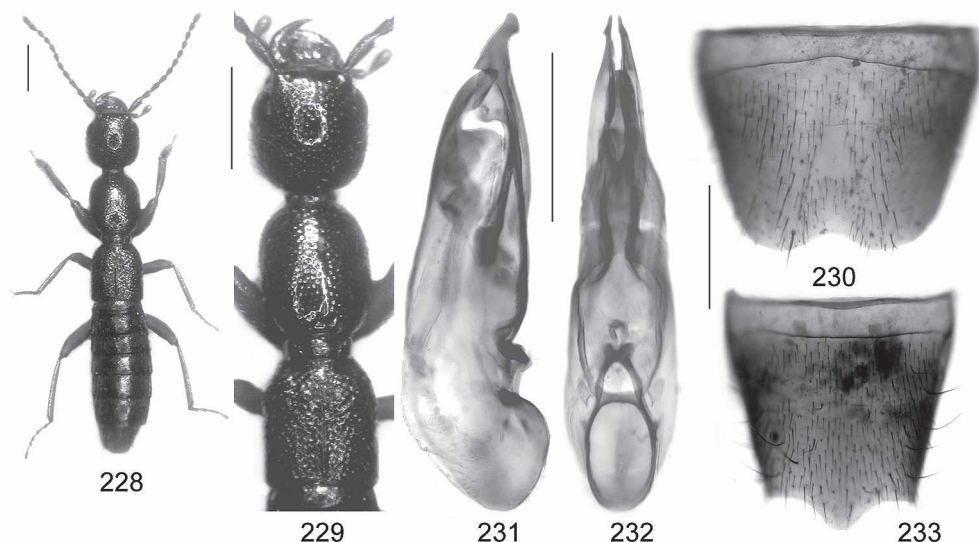
Lobrathium kuanicum sp. n. (Figs 228-234)

Type material:

Holotype ♂: "Taiwan, Kaohsiung Hsien, Kuanshan trail above Kaunshanchi Riv., 2650 m, 21.IV.92, A. Smetana [T95] / Holotypus ♂ *Lobrathium kuanicum* sp. n., det. V. Assing 2010" (cAss). Paratype: 1 ♀: same data as holotype (cSme).

Description:

Body length: 7.5-8.5 mm. Habitus as in Fig. 228. External characters as in *L. spoliatum*, except



Figs 228-233: *Lobrathium kuanicum* sp. n.: habitus (228); forebody (229); male sternite VIII (230); aedeagus in lateral and in ventral view (231-232); female tergite VIII (233). Scale bars: 228-229: 1.0 mm; 230-233: 0.5 mm.

for the somewhat larger eyes, their length approximately half the distance from posterior margin of eyes to posterior constriction in dorsal view (Fig. 229).

♂: posterior margin of tergite VIII weakly angled in the middle; sternite VII not depressed in the middle, posterior margin almost truncate; sternite VIII with impression of somewhat oblong triangular shape, this impression with very sparse setae, without clusters of peg-setae, posterior excision shallowly concave (Fig. 230); aedeagus of characteristic morphology, apical lobes slender and subapically hooked (Figs 231-232).

♀: posterior margin of tergite VIII strongly and convexly produced in the middle (Fig. 233); sternite VIII not oblong, posterior margin broadly convex, in the middle truncate; lateral sclerites of tergite IX very narrowly separated anteriorly; tergite X obtuse anteriorly, rather slender and acute apically (Fig. 234).

Comparative notes:

From other representatives of the *L. stimulans* group, *L. kuanicum* is readily separated by the morphology and chaetotaxy of the male sternite VIII, the conspicuous shape of the aedeagus, as well as by the shape of the female tergite VIII.

Etymology:

The specific epithet (adjective) is derived from the name of the mountain range where the species is probably endemic.

Distribution and natural history:

The type locality is situated in the Kuanshan, Kaohsiung Hsien, southern Taiwan, at an altitude of 2650 m. The specimens were sifted from moss on large rocks and fallen trees in a primary coniferous forest (mostly fir) with bamboo undergrowth.

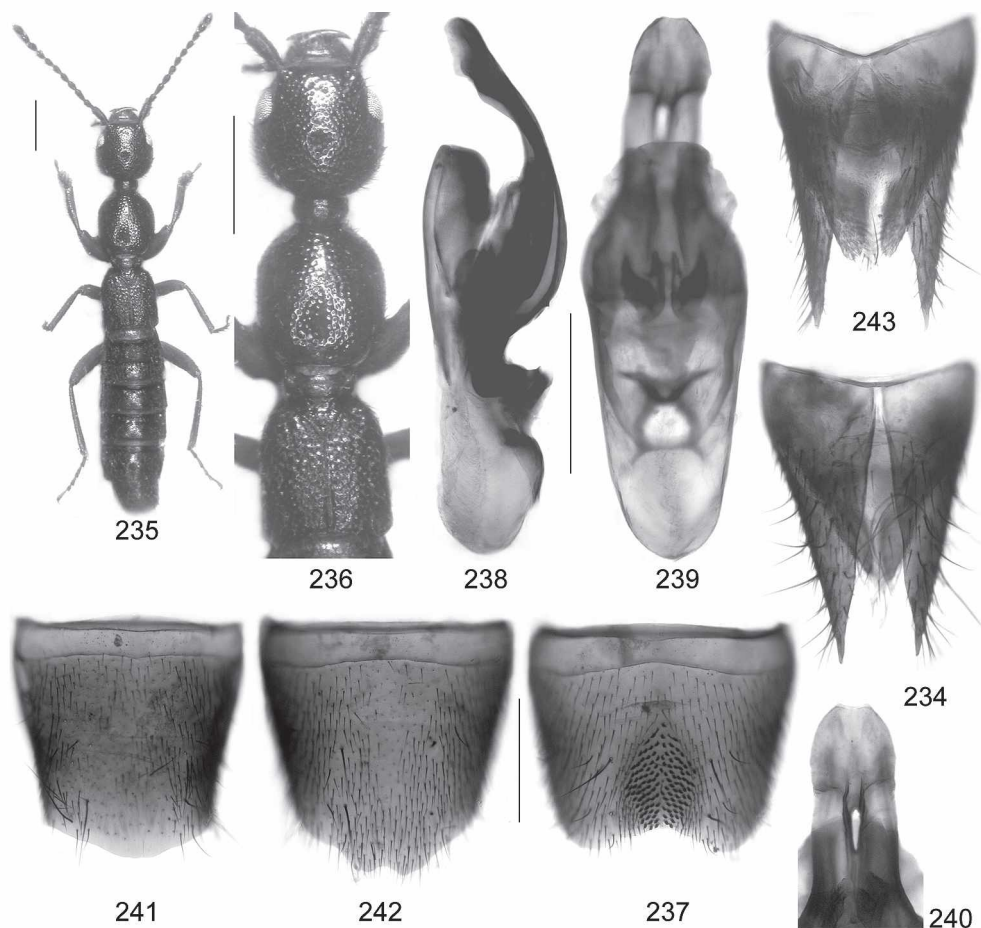
***Lobrathium coalitum* sp. n.** (Figs 235-243)**Type material:**

Holotype ♂: "Taiwan, Nantou Hsien, Nenkaoshan, 2.5 km SW Tenchi Hut, 2720 m, 6.V.92, A. Smetana [T115] / Holotypus ♂ *Lobrathium coalitum* sp. n., det. V. Assing 2010" (cSme). Paratypes 3 ♂♂, 2 ♀♀: same data as holotype (cSme); 3 ♂♂: "Taiwan, Nantou Hsien, Nenkaoshan, Tenchi Hut, 2900 m, 5.V.92, A. Smetana [T114]" (cSme); 1 ♂: "Taiwan, Nantou Hsien, Nenkaoshan, 1.5 km SW Tenchi Hut, 2830 m, 6.V.92, A. Smetana [T116]" (cSme).

Description:

Habitus and forebody as in Figs 235-236. External characters as in *L. spoliatum*, distinguished only by the sexual characters:

♂: posterior margin of tergite VIII weakly convex, in the middle indistinctly concave; sternite VII very shallowly impressed in the middle, posterior margin weakly concave; sternite VIII posteriorly



Figs 234-243: *Lobrathium kuanicum* sp. n. (234) and *L. coalitum* sp. n. (235-243): female tergites IX-X (234, 243); habitus (235); forebody (236); male sternite VIII (237); aedeagus in lateral and in ventral view (238-239); apex of aedeagus in ventral view (240); female tergite VIII (241); female sternite VIII (242). Scale bars: 235-236: 1.0 mm; 234, 237-243: 0.5 mm.

broadly impressed, this impression with subcircular to hexagonal cluster of peg-setae, posterior excision broadly concave (Fig. 237); aedeagus of characteristic morphology, apical lobes fused apically (Fig. 238-240).

♀: posterior margin of tergite VIII moderately convexly produced (Fig. 241); sternite VIII not oblong, posterior margin moderately produced and in the middle briefly concave (Fig. 242); lateral sclerites of tergite IX narrowly separated anteriorly; tergite X obtuse anteriorly, reaching anterior margin of tergite IX, very slender and acute apically (Fig. 243).

Comparative notes:

From other representatives of the *L. stimulans* group, *L. coalitum* is readily separated by the morphology and chaetotaxy of the male sternite VIII, the conspicuous shape of the aedeagus, as well as by the shape of the female tergite and sternite VIII.

Etymology:

The specific epithet (Latin, adjective: fused) alludes to the apically fused apical lobes of the aedeagus.

Distribution and natural history:

The species is known only from the Nenkaoshan, Nantou Hsien, central Taiwan, where the type specimens were sifted from leaf litter, moss, bamboo, and other debris in primary fir forests at altitudes of 2720-2900 m.

Lobrathium taiwanense (WATANABE, 1998), comb. n.

Lathrobium taiwanense WATANABE, 1998: 304 ff.

Comment:

The original description of *L. taiwanense* is based on a single male holotype from "Mt. Hsiao-hsüeh Shan, Ta-hsüeh Shan Mts., Taichung Hsien, Taiwan" (WATANABE 1998). The type was not examined, but based on the details and the illustrations (habitus, male abdominal apex, aedeagus) provided by WATANABE (1998), there is little doubt that *L. taiwanense* is closely allied to the following species and that it refers in fact to the genus *Lobrathium*, not *Lathrobium*.

Lobrathium (subgenus?) spp.

Comment:

The following brachypterous females probably refer to undescribed species of the *L. stimulans* group, but are not described.

sp. 1 [elytra with submarginal line]: 2 exs.: "Taiwan, Pingtung Hsien, Pietawushan [sic], Kuai-Ku Hut, 2325 m, 22.V.1991, A. Smetana [T90]" (cSme); 2 exs.: "Taiwan, Pingtung Hsien, Peitawushan, above Kuai-Ku Hut, 2750 m, 29.IV.1992, A. Smetana [T107]" (cSme).

sp. 2 [elytra with submarginal line]: 1 ex.: "Taiwan, Pingtung Hsien, Peittawushan trail at 1500 m, 1.V.1992, A. Smetana [T110]" (cSme).

sp. 3 [elytra with short rudiment of submarginal line]: 1 ex.: "Taiwan, Hualien Hsien, Taroko N.P., Duodyatunshan, 2650, 8.V.1990, A. Smetana [T46]" (cSme).

sp. 4 [elytra without submarginal line]: 1 ex.: "Taiwan, Hualien Hsien, Taroko N.P., Ridge SE Nanhushi Hut, 2700, 11.V.90, A. Smetana [T52]" (cSme); 1 ex.: "Taiwan, Hualien Hsien, Taroko N.P., Duodyatunshan, 2650, 13.V.1990, A. Smetana [T56]" (cSme).

sp. 5 [elytra without submarginal line]: 1 ex.: "Taiwan, Nantou Hsien, Nenkaoshan, 2.5 km SW Tenchi Hut, 2720 m, 6.V.92, A. Smetana [T115]" (cSme).

sp. 6 [elytra without submarginal line]: 1 ex.: "Taiwan, Nantou Hsien, Shanlinchi, 1650 m, 16.V.90, A. Smetana [T60]" (cSme).

sp. 7 [elytra without submarginal line]: 2 exs.: "Taiwan, Nantou Hsien, Houhuanshan, 3100 m, 20.IV.1990, A. Smetana [T12]" (cSme).

***Tetartopeus bimaculatus* (LI, TANG & ZHU, 2007), comb. n.**

Lobrathium bimaculatum LI, TANG & ZHU, 2007: 261 f.

Comment:

Based on the illustrations of the habitus, as well as of the male primary and secondary sexual characters provided with the original description, this species undoubtedly refers to the genus *Tetartopeus* CZWALINA, 1888.

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