Five new species of *Lathrobium* from Nepal and China (Coleoptera: Staphylinidae: Paederinae)

With 37 figures

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Abstract

Five species of the Holarctic genus *Lathrobium* Gravenhorst, 1802 are described and illustrated: *L. adsurgens* spec. nov. (Northwest Nepal: Gurans Himal) of the *L. deuvei* group, *L. guransicum* spec. nov. (Northwest Nepal: Gurans Himal) of the *L. emodense* group, *L. latius* spec. nov. (Northwest Nepal: Karnali) of the *L. jumlense* group, *L. egens* spec. nov. (China: Sichuan), a close relative of *L. diffissum* Assing, 2013, and *L. bitaleatum* spec. nov. (China: Sichuan) of the *L. bibaculatum* group. *Lathrobium* is currently represented in the Palearctic region by as many as 612 described species, 222 of which have been recorded from China and 79 from the Himalaya.

Taxonomic acts

*Lathrobium adsurgens* spec. nov. – urn:lsid:zoobank.org:act:D2C2B679-2B67-4F0B-8730-F05E508F22CD
*Lathrobium guransicum* spec. nov. – urn:lsid:zoobank.org:act:B1554BAD-7DAF-4C64-938B-2CB07BC00902
*Lathrobium latius* spec. nov. – urn:lsid:zoobank.org:act:5F4EB33C-87CB-4BCD-A529-7DBD1904E33A
*Lathrobium egens* spec. nov. – urn:lsid:zoobank.org:act:B8C92E76-A107-443F-8E85-06ED222098A5
*Lathrobium bitaleatum* spec. nov. – urn:lsid:zoobank.org:act:89FDDE54-09AA-476F-BF70-36ADA0183713

Key words

Coleoptera, Staphylinidae, Paederinae, *Lathrobium*, Palearctic region, Himalaya, Nepal, China, taxonomy, new species

Zusammenfassung

Introduction

The Holarctic genus *Lathrobium* Gravenhorst, 1802 is one of the most speciose genera of Paederinae worldwide and by far the most speciose paederine genus in the Palaearctic region. According to Assing (2017), the genus was represented in the Palaearctic region by 595 species and nine subspecies. In the meantime, twelve additional species have been described from Italy (two species), Russia (one), and Japan (nine) (Bordoni 2018, Bordoni & Magrini 2018, Watanabe 2016, 2017a, b, 2018). Diversity hotspots are China (220 described species), the Himalaya (76 species), and Japan (125 species). All the species from the Himalaya and the vast majority of the species recorded from China and Japan are micropterous and locally endemic. Recently collected material examined since the latest contribution (Assing 2017) included yet another five undescribed species, three from Nepal and two from China, raising the number of described species known from the Palaearctic region to 612, and that of species recorded from the Himalaya and China to 79 and 222, respectively.

Material and methods

The material treated in this study is deposited in the following public and private collections:

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<td>MMB</td>
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The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss), a Discovery V12 microscope (Zeiss), and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using a digital camera (Nikon Coolpix 995), Axiocam ERC 5s, and Picolay software.

Body length was measured from the anterior margin of the mandibles (in resting position) to the abdominal apex, the length of the forebody from the anterior margin of the mandibles to the posterior margin of the elytra, head length from the anterior margin of the frons to the posterior constriction of the head, elytral length at the suture, width at the suture; internal sac with a pair of very long and nearly obsolete microreticulation, in median dorsal obliquity. Eyes (Fig. 3) reduced to minute narrowly oblong rudiments without pigmentation and with approximately five weakly defined ommatidia. Antenna long and slender, 2.3–2.4 mm long. Pronotum (Fig. 2) weakly convex in cross-section and conspicuously slender, approximately 1.4 times as long as broad and 0.85 times as broad as head, widest anteriorly; lateral margins very weakly converging posteriorly and weakly convex in dorsal view; punctuation on average slightly finer than that of head; midline moderately broadly impunctate; interstices without microsculpture. Elytra (Fig. 2) slender, 0.62–0.66 times as long as pronotum, combined width only approximately 1.3 times the length of suture; punctuation shallow and rather ill-defined; interstices without distinct microsculpture. Hind wings completely reduced. Protarsomerites I–IV with moderate sexual dimorphism. Abdomen 1.15–1.20 times as broad as elytra; punctuation fine and dense; interstices with shallow microsculpture; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII truncate to weakly convex.

♂: protarsomerites I–IV strongly dilated; sternite VII (Fig. 4) strongly transverse and with unmodified pubescence, posterior margin broadly concave, in the middle obtusely pointed; sternite VIII (Fig. 5) transverse, posterior excision 0.22 times as deep as length of sternite; aedeagus (Figs 6–7) 1.2 mm long; ventral process laterally compressed apically, dorsal plate with very long, distinctly sclerotized, strongly sinuate, and apically hooked apical portion, and with short membranous basal portion; internal sac with a pair of very long and nearly straight sclerotized structures.

### Descriptions

*Lathrobium adsurgens* spec. nov.


(Figs 1–10)

**Type material:** Holotype ♀: “NEP: Mahakali/Darchula, vic. Rapla, Shipu Lekh, 4320 m, N29°54'17", E80°47'57", 24.VI.2017, leg. A. Weigel, rocky slopes/snow fields, #17-11a / Holotypus ♀ *Lathrobium adsurgens* sp. n., det. V. Assing 2018” (NME). 1 ♀: same data as holotype (cAss).

**Etymology:** The specific epithet is the present participle of the Latin verb adsurgere (to climb) and alludes to the high elevation of the type locality.

**Description:** Body length 6.7–6.8 mm; length of forebody 3.6–3.8 mm. Body slender and somewhat flattened; habitus as in Fig. 1. Coloration: body reddish-brown with the abdominal apex slightly paler; legs pale-brown; antennae reddish-brown with the basal antennomeres reddish. Head (Fig. 2) approximately as long as broad, weakly convex in cross section; punctuation rather dense and moderately coarse; interstices with extremely shallow, nearly obsolete microreticulation, in median dorsal portion without microsculpture. Eyes (Fig. 3) reduced to minute narrowly oblong rudiments without pigmentation and with approximately five weakly defined ommatidia. Antenna long and slender, 2.3–2.4 mm long. Pronotum (Fig. 2) weakly convex in cross-section and conspicuously slender, approximately 1.4 times as long as broad and 0.85 times as broad as head, widest anteriorly; lateral margins very weakly converging posteriorly and weakly convex in dorsal view; punctuation on average slightly finer than that of head; midline moderately broadly impunctate; interstices without microsculpture. Elytra (Fig. 2) slender, 0.62–0.66 times as long as pronotum, combined width only approximately 1.3 times the length of suture; punctuation shallow and rather ill-defined; interstices without distinct microsculpture. Hind wings completely reduced. Protarsomerites I–IV with moderate sexual dimorphism. Abdomen 1.15–1.20 times as broad as elytra; punctuation fine and dense; interstices with shallow microsculpture; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII truncate to weakly convex.

♂: protarsomerites I–IV strongly dilated; sternite VII (Fig. 4) strongly transverse and with unmodified pubescence, posterior margin broadly concave, in the middle obtusely pointed; sternite VIII (Fig. 5) transverse, posterior excision 0.22 times as deep as length of sternite; aedeagus (Figs 6–7) 1.2 mm long; ventral process laterally compressed apically, dorsal plate with very long, distinctly sclerotized, strongly sinuate, and apically hooked apical portion, and with short membranous basal portion; internal sac with a pair of very long and nearly straight sclerotized structures.
Figs 1–14: Lathrobium adsurgens (1–10) and L. guransicum (11–14): habitus (1, 11); forebody (2, 12); head in lateral view (3, 13); male sternite VII (4); male sternite VIII (5); aedeagus in lateral and in ventral view (6–7, 14); female sternite VIII (8); posteromedian portion of female sternite VIII (9); female tergites IX–X (10). Scale bars: 1, 11: 2.0 mm; 2, 12: 1.0 mm; 3–8, 10, 13–14: 0.5 mm; 9: 0.2 mm.
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♀: protarsomeres I–IV dilated, but less so than in male; sternite VIII (Fig. 8) approximately as long as broad, without micropubescence in posterior portion, posterior margin (Fig. 9) convex, in the middle with small concavity (artefact?); tergite IX (Fig. 10) undivided in the middle, postero-lateral processes apically acute and rather short, but distinctly extending beyond apex of tergite X; tergite X (Fig. 10) weakly convex in cross-section, of oval shape, and distinctly shorter than antero-median portion of tergite IX.

Comparative notes: Based on the external (slender habitus with long legs and antennae; flattened body; eyes reduced to minute rudiments; relatively long and slender elytra) and the male sexual characters (strongly transverse male sternite VII; aedeagus slender; dorsal plate with long, distinctly sclerotized, and apically hooked apical portion; presence of a pair of internal structures), L. adsurgens undoubtedly belongs to the L. deuevi group, which is distributed in West and Central Nepal (Assing 2012). Among the species of this group, the new species is most similar to the geographically close L. descendens Assing, 2014 and L. ascendens Assing, 2014 from Jumla and Humla districts, respectively. It is distinguished from both by the shapes of the ventral process and the internal structures of the aedeagus, larger body size, and by the shape of the posterior margin of the male tergite VII. For illustrations of L. descendens and L. ascendens see Assing (2014), for illustrations of other previously described representatives of the L. deuevi group see Assing (2012).

Distribution: The type locality is situated in Gurans Himal in the extreme northwest of Nepal. The specimens were collected near snow fields at an altitude of 4320 m, together with the type specimens of L. guransicum (see below).

Lathrobium guransicum spec. nov.
urn:lsid:zoobank.org:act:B1554BAD-7DAF-4C64-938B-2CB07BC09902 (Figs 11–16)


Etymology: The specific epithet is an adjective derived from the name of the mountain range (Gurans Himal) where the type locality is situated.

Description: Body length 7.0–7.5 mm; length of forebody 3.2–3.4 mm; habitus as in Fig. 11. Coloration: body reddish; legs yellowish-red; antennae reddish. Head (Fig. 12) approximately as broad as long; punctuation moderately fine and rather dense; interstices with very shallow microreticulation. Eyes (Fig. 13) not projecting from lateral contours of head, very small, and composed of approximately 10 ommatidia. Pronotum (Fig. 12) approximately 1.25 times as long as broad and approximately 0.95 times as broad as head; punctuation slightly finer and denser than that of head; interstices without microsculpture. Elytra (Fig. 12) short, approximately 0.6 times as long as pronotum; humeral angles weakly marked; punctuation shallow and ill-defined; interstices without microsculpture. Hind wings completely reduced. Metatibia somewhat compressed. Abdomen broader than elytra; punctuation moderately fine and dense; interstices with fine, shallow, and transverse microsculpture; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII convex.

♂: protarsomeres I–IV strongly dilated; sternite VII (Fig. 15) very strongly transverse, with dense and strongly modified setae in postero-median portion and with moderately dense and weakly modified setae along middle, posterior margin broadly and distinctly concave; sternite VIII (Fig. 16) transverse, with extensive impression in postero-median portion, this impression with numerous dense and strongly modified setae, posterior excision very broad, shallow, and slightly asymmetric; aedeagus (Fig. 14) 1.6 mm long; ventral process straight and apically hooked in lateral view, and symmetric in ventral view; dorsal plate with long, strongly sclerotized, and apically acute apical portion, basal portion completely reduced; internal sac with a massive and strongly sclerotized apical spine and with a weakly sclerotized subapical spine.

♀: unknown.

Comparative notes: Primarily based on the morphology of the aedeagus (dorsal plate with strongly sclerotized apical portion and reduced basal portion; internal sac with heavily sclerotized apical spine), L. guransicum is tentatively attributed to the L. emodense group (see Assing 2012), which previously included seven species from Central Nepal: L. emodense Coiffait, 1975 (SW-Annapurna), L. curvum Assing, 2012 (Dhaulagiri), L. spinosissimum Assing, 2012 (Annapurna: Lamjung Himal), L. annapurnense Assing, 2012 (Annapurna: Lamjung Himal), L. rude Assing, 2014 (SE-Annapurna), L. kiriense Assing, 2015 (SE-Annapurna), and L. ungulerum Assing, 2016 (S-Dhaulagiri). The new species is distinguished from all of them by smaller eyes (other species: eyes composed of at least approximately 20 ommatidia), by completely different shapes and chaetotaxy of the male sternites VII and VIII, as well as by the morphology of the aedeagus. For illustrations of other species of the L. emodense group see Assing (2012, 2014, 2015, 2016).

Distribution: The type locality and the circumstances of collection are identical to those of L. adsurgens.
Lathrobium latius spec. nov.
urn:lsid:zoobank.org:act:5F4EB33C-87CB-4BCD-A529-7DBD1904E33A
(Figs 17–20)

Type material: Holotype : “NEPAL, Karnali Zone, Jaljala Chaur to Bhadali, 29°21’N 82°06’E – 29°20’N 82°09’E, alt. 3050–3350 m, lgt. Fouqué René, 3.X.2015 / Holotypus  Lathrobium latius sp. n., det. V. Assing 2018” (cAss).

Etymology: The specific epithet is the comparative of the Latin adjective latum (broad). It alludes to characters distinguishing this species from the similar L. planissimum Assing, 2012: the broader male sternite VIII and the broader aedeagus (ventral view).

Description: Small species, body length 4.0 mm; length of forebody 1.8 mm. Coloration: body uniformly yellowish-red.

Head approximately as broad as long; punctuation rather coarse and sparse; interstices broader than diameter of punctures and with shallow microreticulation. Eyes not projecting from lateral contours of head, very small, composed of approximately five ommatidia.

Pronotum rather broad, 1.2 times as long as broad and 0.97 times as broad as head; posterior margin truncate; punctuation fine and sparse; midline broadly impunctate; interstices without microsculpture.

Elytra short, 0.55 times as long as pronotum; humeral angles weakly marked; punctuation shallow, fine, and sparse; interstices without microsculpture. Hind wings completely reduced. Metatibia slightly compressed.

Abdomen slightly broader than elytra; punctuation fine and dense; interstices with transverse microsculpture; posterior margin of tergite VII without palisade fringe; posterior margin of tergite VIII weakly convex.

♂: protarsomeres I–IV strongly dilated; sternite VII (Fig. 17) strongly transverse, with broadly concave posterior margin and with sparse, unmodified pubescence; sternite VIII (Fig. 18) approximately as long as broad, with moderately deep posterior excision and with unmodified pubescence; aedeagus (Figs 19–20) 0.53 mm long, with conspicuously broad, short (ventral view), flat and curved (lateral view) ventral process; apex of ventral process with small tooth-shaped process in ventral view; internal sac with a pair of weakly sclerotized membranous structures, without sclerotized spines.

♀: unknown.

Figs 15–20: Lathrobium guransicum (15–16) and L. latius (17–20): male sternite VII (15, 17); male sternite VIII (16, 18); aedeagus in lateral and in ventral view (19–20). Scale bars: 15–16: 0.5 mm; 17–20: 0.2 mm.
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Figs 21–34: *Lathrobium egens* (21–27) and *L. bitaleatum* (28–34): forebody (21, 29); male sternite VII (22); male sternite VIII (23); aedeagus in lateral (24, 30, 33), ventral (25, 31), and dorsal view (32, 34); female sternite VIII (26); female tergites IX–X (27); habitus (28). Scale bars: 28: 5.0 mm; 21, 29: 1.0 mm; 22–27, 30–34: 0.5 mm.
Assing, V.: Five new species of *Lathrobium* from Nepal and China (Coleoptera: Staphylinidae: Paederinae)

Figs 35–37: *Lathrobium bitaleatum*: head in lateral view (35); male sternite VII (36); male sternite VIII (37). Scale bars: 0.5 mm.

Anterior and median portions; interstices with distinct microreticulation. Eyes (Fig. 35) small, composed of > 50 ommatidia, approximately one fourth as long as postocular region in dorsal view. Antenna approximately 2.7 mm long.

Pronotum (Fig. 29) approximately 1.3 times as long as broad and 1.02 times as broad as head; punctation similar to that of head; midline broadly impunctate; interstices without microsculpture.

Elytra (Fig. 29) 0.54 times as long as pronotum; punctation similar to that of pronotum; interstices without microsculpture. Hind wings completely reduced.

Abdomen slightly broader than elytra; punctation dense and rather fine, slightly less dense on posterior than on anterior tergites; interstices with fine transverse microsculpture visible only at high magnification; posterior margin of tergite VII without palisade fringe.

♀: protarsomeres I–IV strongly dilated; sternite VII (Fig. 36) moderately transverse, shallowly impressed along middle and in postero-median portion with more distinct impression of semicircular shape, these impressions with rather sparse and weakly modified black setae, posterior margin concave in the middle; sternite VIII (Fig. 37) moderately transverse, with two clusters of dense and weakly modified black setae, posterior margin somewhat asymmetric and with very small concavity in the middle; aedeagus (Figs 30–34) 2.0 mm long, practically symmetric in ventral view; aedeagus smoothly curved and slender in lateral view, basally broad and apically abruptly narrowed in ventral view; dorsal plate dark, but thin, with broad, long, and apically acute apical portion and with short and weakly sclerotized basal portion; internal sac with two very long, slender, basally dilated, and distinctly sclerotized spines.

♂: unknown.

**Comparative notes:** As can be inferred from the morphology of the aedeagus (symmetric, ventral process slender, dorsal plate lamellate, internal sac with two long sclerotized structures) and from the modifications of the male sternite VII and VIII, *L. bitaleatum* belongs to the *L. bibaculatum* group, which was previously represented in Sichuan by nine species (Assing 2013a, c, 2016). The new species is distinguished from other species of this group particularly by the distinctive shapes of the ventral process and of the internal structures of the aedeagus. In addition, it is characterized by rather large size and by the shapes and chaetotaxy of the male sternites VII and VIII.

**Distribution:** The type locality and other data are identical to that of *L. egens*.

**Acknowledgements**

I am indebted to the colleagues indicated in the material section for making their material available for study. Benedikt Feldmann (Münster) and Jan Matějíček (Hradec Králové) generously granted permission to retain the holotypes of *Lathrobium egens* and *L. latius*, respectively. Benedikt Feldmann also proof-read the manuscript.

**References**


