A revision of Palaearctic Lobrathium. V. Three new species from the Himalaya and China, a new synonymy, and additional records (Coleoptera: Staphylinidae: Paederinae)

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A b s t r a c t: Four new species of Lobrathium Mulsant & Rey 1878 are described and illustrated: L. subcaeruleum nov.sp. (North India, Nepal), L. wutaium nov.sp. (China: Shanxi: Wutai Shan), L. flexum nov.sp. (China: Jiangxi: Jinggang Shan), and L. circumclusum nov.sp. (Myanmar). Lobrathium zonale Li, Solodovnikov & Zhou 2013, nov.syn. is placed in synonymy with L. configens Assing 2012. Additional records of thirteen species are presented, among them the first record of the genus from Thailand. Lobrathium is now represented in the Palaearctic region by 135 species and one subspecies, with 21 species recorded from the Himalaya and 40 from mainland China.

K e y w o r d s: Coleoptera, Staphylinidae, Paederinae, Lobrathium, Palaearctic region, Himalaya, China, Myanmar, new species, new synonymy, new records.

Introduction

According to a recent revision and a supplement to this revision, 123 species and one subspecies of Lobrathium Mulsant & Rey 1878 were known from the Palaearctic region (including Myanmar and North Vietnam). In the meantime, nine additional species have been described from China, one species was moved from Lathrobium Gravenhorst 1802 to Lobrathium, and one new synonymy was proposed (Assing 2013a, b; Li & Li 2013; W.-R. Li et al. 2013a, b). Thus, the genus was previously represented in the Palaearctic region by 132 species and one subspecies, with a total of 21 species recorded from the Himalaya and 39 from mainland China.

The present paper is based on previously unrevised material from the private collection of Guillaume de Rougemont (Oxford) and from other sources. A study of this material yielded three new species from the Himalaya and China, a new synonymy, and additional records of thirteen species, among them the first record of the genus from Thailand.

Material and methods

The material treated in this paper is deposited in the following public and private collections:
The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). A digital camera (Nikon Coolpix 995) was used for the photographs.

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 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 aedeagal capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

Species descriptions and additional records

**Lobrathium reitteri** (CZWALINA 1889)

Material examined: **Russia**: 3 exs., West Caucasus, Krasnodar region, Temnolesskaia near Mezmai, 850 m, 8.VI.1999, leg. Smetana [R4] (cSme); 1 ex., same data, but 19.VI.1999 [R4] (cSme); 1 ex., same data, but 800 m, 8.VI.1999 [R3] (cAss); 1 ex., Krasnodar region, Guama near Mezmai, 950-1000 m, 11.VI.1999, leg. Smetana [R8] (cAss).

Comment: The distribution of the micropterous *L. reitteri* is confined to the Northwest Caucasus. For a detailed redescription, illustrations, a distribution map, and additional details see SOLODOVNIKOV (2001).

**Lobrathium lederi** (EPPELSHEIM 1884)

Material examined: **Iran**: 1♂, Mazandaran, Chorteh, 1700 m, above forest line, 12.VI.1998, leg. Heinz (cAss).

Comment: *Lobrathium lederi* is distributed in the eastern Caucasus region eastwards to North Iran (ASSING 2011, 2012, 2013a).

**Lobrathium candicum** BORDONI 2009


Comment: *Lobrathium candicum* is endemic to Crete, where it is apparently rather rare (ASSING 2012).

**Lobrathium badium** (CAMERON 1924)

Material examined: **India**: 1♂, Uttarakhand, 15 km SW New Tehri, 30°16'N, 78°22'E, 870 m, 18.-20.IV.2012, leg. Anichtchenko (cSha).
Comment: The distribution of *L. badium* is confined to Himachal Pradesh and Uttarakhand in northern India; it is mapped in ASSING (2012).

*Lobrathium wittmeri* COIFFAIT 1982

Material examined: Nepal: 3♀ (1 macropterous), Dhaulagiri, SE-slope, upper Ruhanag Khola, between Chima Khola and Dwari, 1750 m, 10.V.2002, leg. Schmidt (NME, cAss); 1♀ (macropterous), Mechi province, between Mitling and Chiruwa, 900-1200 m, 1.IV.2003, leg. Weipert (NME); 1♀, Kali Gandaki valley, upper Lete, 2600-2700 m, 28.V.2002, leg. Schmidt (NME).

Comment: This species was previously known only from Central Nepal (ASSING 2012). The above female from Mechi would represent the first record from East Nepal, but males are required to confirm the presence of *L. wittmeri* in this region.

*Lobrathium bicarinatum* ASSING 2012

Material examined: Nepal: 9♀♂, 1♂, Karnali province, Humla district, 20 km W Simikot, 2 km S Chala, Kairang Khola, 29°59'N, 81°38'E, 3200-3500 m, river valley, 26.VI.2001, leg. Kopetz (NME, cAss).

Comment: In Nepal, *L. bicarinatum* was previously known only from one female-based record in the Annapurna range (ASSING 2012).

*Lobrathium ochreonotatum* (CHAMPION 1922)

Material examined: Nepal: 1 ex., Dhaulagiri, Pakhapani to Ulleri and Dwari, 1700-2000 m, 18.VI.1998, leg. Schmidt (NME); 1 ex., Gandaki province, Sikles range, waterpower station, 1450 m, 10.V.1996, leg. Schmidt (cAss).

Comment: The distribution of *L. ochreonotatum* ranges from Uttarakhand to East Nepal (ASSING 2012).

*Lobrathium flavipenne* ASSING 2012

Material examined: Nepal: 1♀, Kalekanda, Karnali, 700 m, XI.1987, leg. Morvan (cRou).

Comment: Based on external characters, the above female belongs to *L. flavipenne*, a species previously known only from Himachal Pradesh (ASSING 2012). A male would be required to confirm the presence of *L. flavipenne* in Nepal.

*Lobrathium mordens* ASSING 2012

Material examined: India: 1♂, 1♀, Uttarakhand, 15 km SW New Tehri, 30°16'N, 78°22'E, 870 m, 18-20.IV.2012, leg. Anichtchenko (cSha, cAss).

Comment: The known distribution of this recently described species is confined to Uttarakhand and Himachal Pradesh in North India (ASSING 2012).

*Lobrathium integrum* ASSING 2012

Material examined: Nepal: 1♀, Mechi province, 27°12'N, 87°45'E, between Khesewa and Lali Kharka, 1700-2250 m, 20.IV.2003, leg. Weipert (NME).

Comment: This species has been recorded only from northeastern Nepal (ASSING
2012). Since the above specimen is a female, the identification should be considered tentative.

**Lobrathium subcaeruleum nov.sp.** (Figs 1-3, 8-9)


**Etymology:** The specific epithet (Latin, adjective: bluish) refers to the distinct bluish hue of the forebody.

**Description:** Relatively large species; body length 8.5-9.0 mm; length of forebody 4.5-4.6 mm. Habitus as in Fig. 1. Coloration: forebody black with dark-bluish hue; abdomen, legs, and antennae black.

Head (Fig. 2) 1.09-1.15 times as broad as long; posterior angles rounded, moderately marked; punctuation umbilicate, moderately coarse, and very dense, except for a sparsely punctate transverse spot on vertex; interstices in lateral and posterior portions reduced to narrow ridges. Eyes large, as long as, or longer than postocular region and distinctly more than half as long as distance from posterior margin of eye to neck in dorsal view. Antenna 2.5-2.7 mm long.

Pronotum (Fig. 2) rather short and broad, 1.17-1.19 times as long as broad and 0.90-0.95 times as broad as head; punctuation dense, as coarse as that of head; interstices distinctly narrower than diameter of punctures; impunctate midline narrow, but sharply defined.

Elytra (Fig. 2) long, 1.17-1.19 times as long as pronotum; humeral angles marked; punctuation not seriate, dense, and slightly coarser than that of pronotum; interstices without microsculpture. Hind wings present. Protarsomeres strongly dilated in both sexes, without sexual dimorphism.

Abdomen approximately 0.9 times as broad as elytra; punctuation fine and moderately dense, distinctly coarser in the distinct anterior impressions of tergites III-VII; interstices with fine and shallow microsculpture; posterior margin of tergite VII with palisade fringe; tergite VIII with weakly pronounced sexual dimorphism.

♂: tergite VIII with moderately convex posterior margin; sternite VII (Fig. 8) strongly transverse and with unmodified pubescence, posterior margin broadly and distinctly concave; sternite VIII (Fig. 9) nearly 1.2 times as broad as long and with oblong median impression, this impression with numerous distinctly modified short and stout black setae, posterior excision U-shaped and moderately deep, its depth less than one fifth of the length of sternite; aedeagus (Fig. 3) large, 2.3 mm long, and symmetric; ventral process conspicuously long, slender, and strongly curved in lateral view, apically with a lamellate projection of triangular shape on either side; dorsal plate with strongly sclerotized apical portion and without appreciable basal portion; internal sac with large, long, and distinctly sclerotized structure.

♀: tergite VIII with strongly convex posterior margin; sternite VIII with shallow, but distinct, broadly V-shaped posterior excision.
Figs 1-7: *Lobraithium subcaeruleum* nov.sp. (1-3) and *L. wutaium* nov.sp. (4-7): (1, 4) habitus; (2, 5) forebody; (3, 6-7) aedeagus in lateral and in ventral view. Scale bars: 1.0 mm.
Figs 8-11: Lobrathium subcaeruleum nov.sp. (8-9) and L. wutaium nov.sp. (10-11): (8, 10) male sternite VII; (9, 11) male sternite VIII. Scale bars: 0.5 mm.

Comparative notes: In the key to the Lobrathium species of the Himalaya in ASSING (2012), L. subcaeruleum would key out at couplet 20, together with L. mordens ASSING 2012, from which the new species differs by much greater size (L. mordens: length of forebody 3.0-3.8 mm), the transverse male sternite VIII (L. mordens: sternite VIII oblong) with a smaller posterior excision, and by the much larger and differently shaped aedeagus. For illustrations of L. mordens see ASSING (2012).

Distribution and natural history: Lobrathium subcaeruleum is currently known only from one locality in Himachal Pradesh and two in Nepal. The paratypes were collected at altitudes of 310 and 900 m.

Lobrathium hebeatum ZHENG 1988


Comment: Based on external characters, the above female belongs to L. hebeatum, which is widespread in China and has repeatedly been recorded from Sichuan (ASSING 2012, 2013a), but nevertheless the identification should be considered tentative.

Lobrathium configens ASSING 2012


Type material examined: Paratype ♂: "1900 m, 2003.VIII.18 [remaining data in
Chinese; according to original description: Baoxing, Guobayan, leg. Yejun Zhang] / Paratype / Lobrathium zonals Li et al., 2013, Det. XY LI 2013 / Lobrathium configens Assing, det. V. Assing 2013” (c-Ass).

Additional material examined: China: 1♀, Sichuan, Emei Shan, 7.X.1985, leg. Rougemont (cRou); 1♀, Zhejiang, Tianmu Shan, 29.IV.1993, leg. Rougemont (cRou).

Comment: The original description of L. zonale is based on ten type specimens from three localities in Sichuan (Li X.-Y. et al. 2013). An examination of the above paratype from the type locality revealed that L. zonale is conspecific with L. configens, in China a widespread and common species. Hence the synonymy proposed above.

Lobrathium wutaium nov.sp. (Figs 4-7, 10-11)

Type material: Holotype: "CHINA Shanxi, Wutaishan, 4-5.VI.1993, G. de Rougemont / Holotypus Lobrathium wutaium sp. n., det. V. Assing 2013” (cRou).

Etymology: The specific epithet is an adjective derived from the name of the mountain where the holotype was collected.

Description: Species of moderate size; body length 7.2 mm; length of forebody 3.8 mm. Habitus as in Fig. 4. Coloration: forebody reddish; abdomen brown; legs reddish-yellow; antennae reddish.

Head (Fig. 5) weakly oblong, 1.03 times as long as broad; posterior angles rounded, weakly marked; punctation moderately coarse and dense, somewhat sparser in median dorsal portion. Eyes small and weakly convex, slightly less than one third as long as distance from posterior margin of eye to neck in dorsal view. Antenna 2.4 mm long.

Pronotum (Fig. 5) slender, 1.35 times as long as broad and approximately 0.9 times as broad as head; punctation similar to that of head, but somewhat less dense; interstices slightly narrower than average diameter of punctures; impunctate midline moderately broad.

Elytra (Fig. 5) of moderate length, 0.93 times as long as pronotum; humeral angles marked; punctation irregularly diagonally seriate, dense, and approximately as coarse as, though somewhat less defined than, that of pronotum; interstices without microsculpture. Hind wings present, but possibly of reduced length.

Abdomen approximately as broad as elytra; punctation fine and very dense; anterior impressions of tergites III-VII very sparsely punctate, smooth, only with indistinct microsculpture; interstices of remainder of tergal surfaces with fine and distinct microsculpture; posterior margin of tergite VII with palisade fringe.

♂: protarsomeres I-IV strongly dilated; tergite VIII with moderately convex posterior margin; sternite VII (Fig. 10) distinctly transverse and with shallow, extensive postero-median impression, this impression with dark setae directed diagonally postero-mediad, posterior margin broadly concave; sternite VIII (Fig. 11) as long as broad and with oblong median impression, this impression with numerous distinctly modified short and stout black setae, posterior excision of moderate size, its depth approximately one fifth of the length of sternite; aedeagus (Figs 6-7) 1.45 mm long and symmetric; ventral process long and massive in relation to capsule, ventrally with transverse carinae, and apically acute in ventral view.

Comparative notes: This species is characterized particularly by the reddish coloration of the forebody, the moderately long elytra (distinctly shorter than the
pronotum), and the male sexual characters, particularly the distinctive shape of the ventral process of the aedeagus.

**Distribution and natural history:** The holotype was collected in the Wutai Shan in Shanxi province, China. Additional data are not available.

**Lobrathium flexum nov.sp.** (Figs 12-16)

**Type material:** Holotype ♀: "CHINA: Jiangxi prov. [MF13], Jinggangshan Mts., Pingshuishan, 26°30.4'N, 114°06.9'E, 1590 m 28.iv.2011, lgt. Fikáček, Hájek, Kubeček, Jia, Song, Zhao / sifting: moist leaf litter in a sparse forest with bamboo + of mosses (partly Sphagnum) in a dried up fen in a low Azalea forest / Holotypus ♀ Lobrathium flexum sp. n., det. V. Assing 2013" (NMNHP).

**Etymology:** The specific epithet is the past participle of the Latin verb flectere (to bend) and alludes to the shape of the ventral process of the aedeagus in lateral view.

**Description:** Body length 7.6 mm; length of forebody 4.0 mm. Habitus as in Fig. 12. Coloration: forebody black with weak bluish hue, elytra each with rather large yellowish spot posteriorly, this spot not reaching suture, lateral, and posterior margins; abdomen black; legs blackish with reddish-brown tarsi; antennae dark-brown with blackish antennomere I and somewhat paler apical antennomeres.

Head (Fig. 13) transverse, 1.08 times as broad as long; posterior angles rounded, weakly marked; punctuation rather coarse, umbilicae, and very dense, somewhat sparser in median dorsal portion. Eyes large, their length distinctly more than half the distance from posterior margin of eye to neck in dorsal view. Antenna 2.6 mm long.

Pronotum (Fig. 13) moderately slender, 1.23 times as long as broad and 0.96 times as broad as head; punctuation less dense and on average slightly coarser than that of head; interstices on average narrower than diameter of punctures; impunctate midline moderately broad.

Elytra (Fig. 13) 0.95 times as long as pronotum; humeral angles marked; punctuation distinctly coarser than that of pronotum, arranged in irregular series in anterior two thirds; interstices without microsculpture. Hind wings not examined.

Abdomen approximately as broad as elytra; punctuation fine and very dense; anterior impressions of tergites III-VII with coarse, but not very dense punctuation; interstices with fine and distinct microsculpture; posterior margin of tergite VII with palisade fringe. 

♂: protarsomeres I-IV strongly dilated; tergite VIII with posterior margin obtusely angled in the middle; sternite VII (Fig. 14) distinctly transverse and with long median impression, this impression without setae and semi-transparent posteriorly, on either side of this impression with rather long setae, posterior margin broadly and weakly concave; sternite VIII (Fig. 15) approximately as long as broad and with long median impression, this impression without setae posteriorly, with strongly modified short and stout black setae anteriorly and laterally, semi-transparent posteriorly, posterior excision U-shaped, on either side of this excision with dense dark pubescence; aedeagus (Fig. 16) 1.1 mm long; ventral process spine-shaped, stout, strongly sclerotized, strongly bent subapically in lateral view, and with acute apex; dorsal plate with large, distinctly sclerotized, lamellate apical portion and with small, weakly sclerotized basal portion.
Comparative notes: Based on the similar modifications of the male sternites VII and VIII, as well as on the similar morphology of the aedeagus, *L. flexum* is most closely related to *L. fuscoguttatum* W.-R. Li et al. 2013 from Guangxi, from which it differs by the shape and chaetotaxy of the male sternite VII (less transverse; posteriorly with longer setae; posterior margin not concave in the middle), by the slightly deeper and broader posterior excision of the male sternite VIII, and by the shorter, stouter, and more strongly bent ventral process of the aedeagus in lateral view. For illustrations of *L. fuscoguttatum* see W.-R. Li et al. (2013a).

Distribution and natural history: The type locality is situated in the Jinggang Shan in the west of Jiangxi province, close to the border with Hunan, in southeastern China. The holotype was sifted from moist leaf litter and moss in an *Azalea* forest at an altitude of 1590 m.
Lobrathium guttula (FAUVEL 1895)


Comment: Confirmed records of L. guttula were previously known only from Myanmar (ASSING 2012). The above specimen represents the first record of both the genus and the species from Thailand.

Lobrathium circumclusum nov.sp. (Figs 17-21)


Etymology: The specific epithet (Latin, adjective: enframed) alludes to the chaetotaxy of the male sternite VII, whose postero-median impression is enframed by modified setae.

Description: Body length 7.5-8.5 mm; length of forebody 4.3-4.5 mm. Coloration: forebody black; elytra with or without dark-bluish hue, with large circular yellowish spot posteriorly, this spot leaving the posterior, lateral, and sutural margins narrowly blackish; abdomen blackish; legs blackish-brown to black, with the middle of the meso- and metafemora more or less distinctly paler (dark-yellowish to yellowish-brown); antennae blackish-brown to blackish, with the basal and/or the apical antennomeres somewhat paler.

Head (Fig. 17) approximately as broad as long; lateral margins broadly rounded towards posterior constriction; punctuation moderately coarse, somewhat umbilicate, and very dense, except for a transverse impunctate or sparsely punctate glossy area in median dorsal portion and a longitudinal impunctate glossy area on frons. Eyes large, 0.6-0.7 times as long as distance from posterior margin of eye to neck. Antenna approximately 2.6 mm long.

Pronotum (Fig. 17) approximately 1.25 times as long as broad and 0.9 times as broad as head; punctuation as coarse as that of head, but less dense; interstices on average narrower than diameter of punctures; impunctate midline moderately broad.

Elytra (Fig. 17) approximately as long as pronotum; punctuation dense, irregular, and much coarser than that of head and pronotum. Hind wings present. Protarsomeres I-IV strongly dilated.

Abdomen approximately 0.9 times as broad as elytra; punctuation fine and moderately dense, distinctly coarser in the distinct anterior impressions of tergites III-V; interstices with fine and shallow transverse microsculpture; posterior margin of tergite VII with palisade fringe.

♂: tergite VIII with weakly convex posterior margin; sternite VII (Fig. 18) distinctly transverse and with pronounced postero-median impression of sub-circular shape, this impression without setae, but enframed by relatively few strongly modified short and stout black setae, posterior margin broadly concave; sternite VIII (Fig. 19) approximately as long as broad and with pronounced longitudinal median impression, this impression with numerous strongly modified short and stout black setae anteriorly and laterally, and without any setae in postero-median portion, posterior excision rather broad, deep, and of subtrapezoid shape, on either side of excision with dense modified short and stout black
setae; aedeagus approximately 1.25 mm long; ventral process blade-shaped, broadest approximately in the middle in ventral view, and with numerous ventral teeth; dorsal plate almost completely reduced; internal sac with pair of dark structures.

♀: unknown.

**Figures 17-21:** *Lobratium circumclusum* nov.sp.: (17) forebody; (18) male sternite VII; (19) male sternite VIII; (20-21) aedeagus in lateral and in ventral view. Scale bars: 17: 1.0 mm; 18-21: 0.5 mm.

**Comparative Notes:** As can be inferred from the similarly derived shapes and chaetotaxy of the male sternites VII and VIII, as well as from the similar morphology of the aedeagus, *L. circumclusum* is closely allied to the geographically
close L. guttula, to L. sinuatrum ASSING 2012 from China, and to L. kleebergi ASSING 2012 from Nepal. It is distinguished from them by the number and arrangement of the modified setae on the male sternites VIII, by the shape and chaetotaxy of the posterior excision of the male sternite VIII (deeper and less broad than in L. guttula; anterior margin not distinctly bisinuate and without modified setae), and by the shape of the ventral process of the aedeagus (in L. guttula widest near base in ventral view and apically less slender in lateral view). For illustrations of L. guttula, L. kleebergi, and L. sinuatrum see ASSING (2012).

Distribution and natural history: The type locality is situated in central Myanmar. Additional data are not available.

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Zusammenfassung


References


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