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**Six new species and additional records of *Leptusa* from northern Yunnan, China
(Coleoptera: Staphylinidae, Aleocharinae)**

V. ASSING

A b s t r a c t : Eight species of *Leptusa* KRAATZ from northern Yunnan, China, are (re-)described and illustrated: *L. (Aphaireleptusa) yunnanensis* PACE, *L. (A.) xuemontis* PACE, *L. (A.) turgida* nov.sp., *L. (A.) tenuicornis* nov.sp., *L. (Drepanoleptusa) emplenotoides* nov.sp., *L. (Heteroleptusa) discolor* nov.sp., *L. curvata* nov.sp., and *L. recta* nov.sp. *Leptusa chinensis* PACE is recorded from Yunnan for the first time.

Key words : Coleoptera, Staphylinidae, Aleocharinae, *Leptusa*, Palearctic region, China, Yunnan, taxonomy, new species, new records.

1. Introduction

From the vast territory of China (including Taiwan), 47 species and subspecies of *Leptusa* KRAATZ were previously known (ASSING 2002, 2004), all of them were described only during the past 15 years. They are currently attributed to 11 subgenera, the most diverse of them being *Aphaireleptusa* PACE, whose distribution is confined to the Eastern Palearctic region and which included 15 species from Chinese territory prior to the present paper. Owing to the mostly unclarified phylogenetic relationships within this huge genus and the partly doubtful subgeneric system, three species have not been assigned to any of the existing subgenera. For a recent catalogue of the species and subspecies recorded from China and their subgeneric affiliations see ASSING (2002).

In the present paper, material from the Chinese province Yunnan is treated. It was collected by M. Schülke, D. Wrase (both Berlin), and A. Smetana (Ottawa) during two joint field trips in August 2003 and June 2005 and yielded as many as 6 species new to science, plus several additional records of described species.

2. Material and measurements

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

OÖLL..... Oberösterreichisches Landesmuseum Linz (Biologiezentrum)

cAss..... author's private collection
cSch..... private collection M. Schülke, Berlin
cSme..... private collection A. Smetana, Ottawa

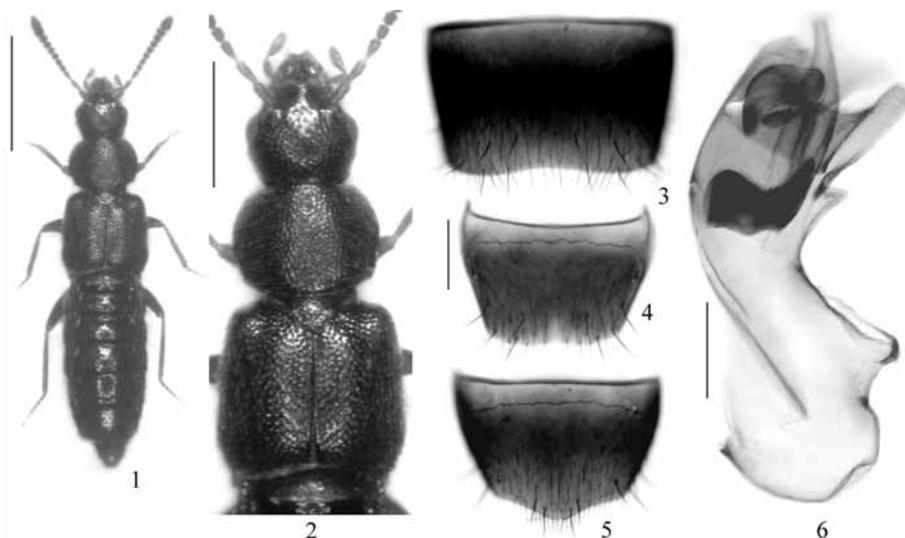
Head length was measured from the anterior margin of the clypeus to the posterior margin of the head, elytral length at suture from the apex of the scutellum to the posterior margin of the elytra.

3. New species and new records

Leptusa (Aphaireleptusa) yunnanensis PACE (Figs 1-6)

Material examined: 4 exs., N-Yunnan, Diqing Tibet Aut. Pref., Zhongdian Co., Xue Shan near lake 23 km S Zhongdian, 27°37'N, 99°39'E, 3895 m, 15.VI.2005, leg. Smetana (cSme, cAss); 1 ex., same locality, 5.VI.2005, leg. Schülke (cSch); 2 exs., N-Yunnan, Zhongdian Co., 55 km N Zhongdian, 28°20'N, 99°46'E, 3800 m, primary mixed forest, 18.VIII.2003, leg. Schülke (cSch, cAss).

Comments: Previously, only the three type specimens had become known. The two specimens from the second locality (see above) were erroneously recorded as *L. xuemontis* by ASSING (2004). The habitus, as well as the male primary and secondary sexual characters are illustrated in Figs 1-6.



Figs 1-6: *Leptusa yunnanensis*: (1) habitus; (2) forebody; (3) ♂ sternite VII; (4) ♂ tergite VIII; (5) ♂ sternite VIII; (6) median lobe of aedeagus in lateral view. Scale bars: 1: 1.0 mm; 2: 0.5 mm; 3-5: 0.2 mm; 6: 0.1 mm.

***Leptusa (Aphaireleptusa) chinensis* PACE**

Material examined: 1 ex., N-Yunnan, Diqing Tibet Aut. Pref., Zhongdian Co., Bitai Hai lake area, 29 km ESE Zhongdian, 27°44'N, 99°59'E, 3540 m, devastated mixed forest, 1.VI.2005, leg. Schülke & Smetana (cSch, cAss); 1 ex., N-Yunnan, Diqing Tibet Aut. Pref., Deqin Co., east side of Meili Xue Shan, 14 km W Deqin, 28°27'N, 98°46'E, 2580 m, 11.VI.2005, leg. Smetana (cSme); 1 ex., N-Yunnan, Diqing Tibet Aut. Pref., Zhongdian Co., Xue Shan near lake, 23 km S Zhongdian, 27°37'N, 99°39'E, 3895 m, 15.VI.2005, leg. Smetana (cSme).

Comments: This widespread species was previously known from several mountain ranges in Sichuan and Shaanxi (ASSING 2002). It is here recorded from Yunnan for the first time.

***Leptusa (Aphaireleptusa) xuemontis* PACE (Figs 7-20, 31, 89)**

Type material examined: **Paratypes:** 2♂♂: China, N-Yunnan, Xue Shan nr. Zhongdian, 4050 m, 24.VI.1996, 27°49'N, 99°34'E, C40 / collected by A. Smetana, J. Farkač, and P. Kabátek / Paratypus *Leptusa xuemontis* m., det. R. Pace 1999 (cSme, cAss).

Additional material examined: 189 exs., China: N-Yunnan, Diqing Tibet Aut. Pref., Zhongdian Co., Xue Shan near lake 23 km S Zhongdian, 27°37.1'N, 99°38.5'E, 3850-3895 m, degraded mixed forest, meadows, lake border, leaf litter, dead wood, sifted, 5.-15.VI.2005, leg. M. Schülke (OÖLL, cSch, cSme, cAss).

Description: 2.6-3.5 mm. Habitus as in Fig. 7. Coloration: body blackish brown, with the pronotum, the elytra, the anterior abdominal segments and the abdominal apex usually slightly paler, dark brown; legs reddish brown; antennae dark brown, with the basal 3-4 antennomeres reddish.

Head approximately as wide as long or weakly transverse; puncturation very dense, punctures large, but not very deep and often rather ill-defined; microsculpture present, but shallow; eyes moderately large, very weakly protruding from lateral outline of head, usually slightly shorter than postocular region in dorsal view (Fig. 8). Antenna with antennomere III slightly shorter than II, IV approximately as wide as long, V weakly transverse, VI-X of increasing width and increasingly transverse, X approximately 1.5 times as wide as long.

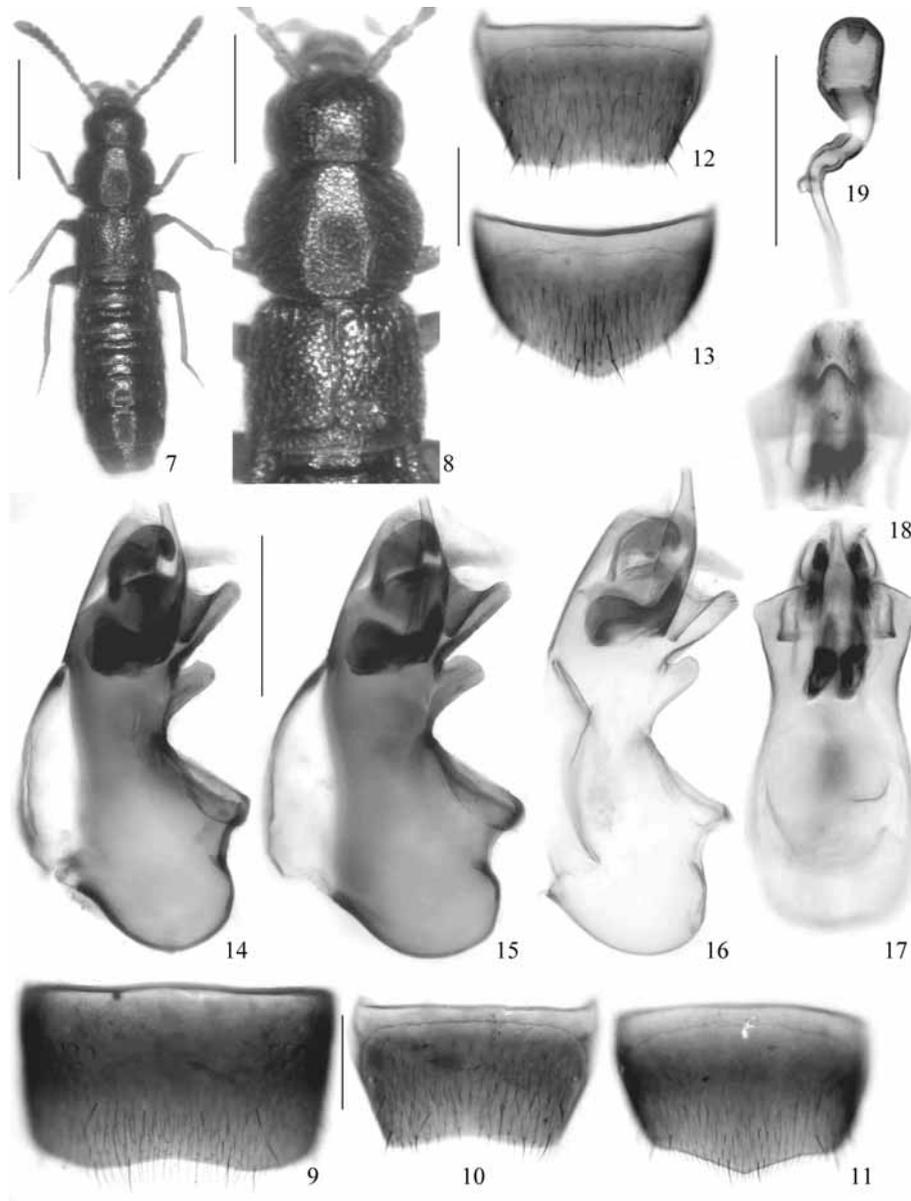
Pronotum moderately convex in cross-section, approximately 1.3 times as wide as head and 1.3 times as wide as long, maximal width in anterior half (Fig. 8); posterior angles obtuse; puncturation fine, shallow, and ill-defined; microsculpture distinct.

Elytra approximately as wide as pronotum and at suture about 0.60 times as long as pronotum; near posterior angles distinctly sinuate; puncturation very dense, coarse, but rather ill-defined; microsculpture indistinct (Fig. 8). Hind wings reduced. First metatarsomere longer than metatarsomere II, but shorter than the combined length of the two following tarsomeres.

Abdomen approximately 1.1 times as wide as elytra, widest at segments V/VI; puncturation fine and moderately dense, somewhat denser on anterior than on posterior tergites; tergite VII without sexual dimorphism, its posterior margin with narrow (i. e. somewhat reduced) palisade fringe.

♂: posterior margin of sternite VII broadly, but not very deeply concave, densely furnished with long thin setae (Fig. 9); tergite VIII with broadly concave posterior margin (Fig. 10); posterior margin of sternite VIII obtusely angled in the middle (Fig. 11); median lobe of aedeagus as in Figs 14-18, 89, ventral process with conspicuous process in lateral view; apical lobe of paramere as in Fig. 31.

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Figs 7-19: *Leptusa xuemontis*: (7) habitus; (8) forebody; (9) ♂ sternite VII; (10) ♂ tergite VIII; (11) ♂ sternite VIII; (12) ♀ tergite VIII; (13) ♀ sternite VIII; (14-17) median lobe of aedeagus in lateral and in ventral view; (18) apex of median lobe of aedeagus in ventral view; (19) spermatheca. Scale bars: 7: 1.0 mm; 8: 0.5 mm; 9-19: 0.2 mm.

♀: posterior margin of tergite VIII very weakly sinuate in the middle (Fig. 12); posterior margin of sternite VIII obtusely pointed (Fig. 13); spermatheca as in Fig. 19.

Comparative notes: From all its congeners, *L. xuemontis* is readily distinguished by the male sexual characters, especially the conspicuous process at the ventral process of the aedeagus. The geographically closest – and syntopic – dark-coloured, previously described representatives of the subgenus *Aphaireleptusa* are *L. chinensis* PACE and *L. yunnanensis* PACE. From both, the new species is additionally separated by the much finer puncturation of the pronotum, the finer puncturation of the abdomen, the less well-defined puncturation of the elytra, as well as by much shorter and narrower elytra.

Remarks: The illustrations of the habitus and the male genitalia in the original description are somewhat misleading; for comparison see Figs 7-8, 14-18, 89 (paratype) of the present paper and figures 1-3 in PACE (2001).

Distribution and bionomics: The species has become known only from the Xue Shan near Zhongdian in northern Yunnan. The record of *L. xuemontis* by ASSING (2004) refers to an undescribed species (see description of *L. tenuicornis* below). The above material was sifted from leaf litter and dead wood in degraded mixed forests at an altitude of 3850-3900 m (Fig. 20). Some of the specimens are slightly teneral.

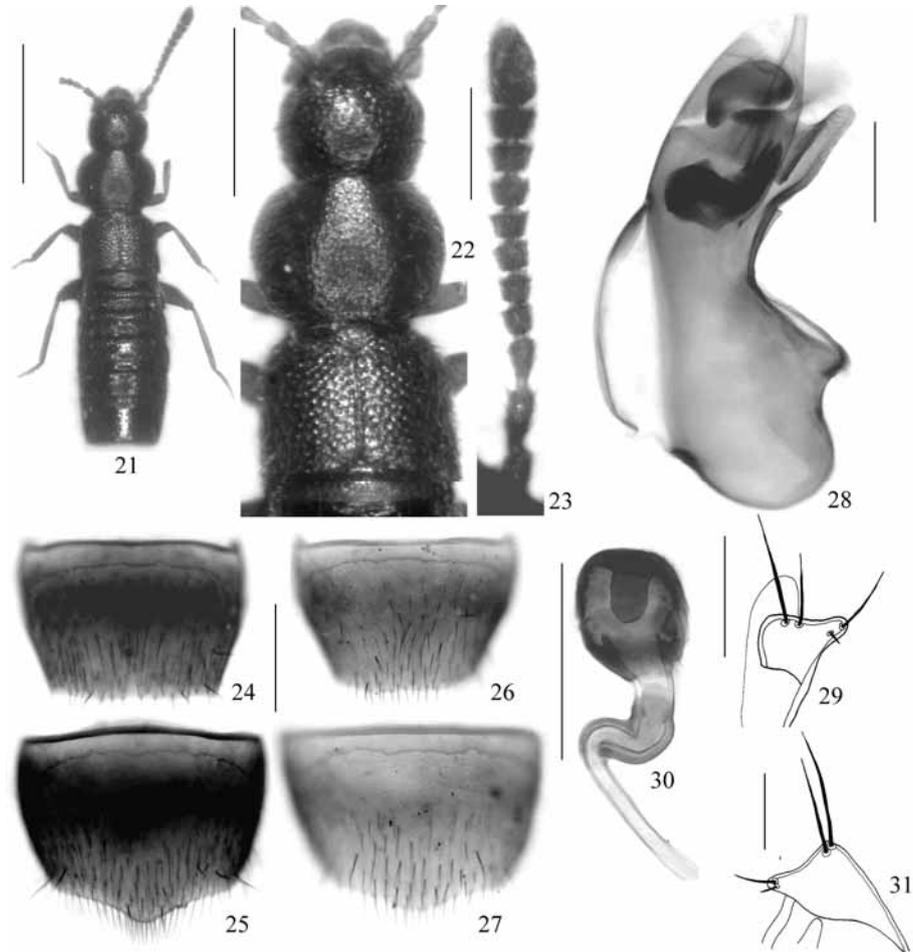


Fig. 20: Locality where numerous specimens of *Leptusa xuemontis* (together with *L. yunnanensis* and *L. chinensis*) were found.

***Leptusa (Aphaireleptusa) turgida* nov.sp. (Figs 21-30)**

Holotype ♂: China: N-Yunnan [C2005-01], Diqing Tibet. Aut. Pref., Zhongdian Co., Bitai Hai lake area, 29 km ESE Zhongdian / 27°43.65'N, 99°58.97'E, 3540 m, creek valley, devast. mixed forest, litter, moss, dead wood, 1.VI.2005, leg. M. Schülke [C2005-01] / Holotypus ♂ *Leptusa turgida* sp. n. det. V. Assing 2006 (cAss). **Paratypes:** 2 ♀♀: China: N-Yunnan, [C03-13], Zhongdian Co., 36 km ESE Zhongdian, overgrown rock hillside with old mixed forest, bamboo, dead wood, mushrooms, 27°40.9'N, 100°01.5'E, 3500-3550 m, 23.VIII.2003, leg. M. Schülke (cSch).

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Figs 21-31: *Leptusa turgida* (21-30) and *L. xuemontis* (31): (21) habitus; (22) forebody; (23) antenna; (24) ♂ tergite VIII; (25) ♂ sternite VIII; (26) ♀ tergite VIII; (27) ♀ sternite VIII; (28) median lobe of aedeagus in lateral view; (29, 31) apical lobe of paramere; (30) spermatheca. Scale bars: 21: 1.0 mm; 22: 0.5 mm; 23-27: 0.2 mm; 28-31: 0.1 mm.

Description: In external characters highly similar to *L. xuemontis*, but distinguished as follows:

Slightly smaller, 2.5-3.0 mm. Habitus as in Fig. 21. Antennae (Fig. 23) shorter, more slender, and of paler coloration, reddish brown, with the 3-4 basal antennomeres reddish yellow. Puncturation of head less dense (Fig. 22).

♂: posterior margin of sternite VII broadly, but not very deeply concave, densely furnished with long thin setae, of similar morphology and chaetotaxy as in *L. xuemontis*; tergite VIII with truncate posterior margin (Fig. 24); posterior margin of sternite VIII obtusely angled in the middle (Fig. 25); median lobe of aedeagus as in Fig. 28, ventral process in lateral view only with small dent at base; apical lobe of paramere as in Fig. 29.

♀: posterior margin of tergite VIII very shallowly concave in the middle (Fig. 26); posterior margin of sternite VIII obtusely pointed (Fig. 27); spermatheca as in Fig. 30.

E t y m o l o g y : The name (Lat., adj.: swollen) refers to the short and stout body shape.

C o m p a r a t i v e n o t e s : For characters distinguishing *L. turgida* from *L. xuemontis*, its most similar consubgener, see the description above. Other geographically close Chinese representatives of *Aphaireleptusa* are separated from the new species by the male sexual characters, especially the shape of the median lobe of the aedeagus, as well as by the following characters: In *L. chinensis*, whose aedeagus is highly similar, the antennae are longer and darker, the head and especially the pronotum are much more coarsely punctured, the eyes are more distinctly protruding from the outline of the head in dorsal view, the elytra are much longer, the legs are longer and more slender, and the male tergite VIII is distinctly concave posteriorly.

Leptusa yunnanensis is distinctly larger, its antennae are longer and darker, the head and the pronotum are more coarsely punctured, the eyes are more distinctly protruding from the outline of the head in dorsal view, the elytra are much longer, the legs are longer and more slender, and the ventral process of the aedeagus is more distinctly dentate at base (see Figs 1-6).

In the slightly smaller *L. daxuemontis* PACE from Sichuan, the body is of paler coloration, the forebody is much more coarsely punctured, and the aedeagus is of different shape (more slender, more distinctly dentate at base of ventral process, more pronounced crista apicalis). For illustrations of the aedeagus of this species see PACE (1997).

In *L. jiudingensis* PACE from Sichuan, the eyes are more distinctly protruding from the outline of the head in dorsal view, the elytra are longer, and the aedeagus is of stouter morphology and more distinctly dentate at the base of the ventral process. For illustrations of the aedeagus of this species see PACE (1999).

In *L. xuemontis* PACE from Yunnan, the antennae are longer, the head and the pronotum are more distinctly punctured, the elytra and the legs are longer, the male sternite VII is more strongly concave posteriorly, the posterior margin of the male tergite VIII is distinctly concave, and the aedeagus is more distinctly dentate at the base of the ventral process. The aedeagus and the male sternite VII of this species are illustrated by ASSING (2004).

D i s t r i b u t i o n a n d b i o n o m i c s : The localities are situated in the mountain range to the east-southeast of Zhongdian in northern Yunnan. The specimens were collected by sifting the forest floor of mixed forests at an altitude of 3500-3550 m.

***Leptusa (Aphaireleptusa) tenuicornis* nov.sp. (Figs 75-88)**

H o l o t y p e ♂: China: N-Yunnan [C2003-07], Zhongdian Co., 55 km N Zhongdian, 28°19.8'N, 99°45.7'E, 3800 m, primary mixed forest, Rhodod., dead wood, mushrooms, moss, 18.VIII.2003, M. Schülke / Holotypus ♂ *Leptusa tenuicornis* sp. n. det. V. Assing 2006 (cAss). **P a r a t y p e s :** 11 exs.: same data as holotype (OÖLL, cSch, cAss).

D e s c r i p t i o n : In external characters (Figs 75-78) highly similar to *L. xuemontis*, but distinguished as follows:

Habitus as in Fig. 75. Punctuation of head slightly more distinct (Fig. 76). Antennae (Fig. 78) shorter and more slender.

Pronotum slightly smaller in relation to body, slightly more convex in cross-section, and with distinctly coarser puncturation (Fig. 76).

Elytra larger, almost as long and 1.05-1.10 times as wide as pronotum, and with rather pronounced humeral angles. Hind wing rudiments slightly longer than elytra.

Abdomen with coarser puncturation; palisade fringe at posterior margin of tergite VII more or less pronounced.

♂: sternite VII of similar morphology and chaetotaxy as in *L. xuemontis* (Fig. 79); tergite VIII with weakly concave posterior margin (Fig. 80); posterior margin of sternite VIII convexly projecting in the middle (Fig. 81); median lobe of aedeagus (Figs 84-87) distinctly smaller than in *L. xuemontis* (compare Figs 84-85 and Fig. 89), ventral process in lateral view only with pronounced dent at base; apical lobe of paramere as in *L. xuemontis* and *L. turgida*.

♀: posterior margin of tergite VIII truncate (Fig. 82); posterior margin of sternite VIII obtusely pointed (Fig. 83); spermatheca as in Fig. 88.

E t y m o l o g y : The name (Lat., adj.) refers to the slender antennae, an external character separating this species from *L. xuemontis*.

C o m p a r a t i v e n o t e s : For characters distinguishing *L. tenuicornis* from *L. xuemontis* see the description above. Other Chinese representatives of *Aphaireleptusa* known to occur in Yunnan are separated from the new species by the male sexual characters, especially the shape of the median lobe of the aedeagus, as well as by the following characters:

In *L. chinensis*, the antennae are longer, the head and especially the pronotum are much more coarsely punctured, the eyes are more distinctly protruding from the outline of the head in dorsal view, the pronotum is less transverse and more convex in cross-section, the elytra are much longer, the legs are longer and more slender, and the male tergite VIII is distinctly concave posteriorly.

Leptusa yunnanensis has longer, larger, and more sparsely punctured elytra, a more sparsely punctured abdomen with less pronounced microsculpture, a posteriorly only very weakly concave male sternite VII, and an only indistinctly concave posterior margin of the male tergite VII.

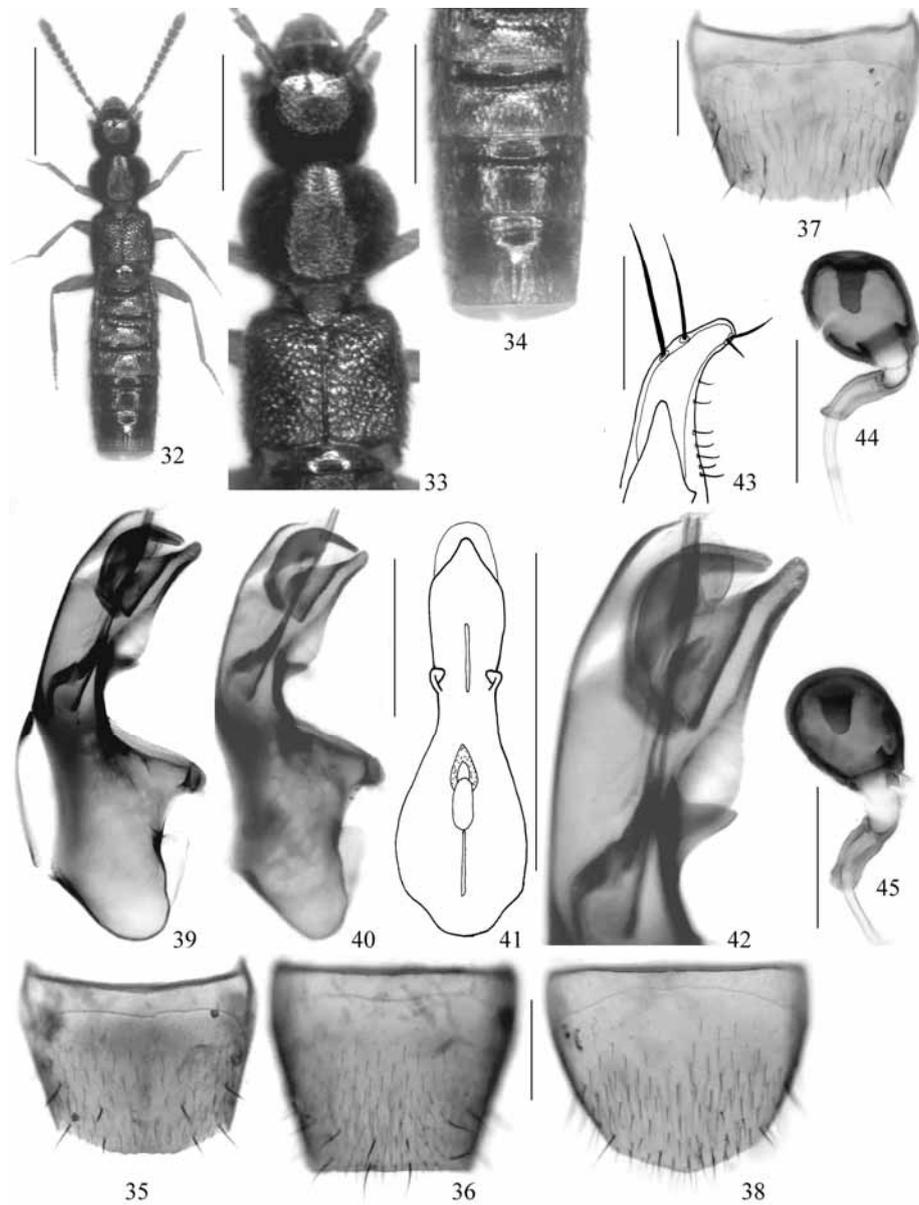
In the slightly smaller *L. turgida*, the forebody (especially the pronotum) is much more finely punctate, the elytra are shorter and more slender, the abdomen is wider in relation to the elytra and more finely and sparsely punctate, the male sternite VIII is more acutely pointed posteriorly, and the posterior margin of the male tergite VIII is not distinctly concave.

D i s t r i b u t i o n a n d b i o n o m i c s : The species is known only from one locality in the mountain range to the north of Zhongdian in northern Yunnan, from where it was erroneously recorded as *L. xuemontis* by ASSING (2004). The type specimens were collected by sifting the forest floor of a mixed forest at an altitude of 3800 m.

***Leptusa (Drepanoleptusa) emplenotoides* nov.sp. (Figs 32-45)**

Holotype ♂: China (N-Yunnan), Diqing Tibet Aut. Pref., Zhongdian Co., Bitai Hai Lake area, 29 km ESE Zhong-dian, 3540 m, 27°43.65'N, 99°58.97'E, creek vall., devast. mixed forest, bamboo, 1.VI.2005, D. W. Wrase [01] / Holotypus ♂ *Leptusa emplenotoides* sp. n. det. V. Assing 2006 (cAss). **Paratypes**: 3 ♂♂ : China: N-Yunnan [C2005-02], Diqing Tibet. Aut. Pref., Zhongdian

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Figs 32-45: *Leptusa emplenotoides*: (32) habitus; (33) forebody; (34) ♂ abdominal segments IV-VII; (35) ♂ tergite VIII; (36) ♂ sternite VIII; (37) ♀ tergite VIII; (38) ♀ sternite VIII; (39-41) median lobe of aedeagus in lateral and in ventral view; (42) apex of median lobe of aedeagus in lateral view; (43) apical lobe of paramere; (44-45) spermatheca. Scale bars: 32: 1.0 mm; 33-34: 0.5 mm; 35-38: 0.2 mm; 39-45: 0.1 mm.

Co., Xue Shan, 23 km S Zhongdian, 3675-3725 m / 27°36.3'N, 99°41.5'E, devastated mixed forest, sifted from leaf litter, dead wood, 2.VI.2005, M. Schülke [C2005-02] (cSch, cAss); 1 ♀ [macropterous]: China: N-Yunnan [C2005-03], Diqing Tibet. Aut. Pref., Zhongdian Co., 35 km ESE Zhongdian, 3450 m / 27°41.00'N, 100°01.47'E, devastated mixed forest nr. small creek, litter, moss, dead wood sifted, 3.VI.2005, M. Schülke [C2005-03] (cSch); 4 ♂♂, 4 ♀♀: China: N-Yunnan, Diqing Tibet Aut. Pr., Zhongdian Co., Xue Shan nr. lake, 23 km S Zhongdian, 27°37.1'N, 99°38.5'E, 3850 m, 6.VI.2005, A. Smetana (C153a) (cSme, cAss); 1 ♂, 1 ♀: same data, but "3895 m, 5.VI.2005, ... C152" (cSme, cAss); 1 ♂, 2 ♀♀: same data, but "15.VI.2005 ... C161" (cSme, cAss).

D e s c r i p t i o n : 3.0-4.2 mm. Habitus as in Fig. 32. Coloration: head dark brown to blackish brown; pronotum reddish brown to dark brown; elytra rufous; abdomen rufous, with the central area of tergite VI and the anterior 1/3-2/3 of tergite VII infusate; legs reddish yellow; antennae rufous.

Head approximately as wide as long or weakly transverse; puncturation dense, punctures moderately large, but very shallow; microsculpture distinct; eyes rather small, very weakly protruding from lateral outline of head, approximately half the length of post-ocular region in dorsal view (Fig. 33). Antenna with antennomere III almost as long as II, IV approximately as wide as long, V subquadrate to weakly transverse, VI-X of increasing width and increasingly transverse, X approximately 1.5 times as wide as long. Penultimate joint of maxillary palpus approximately 3 times as long as wide.

Pronotum moderately convex in cross-section, approximately 1.2 times as wide as head and 1.25 times as wide as long, maximal width in anterior half (Fig. 33); posterior angles obtuse, lateral margins often weakly sinuate near posterior angles; puncturation moderately dense and fine, barely noticeable; microsculpture distinct.

Elytra slightly (brachypterous morph) or distinctly (macropterous morph) wider than pronotum, at suture either slightly shorter (brachypterous morph) or slightly longer (macropterous morph) than pronotum; near posterior angles distinctly sinuate; puncturation coarsely granulose; microsculpture absent or very shallow, much less distinct than that of pronotum. Hind wings either fully developed (macropterous morph) or reduced (brachypterous morph).

Abdomen approximately as wide as (brachypterous morph) or slightly narrower (macropterous morph) than elytra, widest at segment IV; puncturation fine and moderately dense; microsculpture somewhat variable, but always distinctly visible; tergite VII with sexual dimorphism, its posterior margin with palisade fringe.

♂: tergite VII with pronounced long median tubercle (Fig. 34); sternite VII unmodified; tergite VIII with pronounced microreticulation, its posterior margin convex, in the middle truncate and weakly crenulate (Fig. 35); posterior margin of sternite VIII truncate (Fig. 36); median lobe of aedeagus of highly distinctive morphology (Figs 39-42), at base of ventral process with pair of characteristic processes; apical lobe of paramere as in Fig. 43.

♀: posterior margin of tergite VIII very weakly sinuate in the middle (Fig. 37); posterior margin of sternite VIII weakly pointed (Fig. 38); spermatheca as in Figs 44-45.

E t y m o l o g y : The name (Lat., adj.) refers to the pair of processes of the median lobe of the aedeagus, which, in this respect, bears some resemblance to the aedeagi of *Aleochara* species of the subgenus *Emplenota* CASEY.

C o m p a r a t i v e n o t e s : From all its congeners, the *L. emplenotoides* is readily distinguished by the male sexual characters, especially the distinctive shape of the me-

dian lobe of the aedeagus. Based on the similarly derived aedeagal morphology, it appears to be the adelphotaxon of *L. sichuanensis* PACE from the Gongga Shan (Sichuan), from which it is distinguished particularly by the presence of a pair of processes at the base of the ventral process of the aedeagus. For illustrations of the male genitalia of *L. sichuanensis* see PACE (1997).

Distribution and bionomics: The localities are situated in the Xue Shan near Zhongdian in northern Yunnan (China). Since the species is wing-dimorphic, it may be more widespread. The type specimens were sifted from leaf litter and dead wood in degraded mixed forests at altitudes of 3450-3900 m.

***Leptusa (Heteroleptusa) discolor* nov.sp. (Figs 46-57)**

Holotype ♂: China: N-Yunnan [C2005-07], Diqing Tibet. Aut. Pref., Deqin Co., Meili Xue Shan, E-side, 12 km SW Deqin, 2890 m, 28°25.30'N, 98°48.47'E / small creek valley, mixed forest with bamboo, leaf litter, moss, dead wood, sifted, 9.VI.2005, leg. M. Schülke [C2005-07] / Holotypus ♂ *Leptusa discolor* sp. n. det. V. Assing 2006 (cAss). **Paratype** ♀: China: N-Yunnan [C03-11], Zhongdian Co., 48 km N Zhongdian, 28°16.6'N, 99°45.7'E, 3220 m, creek valley, devastated primary forest, dead wood, moss, mushrooms, 21.VIII.2003, leg. M. Schülke (cSch).

Description: 2.6-3.1 mm. Habitus as in Fig. 46. Distinctly bicoloured species: whole body rufous, with the head, abdominal segment VI and anterior half of segment VII blackish brown to black.

Head approximately as wide as long; puncturation dense, punctures moderately large, but shallow; microsculpture weakly pronounced; eyes relatively large, weakly protruding from lateral outline of head, approximately as long as postocular region in dorsal view (Fig. 47). Antenna with antennomere III slightly shorter than II, IV weakly transverse, V-X of increasing width and increasingly transverse, X approximately twice as wide as long (Fig. 48). Penultimate joint of maxillary palpus approximately 3 times as long as wide.

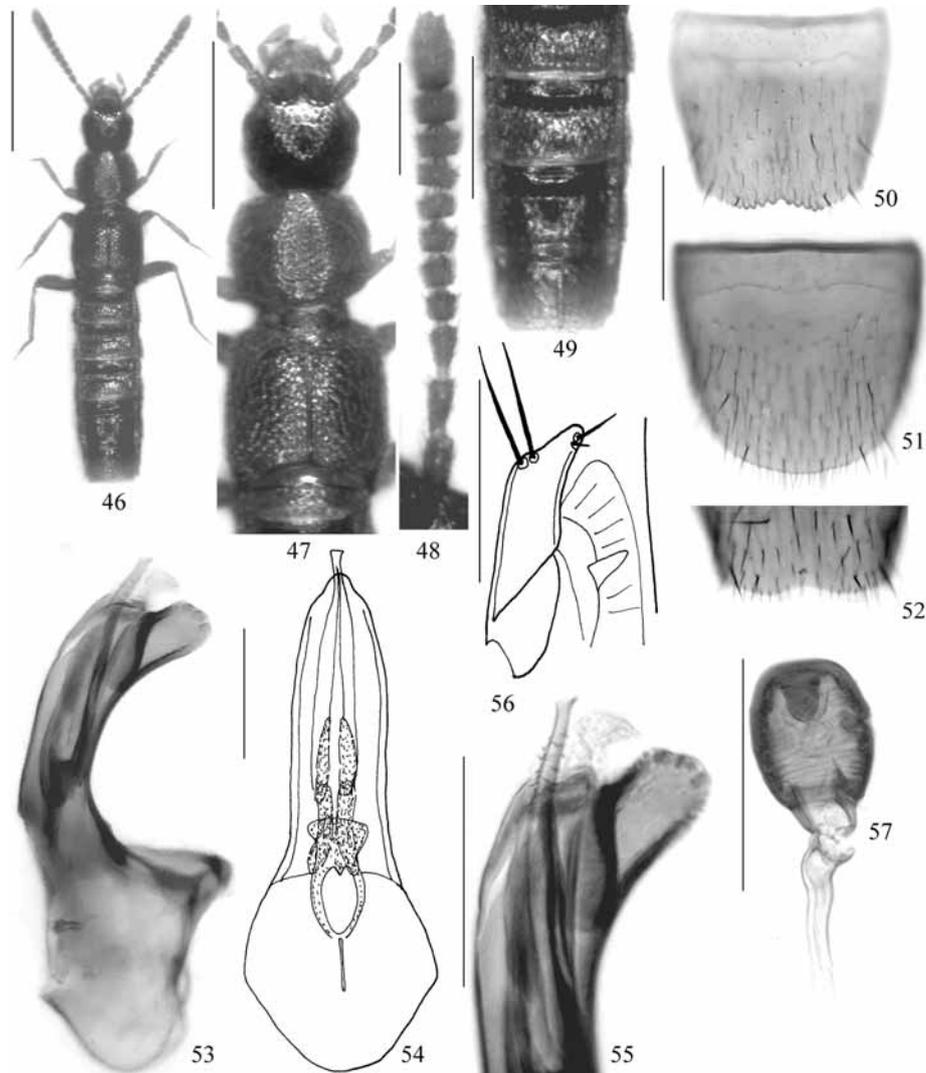
Pronotum distinctly convex in cross-section and relatively slender, approximately 1.2 times as wide as head and 1.2 times as wide as long, maximal width in anterior half (Fig. 47); posterior angles obtuse; puncturation dense, fine, and ill-defined; microsculpture very shallow, barely noticeable.

Elytra approximately 1.15 times as wide and at suture as long as pronotum; near posterior angles distinctly sinuate; puncturation coarsely granulose; microsculpture absent (Fig. 47). Hind wings reduced.

Abdomen approximately 0.9 times as wide as elytra, subparallel; puncturation on tergite III coarse and dense, on tergites IV-V less coarse and less dense, and on tergites VI-VII fine and rather sparse; microsculpture shallow (Fig. 49); tergite VII with sexual dimorphism, its posterior margin with palisade fringe.

♂: tergite VII with pronounced long median tubercle (Fig. 49); sternite VII unmodified; tergite VIII with short oblong median tubercle, its posterior margin in the middle weakly concave and distinctly serrate (Fig. 50); posterior margin of sternite VIII broadly convex (Fig. 51); median lobe of aedeagus as in Figs 53-55, ventral process apically of distinctive shape; apical lobe of paramere as in Fig. 56.

♀: posterior margin of tergite VIII weakly concave in the middle (Fig. 52), that of sternite VIII broadly convex; spermatheca as in Fig. 57.



Figs 46-57: *Leptusa discolor*: (46) habitus; (47) forebody; (48) antenna; (49) ♂ abdominal segments IV-VII; (50) ♂ tergite VIII; (51) ♂ sternite VIII; (52) posterior part of ♀ tergite VIII; (53-54) median lobe of aedeagus in lateral and in ventral view; (55) apex of median lobe of aedeagus in ventral view; (56) apical lobe of paramere; (57) spermatheca. Scale bars: 46: 1.0 mm; 47, 49: 0.5 mm; 48, 50-52: 0.2 mm; 53-57: 0.1 mm.

E t y m o l o g y : The name (Lat., adj.: colourful) refers to the distinctive coloration of this species.

C o m p a r a t i v e n o t e s : Four species of *Heteroleptusa* PACE were previously known from China: *L. shaanxiensis* PACE, *L. flagellata* ASSING, *L. hastata* ASSING, and *L. titillans* ASSING. From all of them, as well as from all other species of the genus, the

new species is readily separated by the distinctive shape of the ventral process of the aedeagus. From the other species of *Heteroleptusa* it is additionally distinguished by the coloration (distinctly bicoloured body; bright reddish pronotum, elytra, and anterior segments of abdomen). For illustrations of the male genitalia of these species see PACE (1999) and ASSING (2002).

Distribution and bionomics: The two localities are separated by a deep valley, suggesting that the species is probably more widespread in northern Yunnan. The type specimens were sifted from the forest floor in mixed forests at altitudes of about 2900 and 3200 m.

***Leptusa curvata* nov.sp. (Figs 58-67)**

Holotype ♂: China: N-Yunnan [C2005-01], Diqing Tibet. Aut. Pref., Zhongdian Co., Bitai Hai lake area, 29 km ESE Zhongdian / 27°43.65'N, 99°58.97'E, 3540 m, creek valley, devast. mixed forest, litter, moss, dead wood, 1.VI.2005, leg. M. Schülke [C2005-01] / **Holotypus** ♂ *Leptusa curvata* sp. n. det. V. Assing 2006 (cAss). **Paratypes:** 1 ♀: China: N-Yunnan [C03-13], Zhongdian Co., 36 km ESE Zhongdian, overgrown rock hillside with old mixed forest, bamboo, dead wood, mushrooms, 27°40.9'N, 100°01.5'E, 3500-3550 m, 23.VIII.2003, leg. M. Schülke (cSch); 1 ♀: China (N-Yunnan), Zhongdian Co., 36 km ESE Zhongdian, 3500-3550 m, 27°40.9'N, 100°01.5'E (overgrown rock hillside with old mixed forest, bamboo, dead wood, leaf litter) 23.-24.VIII.2003, Wrase [13] (cSch).

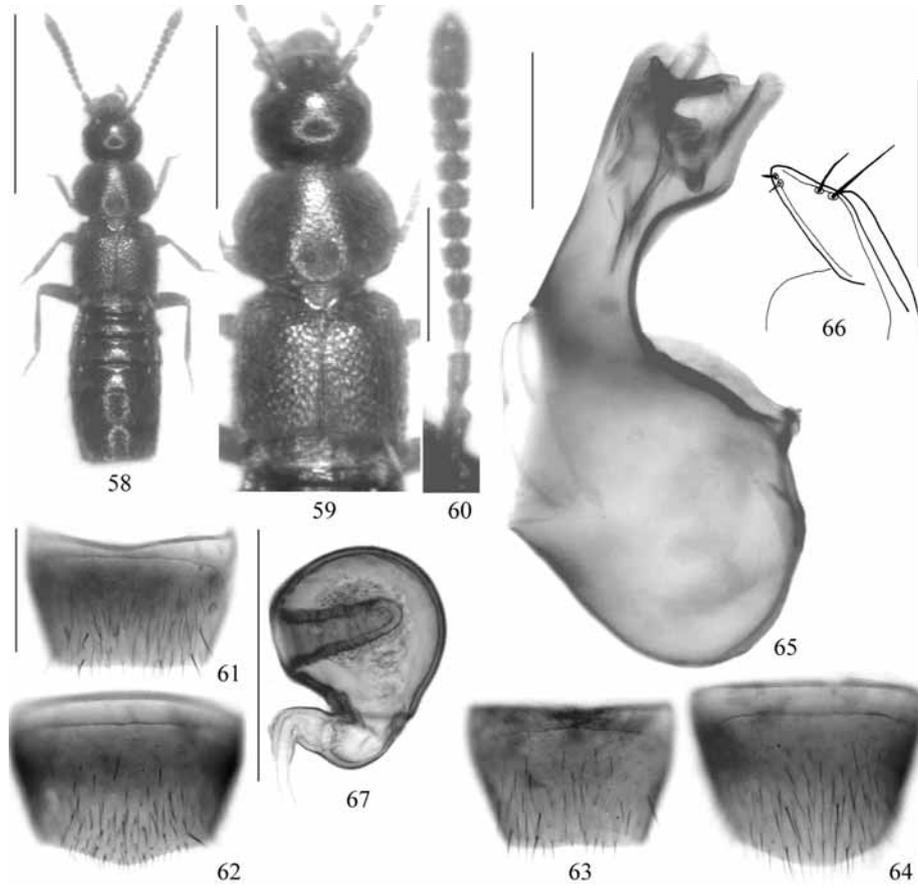
Description: 2.1-2.4 mm. Habitus as in Fig. 58. Coloration: head reddish brown to dark brown; pronotum and elytra paler than head, rufous to reddish brown; abdomen blackish brown to black, with the anterior 2-3 segments and the apex slightly paler; legs and antennae reddish.

Head slightly wider than long; integument with distinct microreticulation and subdued shine; puncturation relatively sparse and very fine, barely noticeable; eyes moderately large, weakly protruding from lateral outline of head, approximately as long as postocular region in dorsal view (Fig. 59). Antenna with antennomere III distinctly shorter than II, IV subquadrate, V weakly transverse, VI-X of increasing width and increasingly transverse, X approximately twice as wide as long (Fig. 60). Penultimate joint of maxillary palpus approximately 2.5 times as long as wide.

Pronotum moderately convex in cross-section and strongly transverse, approximately 1.3 times as wide as head and almost 1.4 times as wide as long, maximal width in anterior half (Fig. 59); posterior angles obtuse, weakly marked; puncturation very fine and ill-defined, barely noticeable; microsculpture similar to that of head.

Elytra approximately as wide and at suture as long as pronotum; near posterior angles distinctly sinuate; puncturation moderately coarse and shallow, much more pronounced than that of head and pronotum; microsculpture shallow, but distinct (Fig. 59). Hind wings present, but apparently of reduced length.

Abdomen as wide as or slightly wider than elytra, maximal width at segment V; puncturation very fine and relatively sparse, especially on posterior tergites; microsculpture present, but rather shallow; tergite VII without sexual dimorphism, at posterior margin with palisade fringe; sternite VII without sexual dimorphism.



Figs 58-67: *Leptusa curvata*: (58) habitus; (59) forebody; (60) antenna; (61) ♂ tergite VIII; (62) ♂ sternite VIII; (63) ♀ tergite VIII; (64) ♀ sternite VIII; (65) median lobe of aedeagus in lateral view; (66) apical lobe of paramere; (67) spermatheca. Scale bars: 58: 1.0 mm; 59: 0.5 mm; 60-64: 0.2 mm; 65-67: 0.1 mm.

♂: posterior margin of tergite VIII almost truncate (Fig. 61); posterior margin of sternite VIII obtusely angled in the middle (Fig. 62); median lobe of aedeagus of highly distinctive morphology (Fig. 65), ventral process strongly curved in lateral view; apical lobe of paramere slender and with rather short setae (Fig. 66).

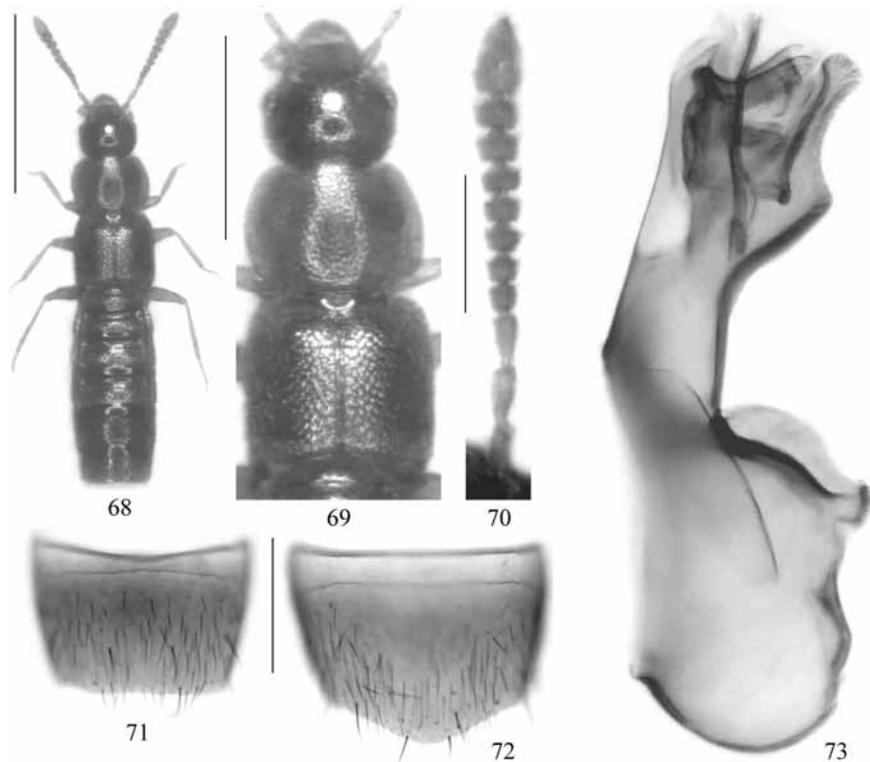
♀: posterior margin of tergite VIII of similar shape as in ♂ (Fig. 63); posterior margin of sternite VIII distinctly convex (Fig. 64); spermatheca as in Fig. 67.

E t y m o l o g y : The name (Lat., adj.) alludes to the strongly curved ventral process of the aedeagus.

C o m p a r a t i v e n o t e s a n d s u b g e n e r i c a f f i l i a t i o n s : Based on external characters and especially the male primary and secondary sexual characters, the phylogenetic relations of this species to any of the described subgenera are uncertain. As was the practice with several other previously described species of doubtful

subgeneric affiliations, a description of a new subgenus to accommodate this and the following species is here refrained from. At present, too little is known about the phylogenetics of Eastern Palaearctic *Leptusa*.

The new species is distinguished from its Chinese congeners particularly by the conspicuous morphology of the aedeagus, as well as by the combination of small size, compact body shape, a strongly transverse pronotum, and the very fine puncturation of the head and pronotum. For characters separating it from the extremely similar *L. recta* see the description in the following section.



Figs 68-73: *Leptusa recta*: (68) habitus; (69) forebody; (70) antenna; (71) ♂ tergite VIII; (72) ♂ sternite VIII; (73) median lobe of aedeagus in lateral view. Scale bars: 68: 1.0 mm; 69: 0.5 mm; 70-72: 0.2 mm; 73: 0.1 mm.

Distribution and bionomics: The localities are situated in the mountain range to the east-southeast of Zhongdian, northern Yunnan. The specimens were sifted from the forest floor in mixed forests at altitudes of 3500-3550 m.

***Leptusa recta* nov.sp. (Figs 68-74)**

Holotype ♂: China: N-Yunnan [C2005-16], Lujiang Lisu Aut. Pref., Gongshan Co., Gaoligong Shan, side valley, 3000-3050 m, 27°47.90'N, 99°30.19'E / conif. forest with *Rhododendron*, broad-leaved bushes, litter, moss, dead wood, sifted along creek and snowfields, 21.VI.2005, M. Schülke [C2005-16] / Holotypus ♂ *Leptusa recta* sp. n. det. V. Assing 2006 (cAss).

Description: 2.3 mm. Habitus as in Fig. 68. Based on external characters (Figs 69-70) indistinguishable from *L. curvata* (see preceding section), so that a detailed description is here refrained from. Both species are reliably separated only by the morphology of the aedeagus.

♂: tergite and sternite VIII as in Figs 71-72; median lobe of aedeagus of similar general morphology as in *L. curvata*, but ventral process straight at base and in the middle distinctly angled (Fig. 73); apical lobe of paramere as in *L. curvata*.

♀: unknown

Etymology: The name (Lat., adj.) refers to the uncurved base of the ventral process of the aedeagus (lateral view), a character distinguishing this species from the extremely similar *L. curvata*.

Comparative notes: For distinction from *L. curvata*, the only similar Chinese representative of the genus, see the description above. For remarks regarding the subgeneric placement of the species see the comparative notes in the section on *L. curvata*.



Fig. 74: Type locality of *Leptusa recta*.

Distribution and bionomics: The type locality is situated in the Gaoiligong Shan, northern Yunnan. The holotype was sifted from the forest floor in a coniferous forest at an altitude of approximately 3000 m (Fig. 74).

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I am most grateful to Michael Schülke and Aleš Smetana for making their interesting material available to me. In particular, I would like to thank the former for the generous gift of the holotypes of the species described in this paper and for providing the habitat photos. Benedikt Feldmann (Münster) proof-read the manuscript.

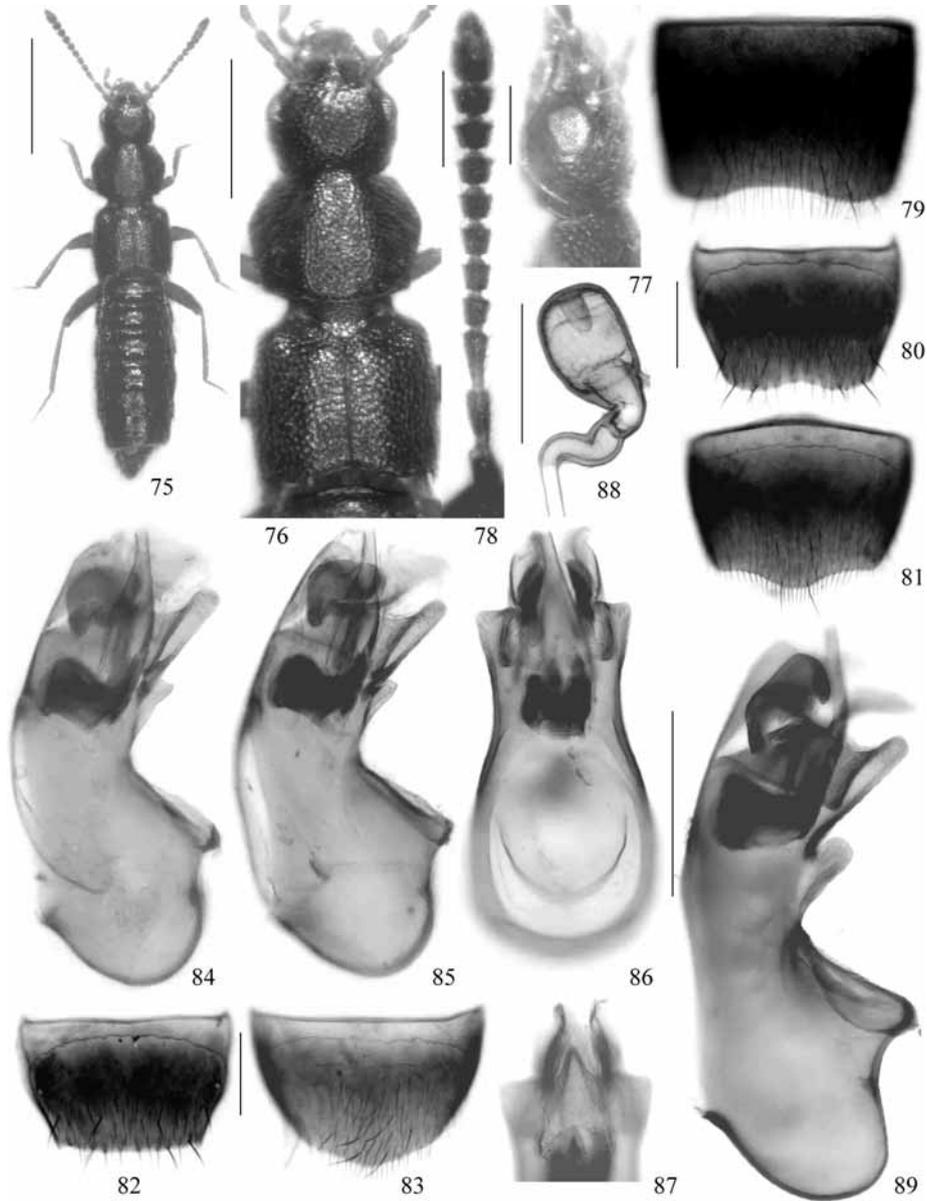
Zusammenfassung

Acht Arten der Gattung *Leptusa* KRAATZ aus dem nördlichen Yunnan, China, werden beschrieben bzw. redeskribiert und abgebildet: *L. (Aphaireleptusa) yunnanensis* PACE, *L. (A.) xuemontis* PACE, *L. (A.) turgida* nov.sp., *L. (A.) tenuicornis* nov.sp., *L. (Drepanoleptusa) emplenotoides* nov.sp., *L. (Heteroleptusa) discolor* nov.sp., *L. curvata* nov.sp. und *L. recta* nov.sp. *Leptusa chinensis* PACE wird erstmals aus Yunnan nachgewiesen.

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Figs 75-89: *Leptusa tenuicornis* (75-88) and paratype of *L. xuemontis* (89): (75) habitus; (76) forebody; (77) head in lateral view; (78) antenna; (79) ♂ sternite VII; (80) ♂ tergite VIII; (81) ♂ sternite VIII; (82) ♀ tergite VIII; (83) ♀ sternite VIII; (84-86, 89) median lobe of aedeagus in lateral and in ventral view; (87) apex of median lobe in ventral view; (88) spermatheca. Scale bars: 75: 1.0 mm; 76: 0.5 mm; 77-87, 89: 0.2 mm; 88: 0.1 mm.

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