

New species and records of *Leptusa* from the Georgian Caucasus (Coleoptera: Staphylinidae: Aleocharinae)

With 14 figures and 2 maps

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Abstract

Three field trips to West Georgia conducted in 2021 yielded 923 specimens of *Leptusa* KRAATZ, 1858 belonging to ten species, two of which are described and illustrated: *Leptusa* (*Neopisalia*) *pugiofera* spec. nov. (Georgia: Kvemo Svaneti); *L. (N.) insculpta* spec. nov. (Georgia: Zemo Svaneti). The distributions of five species are mapped. The *Leptusa* fauna of the Caucasus region sensu lato is now represented by a total of 40 species, 21 of which (11 exclusive) have been recorded from Georgia. The Palearctic fauna includes 420 species and 74 subspecies in 71 subgenera.

Taxonomic acts

Leptusa pugiofera spec. nov. – urn:lsid:zoobank.org:act:65DB13D7-F5EB-4C7A-816A-6C3891641F7A

Leptusa insculpta spec. nov. – urn:lsid:zoobank.org:act:CE43945E-ABB8-41D8-BA13-DE93033EA108

Keywords

Coleoptera, Staphylinidae, Aleocharinae, *Leptusa*, taxonomy, new species, Caucasus region, Georgia, new records, distribution maps

Zusammenfassung

Während dreier im Jahr 2021 durchgeführter Forschungsreisen nach West-Georgien wurden 923 Individuen der Gattung *Leptusa* KRAATZ, 1858 gesammelt. Sie gehören zu zehn Arten, von denen zwei beschrieben und abgebildet werden: *Leptusa* (*Neopisalia*) *pugiofera* spec. nov. (Georgien: Kvemo Svaneti); *L. (N.) insculpta* spec. nov. (Georgien: Zemo Svaneti). Die derzeit bekannten Verbreitungsgebiete von fünf Arten werden anhand von Karten illustriert. Die *Leptusa*-Fauna der Kaukasusregion sensu lato ist nunmehr durch 40 Arten vertreten, von denen 21 (11 exklusiv) aus Georgien nachgewiesen wurden. Die paläarktische Fauna enthält insgesamt 420 Arten und 74 Unterarten in 71 Untergattungen.

Schlüsselwörter

Coleoptera, Staphylinidae, Aleocharinae, *Leptusa*, Taxonomie, neue Arten, Kaukasusregion, Georgien, neue Nachweise, Verbreitungskarten

Introduction

According to the latest contribution to the taxonomy and distribution of *Leptusa* KRAATZ, 1858, the genus was previously represented in the Palaearctic region by a total of 418 species and 74 subspecies in 71 subgenera, with nine species listed as incertae sedis (ASSING 2021). The foundation of the exploration of the Caucasian fauna was laid by PACE (1989), who comprehensively revised the genus at a world scale. Several additional species, synonyms, and numerous records from the Greater and Lesser Caucasus were published in subsequent years (ASSING 2011, 2017, 2019, 2021). ASSING (2017) provided an overview of the Caucasian *Leptusa* fauna known at that time. Prior to the present study, the fauna of the Caucasus region sensu lato (i.e., the region including the Russian part of the Greater Caucasus, Georgia, Northeast Turkey, Armenia, and Azerbaijan) was composed of 38 species in five subgenera, the vast majority of them regionally or locally endemic. Nineteen of these species (nine of them exclusive) had been recorded from the territory of Georgia, including Abkhazia.

In 2021, three field trips were conducted to West Georgia, one by Volker Brachat (Geretsried) and Heinrich Meybohm (Großhansdorf) in June and two by Michael Schülke (Berlin) and the author in July/August and October. A study of 923 specimens of *Leptusa* collected during these field trips revealed that this material included ten species, two of them undescribed.

Material and methods

The material examined in the present study is deposited in the following collections:

MNB Museum für Naturkunde, Berlin (including coll. Schülke)
cAss author's private collection

The morphological studies were conducted using Stemi SV 11 (Zeiss) and Discovery V12 (Zeiss) microscopes, and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using digital cameras (Axio-cam ERc 5s, Nikon Coolpix 995), as well as Labscope and Picolay software. The maps were created using MapCreator 2.0 (primap) software.

Body length was measured from the anterior margin of the labrum to the apex of the abdomen, the length of the forebody from the anterior margin of the labrum to the posterior margin of the elytra, head length from the anterior margin of the clypeus to the posterior constriction 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.

Results

Leptusa (Leptusa) pulchella (MANNERHEIM, 1830)

Material examined: Georgia: Racha: 1 ex., NE Oni, Shovi, 42°41'47"N, 43°41'05"E, 1580 m, forest margin with predominant *Carpinus*, litter and roots sifted, 25.VII.2021, leg. Assing (cAss). **Kvemo Svaneti:** 3 exs., E Lentekhi, mountain track Chvelpi–Latpari pass, 42°50'30"N, 42°56'33"E, 1600 m, beech forest, bark of beech trunk sifted, 30.VII.2021, leg. Assing (cAss).

This corticolous species is widespread in most of the West Palaearctic region, but has been recorded only from few localities in the Caucasus region (ASSING 2017, 2021).

Leptusa (Neopisalia) venusta (HOCHHUTH, 1849)

Material examined: Georgia: Guria: 1 ex., Kvabgha–Zoti, 41°55'05"N, 42°24'18"E, 530 m, flood plain forest with alder, litter sifted, 11.VI.2021, leg. Brachat & Meybohm; 1 ex., Vakijvari, 41°54'06"N, 42°09'40"E, 430 m, deciduous forest, litter sifted, 12.VI.2021, leg. Brachat & Meybohm. **Zemo Svaneti:** 1 ex., NW Khaishi, 42°59'54"N, 42°09'25"E, 900 m, alder forest, litter sifted, 6.VIII.2021, leg. Assing; 1 ex., NW Khaishi, 43°00'09"N, 42°08'59"E, 950 m, alder forest, litter sifted, 6.VIII.2021, leg. Assing; 2 exs., NW Khaishi, 43°01'28"N, 42°05'42"E, 1440 m, mixed forest, litter near rotten logs and rotten trunks sifted, 6.VIII.2021, leg. Assing; 2 exs., same data, but 11.VIII.2021, leg. Schülke; 2 exs., NW Khaishi, 43°01'26"N, 42°05'50"E, 1430 m, mixed forest, litter near rotten logs and rotten trunks sifted, 6.VIII.2021, leg. Assing & Schülke; 2 exs., NW Khaishi, 43°01'16"N, 42°06'14"E, 1360 m, mixed forest, litter near dead trunks and logs sifted, 7.VIII.2021, leg. Assing & Schülke; 1 ex., N Khaishi, 43°05'41"N, 42°11'09"E, 1110 m, alder forest, moist litter sifted 10.VIII.2021, leg. Assing; 11 exs., N Khaishi, 43°05'11"N, 42°11'05"E, 1080 m, alder forest, bark sifted, 10.VIII.2021, leg. Assing; 1 ex., WSW Khaishi, 42°56'04"N, 42°09'15"E, 670 m, stream valley with scree and ferns, moist and deep litter between stones sifted, 10.VIII.2021, leg. Schülke. **Kvemo Svaneti:** 11 exs., E Lentekhi, mountain track Chvelpi–Latpari pass, 42°50'25"N, 42°56'38"E, 1560 m, beech and hazelnut litter sifted, 29.VII.2021, leg. Assing & Schülke; 4 exs., E Lentekhi, mountain track Chvelpi–Latpari pass, 42°50'58"N, 42°56'43"E, 1870 m, beech forest, litter sifted, 30.VII.2021, leg. Assing & Schülke; 1 ex., E Lentekhi, mountain track Chvelpi–Latpari pass, 42°50'30"N, 42°56'33"E, 1600 m, beech forest, litter and dead wood sifted, 30.VII.2021, leg. Assing; 1 ex., Chvelpi–Latpari pass, 42°51'19"N, 42°56'38"E, 2100 m, litter of birch, hazelnut, sorbus, and rhododendron, litter sifted, 15.VI.2021, leg. Brachat & Meybohm; 1 ex., Chvelpi–Latpari pass, 42°50'58"N, 42°56'42"E, 1950 m, beech forest, litter sifted, 15.VI.2021, leg. Brachat & Meybohm; 2 exs., Chvelpi–

Latpari pass, 42°50'30"N, 42°56'33"E, 1510 m, forest with beech and alder, litter sifted, 16.VI.2021, leg. Brachat & Meybohm; 1 ex., S Panaga, 42°49'43"N, 42°55'01"E, 1170 m, beech and hazelnut forest with rocks, litter sifted, 16.VI.2021, leg. Brachat & Meybohm; 1 ex., S Panaga, 42°49'35"N, 42°54'56"E, 1250 m, alder forest with rocks, litter sifted, 16.VI.2021, leg. Brachat & Meybohm; 14 exs., E Lentekhi, S Panaga, 42°49'46"N, 42°55'09"E, 1160 m, deciduous forest, bark sifted, 1.VIII.2021, leg. Assing; 1 ex., same data, but litter sifted; 4 exs., NE Lentekhi, 42°48'46"N, 42°44'08"E, 1690 m, hazelnut litter sifted, 2.VIII.2021, leg. Assing & Schülke; 1 ex., NW Lentekhi, 42°48'26"N, 42°39'56"E, 1360 m, moist beech forest, litter and roots sifted, 3.VIII.2021, leg. Schülke; 1 ex., E Ushguli, E Zagari pass, 42°55'39"N, 43°06'56"E, 2330 m, *Salix* litter sifted, 31.VII.2021, leg. Assing; 1 ex., E Ushguli, E Zagari pass, 42°54'18"N, 43°08'32"E, 1860 m, moist *Carpinus* forest, litter sifted, 31.VII.2021, leg. Schülke (MNB). **Racha:** 1 ex., NE Ambrolauri, Likhetei, 42°35'31"N, 43°13'38"E, 760 m, moist deciduous forest with predominant alder, partly on scree and gravel substrate, litter sifted, 21.X.2021, leg. Assing; 1 ex., Likhetei, 42°40'10"N, 43°17'54"E, 1090 m, moist deciduous forest, litter sifted, 17.VI.2021, leg. Brachat & Meybohm; 10 exs., N Oni, E Ghebi, 42°45'54"N, 43°31'36"E, 1450 m, moist deciduous forest with predominant old *Fagus*, litter sifted, 22.X.2021, leg. Assing & Schülke; 1 ex., Lesora, 42°31'21"N, 43°31'30"E, 1090 m, moist slope with *Petasites*, litter sifted, 19.VI.2021, leg. Brachat & Meybohm; 4 exs., E Ambrolauri, SE Oni, Tskhmori, 42°32'08"N, 43°29'38"E, 1320 m, moist deciduous forest with predominant alder, alder litter and forest margin sifted, 23.VII.2021, leg. Schülke; 5 exs., E Ambrolauri, SE Oni, Tskhmori, 42°32'36"N, 43°28'35"E, 1120 m, deciduous forest with predominant alder, litter near stream sifted, 23.VII.2021, leg. Assing & Schülke; 1 ex., SE Oni, Lesora, 42°30'50"N, 43°31'37"E, 1440 m, graveyard with old trees, predominantly *Fagus*, litter sifted, 24.VII.2021, leg. Assing; 11 exs., NE Oni, Shovi, 42°41'47"N, 43°41'05"E, 1580 m, forest margin with predominant *Carpinus*, litter and roots sifted, 25.VII.2021, leg. Assing & Schülke; 1 ex., SW Ambrolauri, N Nakerala pass, 42°24'41"N, 43°02'28"E, 1160 m, clearing in beech forest, beech litter at forest margin sifted, 26.VII.2021, leg. Assing; 1 ex., N Nakerala pass, 42°24'31"N, 43°02'27"E, 1160 m, beech forest margin, litter sifted, 26.VII.2021, leg. Schülke; 2 exs., mountain road E Ambrolauri, 42°31'04"N, 43°19'10"E, 1530 m, deep valley with *Carpinus* and *Acer*, litter sifted, 27.VII.2021, leg. Assing & Schülke; 5 exs., mountain road E Ambrolauri, 42°31'42"N, 43°17'54"E, 1120 m, stream valley, litter sifted, 27.VII.2021, leg. Assing & Schülke; 2 exs., new pass road S Oni, 42°28'31"N, 43°24'31"E, 1810 m, montane forest (*Corylus*, *Acer*) margin, litter sifted, 28.VII.2021, leg. Assing & Schülke. **Imereti:** 6 exs., pass 25 km SE Sachkhere, 42°09'54"N, 43°35'44"E, 1190 m, deciduous forest with predominant *Fagus* and *Carpinus*, litter sifted, 23.X.2021, leg. Assing & Schülke; 1 ex., pass 25 km SE Sachkhere, 42°11'00"N, 43°35'19"E,

1090 m, beech forest, litter sifted, 24.X.2021, leg. Schülke. Material in MNB and cAss.

Leptusa venusta is widespread and common in the Caucasus region. For a distribution map see ASSING (2017).

Leptusa (Neopisalia) lederi EPPELSHEIM, 1883

(Map 1)

Material examined. **Georgia:** **Imereti:** 41 exs., SW Ambrolauri, Nakerala pass, 42°23'09"N, 42°58'45"E, 1440 m, fir forest margin, litter under rhododendron, spruce, and *Tussilago* sifted, 26.VII.2021, leg. Assing & Schülke. **Racha:** 11 exs., SW Ambrolauri, N Nakerala pass, 42°24'41"N, 43°02'28"E, 1160 m, clearing in beech forest, beech litter at forest margin sifted, 26.VII.2021, leg. Assing & Schülke; 9 exs., N Nakerala pass, 42°24'31"N, 43°02'27"E, 1160 m, beech forest margin, litter sifted, 26.VII.2021, leg. Assing & Schülke; 3 exs., mountain road E Ambrolauri, 42°31'04"N, 43°19'10"E, 1530 m, deep valley with *Carpinus* and *Acer*, litter sifted, 27.VII.2021, leg. Schülke; 6 exs., same data, but 20.X.2021, leg. Assing & Schülke. Material in MNB and cAss.

This species was originally described based on material from the Nakerala pass (SW Ambrolauri). It was subsequently recorded from several localities at and near the type locality (SW Ambrolauri), from one locality to the east of Ambrolauri, and one near Sasashi (ASSING 2017). The currently known distribution is illustrated in Map 1.

Leptusa (Neopisalia) pugiofera spec. nov.

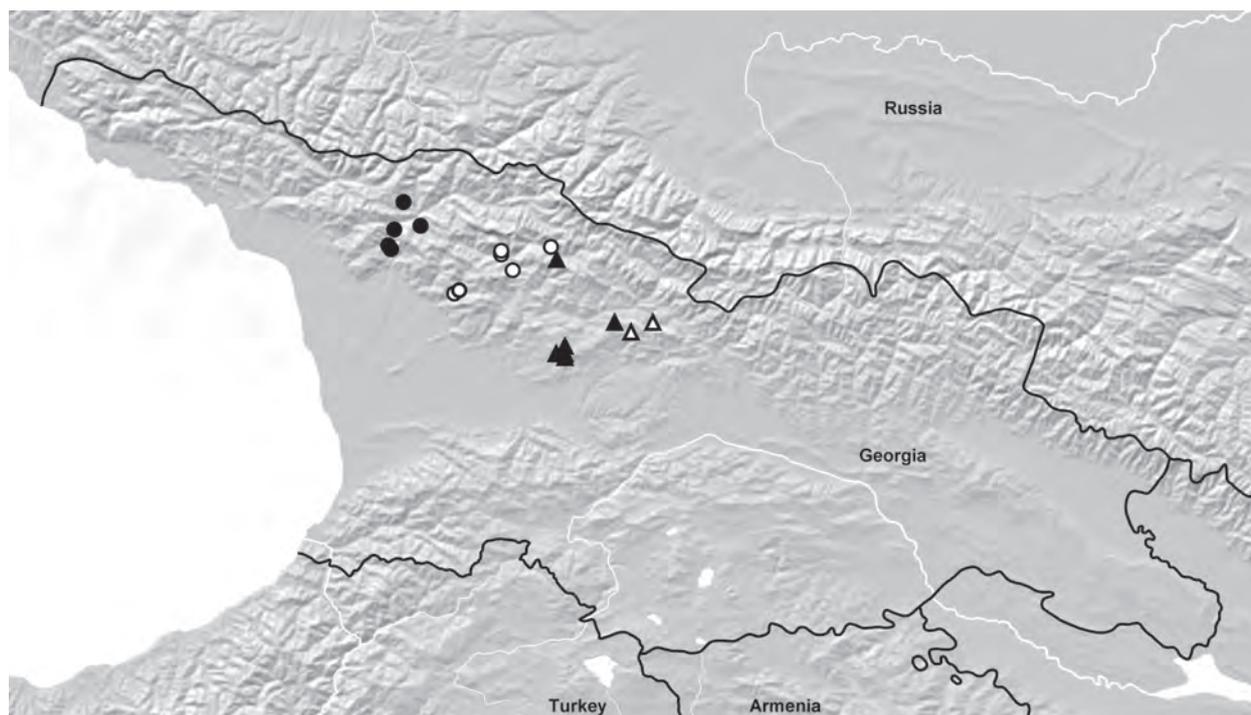
urn:lsid:zoobank.org:act:65DB13D7-F5EB-4C7A-816A-6C3891641F7A

(Figs 1–5, Map 1)

Type material: Holotype ♂: "N42°30'51 E043°31'36 (21), Georgien Racha, Lesora 1410 m, Brachat & Meybohm 19.6.2021 / Holotypus ♂ *Leptusa pugiofera* sp. n. det. V. Assing 2021" (cAss). Paratypes: 1 ♀: "GEORGIA [15] – Racha pass S Oni, 42°28'31"N, 43°24'31"E, 1810 m, forest margin, litter sift., 28.VII.2021, V. Assing" (cAss); 5 ♂♂, 4 ♀♀ [partly teneral]: "GEORGIA [GE2021-15]: Racha, new pass road S Oni, 42°28'31"N, 43°24'31"E, 1810 m, montane forest (*Corylus*, *Acer*) margin, litter sifted, 28.VII.2021, leg. Schülke" (MNB, cAss).

Etymology: The specific epithet is an adjective composed of the Latin noun *pugio* (dagger) and the adjectival suffix *-fera* (carrying). It alludes to the dagger-shaped process at the base of the ventral process of the aedeagus.

Description: Body length 2.1–2.8 mm; length of forebody 0.9–1.2 mm. Habitus as in Fig. 1. Colouration: body reddish to brown with the head often slightly darker, abdominal segment VI and the anterior portion of segment VII blackish, and the abdominal apex



Map 1: Distributions of *Leptusa insculpta* (black circles), *L. svanetica* (white circles), *L. lederi* (filled triangles), and *L. pugiofera* (white triangles).

(segments VIII–X) dark-yellow; legs dark-yellow; antennae reddish.

Head transverse and with pronounced microsculpture rendering the shallow punctation indistinct. Eyes (Fig. 2) small, approximately one-third as long as postocular region in dorsal view, composed of little more than 15 ommatidia. Antennae moderately incrassate apically; antennomeres IV weakly transverse, V–X distinctly transverse and gradually increasing in width.

Pronotum approximately 1.3 times as broad as long and 1.2 times as broad as head; maximal width approximately in the middle; posterior angles weakly marked; punctation fine, shallow, denser than that of head, and indistinct owing to pronounced microsculpture.

Elytra approximately 0.7 times as long as pronotum; microsculpture present, but less pronounced than that of head and pronotum. Hind wings completely reduced.

Abdomen broader than elytra; microsculpture composed of transverse striae and transverse meshes on tergites III–VI and of isodiametric and short transverse meshes on tergite VII; tergite VII with narrow rudiment of a palisade fringe.

♂: tergite VII unmodified; posterior margin of tergite VIII shallowly concave in the middle, otherwise unmodified; posterior margin of sternite VIII strongly convex; median lobe of aedeagus 0.53 mm long, shaped as in Fig. 3, at base of ventral process with pronounced semi-transparent dagger-shaped process; paramere slightly longer than median lobe and shaped as in Fig. 4.

♀: posterior margin of sternite VIII convex; spermatheca shaped as in Fig. 5.

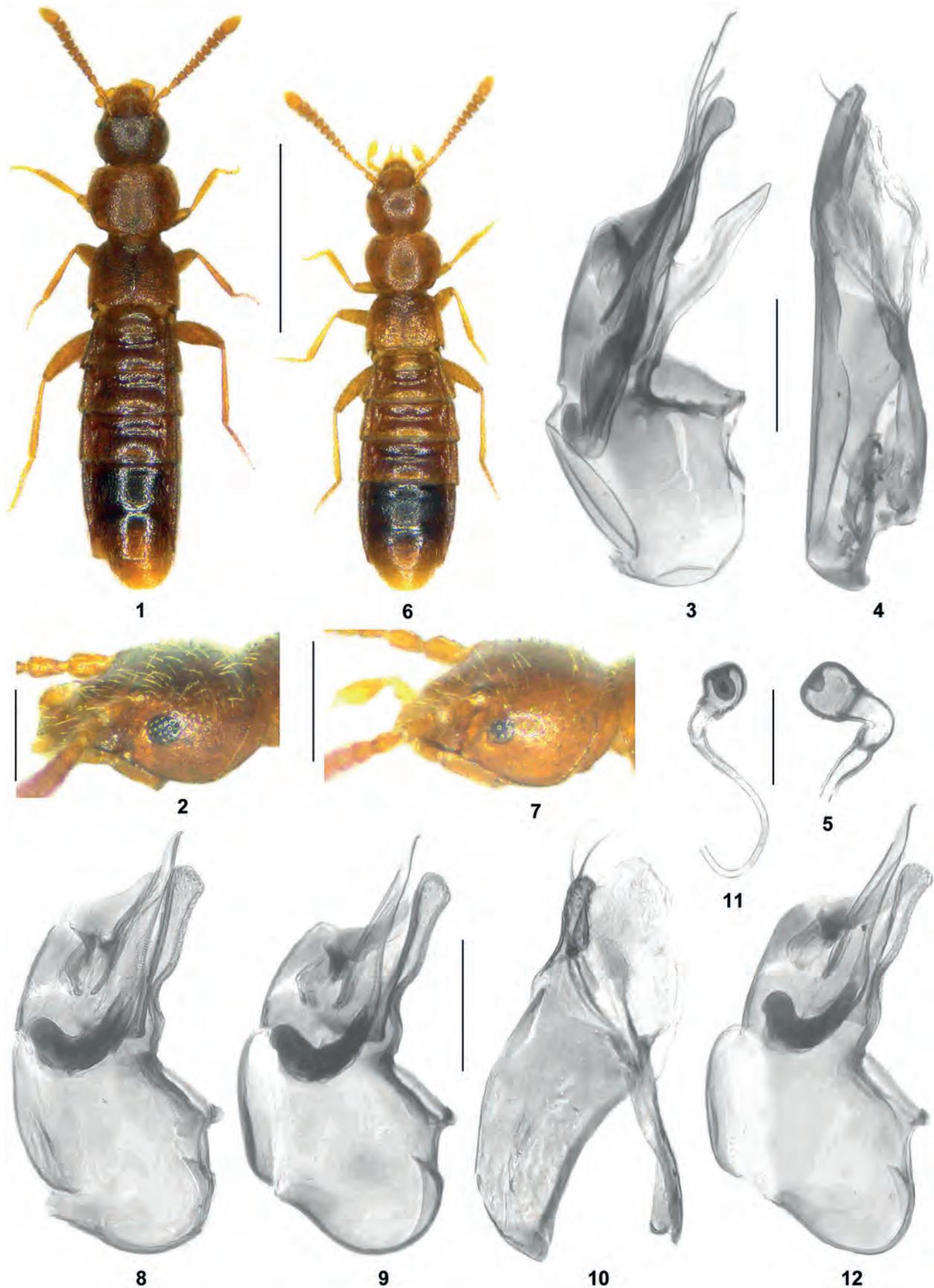
Comparative notes: The shape of the median lobe of the aedeagus somewhat resembles that of *L. abchasica* BERNHAUER, 1935, from which the new species is distinguished by a smaller and more slender body, a less convex pronotum (cross-section), a less glossy forebody with more pronounced microsculpture, and a smaller aedeagus with a ventral process and internal structures of different shapes. *Leptusa pugiofera* differs from the externally similar *L. lederi*, the geographically closest *Neopisalia* species, by the shape of the aedeagus, particularly the completely different structure of the basal projection of the ventral process. For illustrations of *L. abchasica*, *L. lederi*, and other Caucasian *Neopisalia* species see PACE (1989) and ASSING (2011, 2017).

Distribution and natural history: The species was discovered in two localities to the south and southeast of Oni (Racha) (Map 1). The holotype was sifted from litter in an abandoned graveyard with old trees, predominantly beech, at an altitude of 1410 m. The partly teneral paratypes were collected from litter in a montane forest with predominant maple and hazelnut at an altitude of 1810 m. The holotype was found together with *Leptusa venusta* and *L. caucasica*.

Leptusa (Neopisalia) svanetica ASSING, 2017

(Fig. 12, Map 1)

Material examined: Georgia: Zemo Svaneti: 3 ♂♂, N Martvili, Lebarde valley, 42°37'54"N, 42°24'28"E, 580 m, track margin with predominant alder and hazelnut, soil-washing, 13.VIII.2021, leg. Assing (cAss); 1 ♂,



Figs 1–12: *Leptusa pugiofera* (1–5), *L. insculpta* (6–11), and *L. svanetica* from Lebarde valley (12). 1, 6 – habitus; 2, 7 – head in lateral view; 3, 8–9, 12 – median lobe of aedeagus in lateral view; 4, 10 – paramere; 5, 11 – spermatheca. Scale bars: 1, 6: 1.0 mm; 2, 7: 0.2 mm; 3–5, 8–12: 0.1 mm.

1 ♀, same data, but forest with large rocks and with predominant hazelnut and alder, litter sifted (cAss); 1 ♂, N Martvili, Lebarde valley, 42°37'54"N, 42°24'28"E, 580 m, track margin with predominant alder and hazelnut, soil-washing, 16.X.2021, leg. Assing (cAss); 1 ♀, N Martvili, Lebarde valley, 42°37'51"N, 42°24'20"E, 540 m, deciduous forest with rocks, soil-washing, 17.X.2021, leg. Assing (cAss); 1 ♂, 1 ♀ [teneral], N Martvili, Lebarde valley, 42°38'46"N, 42°25'40"E, 840 m, stream valley with deciduous forest, litter sifted, 17.X.2021, leg. Assing (cAss). **Kvemo Svaneti:** 1 ♀, E Lentekhi, mountain track Chvelpi-Latpari pass, 42°50'25"N, 42°56'38"E, 1560 m, beech and hazelnut litter sifted, 29.VII.2021, leg. Assing (cAss); 1 ♂, 1 ♀, NW Lentekhi, 42°48'26"N, 42°39'56"E, 1360 m, moist beech forest, litter and roots sifted, 3.VIII.2021, leg. Assing (cAss); 1 ♂, same data, but soil-washing (cAss).

This recently described species was previously known from only three localities in Kvemo Svaneti and Zemo Svaneti (ASSING 2017, 2021). The distribution may be allo- or parapatric with that of *L. insculpta* (Map 1). The aedeagus of one of the males from Lebarde valley is illustrated in Fig. 12.

Irritatingly, the locality from Zemo Svaneti reported by ASSING (2021) (specimens labeled "NE-slopes of Otepara-Dudi mountain, left bank of Tkheishi river, Kvemo-Vedi env., 42°54'N, 42°12'E, 910 m") is practically within the range of *L. insculpta*. The specimens were studied again and clearly belong to *L. svanetica*. It is currently unclear if the distributions of both species overlap in this region or if the respective specimens were possibly mislabeled. For the time being, the record is considered doubtful and the locality is omitted from Map 1.

The material collected in October is partly teneral, suggesting that pre-imaginal development takes place in late summer and autumn.

Leptusa (Neopisalia) insculpta spec. nov.

urn:lsid:zoobank.org:act:CE43945E-ABB8-41D8-BA13-DE93033EA108
(Figs 6–11, 13–14, Map 1)

Type material: Holotype ♂: "GEORGIA [37] – Zemo Svaneti, NW Khaishi, 43°01'26"N, 42°05'50"E, 1430 m, mixed forest, 6.VIII.2021, V. Assing / Holotypus ♂ *Leptusa pugiofera* sp. n. det. V. Assing 2021" (cAss). Paratypes: 37 ♂♂, 17 ♀♀: same data as holotype (cAss, MNB); 5 exs.: "GEORGIA [GE2021-37]: Zemo Svaneti, NW Khaishi, 43°01'26"N, 42°05'50"E, 1430 m, mixed forest, litter near rotten logs and trunks sifted, 6.VIII.2021, leg. M. Schülke" (MNB); 7 ♂♂, 3 ♀♀: same data as holotype, but 11.VIII.2021 (cAss, MNB); 3 exs.: "GEORGIA [GE2021-37b]: Zemo Svaneti, NW Khaishi, 43°01'26"N, 42°05'50"E, 1430 m, mixed forest, litter near rotten logs and trunks sifted, 11.VIII.2021, M. Schülke" (MNB); 2 ♂♂: "GEORGIA [38] – Zemo Svaneti, S Khaishi, 42°54'45"N, 42°11'39"E, 840 m, alder forest, 7.VIII.2021, V. Assing" (cAss); 6 ♂♂, 4 ♀♀: "GEORGIA [44] – Zemo

Svaneti, N Jvari, 42°49'58"N, 42°01'28"E, 620 m, stream valley, 9.VIII.2021, V. Assing" (cAss, MNB); 1 ♂ [teneral]: "GEORGIA [62a] – Zemo Svaneti, N Jvari, 42°49'58"N, 42°01'28"E, 620 m, stream valley, 18.X.2021, V. Assing" (cAss); 4 ♂♂, 2 ♀♀: "GEORGIA [45] – Zemo Svaneti, N Jvari, 42°49'02"N, 42°01'54"E, 600 m, stream valley, 9.VIII.2021, V. Assing" (cAss, MNB); 1 ♀ [teneral]: "GEORGIA [61] – Zemo Svaneti, N Jvari, 42°49'02"N, 42°01'54"E, 600 m, stream valley, 18.X.2021, V. Assing" (cAss); 1 ♀ [teneral]: same data, but "61a" (cAss); 7 exs. [mostly teneral]: "GEORGIA [GE2021-61]: Zemo Svaneti, N Jvari, 42°49'02"N, 42°01'54"E, 600 m, stream valley with mixed deciduous forest, litter sifted, 18.X.2021, leg. M. Schülke" (MNB); 1 ♂, 1 ♀: "GEORGIA [47] – Zemo Svaneti, N Jvari, 42°53'53"N, 42°02'54"E, 570 m, stream valley, 9.VIII.2021, V. Assing" (cAss, MNB).

Etymology: The specific epithet is the past participle of the Latin verb *insculpere* (to engrave, to carve in) and alludes to the basally distinctly emarginate ventral process of the aedeagus (lateral view), one of the characters distinguishing this species from the similar *L. svanetica*.

Description: Small species; body length 2.2–2.5 mm; length of forebody 0.9–1.1 mm. Habitus as in Fig. 6. Colouration: body pale reddish-brown with abdominal segment VI and the anterior portion of segment VII infusate, and with the abdominal apex (segments VIII–X and posterior portion of segment VII) yellow; legs yellow; antennae yellow to dark-yellow.

Head of orbicular shape; punctuation very fine, indistinct in the pronounced microsculpture, visible only at high magnification (100 x). Eyes (Fig. 7) very small, approximately one-fourth as long as postocular region in dorsal view, composed of 5–8 ommatidia. Antennae incrassate apically; antennomeres IV as long as broad or weakly transverse, V–X increasingly transverse and gradually increasing in width.

Pronotum approximately 1.2 times as broad as long and 1.15 times as broad as head, strongly convex in cross-section; maximal width near anterior angles, lateral margins strongly converging posteriad; punctuation and microsculpture similar to those of head.

Elytra approximately 0.7 times as long as pronotum; microsculpture present, but less pronounced than that of head and pronotum; punctuation much coarser and more distinct than that of head and pronotum. Hind wings completely reduced.

Abdomen broader than elytra; microsculpture composed of transverse striae and transverse meshes on tergites III–VI and of isodiametric and short transverse meshes on tergite VII; tergite VII with or without narrow rudiment of a palisade fringe; posterior margin of tergite VIII convex, or indistinctly concave in the middle.

♂: tergites VII and VIII unmodified; posterior margin of sternite VIII angularly produced; median lobe of aedeagus approximately 0.30 mm long, shaped as in



Figs 13–14: Type locality of *Leptusa insculpta* (Zemo Svaneti, NW Khaishi, 43°01'26"N, 42°05'50"E, 1430 m). A total of 71 type specimens was collected in this locality.

Figs 8–9; paramere approximately as long as median lobe and shaped as in Fig. 10.

♀: posterior margin of sternite VIII strongly convex; spermatheca as in Fig. 11.

Comparative notes: The practically identical external and very similar male sexual characters suggest that *L. insculpta* is the adelphotaxon of *L. svanetica*, from which it is reliably distinguished only by the shape of the median lobe of the aedeagus. In *L. insculpta*, the latter is slightly smaller (*L. svanetica*: length 0.32–0.33 mm), and the basal portion of the aedeagus is more deeply emarginate and distinctly angular. For comparison, the aedeagus of one of the males of *L. svanetica* from Lebarde valley is illustrated in Fig. 12.

Distribution and natural history: The type material was collected in two localities to the northwest of Khaishi, close to the border of Zemo Svaneti with Abkhazia, and in three localities near the eastern shore of Jvari reservoir (Map 1), suggesting that the distribution is confined to the extreme northwest of Georgia and possibly also includes the east of Abkhazia. Most of the specimens were sifted from deep litter, often near dead tree trunks and logs in mixed forests. The type locality, where 71 specimens were collected, is illustrated in Figs 13–14. A substantial number of specimens was collected by soil-washing. This, in combination with the strongly reduced eyes and the fact that the species had never been found before, suggests that *L. insculpta* inhabits deeper strata of the leaf litter and soil. Syntopic congeners were *L. storkani* and *L. venusta*. Several beetles found by soil-washing in August and most of the specimens collected in October are teneral, suggesting that pre-imaginal development occurs in summer and autumn.

Leptusa (Roubaliusa) storkani ROUBAL, 1917

Material examined: Georgia: Zemo Svaneti: 1 ex., NW Khaishi, 42°59'54"N, 42°09'25"E, 900 m, alder forest, litter sifted, 6.VIII.2021, leg. Assing; 22 exs., NW Khaishi, 43°01'28"N, 42°05'42"E, 1440 m, mixed forest, litter near rotten logs and rotten trunks sifted, 6.VIII.2021, leg. Assing & Schülke; 11 exs., same data, but 11.VIII.2021; 30 exs., NW Khaishi, 43°01'26"N, 42°05'50"E, 1430 m, mixed forest, litter near rotten logs and rotten trunks sifted, 6.VIII.2021, leg. Assing & Schülke; 1 ex., same data, but soil-washing; 19 exs., same data, but litter near rotten logs and rotten trunks sifted, 11.VIII.2021, leg. Assing & Schülke; 3 exs., NW Khaishi, 43°01'16"N, 42°06'14"E, 1360 m, mixed forest, litter near dead trunks and logs sifted, 7.VIII.2021, leg. Assing & Schülke; 18 exs., NW Khaishi, 43°01'22"N, 42°06'00"E, 1410 m, mixed forest, litter near trunks and logs sifted, 7.VIII.2021, leg. Assing & Schülke; 1 ex., S Mestia, 43°01'09"N, 42°42'19"E, 1860 m, secondary mixed forest, litter under hazelnut and undergrowth sifted, 8.VIII.2021, leg. Schülke; 6 exs.,

S Mestia, 43°01'09"N, 42°42'19"E, 1860 m, secondary mixed forest, litter under hazelnut, undergrowth, and spruce sifted, 8.VIII.2021, leg. Assing & Schülke; 3 exs., N Jvari, 42°49'02"N, 42°01'54"E, 600 m, stream valley with mixed deciduous forest, litter sifted, 9.VIII.2021, leg. Assing; 1 ex., same data, but 18.X.2021, leg. Schülke; 1 ex., N Khaishi, 43°05'11"N, 42°11'05"E, 1080 m, alder forest, litter sifted, 10.VIII.2021, leg. Assing; 1 ex., WSW Khaishi, 42°56'04"N, 42°09'15"E, 670 m, stream valley with scree and ferns, moist and deep litter between stones sifted, 10.VIII.2021, leg. Assing; 1 ex., N Martvili, Lebarde valley, 42°38'46"N, 42°25'40"E, 840 m, stream valley with deciduous forest, litter sifted, 17.X.2021, leg. Assing. **Kvemo Svaneti:** 2 exs., Chvelpi–Latpari pass, 42°51'19"N, 42°56'38"E, 2100 m, litter of birch, hazelnut, sorbus, and rhododendron, litter sifted, 15.VI.2021, leg. Brachat & Meybohm; 8 exs., Chvelpi–Latpari pass, 42°50'58"N, 42°56'42"E, 1950 m, beech forest, litter sifted, 15.VI.2021, leg. Brachat & Meybohm; 1 ex., Chvelpi–Latpari pass, 42°50'36"N, 42°56'26"E, 1600 m, mixed forest with rhododendron, litter sifted, 15.VI.2021, leg. Brachat & Meybohm; 2 exs., E Lentekhi, mountain track Chvelpi–Latpari pass, 42°50'25"N, 42°56'38"E, 1560 m, beech and hazelnut litter sifted, 29.VII.2021, leg. Assing; 20 exs., E Lentekhi, mountain track Chvelpi–Latpari pass, 42°50'58"N, 42°56'43"E, 1870 m, beech forest, litter sifted, 30.VII.2021, leg. Assing & Schülke; 1 ex., E Lentekhi, mountain track Chvelpi–Latpari pass, 42°50'30"N, 42°56'33"E, 1600 m, beech forest, litter and dead wood sifted, 30.VII.2021, leg. Assing. Material in MNB and cAss.

Leptusa storkani is endemic to the western Greater Caucasus, where it is rather widespread and common. For a distribution map see ASSING (2017).

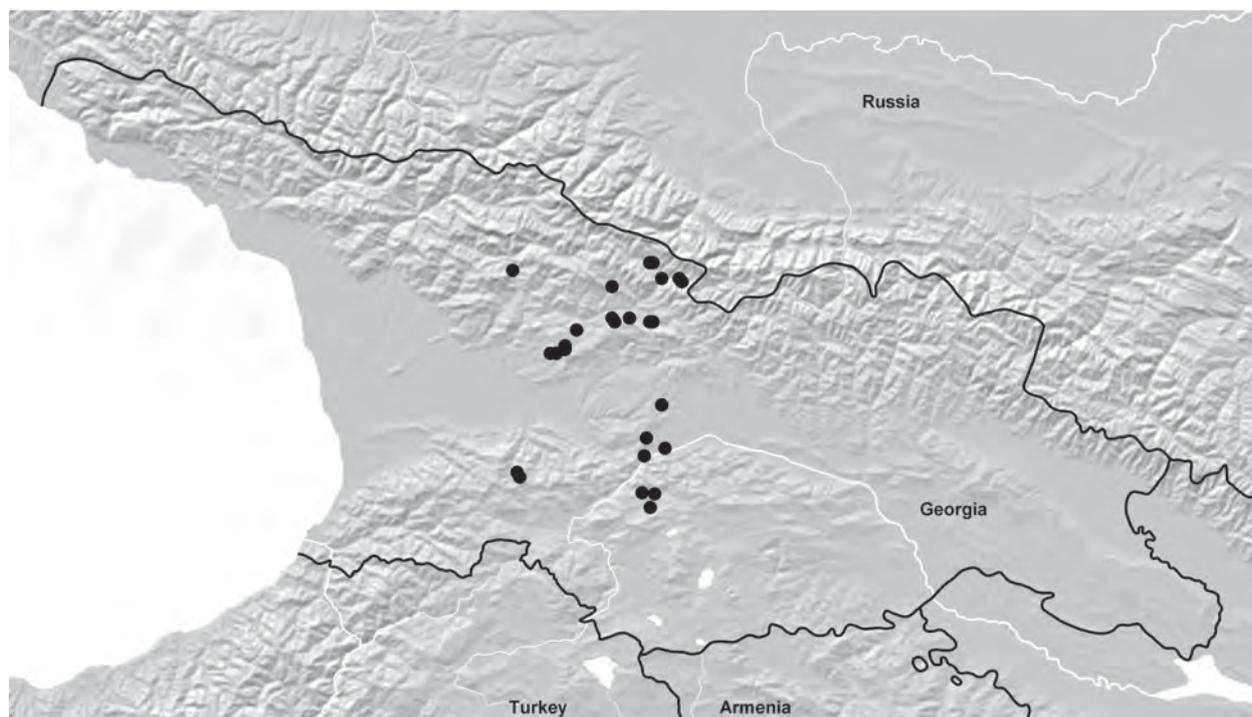
Leptusa (Neopisalia) cf. kaszabi PACE, 1981

Material examined: Georgia: Imereti: 1 ♀, pass 25 km SE Sachkhere, 42°09'54"N, 43°35'44"E, 1190 m, deciduous forest with predominant *Fagus* and *Carpinus*, litter sifted, 23.X.2021, leg. Assing (cAss).

This species was originally described based on a unique male from “Kaukasus, Mihailovo Suram” (PACE 1981). Subsequent records are wanting. The locality where the above female was collected is not far from the type locality, but a male would be required to confirm that it is in fact conspecific with the holotype.

Leptusa (Stictopisalia) caucasica EPPELSHEIM, 1878
(Map 2)

Material examined: Georgia: Racha: 1 ex., Likheti, 42°40'10"N, 43°17'54"E, 1090 m, moist deciduous forest, litter sifted, 17.VI.2021, leg. Brachat & Meybohm;



Map 2: Distribution of *Leptusa caucasica*.

113 exs., N Oni, E Ghebi, 42°45'54"N, 43°31'36"E, 1450 m, moist deciduous forest with predominant old *Fagus*, litter sifted, 22.X.2021, leg. Assing & Schülke; 19 exs., N Oni, E Ghebi, 42°45'45"N, 43°31'04"E, 1410 m, deciduous forest with predominant old *Fagus* and alder, litter sifted, 27.X.2021, leg. Assing & Schülke; 2 exs., same data, but soil-washing, leg. Assing; 11 exs., E Ghebi, 42°46'N, 43°32'E, 1450 m, slope with very old beech, litter sifted, 18.VI.2021, leg. Brachat & Meybohm; 2 exs., Lesora, 42°31'21"N, 43°31'30"E, 1090 m, moist slope with *Petasites*, litter sifted, 19.VI.2021, leg. Brachat & Meybohm; 1 ex., SE Oni, Lesora, 42°30'50"N, 43°31'37"E, 1440 m, graveyard with old trees, predominantly *Fagus*, litter sifted, 24.VII.2021, leg. Assing; 1 ex., E Ambrolauri, SE Oni, Tskhmori, 42°32'36"N, 43°28'35"E, 1120 m, deciduous forest with predominant alder, litter near stream sifted, 23.VII.2021, leg. Schülke; 1 ex., new pass road S Oni, 42°28'27"N, 43°24'23"E, 1810 m, moist montane forest with predominant hazelnut, litter sifted, 24.VII.2021, leg. Schülke; new pass road S Oni, 42°28'31"N, 43°24'31"E, 1810 m, montane forest (*Corylus*, *Acer*) margin, litter sifted, 28.VII.2021, leg. Schülke; 50 exs., NE Oni, Shovi, 42°41'47"N, 43°41'05"E, 1580 m, forest margin with predominant *Carpinus*, litter and roots sifted, 25.VII.2021, leg. Assing & Schülke; 1 ex., NE Oni, W Gola, 42°41'47"N, 43°35'04"E, 1140 m, mixed forest margin, litter sifted, 25.VII.2021, leg. Assing; 4 exs., SW Ambrolauri, N Nakerala pass, 42°24'41"N, 43°02'28"E, 1160 m, clearing in beech forest, beech litter at forest margin sifted, 26.VII.2021, leg. Assing & Schülke; 49 exs., mountain road E Ambrolauri, 42°31'04"N, 43°19'10"E, 1530 m, deep valley with *Carpinus* and *Acer*, litter sifted,

27.VII.2021, leg. Assing & Schülke; 35 exs., same data, but 20.X.2021; 47 exs., same data, but 28.X.2021; 4 exs., mountain road E Ambrolauri, 42°31'42"N, 43°17'54"E, 1120 m, stream valley, litter sifted, 27.VII.2021, leg. Assing & Schülke; 40 exs., mountain road E Ambrolauri, 42°31'06"N, 43°18'26"E, 1350 m, ditch with small trees and bushes, litter sifted, 28.X.2021, leg. Assing & Schülke; 8 exs., mountain road E Ambrolauri, 42°31'10"N, 43°18'23"E, 1330 m, *Carpinus* forest, litter sifted, 28.X.2021, leg. Assing & Schülke. **Imereti:** 3 exs., SW Ambrolauri, Nakerala pass, 42°23'09"N, 42°58'45"E, 1440 m, fir forest margin, litter under rhododendron, spruce, and *Tussilago* sifted, 26.VII.2021, leg. Assing & Schülke; 2 exs., pass 25 km SE Sachkhere, 42°10'05"N, 43°35'12"E, 1120 m, secondary beech forest, litter sifted, 23.X.2021, leg. Assing; 18 exs., pass 25 km SE Sachkhere, 42°09'54"N, 43°35'44"E, 1190 m, deciduous forest with predominant *Fagus* and *Carpinus*, litter sifted, 23.X.2021, leg. Assing & Schülke; 1 ex., 6 km W Surami, 42°01'34"N, 43°29'49"E, 940 m, margin of *Fagus* and *Carpinus* forest, litter sifted, 24.X.2021, leg. Assing; 4 exs., NW Surami, Rikoti pass, 42°03'40"N, 43°28'59"E, 930 m, stream valley with chestnut and alder, chestnut litter sifted, 24.X.2021, leg. Schülke; 1 ex., same data, but soil-washing, leg. Assing. Material in MNB and cAss.

Leptusa caucasica has been recorded only from Georgia, where it is distributed in parts of both the Greater and the Lesser Caucasus, including the connecting Suram range. The currently known distribution is illustrated in Map 2.

Leptusa (Dysleptusa) fuliginosa (AUBÉ, 1850)

Material examined: **Georgia: Zemo Svaneti:** 1 ex., N Khaishi, 43°02'38"N, 42°10'20"E, 1250 m, mixed forest, moist litter near small stream sifted, 5.VIII.2021, leg. Assing; 1 ex., NW Khaishi, 43°01'28"N, 42°05'42"E, 1440 m, mixed forest, litter near rotten logs and rotten trunks sifted, 6.VIII.2021, leg. Assing; 1 ex., N Khaishi, 43°05'11"N, 42°11'05"E, 1080 m, alder forest, bark sifted, 10.VIII.2021, leg. Assing; 1 ex., N Martvili, Lebarde valley, 42°37'54"N, 42°24'28"E, 580 m, track margin with predominant alder and hazelnut, litter sifted, 13.VIII.2021, leg. Assing. **Kvemo Svaneti:** 7 exs., E Lentekhi, S Panaga, 42°49'46"N, 42°55'09"E, 1160 m, deciduous forest, bark sifted, 1.VIII.2021, leg. Assing; 2 exs., Chvelpi–Latpari pass, 42°51'19"N, 42°56'38"E, 2100 m, litter of birch, hazelnut, sorbus, and rhododendron, litter sifted, 15.VI.2021, leg. Brachat & Meybohm; 4 exs., Chvelpi–Latpari pass, 42°50'58"N, 42°56'42"E, 1950 m, beech forest, litter sifted, 15.VI.2021, leg. Brachat & Meybohm; 2 exs., Chvelpi–Latpari pass, 42°50'30"N, 42°56'33"E, 1510 m, forest with beech and alder, litter sifted, 16.VI.2021, leg. Brachat & Meybohm; 1 ex., E Lentekhi, mountain track Chvelpi–Latpari pass, 42°50'58"N, 42°56'43"E, 1870 m, beech forest, litter sifted, 30.VII.2021, leg. Schülke. **Racha:** 3 exs., NE Oni, Shovi, 42°41'47"N, 43°41'05"E, 1580 m, forest margin with predominant *Carpinus*, litter and roots sifted, 25.VII.2021, leg. Assing & Schülke; 1 ex., N Oni, E Ghebi, 42°45'54"N, 43°31'36"E, 1450 m, moist deciduous forest with predominant old *Fagus*, litter sifted, 22.X.2021, leg. Schülke; 1 ex., N Oni, E Ghebi, 42°45'45"N, 43°31'04"E, 1410 m, deciduous forest with predominant old *Fagus* and alder, litter sifted, 27.X.2021, leg. Schülke. Material in MNB and cAss.

For a map illustrating the distribution of this widespread Caucasian species see ASSING (2017).

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