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On the *Leptusa* species of Turkey. VII. Notes on distribution, a new species, a new synonymy, and additional records (Coleoptera: Staphylinidae: Aleocharinae)

V. ASSING

A b s t r a c t : *Leptusa* (*Dysleptusa*) *improvisa* nov.sp. (Turkey: Antalya) is described and illustrated. *Stenoleptusa* SCHEERPELTZ 1966, nov.syn., is placed in the synonymy of *Neopisalia* SCHEERPELTZ 1966. Additional records of seven species are presented. In all, 26 species and two doubtful subspecies are now known from Turkish territory. The general distribution of the genus and three subgenera in Turkey, and the individual distributions of nine species are mapped.

K e y w o r d s : Coleoptera, Staphylinidae, Aleocharinae, *Leptusa*, Turkey, taxonomy, new species, new synonymy, distribution, new records.

1. Introduction

According to a recent catalogue (ASSING 2007), twenty-five species and two subspecies of *Leptusa* KRAATZ 1856 were previously known from Turkey. Twenty-four species are currently attributed to eight subgenera, the subgeneric affiliations of one species from Kahramanmaraş are unclear. The vast majority of species with restricted distributions (local endemics) refer to two subgenera, *Neopisalia* SCHEERPELTZ 1966 (14 species) and *Stictopisalia* SCHEERPELTZ 1966 (4 species). The status of the two subspecies, *L. ionopolitana amisensis* PACE 1982 (description based on a female) and *L. paphlagonia othmaniorum* PACE 1983, is doubtful and requires revision.

The distribution of the *Leptusa* fauna in Turkey is remarkably uneven. Three species are more or less widespread: *L. pulchella* (MANNERHEIM 1830) (W-Palaearctic, in Turkey recorded only from the north), *L. asiatica* BERNHAUER 1909 (Turkey, recorded both from the north and the south), and *L. samia* ASSING 2004 (Greece: Samos; Turkey: Manisa). Of the remaining twenty-two species, as many as nineteen are confined to the north, from Istanbul to Artvin, with the highest diversity in the northeast. The distribution of one species, *L. janczyki* PACE 1983 (type locality: "Lagistan"), is unclear; according to ANLAŞ (pers. comm.) Lagistan is synonymous with Lazistan and refers to Rize and/or Artvin. The aedeagus of this species is rather similar to that of *L. soganlica* ASSING 2007 from Rize and the possibility that both names will eventually turn out to be synonymous cannot be excluded. Only three endemic species have been described from the south, all of them from central southern Anatolia (Kahramanmaraş, Antakya). Recently, the first

locally endemic species was discovered in western Anatolia (Aydın); since only females have become available, this species has not been described. No records of endemic *Leptusa* were known from central Anatolia and from southwestern Anatolia between Aydın and Kahramanmaraş (ASSING 2007).

The new data are primarily based on the results of two field trips conducted in 2008, one by Volker Brachat (Geretsried) and Heinrich Meybohm (Großhansdorf) to southwestern Anatolia in April and one by Michael Schülke (Berlin) and the author to northeastern Anatolia in July.

2. Material and methods

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

OÖLL..... Oberösterreichisches Landesmuseum/Biologiezentrum Linz (F. Gusenleitner)
 cAss..... author's private collection
 cFel private collection Benedikt Feldmann, Münster
 cSch..... private collection Michael Schülke, Berlin
 cWun..... private collection Paul Wunderle, Mönchengladbach

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

The maps were generated using the online generic mapping tool (GMT) of the Geomar website at www.aquarius.ifm-geomar.de/omc.

Head length was measured from the anterior margin of the clypeus 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.

3. Results

The new data confirm that the diversity of the *Leptusa* fauna in Turkey is highest in the northeast and decreases towards the west and south (Map 1). The province with the greatest number of species (doubtful subspecies and *L. janczyki* not considered) is Rize (9 species), followed by Trabzon (7), Ordu (5), Artvin (4), Gümüşhane (4), Giresun (4), Samsun (3), Kocaeli/Sakaria (3), and several provinces from where less than 3 species have been reported. Furthermore, in northern Turkey distribution ranges tend to be much more restricted in the east (Rize, Trabzon) than in the west, particularly in species of the subgenus *Neopisalia* SCHEERPELTZ.

3.1 Subgenus *Neopisalia* SCHEERPELTZ

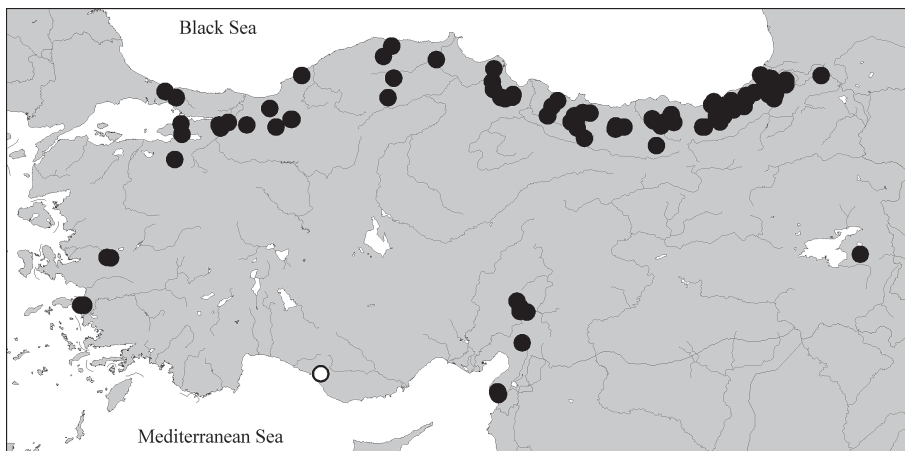
Neopisalia SCHEERPELTZ 1966: 16.

Stenoleptusa SCHEERPELTZ 1966: 10; **nov.syn.**

C o m m e n t : The subgenus *Neopisalia* (type species: *Leptusa microphthalma* REITTER 1887) previously included 26 species, 23 of which are confined to Turkey and the Caucasus region. Only two species were attributed to the subgenus *Stenoleptusa* (type

species: *Bolitochara laeviuscula* HOCHHUTH 1849); both of them are distributed in the western Caucasus (including northeastern Anatolia and Armenia). The separation of both subgenera is mainly based on the morphology of the aedeagus, especially the length of the ventral process and of the long internal tube (see PACE 1989). In the meantime, however, species have been discovered whose aedeagal morphology is transitional between those of the species of *Stenoleptusa* and *Neoleptusa*; for a striking example see the illustrations of the aedeagus of *L. sica* ASSING in ASSING (2003). These observations suggest that the aedeagal morphology of the two species previously attributed to *Stenoleptusa* is an expression of intra- rather than intersubgeneric variation and that both subgenera are consequently synonymous, a conclusion supported also by the distributions of the two *Stenoleptusa* species. Since *Neopisalia* and *Stenoleptusa* were both described in the same article, the former is here designated as the senior synonym, and the latter is placed in its synonymy.

In all, 14 species of *Neopisalia*, all of them with more or less restricted distributions, have become known from Turkey (ASSING 2007), where the distribution of the subgenus is confined to northeastern and central southern Anatolia (Map 2).



Map 1: Distribution of the genus *Leptusa* in Turkey (all records pooled); open circle: type locality of *L. improvisa* nov.sp.

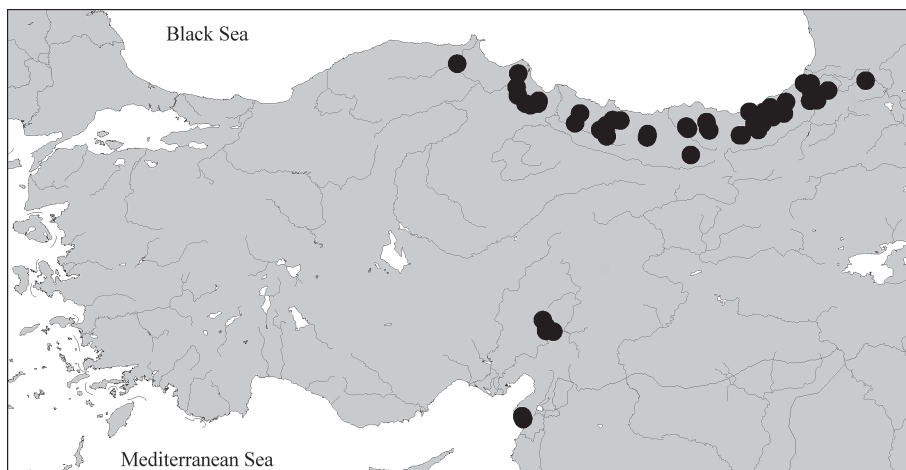
Leptusa (Neopisalia) diecki PACE 1983 (Map 3)

Material examined: **Turkey:** **Ordu:** 3 exs., ca. 30 km SW Ordu, 1 km NE Gökkyöy, 40°43'N, 37°37'E, 1050 m, *Fagus* forest with *Rhododendron* and *Ilex* undergrowth, sifted, 13.VII.2008 (cAss); 37 exs., road Ünye-Akkuş, 18 km NE Akkuş, 40°56'N, 37°06'E, 920 m, mixed deciduous forest (predominantly *Fagus*), litter sifted, 15.VII.2008, leg. Assing (cAss, cSch); 1 ex., 11 km W Gökkyöy, 40°41'N, 37°30'E, 1040 m, wet stream valley, *Carpinus* forest with *Rhododendron*, moist litter near stream bank sifted, 22.VII.2008, leg. Assing & Schülke (cAss, cSch); 8 exs., 15 km S Gökkyöy, Harçbeli Geç., 40°35'N, 37°38'E, 1610 m, *Fagus* forest with *Rhododendron*, litter and mushrooms sifted, 22.VII.2008, leg. Assing (cAss). **Samsun:** 103 exs., 33 km SW Samsun, road Kavak-Asarcık, 7 km SE Kavak, 41°03'N, 36°07'E, 470 m, *Quercus-Carpinus* forest, litter sifted, 20.VII.2008, leg. Assing & Schülke (cAss, cFel, cSch, cWun); 12 exs., 25 km S Samsun, NE Asarcık, 41°05'N, 36°16'E, 880 m, *Fagus-Quercus-Carpinus* forest, litter in dry stream sifted, 20.VII.2008, leg. Assing & Schülke (cAss, cSch);

28 exs., 20 km S Samsun, NE Asarcık, 41°07'N, 36°17'E, 840 m, *Quercus-Carpinus* forest with *Rhododendron*, litter sifted, 20.VII.2008, leg. Assing & Schülke (cAss, cSch).

C o m m e n t : The distribution ranges from Trabzon in the east to Samsun in the west, from where the species is here reported for the first time. For previous records see ASSING (2002, 2003, 2007) and PACE (1983, 1989). The western limit of its distribution appears to be approximately at the Hacılar Geçidi, i. e., the national road (no. 795) between Samsun and Amasya. To the west of this line, *L. diecki* is apparently replaced by the vicariant sister species *L. confinis* (Map 3).

Several of the above specimens, all of them collected in July, are teneral.



Map 2: Distribution of the Turkish representatives of the subgenus *Neopisalia* SCHEERPELTZ (all records pooled). For maps illustrating the individual distributions see ASSING (2007) and Map 3.

***Leptusa (Neopisalia) confinis* PACE 1982 (Map 3)**

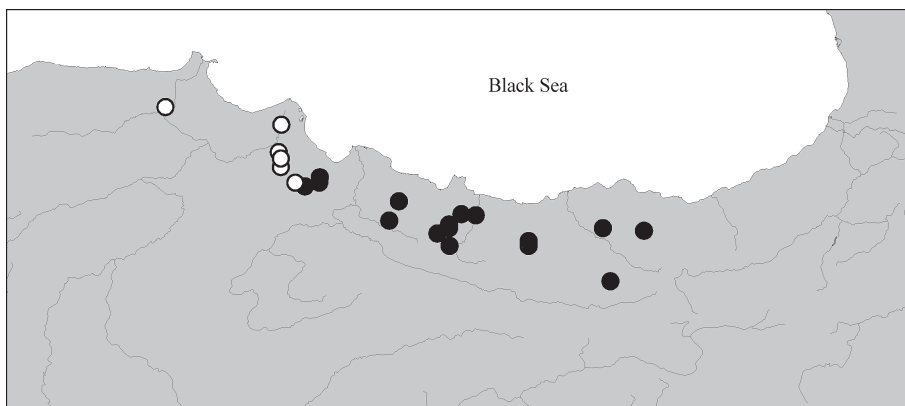
M a t e r i a l e x a m i n e d : Turkey: Samsun: 15 exs., 31 km NE Havza, 41°12'N, 35°52'E, 670 m, *Fagus* forest, litter sifted, 20.VII.2008, leg. Assing (cAss); 1 ex., 40 km W Samsun, 41°16'25"N, 35°51'46"E, 890 m, *Fagus* forest, litter sifted, 21.VII.2008, leg. Schülke (cSch); 67 exs., 41 km W Samsun, 27 km S Bafra, 41°19'N, 35°51'E, 220 m, stream valley, *Fagus* forest with scattered *Alnus*, litter sifted, 21.VII.2008, leg. Assing & Schülke (cAss, cFel, cSch, cWun).

C o m m e n t : This species has become known only from Sinop and Samsun provinces; for previous records see PACE (1989) and ASSING (2007). The eastern limit of its distribution is apparently identical to the western limit of the vicariant *L. diecki* (Map 3). Several of the above specimens, all of them collected in July, are teneral.

***Leptusa (Neopisalia) crinita* ASSING 2007**

M a t e r i a l e x a m i n e d : Turkey: Rize: 1 ex., 32 km SSE Ardeşen, SE Ayder, 40°56'N, 41°09'E, 1730 m, mixed forest (*Alnus*, *Picea*) with undergrowth (*Rhododendron*, *Rubus*), sifted, 10.VII.2008, leg. Assing (cAss).

C o m m e n t : This recently described species was previously known only from the type locality in Rize province (ASSING 2007).



Map 3: Distributions of *L. confinis* PACE (open circles) and *L. diecki* PACE (filled circles) in north-eastern Turkey.

***Leptusa (Neopisalia) sica* ASSING 2003**

Material examined: Turkey: R i z e : 35 exs., 32 km SSE Ardeşen, SE Ayder, 40°56'N, 41°09'E, 1730 m, mixed forest (*Alnus*, *Picea*) with undergrowth (*Rhododendron*, *Rubus*), sifted, 10.VII.2008, leg. Assing & Schülke (cAss, cSch); 38 exs., 25 km S Pazar, 40°58'N, 40°52'E, 670 m, moist mixed forest (*Picea*, *Castanea*, *Rhododendron*), litter sifted, 11.VII.2008, leg. Assing & Schülke (cAss, cSch).

Comment: The known distribution of *L. sica* is confined to several localities in Rize province (ASSING 2003, 2007). Some of the above specimens are teneral.

3.2 Subgenus *Roubaliusa* SCHEERPELTZ

This subgenus is represented in Turkey only by a single species, whose distribution is confined to northeastern Anatolia.

***Leptusa (Roubaliusa) trapezuntis* PACE 1989**

Material examined: Turkey: O r d u : 2 exs., ca. 30 km SW Ordu, 1 km NE Gök köy, 40°43'N, 37°37'E, 1050 m, *Fagus* forest with *Rhododendron* and *Ilex* undergrowth, sifted, 13.VII.2008, leg. Assing & Schülke (cAss); 5 exs., road Ünye-Akkuş, 18 km NE Akkuş, 40°56'N, 37°06'E, 920 m, mixed deciduous forest (predominantly *Fagus*), litter sifted, 15.VII.2008, leg. Assing & Schülke (cAss, cSch).

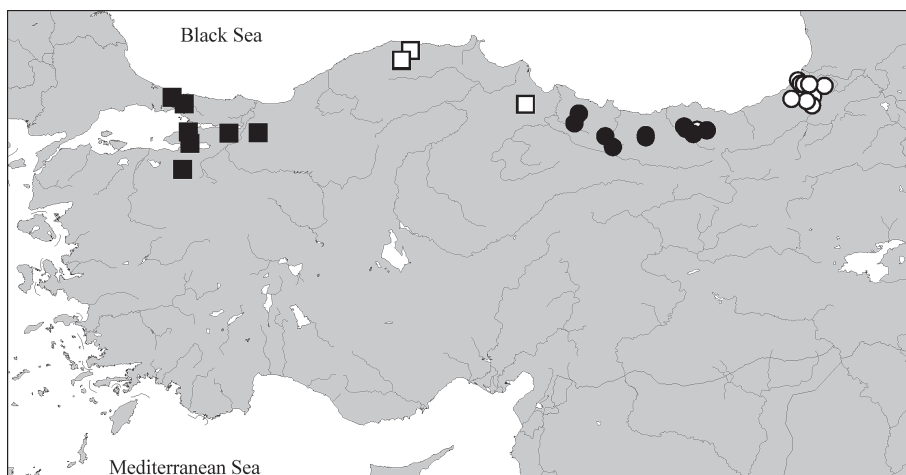
Comment: This species has become known from Ordu, Giresun, and Gümüşhane (ASSING 2003, 2007; PACE 1989); for a distribution map see ASSING (2007).

3.3 Subgenus *Stictopisalia* SCHEERPELTZ

Comment: *Stictopisalia* is represented in Turkey by four species, all of them occurring in the north (Map 4).

***Leptusa (Stictopisalia) fibula* ASSING 2003 (Map 4)**

Material examined: **Turkey:** Giresun: 10 exs., 40 km S Giresun, Şehitler Geçidi, 40°34'N, 38°27'E, 1790 m, spruce forest with *Rhododendron*, litter sifted, 23.VII.2008, leg. Assing & Schülke (cAss, cSch). Ordu: 19 exs., 75 km S Ordu, 34 km SSE Gököy, W Mesudiye, 40°25'N, 37°47'E, 1520 m, *Fagus* forest, moist litter near small stream sifted, 13.VII.2008, leg. Assing & Schülke (cAss, cFel, cSch); 15 exs., road Ünye-Akkuş, 18 km NE Akkuş, 40°56'N, 37°06'E, 920 m, mixed deciduous forest (predominantly *Fagus*), litter sifted, 15.VII.2008, leg. Assing & Schülke (cAss, cSch); 6 exs., 15 km S Gököy, Harçbeli Geçidi, 40°35'N, 37°38'E, 1610 m, *Fagus* forest with *Rhododendron*, litter and mushrooms sifted, 22.VII.2008, leg. Assing & Schülke (cAss, cSch).



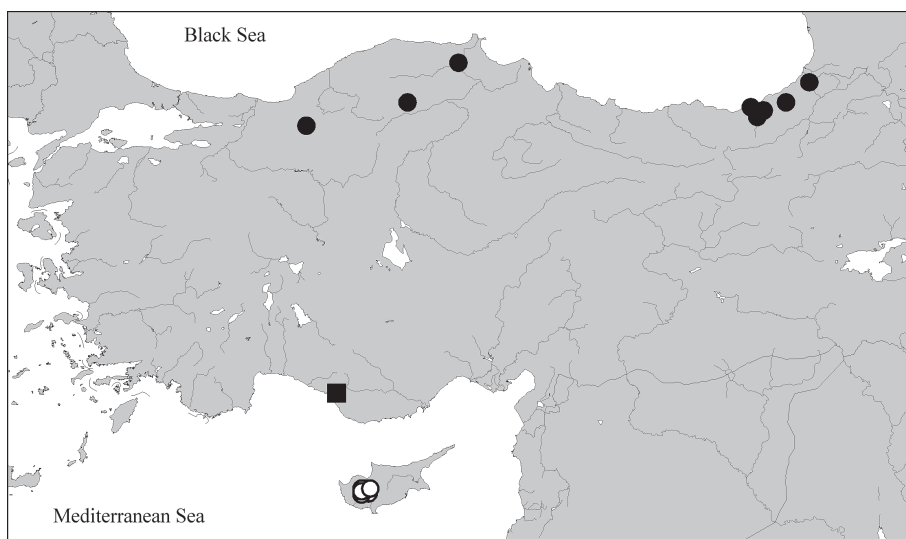
Map 4: Distribution of the subgenus *Stictopisalia* SCHEERPELTZ in Turkey: *L. merkli* BERNHAUER (filled squares), *L. ionopolitana* PACE (open squares), *L. fibula* ASSING (filled circles), and *L. artviniensis* PACE (open circles).

Comment: The species was originally described based on few specimens from Akkuş in Ordu (ASSING 2003) and later also recorded from Gümüşhane, Giresun, and Trabzon (ASSING 2007) (Map 4). A comparison of the material from different regions revealed that the aedeagus is remarkably variable. In the easternmost populations (Trabzon), the length from the apex of the ventral process to the base is usually 0.45-0.48 mm, whereas in material from Ordu it is 0.38-0.42 mm. However, intermediate conditions are found in populations from Giresun and Gümüşhane, suggesting that the observed differences are an expression of clinal intraspecific variation.

Some of the above specimens are teneral.

3.4 Subgenus *Dysleptusa* PACE

Comment: This subgenus was previously represented in Turkey by only one species, *L. fuliginosa* (AUBÉ 1850), whose distribution is confined to the north; another species, *L. cerrutii* COIFFAIT 1970 is endemic to - and quite common in - Cyprus (ASSING & WUNDERLE 2001) (Map 5).



Map 5: Distribution of the subgenus *Dysleptusa* PACE in Turkey and Cyprus: *L. fuliginosa* (AUBÉ) (filled circles), *L. improvisa* nov.sp. (filled square), and *L. cerrutii* COIFFAIT (open circles).

***Leptusa (Dysleptusa) improvisa* nov.sp.** (Figs 1-9, Maps 1, 5)

Type material: Holotype ♂: "N36°31'44" E32°14'04", TR Antalya, Alanya-Taskent, 30 km von Alanya, 1140 m, Brachat & Meybohm, 25.4.2008 / Holotypus ♂ *Leptusa improvisa* sp.n. det. V. Assing 2008 (cAss). Paratypes: 4♂♂, 6♀♀: same data as holotype (cAss, OÖLL).

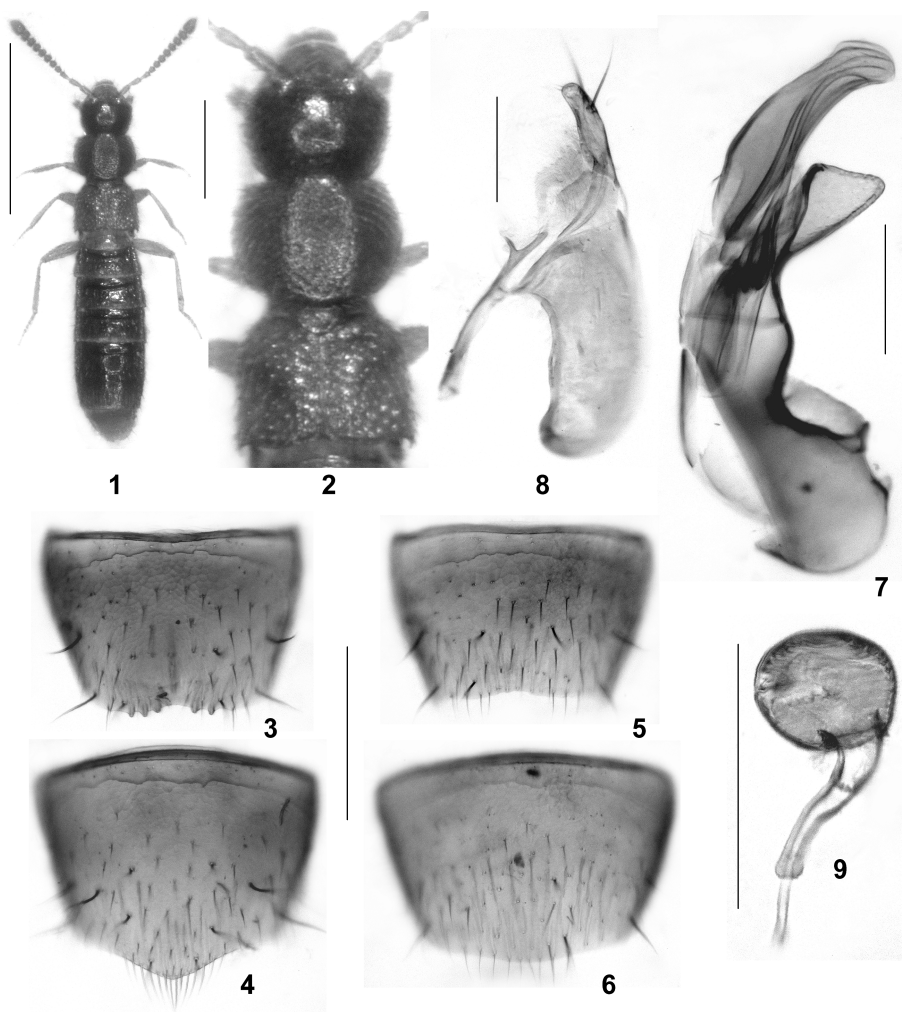
Description: 1.8-2.3 mm. Habitus as in Fig. 1. Coloration: head dark-brown to blackish-brown; pronotum brown to dark-brown, usually somewhat paler than head; elytra yellowish-brown to brown; abdomen with segments VI-VII blackish, segments III-V and apex more or less distinctly paler; legs and antennomeres I-III yellowish, antennomeres IV-XI yellowish-brown to brown.

Head approximately as wide as long; punctuation extremely fine, barely visible; integument with shallow microsculpture; eyes weakly protruding from lateral contours of head, approximately half as long as postocular region in dorsal view (Fig. 2). Antenna distinctly incrassate apically; antennomere IV weakly transverse, X approximately twice as wide as long.

Pronotum approximately 1.30-1.35 times as wide as long and 1.2 times as wide as head; maximal width slightly before middle; punctuation and microsculpture similar to those of head (Fig. 2).

Elytra approximately as wide as or slightly wider than pronotum, at suture approximately 0.8 times as long as pronotum; humeral angles obsolete (Fig. 2); punctuation coarsely granulose; microsculpture indistinct, interstices shiny. Hind wings reduced.

Abdomen subparallel, widest at segment VI, slightly wider than elytra; punctuation extremely fine and sparse; microsculpture shallow; tergites VII-VIII with sexual dimorphism; posterior margin of tergite VII with or without a narrow, barely noticeable rudiment of a palisade fringe.



Figs 1-9: *Leptusa improvisa* nov.sp.: (1) habitus; (2) forebody; (3) male tergite VIII; (4) male sternite VIII; (5) female tergite VIII; (6) female sternite VIII; (7) median lobe of aedeagus in lateral view; (8) paramere; (9) spermatheca. Scale bars: 1: 1.0 mm; 2-6: 0.2 mm; 7-9: 0.1 mm.

♂: tergite VII in posterior half with more or less pronounced oblong median tubercle; tergite VIII with median keel in posterior half, this keel less pronounced than that of tergite VII, posterior margin concave in the middle and distinctly serrate (Fig. 3); sternite VIII obtusely angled in the middle (Fig. 4); median lobe of aedeagus as in Fig. 7; paramere with slender apical lobe (Fig. 8).

♀: posterior margin of tergite VIII almost truncate, only very weakly concave in the middle and not serrate (Fig. 5); sternite VIII posteriorly weakly concave (Fig. 6); spermatheca as in Fig. 9.

E t y m o l o g y : The name (Latin, adjective: surprising, unexpected) refers to the fact

that this species was discovered in southwestern Anatolia, a region from where *Leptusa* species were previously unknown.

Comparative notes: *Leptusa improvisa* is particularly distinguished from all its congeners by the distinctive morphology of the median lobe of the aedeagus. Based on the male sexual characters, the species undoubtedly belongs to the subgenus *Dysleptusa* PACE 1982. The only consubgener previously known from Turkey is *L. fuliginosa*, a species confounded with *L. cribripennis* KRAATZ 1856 until recently (ASSING 2004). From this species, *L. improvisa* is additionally separated by somewhat paler coloration, smaller eyes (in *L. fuliginosa* approximately as long as postocular region in dorsal view), much finer punctation of the head, distinctly less pronounced microsculpture of the head, pronotum and of the abdomen, as well as by shorter and narrower elytra without distinct humeral angles (in *L. fuliginosa* distinct) and by the (near) absence of a palisade fringe (in *L. fuliginosa* pronounced). For an illustration of the aedeagus of *L. fuliginosa* see ASSING (2003).

The new species is distinguished from *L. cerrutii* from Cyprus by the different morphology of the aedeagus (much longer and more acute ventral process, internal structures of different shape) and additionally by the distinctly darker coloration (*L. cerrutii*: body, including appendages, yellowish, with abdominal segment VI and anterior part of VII infuscate), as well as by the slightly larger eyes (*L. cerrutii*: length of eyes approximately 1/4 the length of postocular region in dorsal view). For illustrations of the sexual characters of *L. cerrutii* see PACE (1989).

Distribution and bionomics: The type locality is situated to the east of Alanya, eastern Antalya province, southern Turkey (Map 1). The discovery of this species is zoogeographically remarkable, not only because it is the first representative of the genus to become known from southern Anatolia, but also because it is the second species of *Dysleptusa* recorded from Turkey, a Holarctic subgenus previously including only nine - both widespread and locally endemic - species. The type specimens were sifted in a fir forest from moist decaying wood of a fallen tree trunk (MEYBOHM pers. comm.) at an altitude of 1140 m.

***Leptusa taurica* ASSING 2004**

Material examined: Turkey: Ka h r a m a n m a r a ş : 6 exs., Başkonuş Yaylası, 37°34'N, 36°34'E, 1250 m, 24.IV.2007, leg. Brachat & Meybohm (cAss).

Comment: The above material was collected near the type locality.

Acknowledgements

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Zusammenfassung

Leptusa (Dysleptusa) improvisa nov.sp. (Türkei: Antalya) wird beschrieben und abgebildet. Die Untergattung *Stenoleptusa* SCHEERPELTZ 1966, nov.syn. wird mit *Neopisalia* SCHEERPELTZ 1966 synonymisiert. Weitere Nachweise von sieben Arten werden gemeldet. Insgesamt 26 Arten und

zwei Unterarten von zweifelhaftem Status sind derzeit aus der Türkei bekannt. Die Gesamtverbreitung der Gattung sowie von drei Untergattungen in der Türkei und die Verbreitungsgebiete von neun Arten werden anhand von Karten illustriert.

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