Linzer biol. Beitr.	50/1	129-148	27.7.2018
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# On the *Aleochara* subgenera *Ceranota* and *Xenochara*. IV. A revision of types, a new species, and additional records (Coleoptera: Staphylinidae: Aleocharinae)

#### Volker Assing

A b s t r a c t : Aleochara (Ceranota) plicelytrata nov.sp. (Armenia, Georgia) of the A. subtumida group is described and illustrated. Aleochara (Xenochara) citellorum KIRSHENBLAT, 1935 and A. (X.) jacobsoni KIRSHENBLAT, 1935 are revised, redescribed, and illustrated; lectotypes are designated for both species. They are assigned to the A. parvicornis group. Additional records are reported for 13 species of Ceranota STEPHENS, 1839 and 18 species of Xenochara MULSANT & REY, 1874, among them 17 first records for Armenia (six), Georgia (three), Ukraine (three), Russia (two), Lebanon (two), Greece (one), Iran (one), and Kashmir (one). The distributions of six Ceranota and one Xenochara species are mapped.

K e y w o r d s: Coleoptera, Staphylinidae, Aleocharinae, *Aleochara*, *Ceranota*, *Xenochara*, Palaearctic region, taxonomy, new species, lectotype designation, additional records, distribution maps.

#### Introduction

According to a previous contribution to the subgenus *Xenochara* MULSANT & REY, 1874 (ASSING 2011a), the speciose genus *Aleochara* GRAVENHORST 1802 was represented in the Palaearctic region by approximately 230 species (six nomina dubia not included) in 13 subgenera, with approximately half of the species assigned to the subgenus *Xenochara*. In the meantime, one of the subgenera (*Rheochara* MULSANT & REY, 1875) was synonymized with *Xenochara*. Several synonymies of species group names were recently proposed by ASSING (2016). The West Palaearctic subgenus *Ceranota* STEPHENS, 1839 and several species groups of *Xenochara* were comprehensively revised by ASSING (2009a, b). In the meantime, additional material of *Ceranota* and *Xenochara* species has become available from several field trips to various regions in the West Palaearctic region, as well as from various museum and private collections. This material included an undescribed *Ceranota* species, the type material of two previously unrevised *Xenochara* species, as well as additional records of 32 species of *Ceranota* and *Xenochara*, including 17 first records from Armenia, Georgia, Ukraine, Russia, Greece, Lebanon, Iran, and Kashmir.

#### Material and methods

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

MNB		
NMENaturkundemuseum Erfurt (M. Hartmann, assisted by W. Apfel)		
ZMUCNatural History Museum Denmark/ University of Copenhagen Zoological Museum (A. Solodovnikov)		
ZINZoological Institute, Russian Academy of Sciences, St. Petersburg (M. Salnitska)		
cAnlprivate collection Sinan Anlaş, Izmir		
cAssauthor's private collection		
cFelprivate collection Benedikt Feldmann, Münster		
cGonprivate collection Andrej Gontarenko, Odessa		
cKocprivate collection Matúš Kocian, Praha		
cPütprivate collection Andreas Pütz, Eisenhüttenstadt		
cShaprivate collection Alexey Shavrin, Daugavpils		
cTroprivate collection Marc Tronquet, Molitg-les-Bains		

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss), a Discovery V12 microscope (Zeiss), and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using a photographing device constructed by Arved Lompe (Nienburg) and CombineZ software, as well as a digital camera (Nikon Coolpix 995) and Axiocam ERc 5s. The maps were created using MapCreator 2.0 (primap) software.

Body length was measured from the anterior margin of the labrum to the abdominal apex, 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 (at the suture), and the length of the median lobe 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

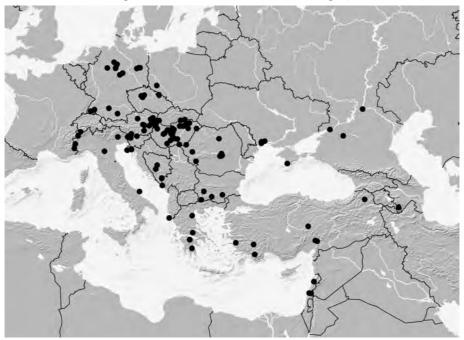
## Subgenus Ceranota STEPHENS, 1839

Including the new species described in this paper, *Ceranota* currently includes 32 species. The subgenus is essentially West Palaearctic, with the easternmost record from Afghanistan. The life histories of *Ceranota* species are poorly known. Available evidence suggests that the reproduction habitat is cryptic (probably subterranean) and some species are active during the cold seasons. Records of these species are more or less accidental, some of them have been collected only once or on very few occasions. Consequently, little is known about the distributions of such species. For more details see ASSING (2009b).

## Aleochara (Ceranota) ruficornis GRAVENHORST, 1802

M a t e r i a l e x a m i n e d : <u>Slovakia</u>: 1\$\int\_0\$, Small Carpathians, Smolenice env., Smolenice Castle, 500 m, 25.-30.III.2007, leg. Pankjans (cAss).

C o m m e n t: This species is distributed across most of Europe (ASSING 2009b).



Map 1: Distribution of Aleochara erythroptera in the West Palaearctic region, based on revised records.

# Aleochara (Ceranota) erythroptera Gravenhorst, 1806 (Map 1)

Material examined: Germany: 1Å, Thüringen, Woffleben, pitfall, 10.VI.2006, leg. Sparmberg (NME). Croatia: 1 ex., Istra, Limski kanal, 2.IV.2010, leg. Hlaváč (cAss). Greece: 18 3♀♀, Pelopónnisos, Parnon, NE Agriani, 37°10'N, 22°36'E, 1290 m, fir forest, 20.IV.-6.V.2007, leg. Schnitter & Arndt (NME, cAss). Greece: 16, Pelopónnisos, Korinthía, Feneos, 37°56'N, 22°17'E, IV-VI.2006, leg. Miksch (NME). Ukraine: 4 exs., Odessa, right bank of Kuyalnik liman, lower reaches, pitfall, 25.III.-11.IV.2000, leg. Gontarenko (cGon, cAss); 1 ex., Odessa, Kubanka, grass turf, 16.III.2008, leg. Gontarenko (cAss); 1 ex., Odessa, right bank of Tiligul liman, Kalinovka env., pitfall, 12.IV..-13.V.2007, leg. Gontarenko (cGon). Turkey: 12, Izmir, Bozdağlar, Sazlı, 15.IV.2014, leg. Örgel (cAnl); 1♀, Denizli, Acıpayam, Elmadağ, 37°37'N, 29°27'E, 1660 m, 17.IV.2015, leg. Örgel (cAnl); 1♀, Osmaniye, 10 km N Andırın, road to Çokak, 37°39'N, 36°21'E, 1150 m, 1-2.V.2005, leg. Brachat & Meybohm (cAss); 1♀, Kahramanmaras, Başkonuş Yaylaşı, 37°34'N, 36°34'E, 1270 m, 27.IV.2004, leg. Besuchet (cAss). Russia: 16, Rostov region, Razdorovskiy district, Razdorovka, 8.-16.X.2009, leg. Ponomaryov (cAss). Armenia: 16, SW Goris, ESE Tatev, 39°22'N, 46°17'E, 1950 m, margin of mixed deciduous forest, sifted from nest of Formica exsecta (det. Seifert), 13.VII.2017, leg. Assing (cAss). Lebanon [all det. Feldmann]:1 ex., Rayfoun, ca. 33°58'N, 35°42'E, 990 m, mixed oak forest, pitfall trap, 15.III.2013, leg. Reuter (cFel); 1 ex., same data, but III.2014 (cFel); 1 ex., same data, but IV.2014 (cFel); 1 ex., same data, but III.2015 (cFel); 6 exs., same data, but 31.III.-9.IV.2016 (cFel); 2 exs., same data, but 9-12.IV.2016 (cFel); 1 ex., same data, but 30.V.2016 (cFel); 2 exs., ca. 27 km NE Beirut, Kfardebian env., ~1100 m, mixed oak forest, pitfall trap, 10-16.V.2016, leg. Reuter (cFel).

C o m m e n t: Unlike many of its congeners, *A. erythroptera* is relatively widespread. The distribution is of the expansive Ponto-Mediterranean type (ASSING 2009b). For recent records from Israel see ASSING (2014). The above specimens from Armenia and Lebanon represent new country records. The currently known distribution is illustrated in Map 1. Interestingly, the male from Armenia was found in a nest of *Formica exsecta*.

# Aleochara (Ceranota) major FAIRMAIRE, 1858

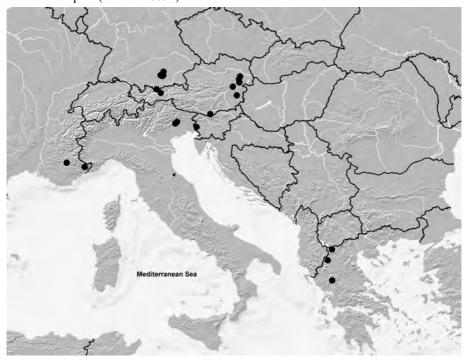
M a t e r i a l e x a m i n e d : France:  $13^\circ$  [det. Feldmann], Rhône-Alpes, Brette, 44.596°N, 5.334°E, lavender field, pitfall trap, 1-15.XI.2016, leg. Lèbre (cFel).

C o m m e n t: The known distribution of *A. major* is confined to Central Europe and France (ASSING 2009b).

## Aleochara (Ceranota) diversicollis FAUVEL, 1900

M a t e r i a l e x a m i n e d : <u>France</u>: 10♂♂, 3♀♀, Pyrénées-Orientales, Eyne natural reserve, 42°28′N, 2°06′E, 1720 m, pitfall traps, 17.-30.V.2009, leg. Lopez (cTro, cAss).

C o m m e n t: Confirmed records of *A. diversicollis* are known only from southern France and Spain (ASSING 2009b).



Map 2: Distribution of Aleochara penicillata, based on revised records.

## Aleochara (Ceranota) penicillata PEYERIMHOFF, 1901 (Map 2)

M a t e r i a l e x a m i n e d : <u>Greece</u>:  $1 \circlearrowleft$ , Flórina, Oros Verno, Vigla, ski resort,  $40^\circ 46^\circ N$ ,  $21^\circ 16^\circ E$ , 1660 m, 15.IX.2015-8.VI.2017, leg. Giachino & Vailati (cAss); l ex., Arta, Kakarditza,

Melissourgi, Oros Tourla, 39°29'N, 21°10'E, 1420 m, 15.VI.2008-18.VI.2010, leg. Giachino & Vailati (cAss); 3 exs., Kastoriá, Oros Vório, above Kotíli, 40°20'N, 21°00'E, 1465 m, 17.VI.2008-14.VI.2010, leg. Giachino & Vailati (cAss).

C o m m e n t: This species was previously known only from the Alps and adjacent regions (ASSING 2009b). The above first records from Greece, reveal that it is wide-spread also in the Balkans (Map 2). The specimens examined were all collected with subterranean pitfall traps.

## Aleochara (Ceranota) hydrocephala FAUVEL, 1900

M a t e r i a l e x a m i n e d : <u>Spain</u>: 1♂, Sierra de Guadarrama, Real Sitio de San Ildefonso, Majada Hambrienta, 21.VI.-8.VII.2016, leg. Lencina & González (cAss).

C o m m e n t: The distribution of this rarely collected species is confined to Southwest Europe (ASSING 2009b).

## Aleochara (Ceranota) purkynei ROUBAL, 1937

M a t e r i a l e x a m i n e d : <u>Greece: Pelopónnisos</u>: 2 exs., Taygetos, W Mystras, Langada pass, 37°08′N, 22°18′E, 1260 m, fir forest, 7.V.2007, leg. Schnitter et al. (NME, cAss); 3 exs., Korinthía, Feneos, 37°56′N, 22°17′E, 21.IV.-5.V.2005, leg. Arndt (NME, cAss).

C o m m e n t : Aleochara purkynei is endemic to the Pelopónnisos (ASSING 2009b).

## Aleochara (Ceranota) strasseri BERNHAUER, 1901

M a t e r i a l e x a m i n e d : <u>Greece</u>: 2 ex., Kardítsa, Belokomíti, Kremasta valley near Spilia Ghaki, 39°14'N, 21°43'E, 1060 m, 12.VI.2008-11.VI.2010, leg. Giachino & Vailati (cAss); 1♀, Pelopónnisos, Taygetos, W Mystras, Langada pass, 37°02'N, 22°15'E, 1520 m, mixed pine and fir forest, 21.IV.-7.V.2007, leg. Schnitter et al. (NME).

C o m m e n t: The revised distribution of *A. strasseri* is confined to the Balkan Peninsula (ASSING 2009b).

## Aleochara (Ceranota) caucasica EPPELSHEIM, 1889 (Map 3)

M a t e r i a l e x a m i n e d : <u>Turkey</u>: 1♂, Trabzon, ca. 40 km S Trabzon, Altındere Milli Park, 40°40'N, 39°40'E, 1560 m, spruce forest with rhododendron, sifted, 26.VII.2006, leg. Assing (cAss).

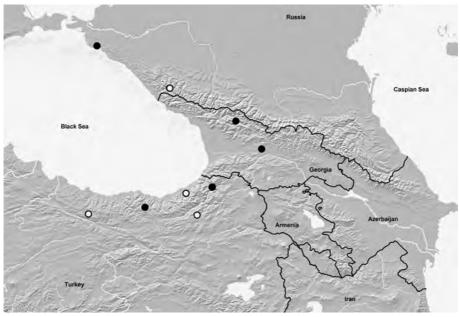
C o m m e n t: The distribution of *A. caucasica* is confined to the western Caucasus region, where it has been found only on rare occasions (ASSING 2009b). For a recent record from Northeast Turkey see ASSING (2016). The currently known distribution is illustrated in Map. 3.

#### Aleochara (Ceranota) claviculata Assing, 2009 (Map 3)

M a t e r i a l e x a m i n e d : <u>Turkey</u>: 1♀, Erzurum, 35 km NW Tortum, Mescit Dağları, ca. 40°30'N, 41°25'E, 2100 m, poplar forest, 18.VI.1998, leg. Solodovnikov (cAss). <u>Russia</u>: 1♀, W-Caucasus, 15 km ENE Krasnaya Polyana, near Pseashkha pass, 43°43'N, 40°23'E, 2040 m, moist subalpine forest (*Betula, Acer*), 16.VII.2011, leg. Assing (cAss); 1♂, W-Caucasus, 15 km ENE Krasnaya Polyana, S-slope of Pseashkha range, 43°43'N, 40°24'E, 2040 m, subalpine beech forest with rhododendron, sifted, 17.VII.2011, leg. Assing (cAss).

C o m m e n t : The previously known distribution was confined to Northeast Anatolia (Ordu and Rize provinces) (ASSING 2009b). The above specimens from the West Cauca-

sus represent the first records from Russia and the Greater Caucasus. The known distribution is illustrated in Map 3.



Map 3: Distributions of Aleochara caucasica (black circles) and A. claviculata (white circles), based on revised records.

# Aleochara (Ceranota) simplicicornis ASSING, 2009

M a t e r i a l e x a m i n e d : Georgia: 1  $\circlearrowleft$ , Adjara, 7 km NE Batumi, 41°39'N, 41°46'E, 500-600 m, 24.VI.2017, leg. Brachat & Meybohm (cAss).

C o m m e n t : This species was previously known only from Erzurum, Ordu, and Artvin provinces, northeastern Anatolia (ASSING 2009b, 2016). The above female represents the first record from Georgia.

# Aleochara (Ceranota) conviva EPPELSHEIM, 1878

M a t e r i a l e x a m i n e d : <u>Armenia</u>: 3♂♂, 2♀♀, above Jermuk, 39.84°N, 45.69°E, 2400 m, debris near snowfield sifted, 21.√2015, leg. Kocian (cKoc, cAss).

C o m m e n t: *Aleochara conviva* had reliably been reported only from Georgia and the Turkish province Bolu (ASSING 2009b). Recently, the species was tentatively recorded also from the Greek island Samos, based on a female (ASSING 2015). The above specimens represent the first confirmed record from Armenia.

## Aleochara (Ceranota) libanica EPPELSHEIM, 1889

M a t e r i a 1 e x a m i n e d : <u>Lebanon</u>: 1♂, Rayfoun, ca. 33°58′N, 35°42′E, 990 m, mixed oak forest, pitfall trap, 15.III.2013, leg. Reuter (cFel); 2 exs., same data, but 6.V.2013 (cFel); 1 ex., same data, but 14.II.-22.III.2016 (cFel); 2 exs., same data, but 31.III.-9.IV.2016 (cFel); 1 ex., same data, but 9-12.IV.2016 (cFel); 1 ex., same data, but 30.V.2016 (cFel); 1 ex., same data, but 24.I.-

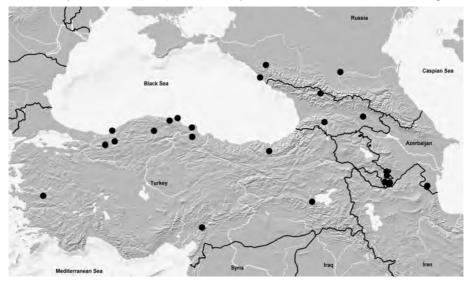
18.II.2017 (cFel); 4 exs., ca. 27 km NE Beirut, Kfardebian env.,  $\sim$  1100m, mixed oak forest, pitfall trap, 10.-16.V.2016, leg. Reuter (cFel).

C o m m e n t: This species has been recorded only from the Middle East (ASSING 2009b). For recent records from Israel see ASSING & FELDMANN (2012) and ASSING (2014).

## Aleochara (Ceranota) subtumida (HOCHHUTH, 1849) (Map 4)

M a t e r i a l e x a m i n e d : Turkey: 1♀, Samsun, 9 km WNW Bafra, 41°35′N, 35°50′E, 55 m, mixed deciduous forest with oak, Hedera, and Rubus undergrowth, 30.III.2009, leg. Assing (cAss); 1♀, Samsun, 31 km NE Havza, 41°12′N, 35°52′E, 670 m, beech forest, 19.VII.2008, leg. Schülke (MNB); 1♀, Izmir, Bozdaglar, Sorguncuk, 14.IV.2014, leg Örgel (cAnl); 1♀, Kahramanmaras, Cimen Dği, Büyüksir, 37°29'N, 36°30'E, 1020 m, 1.V.2007, leg. Brachat & Meybohm (cAss). Georgia: 2♂♂, 2♀♀, Svaneti, Ushguli, North slope, 42°55'N, 43°01'E, 2190 m, 30.VI.2017, leg. Brachat & Meybohm (cAss); 1 ex., Atskuri env., 41°44'N, 43°09'E, 975 m, 20.VI.2013, leg. Kocian (cKoc). Russia: 1Q, Krasnodarskiy Kray, Mezmai env., Guama, 950-1000 m, 11.VI.1999, leg. Smetana (cAss). Armenia: 1♀, 25 km S Kapan, N Gomarants Pass 39°02'N, 46°22'E, 2190 m, oak forest, litter and dead wood sifted, 7.VII.2016, leg. Assing (cAss); 10, 25 km S Kapan, N Gomarants Pass, 39°02'N, 46°22'E, 2050 m, oak forest with Acer, Carpinus, and fern undergrowth, litter and dead wood sifted, 7.VII.2016, leg. Assing (cAss); 2♥♥, WSW Kapan, S Meghri Pass, 39°06'N, 46°10'E, 2090 m, stream valley, litter near stream sifted, 8.VII.2016, leg. Assing (cAss); 10, 200, 20 km Kapan, W Tsav, 39°03'N, 46°26'E, 1170 m, stream valley, litter and flood debris near stream sifted, 9.VII.2016, leg. Assing & Schülke (cAss, MNB); 10, Goris, 39.52°N, 46.32°E, 1700 m, deciduous forest, sifted, 25.V.2015, leg. Kocian (cKoc); 17, Syunik prov., ~5 km N Shvanidzor, 38.9851° N, 046.3746°E, 1335 m, soil traps, 9.VI.-8.VIII.2017, leg. Ghrejyan & Karagyan (cAss); 13, Syunik prov., between Tandzaver and Aghvani, 39.3499°N, 46.3164°E, 1670 m, 5-30.VII.2015, leg. Kalashian (cAss).

C o m m e n t: *Aleochara subtumida* is the most widespread and most common of the Caucasian and Turkish *Ceranota* species (ASSING 2009b). For additional recent records from Turkey see ASSING (2013). The currently known distribution is illustrated in Map 4.



**Map 4**: Distribution of *Aleochara subtumida*, based on revised records.

## Aleochara (Ceranota) plicelytrata nov.sp. (Figs 1-10, Map 5)

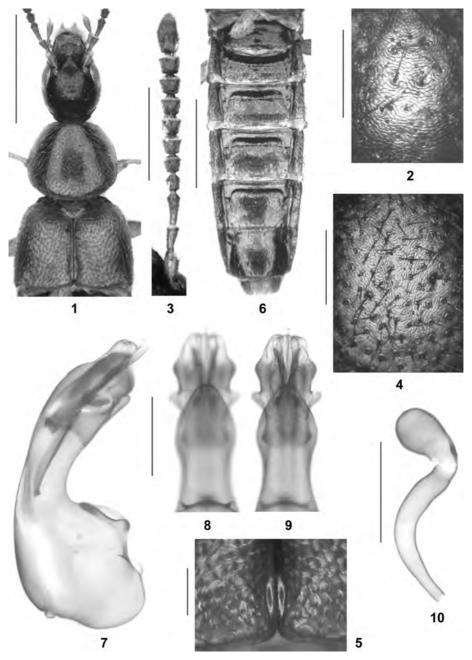
E t y m o l o g y: The specific epithet is an adjective composed of the Latin noun plica (fold) and the adjective elytrata. It alludes to the more or less distinctly elevated posterior portion of the elytral suture.

Description: Body length 3.7-6.0 mm; length of forebody 1.8-2.5 mm. Coloration: head blackish; pronotum reddish-brown to blackish-brown; elytra yellowish-brown to brown, with the scutellar and the postero-lateral portion usually more or less distinctly darker; abdomen dark-brown to blackish, with the posterior margins of the segments paler reddish to reddish-brown; legs dark-yellowish; antennae pale-brown to dark-brown, with the basal 2-3 antennomeres yellowish to reddish.

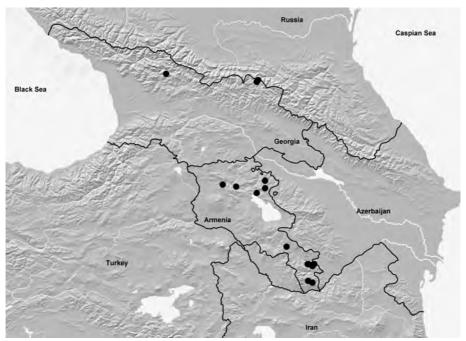
Head (Fig. 1) slender and distinctly oblong; dorsal surface with dense and fine punctation; interstices with distinct microreticulation (Fig. 2). Eyes weakly convex, approximately as long as postocular region in dorsal view. Clypeus fully sclerotized. Antenna as in Fig. 3.

Pronotum (Fig. 1) weakly transverse, usually 1.05-1.10 times as broad as long and much broader than head (approximately 1.4 times as broad as head in relatively large specimens). Punctation rather dense and fine, but more distinct than that of head; interstices with more or less pronounced microreticulation (Fig. 4).

Elytra (Fig. 1) 0.8-0.9 times as long as pronotum; posterior portion of suture mostly more or less distinctly elevated in both sexes (Fig. 5); punctation distinct, somewhat asperate, and dense; interstices with shallow microreticulation visible only at high magnification (100 x). Hind wings fully developed. Metatarsomere I longer than the combined length of II-IV.



Figs 1-10: Aleochara plicelytrata: (1) forebody; (2) median portion of head; (3) antenna; (4) median portion of pronotum; (5) postero-median portion of elytra; (6) abdomen; (7) median lobe of aedeagus in lateral view; (8-9) apical portion of median lobe of aedeagus in ventral view; (10) spermatheca. Scale bars: 1, 6: 1.0 mm; 3: 0.5 mm; 2, 4-5, 7-10: 0.2 mm.



Map 5: Distribution of Aleochara plicelytrata.

Abdomen (Fig. 6) with fine and rather sparse punctation; tergites I-VI with extremely fine and extremely shallow, often practically obsolete transverse microsculpture visible only at high magnification (100 x), tergites VII and especially VIII usually with more distinct transverse microsculpture; posterior margin of tergite VII with palisade fringe.

3: anterior abdominal sternites unmodified; tergite III sometimes with weakly pronounced median tubercle; tergite VII in larger males usually with weakly pronounced and weakly defined transverse median elevation posteriorly; posterior margin of sternite VIII acutely produced posteriorly; median lobe of aedeagus 0.55-0.60 mm long and shaped as in Figs 7-9.

Q: posterior margin of sternite VIII weakly convex, in the middle weakly concave; spermatheca shaped as in Fig. 10.

C o m p a r a t i v e n o t e s: Based on the narrow and oblong head and the male secondary sexual characters, particularly the unmodified anterior male abdominal sternites, A. plicelytrata belongs to the A. subtumida group. Among the species of this group, A. plicelytrata is particularly characterized by the presence of distinct microsculpture on the head and pronotum, the usually elevated posterior portion of the elytral suture, and by the morphology of the aedeagus. It is distinguished from the geographically close A. sarica ASSING, 2009 (Iran) by a more slender head, distinctly longer and more slender antennae (A. sarica: antenna massive, antennomere IV distinctly transverse), more pronounced microsculpture on the pronotum, weakly pronounced or absent modifications of the male tergites III and VII, by a larger, more robust aedeagus with a differently shaped ventral process (A. sarica: median lobe of aedeagus approximately

0.5 mm long; ventral process longer and somewhat sinuate in lateral view), and by the shape of the spermatheca (*A. sarica*: distal portion of different shape; proximal portion less slender and nearly straight). For illustrations of *A. sarica* and other species of the *A. subtumida* group see ASSING (2009b).

Distribution and natural history: The known distribution includes Armenia and Georgia (Map 5). The material was sifted from leaf litter, roots, and debris in various habitats: in mixed forests, oak forests, beech forests, beneath willow near streams, and a wet slope with bushes. The altitudes range from 1350 to 2150 m. Numerous specimens collected in June and July are teneral.

# Subgenus Xenochara MULSANT & REY, 1874

*Xenochara* is the most speciose of all the subgenera recorded from the Palaearctic region. This subgenus includes several species groups associated with subterranean burrows of mammals and other nests. Species of other groups are generally found in dung, mushrooms, or other habitats. For more details see ASSING (2009a).

## Aleochara (Xenochara) brevipennis GRAVENHORST, 1806

M a t e r i a 1 e x a m i n e d : <u>Armenia</u>: 1♂, 40 km NW Sisian, Vorotan Pass, 39°42'N, 45°41'E, 2090 m, grassy slope with scatteres bushes, litter, debris, and moss sifted, 8.VII.2017, leg. Assing (cAss). <u>India: Yammu & Kashmir</u>: 3 exs., NW Poonch: Pir Panjal Mts., Loran, 1800 m, 17.VIII.2010, leg. Reuter (MNB, cAss).

C o m m e n t: This species is widespread in the Palaearctic region, but was previously unknown from Armenia and Kashmir (SCHÜLKE & SMETANA 2015).

## Aleochara (Xenochara) haematoptera KRAATZ, 1858

M a t e r i a l e x a m i n e d : <u>Armenia</u>: 2♂♂, N Yerevan, NW Hrazdan, 40°34'N, 44°24'E, 2000 m, stream bank with gravel, 28.VI.2016, leg. Assing (cAss); 1♀, 20 km Kapan, W Tsav, 39°03'N, 46°26'E, 1170 m, stream valley, collected from gravel, 9.VII.2016, leg. Assing (cAss). <u>Lebanon</u>: 2♂♂, 4 exs. [det. Feldmann], ca. 30 km NE Beirut, bank of Ibrahim river near Adonis, 5.III.2014, leg. Reuter (cFel).

C o m m e n t: This widespread and common species had been reported from Armenia only once (ASSING 2017a). According to SCHÜLKE & SMETANA (2015), it was previously unknown from Lebanon.

#### Aleochara (Xenochara) inconspicua AUBÉ, 1850

M a t e r i a l e x a m i n e d: <u>Armenia</u>: 2♂♂, 14♀♀, 12 exs., 20 km SSE Goris, Shurnukh, 39°22'N, 46°25'E, 1720 m, *Quercus* and *Carpinus* forest, litter and dead wood sifted, 5.VII.2016, leg. Assing & Schülke (cAss, MNB); 1♂, 1♀, 20 km SSE Goris, Shurnukh, 39°22'N, 46°25'E, 1720 m, grassland near forest margin, litter beneath bushes sifted, 5.VII.2016, leg. Assing (cAss); 1♀, 25 km S Kapan, N Gomarants Pass 39°02'N, 46°22'E, 2190 m, oak forest, litter and dead wood sifted, 7.VII.2016, leg. Assing (cAss); 2♀♀, 1 ex., 25 km S Kapan, N Gomarants Pass, 39°02'N, 46°22'E, 2050 m, oak forest with *Acer*, *Carpinus*, and fern undergrowth, litter and dead wood sifted, 7.VII.2016, leg. Assing & Schülke (cAss, MNB); 1 ex., 20 km Kapan, W Tsav, 39°03'N, 46°26'E, 1170 m, stream valley, litter and flood debris near stream sifted, 9.VII.2016, leg. Schülke (MNB); 2♂♂, 2♀♀, 2 exs., 25 km SW Kapan, 39°04'N, 46°16'E, 2150 m, near stream, litter of *Salix* and debris sifted, 10.VII.2016, leg. Assing & Schülke (cAss, cSch); 1♂, 1♀, Gavar, 40°21'N, 45°08'E, 1950 m, old poplar trees near river, litter and roots of herbs sifted, 25.VI.2017, leg. Assing (cAss); 1♂, WSW Dilijan, Kalavan, 40°38'N, 45°06'E, 2100 m, forest at timber line

C o m m e n t: According to SCHÜLKE & SMETANA (2015), A. inconspicua was previously unknown from Armenia, where it is one of the most common Xenochara species.

## Aleochara (Xenochara) lanuginosa GRAVENHORST, 1802

M a t e r i a 1 e x a m i n e d : <u>Armenia</u>: 1 ex., NW Goris, W Verishen, 39°42'N, 45°19'E, 1670 m, margin of oak forest, litter, moss, and roots beneath *Quercus* and *Rosa* sifted, 12.VII.2017, leg. Schülke).

C o m m e n t : Though widespread and common across the Palaearctic region, A. lanuginosa had not been reported from Armenia (SCHÜLKE & SMETANA 2015).

## Aleochara (Xenochara) moerens Gyllenhal, 1827

M a t e r i a l e x a m i n e d : <u>Armenia</u>: 1♂, 2♀♀, WSW Kapan, Meghri Pass, 39°07'N, 46°10'E, 2520 m, grassy slope, in mushroom, 6.VII.2016, leg. Assing (cAss).

C o m m e n t : *Aleochara moerens* is widespread across the Palaearctic region, but was previously unknown from Armenia (SCHÜLKE & SMETANA 2015).

#### Aleochara (Xenochara) longipes LIKOVSKÝ, 1965

M a t e r i a l e x a m i n e d: <u>Iran</u>: 1 ex., Kerman Province, Baft - Jiroft, 7 km NE Hanza, 29°21'N, 57°12'E, 2950 m, 24.V.2010, leg. Frisch & Serri (MNB); 2 exs., Kerman Province, Banan Mts., pass Mahan - Sirch, 30°12', 57°24'E, 2800 m, 20.V.2010, leg. Frisch & Serri (MNB, cAss); 1 ex., Kerman Province, Ahmad - Abad, Shahr-e-Babak road, Purkan, 30°22'N, 55°22'E, 2530 m, 18.V.2010, leg. Frisch & Serri (cAss).

C o m m e n t : The known distribution of *A. longipes* ranges from the Caucasus region across Middle Asia eastwards to Mongolia (ASSING 2009a). The above specimens represent the first records from Iran.

## Aleochara (Xenochara) gontarenkoi ASSING, 2009

M a t e r i a l e x a m i n e d : Russia: 6 exs., Ul'yanovskaya Oblast, Radishchevskiy Rayon, Vyazovka, marmot nest, 2.V.1993, leg. Isaev (ZMUC, cAss); 2 exs., same data, but 1.VIII.1996 (ZMUC); 1 ex., Ul'yanovskaya Oblast, Novospasskiy Rayon, Marjevka, gopher nest, 6.V.2000, leg. Isaev (ZMUC); 2 exs., same data, but 5.V.2000 (ZMUC); 1 ex., Saratovskaya Oblast, Ozinskiy Rayon, 6 km SW Sinegorskiy, 51°17′N; 49°48′E, 2.V.2009, leg. Kovalev (cAss). Ukraine: 2♂♂, 1♀, Kharkiv Oblast, Krasnograd district, Pitschanka env., steppe meadow, pitfall near hole of Spermophilus suslicus, V.1994, leg. Novikov (cGon); 1♀, same data, but IV.1995 (cGon).

C o m m e n t: Confirmed records of this recently described species were previously

known only from gopher nests in Ukraine and eastern Anatolia (ASSING 2009a, 2011a). The above specimens represent the first records from Russia, most of them were collected from marmot nests.

## Aleochara (Xenochara) vagepunctata KRAATZ, 1856

M a t e r i a l e x a m i n e d : <u>Ukraine</u>: 1♂, Kherson obl., Askania-Nova env., sheep farm, burrows of *Microtus socialis*, 30.IV.2016, leg. Gontarenko (cAss)..

C o m m e n t : This rare species was previously known from France, Italy, southern Central Europe (Germany, Austria, Slovakia, Czech Republic), Hungary, and Armenia (SCHÜLKE & SMETANA 2015). The above male represents the first record from Ukraine.

# Aleochara (Xenochara) suslica Assing, 2009

M a t e r i a l e x a m i n e d : <u>Ukraine</u>: 1♂, Odessa oblast, Ivanovka district, Gudevichevo env., sweep-netting, 22.IV.2012, leg. Gontarenko (cGon); 3♂♂, 4♀♀, Odessa oblast, right bank of Tiligul liman, Kalinivka env., suslik burrows, 8.IV.2007, leg. Gontarenko (cGon, cAss); 1♀, Cherson obl., Askania-Nova env., sheep farm, hole of *Citellus pygmaeus*, 30.III.2016, leg. Gontarenko (cGon); 1♂, 1♀, same data, but hole of *Microtus socialis* (cGon, cAss)..

C o m m e n t: Most of the type specimens of this species were collected from burrows of *Spermophilus suslicus* (GÜLDENSTÄDT, 1770). The above records from burrows of other mammals, however, show that *A. suslica* is not exclusively associated with this species. The known distribution is confined to Ukraine.

# Aleochara (Xenochara) parvicornis FAUVEL, 1900

M a t e r i a l e x a m i n e d : <u>Russia</u>: 1 ex., Saratovskaya Oblast, Ozinskiy Rayon, 6 km SW Sinegorskiy, 51°17′N, 49°48′E, <u>2.V.2009</u>, leg. Kovalev (ZMUC).

C o m m e n t: This rarely found species was previously known from only few localities in southwestern Russia and in Mongolia. It is probably associated with the steppe marmot, *Marmota bobak* (MÜLLER, 1776) (ASSING 2009a).

## Aleochara (Xenochara) citellorum KIRSHENBLAT, 1935 (Figs 11-20)

Aleochara (Polychara) citellorum KIRSHENBLAT, 1935: 336.

Type material: Lectotype ♂, present designation: "Ogdun - Chelopskij plemkhoz, Transbaikalia, Bychkov leg. VIII.1929 / in gopher burrow / Aleochara citellorum sp.n. Type, Kirshenblat det. / Lectotypus ♂ Aleochara citellorum Kirshenblat, desig. V. Assing 2010" (ZIN). Paralectotypes: 3♀♀ [one without head and pronotum]: same data as holotype (ZIN).

C o m m e n t: The original description is based on an unspecified number of syntypes from "Transbaikalien" (KIRSHENBLAT 1935). Four syntypes, a male and three females, were located in the Kirshenblat collection in ZIN. The male is designated as the lectotype. This species has never been revised; its sexual characters were unknown. Moreover, an examination of the type specimens revealed that the original description is somewhat misleading. Therefore, a full redescription and illustrations are provided here.

The author's name has been transliterated in various ways. In the article containing the original description it is spelled "Kirschenblatt", whereas it is spelled "Kirschenblat" in the Palaearctic catalogue (SCHÜLKE & SMETANA 2015) and other publications. The latter spelling is adopted in this paper.

Additional material examined: Russia: 1♂, 5♀♀, E Siberia, Irkutskaya oblast, Baikal, Olkhon island, Ulan Nur bay, burrows of *Citellus undulatus*, 5.VI.2010, leg. Vedernikova (cSha, cAss).

R e d e s c r i p t i o n: Body length 4.0-4.8 mm; length of forebody 1.9-2.2 mm. Coloration: head, pronotum, and abdomen blackish; elytra reddish-yellow, with the sutural region and the anterior margin more or less extensively infuscate; legs reddish to brown; antennae dark-brown with the basal 3-4 antennomeres reddish.

Head (Fig. 11) broadest across eyes; punctation distinct and moderately dense, sparser in median dorsal portion; interstices without microsculpture. Eyes large and bulging, longer than postocular region in dorsal view. Antenna (Fig. 12) short, 1.0-1.1 mm long; antennomeres IV indistinctly transverse, V much larger than V and more distinctly transverse, VI-X of gradually increasing width and increasingly transverse, X approximately 1.5 times as broad as long, and XI approximately as long as the combined length of VIII-X.

Pronotum (Fig. 11) moderately transverse, strongly convex in cross-section, and relatively small in relation to head, approximately 1.3 times as broad as long and 1.3 times as broad as head; punctation similar to that of head, but denser; interstices narrower than diameter of punctures and without microsculpture.

Elytra (Fig. 11) short, only 0.70-0.75 times as long as pronotum; posterior margin not sinuate near lateral angles; punctation very dense and somewhat asperate. Hind wings fully developed.

Abdomen (Fig. 13) slightly narrower than elytra; punctation coarse and very dense, slightly less dense on posterior than on posterior tergites; interstices without microsculpture; posterior margin of tergite VII with palisade fringe; tergite VIII (Fig. 14) without sexual dimorphism, posterior margin convex and with a row of distinctly modified short and stout setae (Fig. 20).

♂: sternite VIII (Fig. 15) acutely produced posteriorly; median lobe of aedeagus (Figs 16-17) 0.62 mm long, slender, and strongly arched in lateral view.

 $\circlearrowleft$ : posterior margin of sternite VIII broadly convex (Fig. 18); spermatheca shaped as in Fig. 19.

C o m p a r a t i v e n o t e s: Based on the external characters (body slender and of subparallel shape, head large in relation to pronotum, median lobe of aedeagus slender and with characteristic internal structures), *A. citellorum* belongs to the *A. parvicornis* group (ASSING 2009a), which previously included two species, *A. parvicornis* and *A. suslica*. In external (habitus, coloration, short antennae, large eyes, dense punctation) and the secondary sexual characters, the new species is highly similar to *A. parvicornis*, but distinguished by the absence of distinct microsculpture on the whole body, less transverse antennomeres IV-X (especially IV!), darker antennomeres V-X, a more transverse head, more distinct punctation of the pronotum and elytra, and particularly the shape of the median lobe of the aedeagus (much more strongly arched). For illustrations of the external and sexual characters of *A. parvicornis* and *A. suslica* see ASSING (2009a).

Distribution and natural history: The known distribution is confined to East Siberia. The species has been collected from burrows of the Daurian ground squirrel, *Spermophilus dauricus* BRANDT, 1843 (type material), and of the longtailed ground squirrel, *Urocitellus undulatus* (PALLAS, 1778) (additional material examined).

## Aleochara (Xenochara) jacobsoni KIRSHENBLAT, 1935 (Figs 21-27)

Aleochara (Polychara) jacobsoni KIRSHENBLAT, 1935: 336 f.

T y p e m a t e r i a 1: Lectotype ♂, present designation: "Gran Kisilkumov i Golod. st. u CyrD G Yakoboson 10.v.03 / [word illegible] N45 / Aleochara jacobsoni sp.n. Kirshenblat det. / Lectotypus ♂ Aleochara jacobsoni Kirshenblat, desig. V. Assing 2017" (ZIN). Paralectotype ♀: same data as holotype (ZIN).

C o m m e n t: The original description is based on an unspecified number of syntypes from "Kasakstan und Turkmenien" (KIRSHENBLAT 1935). Two syntypes, a male and a female, both in rather poor condition (most of antennae, legs partly missing), were located in the Kirshenblat collection in ZIN. The male is designated as the lectotype. This species had never been revised; its sexual characters were unknown. Therefore, a full redescription and illustrations are provided.

R e d e s c r i p t i o n : Body length 4.2-4.5 mm. Coloration: head, pronotum, and abdomen blackish; elytra reddish-yellow; legs pale reddish-brown; antennae blackish-brown with the basal three antennomeres reddish.

Head (Fig. 21) broadest across or behind eyes; punctation very fine and rather dense; interstices with distinct microsculpture. Eyes large and bulging, longer than postocular region in dorsal view. Antennae not assessable.

Pronotum (Fig. 21) distinctly transverse, moderately convex in cross-section, approximately 1.3 times as broad as long and 1.4 times as broad as head; punctation slightly denser and somewhat more distinct than that of head; interstices with microsculpture.

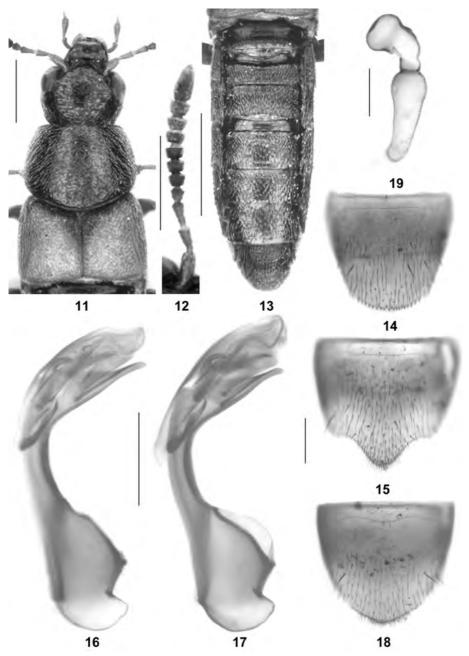
Elytra (Fig. 21) small in relation to pronotum, only slightly broader than, and approximately 0.75-0.80 times as long as pronotum; posterior margin not distinctly sinuate near lateral angles; punctation dense and more distinct than that of head and pronotum. Hind wings fully developed. Legs very long and slender; metatarsus slightly longer than metatibia; metatarsomere I longer than the combined length of metatarsomeres II and III, but shorter than the combined length of II-IV.

Abdomen slightly narrower than elytra; punctation rather coarse and very dense on anterior, less dense and finer on posterior tergites; interstices without microsculpture; posterior margin of tergite VII with palisade fringe.

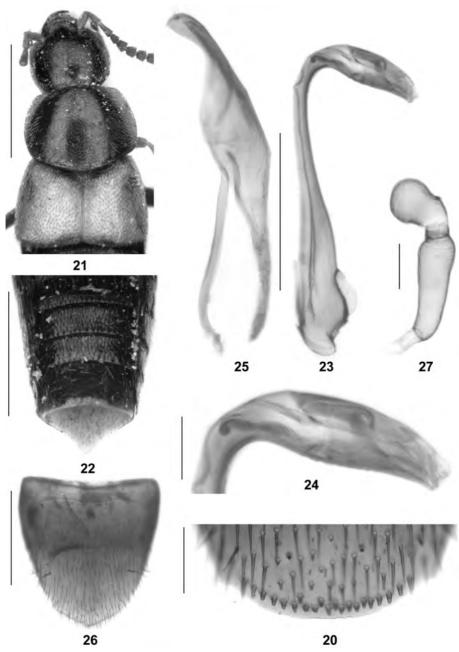
- 3: sternite VII [sic] posteriorly acutely pointed in the middle (Fig. 22); sternite VIII acutely produced posteriorly; median lobe of aedeagus (Fig. 23) 0.9 mm long (total length 0.98 mm) and of conspicuous shape, very slender and strongly bent subapically in lateral view; internal structures as in Fig. 24; paramere (Fig. 25) conspicuously long (length 1.1 mm), even longer than the median lobe.
- Q: sternite VII unmodified; posterior margin of sternite VIII obtusely pointed in the middle (Fig. 26); spermatheca shaped as in Fig. 27.

C o m p a r a t i v e n o t e s: Like A. citellorum, A. jacobsoni belongs to the A. parvicornis group, as can be inferred particularly from the morphology of the aedeagus. The species is readily distinguished from all other Xenochara species by the conspicuously long and slender median lobe and parameres of the aedeagus, as well as by the modifications of the male sternite VII.

Distribution and natural history: *Aleochara jacobsoni* was originally described based on material from "Kasakstan und Turkmenien"; subsequent records are unknown to me. The type material was collected in "den Bauen von *Spermophilopsis leptodactylus* und *Rhombomys opimus*" (KIRSHENBLAT 1935), i. e., the burrows of the long-clawed ground squirrel and of the great gerbil, both of which are distributed in Middle Asia.



Figs 11-19: Aleochara citellorum (15-16: lectotype; 14, 18: paralectotype): (11) forebody; (12) antenna; (13) abdomen; (14) tergite VIII; (15) male sternite VIII; (16-17) median lobe of aedeagus in lateral view; (18) female sternite VIII; (19) spermatheca. Scale bars: 13: 1.0 mm; 11-12: 0.5 mm; 14-18: 0.2 mm; 19: 0.1 mm.



Figs 20-27: Aleochara citellorum (20) and A. jacobsoni (21-27): (20) posterior portion of tergite VIII; (21) forebody; (22) posterior portion of male abdomen; (23) median lobe of aedeagus in lateral view; (24) apical portion of median lobe in lateral view; (25) paramere; (26) female sternite VIII; (27) spermatheca. Scale bars: 21-22: 1.0 mm; 23, 25-26: 0.5 mm; 20, 24, 27: 0.1 mm.

## Aleochara (Xenochara) haemoptera KRAATZ, 1856

M a t e r i a l e x a m i n e d : <u>Ukraine</u>: 1♂, Kherson obl., Askania-Nova, Yuzhnyi, badger burrow, 24.III.2017, leg. Gontarenko (cAss).

C o m m e n t : According to SCHÜLKE & SMETANA (2015), this rare nidicolous species was previously unknown from Ukraine.

## Aleochara (Xenochara) falcata ASSING, 2009

M a t e r i a l e x a m i n e d: <u>Armenia</u>: 4♂♂, 10♀♀, 30 km NW Sisian, 39°47'N, 45°56'E, 2970 m, road margin and pasture, under stones, 2.VII.2016, leg. Assing & Schülke (cAss, MNB); 1♂, 1 ex., 30 km NW Sisian, Mt. Karkar, 39°47'N, 45°57'E, 3000 m, N-slope, debris between stones and under plants sifted, 11.VII.2017, leg. Assing & Schülke (cAss, MNB).

C o m m e n t: The original description is based on few specimens from two localities in Russia (Assing 2009a). The above specimens represent the first records from Armenia.

# Aleochara (Xenochara) grandeguttata ASSING, 2009

M a t e r i a l e x a m i n e d : <u>Ukraine</u>: 1♂, Odessa env., Kuyalnik liman, saline soil, 5.V.2004, leg. Gontarenko (cGon). <u>Armenia</u>: 1♂, 1♀, 2 exs., N Yerevan, NW Hrazdan, 40°38'N, 44°28'E, 2110 m, stream valley, mixed deciduous forest, litter and grass roots sifted, 28.VI.2016, leg. Assing & Schülke (cAss, MNB); 1 ex., 30 km NW Sisian, Mt. Karkar, 39°47'N, 45°56'E, 3000 m, horse dung, 11.VII.2017, leg. Schülke (MNB).

C o m m e n t: This species was previously known from Turkey, Armenia, Hungary, and Romania (ASSING 2009a, 2011a). The above male from the environs of Odessa represents the first record from Ukraine.

## Aleochara (Xenochara) maculata Brisout de Barneville, 1863

M a t e r i a l e x a m i n e d : Georgia: 1♂, Mtskheta-Mtianeti, Gudamakarskiy mts., E Ivari pass, 42°31′N, 44°28′E, 2520 m, under stones, 10.VII.2015, leg. Pütz (cPüt). Armenia: 1♂, 30 km NW Sisian, 39°47′N, 45°56′E, 2960 m, grassy slope with rocks, roots and debris sifted, 2.VII.2016, leg. Assing (cAss); 2♂♂, 2♀♀, mountain range W Gavar, 40°20′N, 44°57′E, 2700 m, snow field, debris sifted, 26.VI.2017, leg. Assing (cAss); 1♀, road Berd – Ijevan, 40°52′N, 45°18′E, 1350 m, beech forest margin, litter and roots sifted, 30.VI.2017, leg. Assing (cAss); 1♀, pass N Goris, 39°36′N, 46°19′E, 1990 m, N-slope with small stream valleys with water, litter, debris, and moss sifted, 10.VII.2017, leg. Assing (cAss);

C o m m e n t: The known distribution of this widespread species ranges from the Iberian Peninsula eastwards to the Caucasus region (ASSING 2009a). The above specimens represent the first records from Georgia and Armenia.

## Aleochara (Xenochara) rambouseki Likovský, 1964 (Map 6)

M a t e r i a l e x a m i n e d : <u>Iraq</u>: 1♂, 11 exs. [det. Feldmann], S Rawandoz, Akoian valley, 36°30′N, 44°36′E, ~1400 m, pitfall trap, 17.-25.IV.2017, leg. Reuter (cFel).

C o m m e n t: The distribution of *A. rambouseki* ranges from the Balkans (Greece, Croatia, Macedonia) across Turkey eastwards to Azerbaijan and Iraq (ASSING 2009a, 2013, 2015, 2016, 2017a, b). The currently known distribution is illustrated in Map 6.

## Aleochara (Xenochara) honesta LIKOVSKÝ, 1973

M a t e r i a l  $\,$  e x a m i n e d :  $\underline{Georgia}$ :  $8 \circlearrowleft \circlearrowleft$ , Mtskheta-Mtianeti, Gudamakarskiy mts., E Ivari

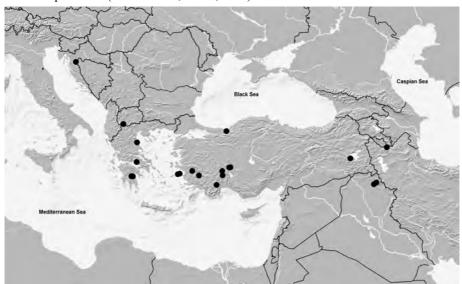
pass, 42°31'N, 44°28'E, 2520 m, under stones, 10.VII.2015, leg. Pütz (cPüt, cAss);  $2 \subsetneq \subsetneq$ , N Tushetia, Kakhetiskiy mts., Abano pass, 42°17'N, 45°31'E, 2860 m, under stones, 7.VII.2015, leg. Pütz (cPüt).

C o m m e n t: This Caucasian species was previously known from Northeast Turkey and the Russian part of the West Caucasus. The above specimens, all of them females, represent the first records from Georgia.

## Aleochara (Xenochara) leptocera Eppelsheim, 1889

M a t e r i a l e x a m i n e d : <u>Turkey</u>: 1♂, 1♀, Denizli, Honaz Dağı, 37°41'N, 29°17'E, 2500 m, 13.VI.2013, leg. Örgel (cAnl, cAss).

C o m m e n t: Reliable records of this nidicolous species are known only from Turkey, Israel, and Iran. In Turkey it had been recorded from Kahramanmaraş and Karaman provinces (ASSING 2007, 2009a, 2011).



Map 6: Distribution of Aleochara rambouseki, based on revised records.

# Acknowledgements

My thanks are extended to the colleagues listed in the material section for the loan of material from their respective collections. Alexey Solodovnikov (Copenhagen) transliterated the type labels of *Aleochara citellorum*, Michael Schülke (Berlin) those of *A. jacobsoni*. Bernhard Seifert (Görlitz) identified a nest sample of *Formica exsecta*. Benedikt Feldmann (Münster) provided additional records and proof-read the manuscript.

#### Zusammenfassung

Aleochara (Ceranota) plicelytrata nov.sp. (Armenien, Georgien) aus der A. subtumida-Gruppe wird beschrieben und abgebildet. Aleochara (Xenochara) citellorum KIRSHENBLAT, 1935 und A. (X.) jacobsoni KIRSHENBLAT, 1935 werden revidiert, redeskribiert und abgebildet. Beide Arten gehören in die A. parvicornis-Gruzppe; es werden jeweils Lektotypen designiert. Weitere Nachweise von 14 Arten der Untergattung Ceranota STEPHENS, 1839 und 18 Arten der Untergattung

*Xenochara* MULSANT & REY, 1874 werden gemeldet, darunter 17 Erstnachweise für Armenien (6), Georgien (3), Ukraine (3), Russland (2), Libanon (2), Griechenland (1), Iran (1) und Kaschmir (1). Die derzeit bekannten Verbreitungsgebiete von sechs *Ceranota*-Arten und einer *Xenochara*-Art werden anhand von Karten illustriert.

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