

РОССИЙСКАЯ АКАДЕМИЯ НАУК  
Южный научный центр

RUSSIAN ACADEMY OF SCIENCES  
Southern Scientific Centre



# Кавказский Энтомологический Бюллетень

CAUCASIAN ENTOMOLOGICAL BULLETIN

Том 15. Вып. 1

Vol. 15. No. 1



Ростов-на-Дону  
2019

## New species and new records of darkling beetles of the tribe Helopini (Coleoptera: Tenebrionidae) from the Western Palaearctic

### Новые виды и новые находки жуков-чернотелок трибы Helopini (Coleoptera: Tenebrionidae) из Западной Палеарктики

© M.V. Nabozhenko<sup>1,2</sup>, R. Grimm<sup>3</sup>

© М.В. Набоженко<sup>1,2</sup>, Р. Гримм<sup>3</sup>

<sup>1</sup>Precaspian Institute of Biological Resources of the Dagestan Federal Research Centre of the Russian Academy of Sciences, M. Gadzhiev str., 45, Makhachkala, Republic of Dagestan 367000 Russia. E-mail: nalassus@mail.ru

<sup>2</sup>Dagestan State University, M. Gadzhiev str., 43a, Makhachkala, Republic of Dagestan 367000 Russia

<sup>3</sup>Unterer Sägerweg, 74, Neuenbürg 75305 Germany. E-mail: grimm.tenebrio@t-online.de

<sup>1</sup>Прикаспийский институт биологических ресурсов – обособленное подразделение Федерального государственного бюджетного учреждения науки Дагестанского федерального исследовательского центра Российской академии наук, ул. М. Гаджиева, 45, Махачкала, Республика Дагестан 367000 Россия

<sup>2</sup>Дагестанский государственный университет, ул. М. Гаджиева, 43а, Махачкала, Республика Дагестан 367000 Россия

<sup>3</sup>Нижний Сегерверг, 74, Ноеинбург 75305 Германия

**Key words:** Coleoptera, Tenebrionidae, Helopini, Mediterranean, Middle East, Middle Asia, new taxa.

**Ключевые слова:** Coleoptera, Tenebrionidae, Helopini, Средиземноморье, Ближний Восток, Средняя Азия, новые таксоны.

**Abstract.** New localities and data on distribution of darkling beetles of the tribe Helopini are presented. In total, 46 species from 12 genera (*Adelphinus* Fairmaire et Coquerel, 1866, *Catomus* Allard, 1876, *Euboeus* Boieldieu, 1865 (*Pelorinus* Vauloger, 1900), *Helops* Fabricius, 1775, *Raiboscelis* Allard, 1876, *Entomogonus* Solier, 1848, *Hedyphanes* Fischer von Waldheim, 1820, *Nalassus* Mulsant, 1854, *Eustenomacidius* Nabozhenko, 2006, *Zophohelops* Reitter, 1902, *Cylindrinotus* Faldermann, 1837, *Odocnemis* Allard, 1876) are reviewed. A brief review of taxonomic works for each genus is given. The following new taxa are described: *Adelphinus* (s. str.) *baehri* sp. n. from Morocco (differs from all congeners by the presence of erect black spine-like setae on elytra), *Euboeus* (*Pelorinus*) *kopetzi* sp. n. from Western Turkey (belongs to the *obesus* species-group, differs from all similar species with wrinkled prohypomera by the dorsally dark-blue body, and the structure of the aedeagus), *Zophohelops* (s. str.) *staveni* sp. n. from Eastern Turkey (similar to *Z. montanatolicus* Nabozhenko et Keskin, 2014, from which it differs by the coarsely and densely punctured pronotum, coarsely wrinkled prohypomera with sparse punctures, absence of hair brush at middle of male abdominal ventrite 1 and not beaded abdominal ventrite 5). The following new combination is proposed: *Euboeus* (*Pelorinus*) *globoicollis* (Seidlitz, 1896), **comb. n.** (transferred from *Probatiscus* Seidlitz, 1896). *Hedyphanes* *koltzei* Heyden, 1892 is recorded for Kazakhstan for the first time. The distribution of *Entomogonus* *saphyrinus* (Allard, 1876) and *Entomogonus* *duchoni* Reitter, 1903 is corrected, both species occur only in Turkey. The species

*Catomus* *fulvipes* (Reiche et Saulcy, 1857) is distributed in Syria and Israel, but not in Turkey.

**Резюме.** В работе представлены новые данные по местонахождениям и распространению жуков-чернотелок трибы Helopini. Всего рассмотрено 46 видов из 12 родов (*Adelphinus* Fairmaire et Coquerel, 1866, *Catomus* Allard, 1876, *Euboeus* Boieldieu, 1865 (*Pelorinus* Vauloger, 1900), *Helops* Fabricius, 1775, *Raiboscelis* Allard, 1876, *Entomogonus* Solier, 1848, *Hedyphanes* Fischer von Waldheim, 1820, *Nalassus* Mulsant, 1854, *Eustenomacidius* Nabozhenko, 2006, *Zophohelops* Reitter, 1902, *Cylindrinotus* Faldermann, 1837, *Odocnemis* Allard, 1876). Сделан краткий обзор таксономических работ по каждому роду. Описаны следующие новые таксоны: *Adelphinus* (s. str.) *baehri* sp. n. из Марокко (отличается от всех видов рода наличием торчащих шипообразных щетинок на надкрыльях), *Euboeus* (*Pelorinus*) *kopetzi* sp. n. с юга Западной Турции (относится к группе видов *obesus*, отличается от всех похожих видов с морщинистыми прогипомерами темно-синим дорсально телом и строением эдеагуса), *Zophohelops* (s. str.) *staveni* sp. n. из Восточной Турции (вид похож на *Z. montanatolicus* Nabozhenko et Keskin, 2014, от которого отличается более густой и грубой пунктировкой переднеспинки, грубо морщинистыми прогипомерами с редкой пунктировкой, отсутствием волосистой щетки посередине первого абдоминального вентрита и не окаймленным на вершине пятым абдоминальным вентритом). Предложена новая комбинация: *Euboeus* (*Pelorinus*) *globoicollis* (Seidlitz, 1896), **comb. n.** (перенесен из *Probatiscus* Seidlitz, 1896). *Hedyphanes* *koltzei* Heyden,

1892 указан для Казахстана впервые. Откорректировано распространение *Entomogonus saphyrinus* (Allard, 1876) и *Entomogonus duchoni* Reitter, 1903, оба вида встречаются только в пределах Турции. *Catomus fulvipes* (Reiche et Saulcy, 1857) распространен в Сирии и Израиле, в Турции не обитает.

The tribe Helopini is widespread in the Northern Hemisphere. The greatest taxonomic diversity of this group is in the Western Palaearctic, especially in the Mediterranean, Iran and Middle Asia, where 38 genera (84% of all genera) are present [Nabozhenko, 2018a]. Western Palaearctic Helopini were poorly studied until now. Many genera from North Africa, the Balkans and the Middle East need revision, especially *Euboeus* Boieldieu, 1865, *Odocnemis* Allard, 1876, *Catomus* Allard, 1876 and *Ectromopsis* Antoine, 1949.

Below we add a significant contribution to the knowledge of Helopini from Europe, North Africa, Anatolia, Iran and Middle Asia based on material from several European museums and private collections.

## Material

The material studied is deposited in the following collections:

NME – Naturkundemuseum Erfurt (Germany);

SMNS – Staatliches Museum für Naturkunde Stuttgart (Germany);

CRG – Private collection of Dr Roland Grimm (Neuenbürg, Germany);

CSB – Private collection of Stanislav Bečvar (Prague, Czech Republic);

CMN - Private collection of Dr Maxim Nabozhenko (Rostov-on-Don, Russia).

The system of the tribe and the order of genera are given according to Nabozhenko [2019].

### Subtribe Helopina

#### Genus *Adelphinus* Fairmaire et Coquerel, 1866

The genus was revised by Reitter [1922], who erected the subgenus *Adelphinops* Reitter, 1922 for setated Asian taxa. Kocher [1958] discussed North African species, noted that two indistinct species, *A. ciliatus* Seidlitz, 1896 and *A. suturalis* (Lukas, 1847), have intermediate characters, and described one additional species *A. rotundicollis* Kocher, 1958 from Morocco. Kaszab [1960] described one species from Afghanistan. Nabozhenko [2015d] made a brief review of Asian species and described one *Adelphinus* from South Western Iran.

Reitter's characters for two subgenera *Adelphinus* s. str. and *Adelphinops* were based only on two species of the genus. The nominotypical subgenus differs from *Adelphinops* by the very thickened male antennomere 1 and bare dorsal side of body. After the description of *A. rotundicollis* the character of sexual dimorphism in antennomere 1 for the nominotypical subgenus must be excluded. Below we describe *Adelphinus baehri* sp. n. from Morocco, which formally must be included in the Asian subgenus *Adelphinops* based on pubescent elytra

with strong setae at apex, but in this case the disjunction between Asian and African species will be very wide and the African exclave of *Adelphinops* will be located among *Adelphinus* s. str., which is doubtful. On the other hand African and Asian species may be monophyletic lineages after molecular genetic analysis. As a result we tentatively include our new species in the nominotypical subgenus.

#### *Adelphinus* (s. str.) *baehri* sp. n. (Color plate 5: 1; Color plate 6: 7–10)

**Material.** Holotype, ♂ (CRG): "Morocco, 5 km E Imiter an der P 32, 21.4.1988, M & B. Baehr", "Coll. Grimm".

**Description.** Body length 8.4 mm, width 2.8 mm. Body moderately shiny, ventrally black, head and pronotum black, elytra dark brown, legs light brown, antennomere 1 yellow brown, antennomere 2 brown, other antennomeres black, maxillary palpomere 1 light brown, palpomeres 2–3 brown, eyes reddish. Anterior margin of head deeply emarginated, with strongly projected angles. Genae strongly elevated, epistome strongly depressed. Lateral margin of head with obtuse short emargination between gena and epistome. Lateral margin of genae weakly rounded, directed strongly obliquely to anterior margin. Epistomal-labral membrane very long, subequal to labral length. Mandibles acute, with far located inner (ventral) tooth. Apical maxillary palpomeres longitudinal, triangular, narrow. Mentum impressed in middle, with anterior third membranous. Head widest at eye level, eyes dorsally round, moderately convex. Punctuation of head dorsally coarse and dense, punctures round, about 1.5 times wider than interpunctural distance. Head ventrally with smooth transverse wrinkles, gula with acute apex, not reaching submentum. Antennae comparatively short, with only three apical antennomeres extending beyond base of pronotum; antennomere 1 simple, slightly wider than weakly longitudinal antennomere 2, antennomere 11 rhombus-like, with shortly sinuated inner margin.

Pronotum nearly rectangular, weakly transverse (1.28 times as wide as long), widest at middle, 1.41 times as wide as head. Margins of pronotum weakly rounded, base straight at middle. Angles of pronotum weakly obtuse, narrowly rounded at apex. Disc weakly convex, with groove-like impression along lateral margin. Punctuation of disc coarse and dense as on head. All margins of pronotum finely beaded, only anterior margin with bead interrupted in middle. Prothoracic hypomera and prosternum with sparse coarse punctuation and smoothed wrinkles. Prohypomera very narrow, flattened near outer margin. Prosternal process not convex and not projected.

Elytra strongly elongate (1.94 times as long as wide), almost parallel, lateral margins weakly widely emarginated in basal half, 1.36 times as wide and 3.4 times as long as pronotum, 1.93 times as wide as head; elytral base 1.25 times as wide as pronotal base. Interstriae convex, with coriaceous microsculpture, covered with fine and short suberect light setae, additionally with longer erect strong black setae in apical third. Lateral deflected margin of elytra clearly visible for their entire length. Punctures in striae merged in grooves. Epipleura not impressed in base, but impressed in apical third, smooth, reaching sutural elytral angle. Ventral side covered with grey subrecumbent hairs. Metepisterna coarsely punctured. Metaventricle convex, with sparse rasp-like punctuation. Abdominal ventrites with fine dense punctuation, ventrite 5 not beaded along margin; intersegmental membranes between ventrites 3–5 strongly impressed.

Legs long, slender. Femora reddish brown, with rasp-like punctuation and suberect setae on inner side. Tibiae narrow along whole length, straight, only mesotibiae slightly bent. Protarsi widened, cordiform, weakly longitudinal.

**Comparative diagnosis.** This new species differs from all known *Adelphinus* by the presence of erect strong black

spine-like setae on apical third of elytra (Color plate 6: 7), together with suberect fine and short pubescence.

**Etymology.** The species is named in the memory of Dr Martin Baehr (10.03.1943–17.04.2019), collector of the holotype and renowned German specialist on Carabidae from Munich. He always and selflessly helped many colleagues as the curator of the collection of beetles in Zoologische Staatssammlung München.

#### Genus *Catomus* Allard, 1876

Central Asian, Caucasian and partly Middle Eastern species were revised by Nabozhenko and co-authors [Nabozhenko, 2006a, 2015a; Nabozhenko et al., 2012; Nabozhenko, Ando, 2018; Nabozhenko, Tichý, 2019]. Mediterranean species were reviewed by Allard [1876, 1877], Seidlitz [1896] and Reitter [1922], by Vauloger [1900], Koch [1935], Antoine [1949] and Nabozhenko [2015b] for North Africa, Ardoin [1958] for France, Español and Viñolas [1986] for Spain. Additional data on Spanish *Catomus* were added by Castro Tovar [2015].

The genus is widely distributed from the Western Mediterranean to China. North African and Middle East species need revision.

#### *Catomus seidlitzii* (Gebien, 1911)

**Material.** 1♀ (CRG), Israel, desert S Arad, Mizpe Zohar, 2.04.1997 (leg. H. Sparmberg).

**Distribution.** Israel.

#### *Catomus fulvipes* (Reiche et Saulcy, 1857) (Color plate 5: 2, 3)

**Material.** 1♂, 1♀ (CRG), Syria, pass SW Nebek [Al-Nabek], 1200–1400 m, 14.04.1978 (leg. W. Heinz); 1♂ (CSB), Syria, Damascus env., 10 km N Duma, 29.03.1993 (leg. S. Bečvar).

**Notes.** Types of *C. fulvipes* were not found and are probably lost. This little known species was described from Nablus (Palestine) and it is broadly interpreted by different authors. Reitter [1922] listed it for “Syrien”, but we don’t know which real species he re-described under the name “*Catomus fulvipes*”. Kaszab [1968] erroneously recorded it from Turkey (Gaziantep and Mardin provinces), where similar undescribed taxa are distributed. Reiche and Saulcy [1857] made a very clear and quality description, mentioned that the species has very shiny lacquered body, weakly longitudinal male pronotum, convex interstriae and striae merged in furrows. Specimens listed above distinctly refer to the Palestinian species *C. fulvipes*.

**Variability.** The specimens from Al-Nabek are wholly dark-brown, male with pronotum not beaded laterally, eyes (in lateral view) a little narrower. The male from Duma has a reddish brown pronotum, very finely beaded lateral margins of pronotum and eyes a little wider.

**Distribution.** South Western Syria and Israel (at least Palestine).

#### Genus *Euboeus* Boieldieu, 1865 Subgenus *Pelorinus* Vauloger, 1900

The subgenus *Pelorinus* was completely revised by Seidlitz [1896] and Reitter [1922], by Vauloger [1900]

for North Africa, Antoine [1949] for Morocco, Español [1956] for Iberian Peninsula, Ardoin [1958] for France, Abdurakhmanov and Nabozhenko [2011] for the Caucasus. Some species from Iran, Turkey and Greece were described [Medvedev, 1976; Sparacio, 2007; Nabozhenko, 2011; Soldati, 2012]. The genus needs revision.

Species of the subgenus occur in the Mediterranean region, Eastern Europe, Western Kazakhstan (Uralsk), Transcaucasia, Iran and Turkmenistan (Kopet Dag).

#### *Euboeus (Pelorinus) globicollis* (Seidlitz, 1896), **comb. n.**

All species of *Proboticus* Seidlitz, 1896 were transferred to the genus *Euboeus* after the synonymy *Euboeus* = *Proboticus* [Nabozhenko et al., 2017]. We overlooked this species in our small review [Nabozhenko et al., 2017], but Francesco Vitali (Musée national d’histoire naturelle de Luxembourg) kindly pointed to our misstep. As a result, this species is also transferred from *Proboticus* to the genus *Euboeus*. Seidlitz [1896: 707] described this species in the genus *Helops* Fabricius, 1775 based on one male and one female from Cyprus and indicated “Mus. Vienn” as depository. The first author studied all Helopini in the collection of NMW, but didn’t find types of “*Helops globicollis*”, which are probably lost.

#### *Euboeus (Pelorinus) subrugosus* (Duftschmid, 1812)

**Material.** 1♀ (CRG), Greece, Kavala, 05.1988 (leg. F. Wrase); 1♂ (SMNS), Russia, Volgograd Region, Elton salt lake env., 18–23.05.2001 (leg. V. Karalius, J. Miatleuski).

**Distribution.** Widely distributed species from Balkan and Eastern Europe to Western Kazakhstan (Uralsk).

#### *Euboeus (Pelorinus) tenebricosus* s. str. (Brullé, 1832)

**Material.** 1♂ (SMNS), Greece, Peloponnese, Erimanthos Mts., Kalentzi, 11.05.2015 (leg. M. Egger).

**Notes.** This species is very broadly interpreted since Seidlitz [1896] and Reitter [1922]. Actually, *E. tenebricosus* is distributed on Naxos Island (type locality) and Peloponnese. Reitter [1922] erroneously interpreted actual *E. tenebricosus* as *E. lacertosus* (Küster, 1845).

**Distribution.** Greece (Peloponnese, Naxos Island).

#### *Euboeus (Pelorinus) myops* (Allard, 1876)

**Material.** 1♂ (SMNS), Turkey, Muş Prov., Buğlan pass, 1640 m, 21.04–11.05.2014 (leg. C. Reuter).

**Distribution.** Eastern Anatolia (Tunceli, Muş, Bitlis, Van provinces).

#### *Euboeus (Pelorinus) dorsalis* (Allard, 1877)

**Material.** 1♂ (SMNS), Turkey, Ankara Prov., pass between Akdoğan and Kızılcahamam, 1100 m, 5.04.1977 (leg. W. Heinz).

**Distribution.** The species is widely distributed in Western Anatolia.

**Variability.** This species is variable in different localities, but males from all populations have absolutely identical genitalia. Typical males of *E. dorsalis* have a bare head, rounded and not projected anterior angles of pronotum, not flattened lateral pronotal sides, elytra

without coriaceous microsculpture and strongly widened transverse pro- and mesotarsi. Specimens (males) from Eskişehir Province have setated (with recumbent goldish setae) head, acute and weakly projected anterior angles and narrower longitudinal pro- and mesotarsi. The specimen mentioned above from Ankara Province has a bare head, the pronotum weakly flattened on sides with acute moderately projected angles, elytra with coriaceous microsculpture and strongly widened tarsi.

*Euboeus (Pelorinus) oliveirae* (Seidlitz, 1896)

**Material.** 1♀ (CRG), Spain, Lugo Prov., Sierra de Ancares, Fieró de Abaixo, 1500 m, 9.07.1996 (leg. D.W. Wrase); 1♂ (CRG), 2♀ (NME, CRG), Spain, Cáceres Prov, Extremadura, NE Plasencia, vicinity of Piornal, 40°07'30"N / 05°49'04"W, 900–1280 m, 5.04.2007 (leg. J. Weipert).

**Distribution.** Western Spain, Portugal.

*Euboeus (Pelorinus) kopetzi* sp. n.  
(Color plate 5: 4; Color plate 6: 11–16)

**Material.** Holotype, ♂ (CRG): "Turkey, distr. Alanya, 30 km E Beldibi, 1000 m 01.IV.1996 leg. A. Kopetz", "Coll. Grimm".

**Description.** Body length 13.8, width 5.7 mm. Body dorsally dark-blue, weakly shiny, ventrally dark-brown, shiny. Anterior margin of head straight, epistome weakly depressed. Eyes large, convex, narrow (lateral view), oblique, head at eye level 1.9 times as wide as interocular space of frons. Puncturation of head coarse and dense, punctures round, merged. Head ventrally with very dense and coarse puncturation of round punctures, gula with acute apex, reaching submentum. Antennae long, with four apical antennomeres extending beyond base of pronotum, antennomere 11 asymmetric.

Pronotum weakly cordiform, transverse (1.3 times as wide as long), widest before middle, 1.48 times as wide as head. Lateral margins weakly rounded, near base weakly emarginated. Anterior margin widely emarginated, base weakly bisinuate. Anterior angles acute, projected, narrowly rounded at apex, posterior angles weakly obtuse, with distinct apex. All margins beaded, base more widely beaded. Disc of pronotum moderately convex, lateral sides narrowly flattened. Puncturation of disc coarse and dense (puncture diameter about 1.5 times wider than interpunctural distance), punctures round, merged on sides. Prothoracic hypomera flattened on margins, with irregular wrinkles. Prosternal process weakly convex.

Pterothorax. Elytra elongate (1.5 times as long as wide), 1.32 times as wide and 2.6 times as long as pronotum, 1.96 times as wide as head. Interstriae flat (weakly convex only near apex), with moderately coarse, not dense puncturation (puncture diameter subequal to or a little wider than interpunctural distance) and sparse transverse wrinkles. Striae deep, often interrupted. Mesepisterna wrinkled near margin, smooth at middle and with coarse separated punctures near base. Metepisterna and metaventricle with finer dense puncturation. Metaventricle with distinct sharp V-shaped impression at middle.

Abdominal ventrites with coarse and dense, not merged puncturation.

Legs slender, long, tibiae straight. Pro- and mesotarsi weakly widened, not wider than tibiae at apex. Ratio of length: width of protarsomeres 1–4 – 1.4 : 1.1, 1.1 : 1, 0.9 : 0.9, 0.6 : 0.6.

**Comparative diagnosis.** The new species is most similar to the Balkan – Anatolian *E. obesus* (Frivaldszky von Frivald, 1835) and Anatolian *E. granicollis* (Seidlitz, 1896) by the wrinkled hypomera and the structure of aedeagus, and externally also similar to *E. bodemeyeri* (Reitter, 1900) and *E. corrugatus* (Seidlitz, 1896).

From the first species it differs in the following characters: body blue dorsally, pronotum wider before middle, gula reaching submentum, metaventricle with V-shaped impression, head and abdominal ventrites without recumbent pubescence of goldish setae, narrower male protarsi and shape of apical piece of aedeagus.

The new species differs from *E. granicollis* (Seidlitz, 1896) by the blue dorsum, flattened lateral sides of pronotum and prohypomera without microgranules.

*Euboeus kopetzi* sp. n. differs from *E. bodemeyeri* by the dorsally blue body, gula reaching submentum, not pubescent metaventricle and abdominal ventrites, wrinkled prothoracic hypomera (*E. bodemeyeri* has coarsely punctured prohypomera) and the structure of aedeagus.

*Euboeus corrugatus* also has the gula reaching the submentum, but distinctly differs from *E. kopetzi* sp. n. by the black body, strongly convex pronotum, punctate prohypomera, densely pubescent metaventricle and abdominal ventrites, finely and sparsely punctured interstriae without transverse wrinkles and structure of aedeagus.

**Etymology.** The species is named in honour of Andreas Kopetz (Erfurt-Kerspleben, Germany), the collector of the holotype.

**Genus *Helops* Fabricius, 1775**

The genus was completely revised by Reitter [1922]. Additional works on the taxonomy of *Helops* were published later: Antoine [1949] for Morocco, Ardoin [1958] for France, Aliquò et al. [2007] for Italy, Abdurakhmanov and Nabozhenko [2011] for the Caucasus and Iran, Nabozhenko and Keskin [2017] for Turkey. Some taxa were described by Pica [1984] from Greece and Grimm [1991] from Cyprus.

The genus is distributed in Central and Southern Europe, North Africa (Atlas), the Middle East, the Caucasus and North Iran (forests around the Caspian Sea).

*Helops punctatissimus* Nabozhenko et Keskin, 2017

**Material.** 1♂ (CRG), Turkey, vicinity of Tatvan, 1200 m, 04.1986 (leg. I.R. Kenyery); 2♂, 2♀ (SMNS), Turkey, Van Province, Reşadiye, 1–17.06.2007 (leg. C. Reuter); 1♀ (SMNS), Turkey, 32 km W Bingöl, Kurucu pass, 1800 m, 20.04–11.05.2014 (leg. C. Reuter).

**Note.** The species was described on the basis of one male [Nabozhenko, Keskin, 2017]. Female differs by more robust body, elytra visibly wider and more convex than in male.

**Distribution.** South Eastern Anatolia (Bingöl, Bitlis, Van provinces).

**Genus *Raiboscelis* Allard, 1876**

The genus was revised by Reitter [1922] but he confused the taxonomy of this group because he divided it based on the erroneous character of completely beaded and not (or incompletely) beaded abdominal ventrite 5. In fact, all *Raiboscelis* have the ventrite 5 completely beaded. In addition, many unclear taxa and forms were described and the group needs revision. Species of *Raiboscelis* occur in Italy, Greece, Western Turkey, Cyprus and countries of the Levantine region.

*Raiboscelis azureus* (Brullé, 1832)

**Material.** 1♀ (SMNS), Greece, Morea [Peloponnese], Akrokorinth, 3.06.1976 (leg. K. Bernhauer).

**Distribution.** Greece, Italy (Sicily). The specimen mentioned above belongs to the black form, listed by Reitter [1922] as “*v. tumidicollis* Küst.”.

*Raiboscelis syriacus* (Reiche, 1861)

**Material.** 2♂, 3♀ (NME), 1♂ (CRG), Turkey, Mersin Prov., Anamur env., 8.03.2013 (leg. M. Snižek).

**Note.** Reitter [1922] indicated the pronotum as finely and sparsely punctate, but this species has the pronotum very densely and coarsely punctured by elongate punctures, also mentioned by Reiche [1861] in the original description.

**Distribution.** Southern Turkey, Syria, Lebanon. This species was listed only for Turkey and Syria [Reitter, 1922; Nabozhenko, Löbl, 2008], but Reiche [1861: 6] indicated Beirut “Habitat Berytam vesus Syriae” in the original description.

**Genus *Entomogonus* Solier, 1848**

The genus was completely revised by Reitter [1922]. Further contributions to the taxonomy of the genus were summarized by Nabozhenko et al. [2018]. In addition, a new species from Jordan was described [Nabozhenko, Tichý, 2019].

*Entomogonus* (s. str.) *angulicollis angulicollis*  
(Mulsant et Wachanru, 1853)

**Material.** 1♂, 1♀ (NME), Turkey, Osmaniye Prov., Toprakale / Issus, 80 m, 7.04.1978 (leg. W. Heinz).

**Distribution.** Turkey and Syria. Multiple subspecies described by Reitter [1922] need revision.

*Entomogonus* (*Delonurops*) *saphyrinus* (Allard, 1876)

**Material.** 1♂ (SMNS), “Akchehir Anatol. c.”; 1♀ (SMNS), Turkey, Ankara Prov., 10 km SE Sereflikoçhisar, Tuz Gölü, 300 m, 10.04.1979 (leg. N. Kinzelbach); 1♂ (SMNS), Turkey, Ankara Prov., 10 km S Polatlı, Yenimehmetli Bucağı, 990 m, 9.05.1987 (leg. P.M. Giachino); 1♀ (CRG), Turkey, Gölbaşı reservoir, 23.05.1983 (leg. H. Freude); 1♀ (CRG), Turkey, Aksaray Prov., 20 km E Aksaray, Karawanserei, 38°29'13.9"N / 34°12'10.2"E, 1196 m, 30.04.2006 (leg. P. Schnitter).

**Distribution.** Central Anatolia, subdeserts. This species is known only from Turkey. Records for Syria and Iraq [Nabozhenko, Löbl, 2008] are not supported by material, but the closely related taxon *E. amri* Nabozhenko et Tichý, 2019 occurs in Central Syria and Jordan.

*Entomogonus* (*Delonurops*) *duchoni* Reitter, 1903

**Material.** 1♂ (SMNS), Turkey, Karamanmaraş Prov., NW Marası, pass S Göksun, 12.06.1973 (leg. K. Bernhauer).

**Distribution.** The species is known only in Turkey (not east of Elazığ Province). Data on Syria [Nabozhenko, Löbl, 2008] “Hochsyrien: Akbes, Zeitoon” are based on the work of Reitter [1922], but now these localities are in Turkey. Data on Iraq are erroneous.

**Genus *Hedyphanes* Fischer von Waldheim, 1820**

The genus was completely revised in a series of works by Nabozhenko and co-authors [Nabozhenko, 2005, 2013, 2018b; Abdurakhmanov, Nabozhenko, 2011; Nabozhenko, Lillig, 2013; Nabozhenko, Grimm, 2018]. Species of *Hedyphanes* are distributed from Western Anatolia and Egypt to Kyrgyzstan and Afghanistan, with highest diversity in Iran.

*Hedyphanes seidlitzi seidlitzi* Reitter, 1914

**Material.** 1♀ (CRG), Turkmenistan, Kopet Dag, 43 km SE Ashgabad, Sherlovka cordon, 700–800 m, 12–17.04.1990 (leg. A. Napolov); 1♂ (CRG), Turkmenistan, Kopet Dag Natural Reserve, NN Germab, 800 m, 19.04.1990 (leg. D. Telnov); 1♂ (CRG), Turkmenistan, 55 km S Ashgabad, Germab env., 1000 m, 20–21.04.1990 (leg. A. Napolov).

**Distribution.** Turkmenistan (Kopet Dag), Iran (North Khorasan).

*Hedyphanes koltzei* Heyden, 1892

**Material.** 1♂ (CRG), Kazakhstan, Almaty Prov., Zharkent Distr., Koktaly, 300 m, 6.07.1996 (leg. V. Lukhtanov).

**Distribution.** Kyrgyzstan, Kazakhstan (the first record for the country).

*Hedyphanes bodemeyeri* Reitter, 1914

**Material.** 1♂, 2♀ (SMNS), Iran, Kordestan Prov., Zage-ya-Bala, 2000 m, 13.05.2002 (leg. G. Sama).

**Distribution.** Western Iran.

*Hedyphanes laticollis* Fischer von Waldheim  
in Ménétrés, 1832

**Material.** 1♀ (SMNS), Iran, Azerbaijan e Sarqi Prov., 27 km W Nir, 1750 m, 20.05.2002 (leg. G. Sama).

**Distribution.** Azerbaijan and North Iran.

**Subtribe *Cylindrinotina***  
**Genus *Nalassus* Mulsant, 1854**

The genus was revised by Reitter [1922]. Many regional taxonomic and faunistic papers are known on European *Nalassus*, among which some important taxonomic revisions were made by Kaszab [1938] on Hungary, Ardoin [1958] on France, Español [1961] on Spain and Aliquò et al. [2007] on Italy. An iconographic review of *Nalassus* of Middle Europe (with some errors) was published by Nývák [2007]. Middle Asian species of the genus were studied by Medvedev [1987b]. East European, Caucasian, Turkish, Iranian, East Asian and American *Nalassus* were revised by Nabozhenko and co-authors [Nabozhenko, 2001b, 2006b, 2008a, 2010; Abdurakhmanov, Nabozhenko, 2011; Nabozhenko et al., 2016; Keskin et al., 2017a; Nabozhenko, Ando, 2018; Nabozhenko, Grimm, 2018].

The genus is widely distributed in the Holarctic, has the range divided into four exclaves [Nabozhenko, Ando, 2018]: Western Palaearctic (from Western Europe and North Africa to Iran), East Kazakhstan (from Balkhash Lake and Moyunkum Desert to Tarbagatay), Pacific Asia and North America.

*Nalassus* (s. str.) *ecoffeti* (Küster, 1850)

**Material.** 1♀ (CRG), France, Ardèche (Valence), Lamastra, 3.05.2005 (leg. T. Struyve); 1♀ (CRG), France, Hérault Department, deciduous forest in Mauroul, 43°34'41"N / 02°52'39"E, 560 m, 35.05.2014 (leg. W. Apfel).

**Notes and distribution.** The species occurs in France. Two subspecies (*N. ecoffeti temperei* and *N. ecoffeti schaeferi*) were described by Ardoin [1958], but F. Soldati and L. Soldati [2001] synonymized both taxa after the study of large series. Our specimen from Ardèche valley corresponds to the aberration *schaeferi*.

*Nalassus* (s. str.) *faldermanni* (Faldermann, 1837)

**Material.** 1♂, 1♀ (CRG), Turkey, Düzce Prov., Güzeldere pass, E part, 2400 m, 8.05.1989 (leg. W. Heinz); 1♀ (SMNS), Azerbaijan, Shamakhi, 1800 m, 4.04.2000 (leg. M. Pejcha); 3♀ (SMNS), Iran, Azerbaijan e Garbi Prov., 40 km S Orumiye, 1400 m, 15.05.2002 (leg. G. Sama); 1♂ (SMNS), Iran, Alborz Prov., 10 km N Gachsar, 19.04.2003 (leg. G. Sama); 1♂, 3♀ (SMNS), Armenia, Sevan Lake, Artsvanist to Vardenis, 1900 m, 11–12.07.2015 (leg. W. Heinz).

**Notes and distribution.** This widely distributed species consists of several different populations with identical male aedeagus: 1) small brown cylindrical specimens with small eyes, more thickened male antennae and the pronotum with margins very narrowly flattened in basal third, occurs in Armenia and Turkey (Van: Ereğ Dağ), beetles inhabit stones, feed on epilithic lichens; this population was described as *Cylindrinotus (Helopocerodes) eligius* Reitter, 1922 (synonymized by Nabozhenko [2001b]); 2) small to large brown specimens with large eyes, less thickened male antennae and wider completely flattened sides of pronotal disc; the most widespread population, distributed from south of European Russia (Rostov Region) and Eastern Anatolia to Turkmenistan (Kopet-Dag), beetles inhabit many species of trees and shrubs, feed on lichen *Xanthoria parietina* Linnaeus [Nabozhenko et al., 2016]; 3) median black specimens, antennae and pronotum as in previous population, known only from Taman Peninsula and Crimea (Sivash), beetles occur in sands under *Stipa* spp., trophic relations are unknown; 4) the most western high mountain population from NW Turkey (Düzce Province) differs from other populations by the following combination of characters: shiny body, male with strongly thickened antennomeres, pronotal disc completely flattened on sides.

*Nalassus* (s. str.) *zaratustrai* Nabozhenko, 2006

**Material.** 1♀ (SNMS), Iran, Fars Prov., pass between Komehr and Ardakan, 2800 m, 24–25.04.2014 (leg. W. Heinz).

**Distribution.** Iran (Fars Province).

*Nalassus* (*Caucasonotus*) *pharnaces* Allard, 1876

**Material.** 1♀ (CRG), Russia, Krasnodar Region, Solokhaul, 11.06.2008 (leg. T. Struyve).

**Distribution.** The Western Caucasus: Russia (Krasnodar Region, the Republic of Adygea, the Karachay-Cherkess Republic), Abkhazia and Georgia. The species feeds on foliose lichens on *Fagus orientalis* Lipsky (1898).

*Nalassus* (*Helopondrus*) *sareptanus* (Allard, 1876)

**Material.** 1♀ (CRG), "SE-Europe, Balkan [Bulgaria], Primorsko W, leg. Wolf 07.06.90".

**Distribution.** This species is widespread in Moldova, the Ukraine and the south of the European part of Russia and was recently recorded for Bulgaria [Nabozhenko, Artokhin, 2017]. The species feeds on epigeic and epiphytic lichens [Nabozhenko et al., 2016].

*Nalassus* (*Helopondrus*) *heres* (Reitter, 1922)

**Material.** 1♀ (SMNS), Iran, Golestan Prov., Farsiyan (Sud Azad Sar), 1100 m, 30.05.2001 (leg. G. Sama); 2♂, 5♀ (SMNS), Iran, Golestan Prov., 10 km S Bandar e Gaz, 150 m, 27.05–7.06.2001 (leg. G. Sama); 1♀ (SMNS), Mazandaran Prov., road to Chorti (SW Chalkorud), 1150 m, 21.06–3.07.2003 (leg. G. Sama).

**Distribution.** Iran (Elburz, forests to 1500 m).

*Nalassus* (*Helopondrus*) *cambyes* (Seidlitz, 1896)

**Material.** 1♂ (SMNS), Iran, W Mazandaran, Hasan Keif, 19–21.04.1999 (leg. J. Rejssek); 2♂ (SMNS), Mazandaran Prov., Elburz, Kandovan pass, 36°09'10"N / 51°18'99"E, 3000 m, 31.05.2008 (leg. A. Skale).

**Distribution.** Iran (Elburz, alpine meadows from 2300 to 3200 m).

*Nalassus* (*Helopondrus*) *rejseki* Nabozhenko, 2014

**Material.** 1♂ (SMNS), Iran, Zanjan Prov., Tah-i-Suleyman, 2200–2300 m, 3.05.2014 (leg. W. Heinz); 1♂, 2♀ (CMN), West Azerbaijan Prov., S of Piranshahr, 36°36'31"N / 45°08'21"E, 20–22.05.2015 (leg. D. Kasatkin, S. Kakunin).

**Distribution.** Iran (East and West Azerbaijan provinces, Zanjan Province).

**Genus *Eustenomacidius* Nabozhenko, 2006**

The genus was revised by Nabozhenko [2006a]. Later, one additional species of the subgenus *Caucasohelops* Nabozhenko, 2006 was described from Eastern Anatolia [Keskin et al., 2017b].

*Eustenomacidius* (s. str.) *turcmenicus*  
(G.S. Medvedev, 1964)

**Material.** 1♀ (CRG), Turkmenistan, Kopet Dag Nature Reserve, N Germab, 800 m, 19.04.1990 (leg. D. Telnov).

**Distribution.** Turkmenistan (Kopet Dag) [Nabozhenko, 2006a].

**Genus *Zophohelops* Reitter, 1902**

Middle Asian species were studied by Reitter [1902, 1922], Skopin [1964, 1966], Medvedev [1987a] and Nabozhenko [2001a, 2008b]. Middle East species of the genus were described by Nabozhenko and co-authors [Nabozhenko, Keskin, 2014; Nabozhenko, 2014].

Species of the genus are widely distributed in Tien-Shan (one species is also known from South Tajikistan), western exclave of the generic range includes three species (one from each country) from Iran (the subgenus *Zophondrus* Nabozhenko, 2014), South Western Transcaucasia and Turkey.

*Zophohelops* (s. str.) *tiro* (Reitter, 1902)

**Material.** 5♂, 3♀ (CRG), Uzbekistan, Chimgan, 2000 m, 6.05.1978 (leg. Kr. Pospíšil); 1♂ (CRG), Uzbekistan, Chimgan, 12.05.1989 (leg. H. Sparmberg).

**Distribution.** Uzbekistan (Chatkal, Pskem and Ugam ranges).

*Zophohelops* (s. str.) *staveni* sp. n.  
(Color plate 5: 5, 6; Color plate 6: 17–20)

**Material.** Holotype, ♂ (NME): “Turkey, Van Catak [Çatak] / Bahcesaray [Bahçesaray], Karabet-Paß, 2800–3000 m, 4.7.1987 leg. K. Staven”. Paratypes: 2♂ (CRG, Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia) with same labels as the holotype; 1♂, 1♀ (CRG), 1♀ (NME), “Türkie, Anatolia bor. Vil. Van, Karabet geçidi E-Seite, 2.500–3.000 m üNN 3/4.VII.1987 leg. Heinz”.

**Description.** Body length 7–8.5 mm, width 2.9–3.5 mm. Body dark brown, dull, robust. Anterior margin of head weakly widely emarginated. Head widest at eye level. Eyes small, convex, strongly transverse (lateral view). Head on eye level 1.4 times as wide as interocular space of frons. Lateral margin of genae evenly moderately rounded, lateral margin of head shortly sinuated between genae and epistome. Punctuation of head irregular: frons with very dense and coarse flat-bottomed round punctures (puncture diameter 2 times as wide as interpuncture distance), epistome and genae dorsally with finer and sparser punctuation. Temples parallel. Gula with rounded margins, not reaching submentum. Head ventrally with very coarse and dense wrinkles. Apical maxillary palpomeres weakly securiform, not transverse. Antennae short, antennomeres not thickened in male and female, with 2 apical antennomeres extending beyond base of pronotum.

Pronotum almost square (1.2 times as wide as long in the holotype), widest a little before middle or at middle, 1.5 times as wide as head (holotype). Anterior margin straight or weakly rounded. Lateral margins and base weakly rounded, rarely base weakly sinuated at middle. Anterior and posterior margins weakly obtuse, not projected, distinct. Anterior margin not beaded, lateral margins and base finely beaded. Disc strongly convex, with the same punctuation as on head, but finer and sparser at middle (puncture diameter 1.5–2 times as short as interpuncture distance), with unpunctured middle line. Prosternum very coarsely and densely punctured. Prothoracic hypomera with irregular coarse and dense wrinkles and sparse coarse punctures between them, narrowly flattened on margins. Prosternal process weakly convex, with distinct acute cone near apex.

Elytra oval (1.23 times as long as wide in the holotype), 1.4 times as wide and 2.07 times as long as pronotum, 2.15 times as wide as head (holotype). Base of elytra visibly wider than base of pronotum, strongly convex, with wide flat lateral edge (much wider than interval 9). Lateral margins strongly rounded. Striae consist of fine and elongate dotted punctures (strongly depressed near base), which merge in furrows at apex. Interstriae flat, with fine sparse punctuation, more shiny and distinctly punctured near base and at middle, matt (shagreen) and indistinctly punctured on sides and at apex. Epipleura impressed along the entire length, reach sutural angle, but very narrow at apex.

Mesoventrite coarsely wrinkled, mesepimera and metepisterna with dense and moderately coarse punctuation, mesepisterna with coarser and sparser punctures. Metaventrite with coarse and sparse punctures on sides and fine and sparse punctuation at middle.

Abdominal ventrites finely and sparsely punctured (puncture diameter 2–3 times as short as interpuncture distance), ventrite 5 not beaded at apex; ventrite 1 without hair brush at middle.

Trochanters with sparse brush of suberect reddish hairs and single long seta. Femora with dense recumbent reddish pubescence in basal half. Tibiae straight, male and female tarsi not widened.

**Comparative diagnosis.** The species is similar to *Z. montanatolicus* Nabozhenko et Keskin, 2014 (Turkey, Hakkary Province) from which it differs in the coarsely and densely punctured pronotum, coarsely wrinkled prohypomera with sparse punctures (*Z. montanatolicus*

has finely wrinkled prohypomera), absence of hair brush at middle of male abdominal ventrite 1 and not beaded abdominal ventrite 5.

**Etymology.** The species is named in the memory of German specialist on Carabidae from Lengede, collector of the type series Klaus Staven (1939–2004).

### Genus *Cylindrinotus* Faldermann, 1837

The genus was completely revised by Nabozhenko [2015c]. Most species of this group inhabit high mountain alpine meadows in Turkey, Transcaucasia and North Iran.

#### *Cylindrinotus femoratus* (Faldermann, 1837)

**Material.** 1♀ (SMNS), “USSR – Armenia Little Caucasus 4 – 5 June 1989”; 1♀ (CRG), Armenia, Garmi-Goht, 40°03'N / 44°45'E, 1700 m, 7.06.2003 (leg. Yokoi); 1♂ (CRG), Armenia, ca. 5 km NW Goris, 2000 m, 39°31'48.6"N / 46°09'04"E, 9.05.2017 (leg. H. Grimm).

**Distribution.** Turkey, Armenia, Azerbaijan, North Iran.

#### *Cylindrinotus gibbicollis* Faldermann, 1837

**Material.** 2♂, 1♀ (CRG): Turkey, Kars, Posof, Ilgardaği-Geçidi, 2350 m, 10.05.1990 (leg. K. Staven); 2♂, 1♀ (CRG), Turkey, Susuz env., 6.06.1994, (leg. R. Sehnal); 1♂ (CRG), Turkey, Ardahan Prov., Çamlıçatak, Döceli, 1830 m, 29.07.2005 (leg. P. Schnitter); 3♀ (SMNS), Georgia, Tukmatash pass, 2000–2100 m, N Paravani, 7–8.07.2013 (leg. W. Heinz); 1♂ (CRG), Georgia, Tukmatash pass near Tsalka, Pinus forest, N side of pass, 1800 m, 17–18.07.2017 (leg. W. Heinz); 1♂, 2♀ (SMNS), Armenia, Vayoz dzor Prov., Vardenis Mts., Selim pass, 2400 m, 25–26.06.2015 (leg. W. Heinz).

**Distribution.** Eastern Anatolia (Ardahan, Kars and Iğdır provinces), South Georgia, Armenia.

#### *Cylindrinotus gibbosus* (Seidlitz, 1896)

**Material.** 1♀ (CRG), Turkey, Rize / Trabzon provinces, Ovit pass, 11.06.1994 (leg. R. Sehnal).

**Distribution.** North Eastern Anatolia (Pontic mountains).

#### *Cylindrinotus nitidus* (Seidlitz, 1896)

**Material.** 1♀ (CRG), Turkey, Bitlis Prov., N Tatvan, Nemrut Dağı, 38°36'34.4"N / 42°15'26.5"E, 2336 m, 10.07.2005 (leg. Schnitter); 12♂ (SMNS), Turkey, Van Prov., Resadiye, 1–17.04.2007, 21.04–20.05.2014 (leg. C. Reuter); 1♂ (SMNS), Turkey, Muş Prov., Buglan pass, 1640 m, 21.04–11.05.2014 (leg. C. Reuter).

**Distribution.** South Eastern Anatolia.

#### *Cylindrinotus tchorokhicus* Nabozhenko 2011

**Material.** 1♂, 1♀ (CRG), Turkey, Artvin Prov., Yusufeli Distr., Kılıçkaya, 4.04.1994 (leg. R. Sehnal).

**Distribution.** Turkey (Artvin Province).

### Genus *Odocnemis* Allard, 1876

The group (under the genera *Helops* Fabricius, 1775, *Cylindrinotus* and *Omaleis* Allard, 1876) was revised in old works of Seidlitz [1896] and Reitter [1922]. Later, Antoine [1949] made a review of the genus (under the name *Stenomax* Allard, 1876) of Morocco; Español [1961] considered two Spanish species of this genus as *Nalassus*.



The eastern species from the European part of the former USSR, Near East and the Caucasus were revised by Nabozhenko [2001b], Keskin and Nabozhenko [2011], Nabozhenko and Keskin [2016]. Other species need revision.

The genus is distributed from Spain and Morocco to Western Kazakhstan and Northern Iran.

*Odocnemis* (s. str.) *altimontana*  
Nabozhenko et Keskin, 2016

**Material.** 1♀ (CRG), Turkey, Antalya Prov., Irmasan pass, 1300–1500 m, 05.1987 (leg. Rasse).

**Distribution.** Turkey (Antalya Province).

*Odocnemis* (s. str.) *amanosica*  
Nabozhenko et Keskin, 2016

**Material.** 3♀ (CRG), Syria, Idlib Prov., between Salma and Slempeh, 35°37'03"N / 36°10'34"E, 1100 m, 6.05.2002 (leg. Barries, Dostal, Preiss); 1♀ (CRG), Syria, Idlib Prov., 10 km Slempeh, 35°34'45.6"N / 36°12'53.1"E, 1320 m, 8.05.2002 (leg. Barries, Dostal, Preiss).

**Distribution.** Turkey (Amanos Dağları), Syria (Latakya and Idlib provinces).

*Odocnemis* (s. str.) *kakunini*  
Nabozhenko et Keskin, 2016

**Material.** 1♀ (SMNS), Iran, Lorestan Province, Razan, 55 km E Khorramabad, 2000 m, 11.05.2002 (leg. G. Sama).

**Distribution.** Western Iran (Kermanshah and Lorestan provinces).

*Odocnemis* (s. str.) *punctata* Allard, 1876

**Material.** 1♂ (SMNS), Lebanon, Bcharre, Cedrus forest, 1850 m, 9.04.1999 (leg. G. Sama); 1♀ (CRG), Lebanon, Ehden, Jabal Mar Elias, zw. Ehden v. Toula, 8.09–12.10.1999 (I. Puchner).

**Distribution.** Turkey, Syria, Lebanon, Israel.

*Odocnemis* (s. str.) *tuberculata* (Küster, 1851)

**Material.** 1♂ (CRG), Greece, Peloponnese, S Levidi, 26.04.1999 (leg. Wachtel); 1♀ (CRG), Greece, Peloponnese, Ilia Region, Erimanthos range, N Mihias, 900–1100 m, 6.05.1999 (leg. I. Wolf).

**Distribution.** Albania, Greece.

*Odocnemis* (s. str.) *alcida* Reitter, 1922

**Material.** 1♂ (CRG), Greece, N Phtiotis, Oros Timfristos, 1800–1950 m, 24.04.1983 (leg. M. Baehr).

**Distribution.** Greece. This species was known only by the holotype (male) from “Grechenland”. The data presented above is the first distinct locality for *O. alcida*.

*Odocnemis* (s. str.) *euritopica euritopica*  
Nabozhenko et Keskin, 2016

**Material.** 1♂ (CRG), 4♂, 1♀ (NME), Turkey, Denizli Prov., pass S Denizli (Kazıkbeyli Geçidi), Kurtköy, 800–1200 m, 25.03.1978 (leg. W. Heinz).

**Distribution.** Western Anatolia.

*Odocnemis* (s. str.) *allardi* Nabozhenko et Keskin, 2016

**Material.** 1♂ (CRG), 3♂, 3♀ (NME), Turkey, Ağrı Prov., pass N Cumaçay, 2000–2500 m, 25.07.1983 (leg. W. Heinz); 2♀ (NME), Turkey, Kars Prov., near Pazarcik, 2100 m, 13.05.1983 (leg. W. Heinz).

**Distribution.** Eastern Anatolia, Armenia, Azarbaijan (Nakhichevan), North Iran.

*Odocnemis* (s. str.) *exarata* Germar, 1817

**Material.** 1♀ (NME), Croatia, Split Prov., Hvar Island, Stari Grad vicinity, 43°12'N / 16°38'E, 28–30.06.2010 (leg. A. Weigel).

**Distribution.** Southern Europe from Croatia to Macedonia.

*Odocnemis* (*Heloponotus*) *gracilis*  
(Fischer de Waldheim, 1823)

**Material.** 2♂ (SMNS), Russia, Crimea, Yaltinskaya yayla, 1200 m, 20.04.2008 (leg. M. Košťál).

**Distribution.** Ukraine, Russia, Kazakhstan. Steppe zone from Crimea to Ural River.

## Acknowledgements

The authors are much obliged to Stanislav Bečvar (Prague, Czech Republic), Matthias Hartmann (NME) and Wolfgang Schawaller (SMNS) for the provided material, to Denis Kasatkin (Rostov Branch of “VNIKR”, Rostov-on-Don, Russia) for the preparation of photographs, to Harold Labrique (Musée des Confluences, Lyon, France) for pdf-copy of the paper of Kocher, to Eric G. Matthews (South Australian Museum, Adelaide, Australia) for linguistic review and corrections.

The study was supported by the basic research project the Caspian Institute of Biological Resources of Dagestan Scientific Centre of the Russian Academy of Sciences: “Biological diversity, organization and dynamics of populations and communities of the animal population, scientific basis for the management of biological resources of the Eastern Caucasus ecoregion”, registration number No. AAAA-A17-117081640018-5, the Program of the Presidium of the Russian Academy of Sciences: “Biodiversity of natural systems. Biological resources of Russia: state assessment and fundamental bases of monitoring” and the Russian Foundation for Basic Research, grant No 18-04-00243-A.

## References

- Abdurakhmanov G.M., Nabozhenko M.V. 2011. Opredelitel' i katalog zhukov-chernotelok (Coleoptera: Tenebrionidae s. str.) Kavkaza i yuga evropeyskoy chasti Rossii [Keys and catalogue to darkling beetles (Coleoptera: Tenebrionidae s. str.) of the Caucasus and south of European part of Russia]. Moscow: KMK Scientific Press Ltd. 361 p. (in Russian).
- Aliquò V., Rastelli M., Rastelli S., Soldati F. 2007. Coleotteri Tenebrionidi d'Italia – Darkling beetles of Italy. Carmagnola: Museo Civico di Storia Naturale di Carmagnola, Associazione Naturalistica Piemontese, Progetto Biodiversità Piccole Faune. CD-ROM.
- Allard E. 1876. Révision des helopides vrais de Lacordaire. *L'Abbeille, Journal d'Entomologie*. 14: 1–80.
- Allard E. 1877. Révision des helopides vrais. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*. 5: 13–268.
- Antoine M. 1949. Notes d'entomologie Marocaine XLIV. Matériaux pour l'étude des Helopinae du Maroc (Col. Tenebrionides). *Bulletin de la Société des Sciences Naturelles du Maroc*. 1945–1947. 25–27: 123–162.
- Ardoin P. 1958. Contribution à l'étude des Helopinae de France (Col. Tenebrionidae). *Annales de la Société Entomologique de France*. 127: 9–49.
- Castro Tovar A. 2015. Una especie nueva de *Catomus* Allard, 1876 de España: *Catomus lopezi* n. sp. (Coleoptera, Tenebrionidae). *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*. 57: 185–188.

- Español F. 1956. Los *Probatiscus* de España (Col. Tenebrionidae). *Eos*. 32: 83–123.
- Español F. 1961. Los *Cylindronotini* de la Península Ibérica (Col. Tenebrionidae). *Eos, Revista Española de Entomología*. 37: 135–160.
- Español F., Viñolas A. 1986. Revisión de los *Catomus* Ibéricos (Col., Tenebrionidae). *Miscellanea Zoologica*. 10: 181–184.
- Grimm R. 1991. Tenebrioniden von der Insel Zypern (Insecta: Coleoptera). *Biocosme Mésogéen*. 8: 15–49.
- Kaszab Z. 1938. A történelmi Magyarország Tenebrionidái. (Die Tenebrioniden des historischen Ungarns.). *Annales historico-naturales Musei nationalis hungarici (Pars zoologica)*. 31: 16–107.
- Kaszab Z. 1960. Die Tenebrioniden Afghanistans, auf Grund der Ergebnisse der Sammelreise des Herrn J. Klapperich in den Jahren 1952/53 (Col.). 1. Fortsetzung und Schluss. *Entomologische Arbeiten aus dem Museum G. Frey*. 11: 1–179.
- Kaszab Z. 1968. Ergebnisse zoologischer Sammelreisen in der Türkei. *Annalen des Naturhistorischen Museums in Wien*. 72: 451–463.
- Keskin B., Nabozhenko M.V. 2011. Review of the genus *Odocnemis* Allard, 1876: *O. korbi* species-group (Coleoptera: Tenebrionidae: Helopini). *Annales zoologici*. 61(2): 339–354. DOI: 10.3161/00034541X584807
- Keskin B., Nabozhenko M., Alpagut-Keskin N. 2017a. Taxonomic review of the genera *Nalassus* Mulsant, 1854 and *Turkonalassus* gen. nov. of Turkey (Coleoptera: Tenebrionidae). *Annales zoologici*. 67(4): 725–747. DOI: 10.3161/00034541XANZ2017.67.4.009
- Keskin B., Nabozhenko M., Alpagut Keskin N. 2017b. *Eustenomacidius egeuniversitatis* sp. n. – the first record of the tenebrionid genus in Turkey. *Turkish Journal of Zoology*. 41(2): 237–240. DOI: 10.3906/zoo-1509-1
- Koch C. 1935. Wissenschaftliche Ergebnisse der entomologischen Expedition seiner Durchlaucht des Fürsten A. della Torre e Tasso nach Aegypten und auf die Halbinsel Sinai. *Bulletin de la Société Royale Entomologique d'Égypte*. 19: 2–111.
- Kocher L. 1958. Observations sur le genre *Adelphinus* Fairm. (Col. Ténébr.), avec description d'une nouvelle espèce du Maroc. *Comptes Rendus des Seances Mensuelles de la Société des Sciences Naturelles et Physiques du Maroc*. 24: 123–125.
- Medvedev G.S. 1976. New species of darkling beetles (Coleoptera, Tenebrionidae) from Iran. *Entomologicheskoe obozrenie*. 55(4): 889–902 (in Russian).
- Medvedev G.S. 1987a. Darkling beetles of the genus *Zophohelops* Rtt. and closely related genera (Coleoptera, Tenebrionidae) of Middle Asia and Kazakhstan. In: Trudy Zoologicheskogo instituta AN SSSR. T. 164. Systematika i geographicheskoe rasprostranenie zhestkokrylykh [Proceedings of the Zoological Institute, USSR Academy of Sciences. Vol. 164. Systematics and geographical distribution of beetles]. Leningrad: Zoological Institute of Academy of Sciences of the USSR: 95–129 (in Russian).
- Medvedev G.S. 1987b. Review of darkling beetles of the genus *Cylindronotus* Fald. (Coleoptera, Tenebrionidae) of Kazakhstan and Middle Asia. In: Trudy Zoologicheskogo instituta AN SSSR. T. 170. Novye i maloizvestnyye zhestkokrylyye nasekomye [Proceedings of the Zoological Institute, USSR Academy of Sciences. Vol. 170. New and little known beetles]. Leningrad: Zoological Institute of Academy of Sciences of the USSR: 99–104 (in Russian).
- Nabozhenko M.V. 2001a. Taxonomic notes on the genus *Zophohelops* Reitter, 1901 with description of new species from Tadzhikistan and new genus *Pseudoprobaticus* gen. n. (Coleoptera, Tenebrionidae). *Annales Zoologici*. 51(4): 113–117.
- Nabozhenko M.V. 2001b. On the classification of the tenebrionid tribe Helopini, with a review of the genera *Nalassus* Mulsant and *Odocnemis* Allard (Coleoptera, Tenebrionidae) of the European part of CIS and the Caucasus. *Entomological Review*. 81(8): 909–942.
- Nabozhenko M.V. 2005. New synonymy and new species of the genus *Hedyphanes* Fischer de Walheim, 1922 (Coleoptera, Tenebrionidae). *Acta zoologica Academiae Scientiarum Hungaricae*. 51(4): 349–355.
- Nabozhenko M.V. 2006a. A revision of the genus *Catomus* Allard, 1876 and the allied genera (Coleoptera, Tenebrionidae) from the Caucasus, Middle Asia, and China. *Entomological Review*. 86(9): 1024–1072.
- Nabozhenko M.V. 2006b. Review of Iranian species of the subgenus *Helopocerodes* Reitter, 1922, genus *Nalassus* Mulsant, 1854 (Coleoptera: Tenebrionidae). In: Trudy Russkogo entomologicheskogo obshchestva. T. 77 [Proceedings of the Russian Entomological Society. Vol. 77]. St Petersburg: Russian Entomological Society: 245–249.
- Nabozhenko M.V. 2008a. Review of the subgenus *Helopondrus* Reitter, 1922 of the genus *Nalassus* Mulsant, 1854 (Coleoptera: Tenebrionidae) of Turkey. *Russian Entomological Journal*. 2007. 16(4): 453–456.
- Nabozhenko M.V. 2008b. New species of the genus *Zophohelops* Reitter, 1902 (Coleoptera: Tenebrionidae) with review of the species of Northern Tien-Shan. *Caucasian Entomological Bulletin*. 4(3): 295–301. DOI: 10.23885/1814-3326-2008-4-3-295-301
- Nabozhenko M.V. 2010. Contribution to the knowledge of the subgenus *Helopondrus* Reitter, 1922 of the genus *Nalassus* Mulsant, 1854 (Coleoptera: Tenebrionidae) of Iran. *Caucasian Entomological Bulletin*. 6(1): 51–55. DOI: 10.23885/1814-3326-2010-6-1-51-55
- Nabozhenko M.V. 2011. Two new species of the tribe Helopini (Coleoptera: Tenebrionidae) from Artvin Province, Turkey. *Annales zoologici*. 61(2): 335–338. DOI: 10.3161/00034541X584799
- Nabozhenko M.V. 2013. Taxonomic notes on the genera *Hedyphanes* Fischer von Waldheim, 1820 and *Entomogonus* Solier, 1848 (Coleoptera: Tenebrionidae) of Turkey. *Journal of Insect Biodiversity*. 1(8): 1–9.
- Nabozhenko M.V. 2014. New darkling beetles of the tribe Helopini (Coleoptera: Tenebrionidae) from Iran. *Caucasian Entomological Bulletin*. 10(2): 237–241. DOI: 10.23885/1814-3326-2014-10-2-237-241
- Nabozhenko M.V. 2015a. Review of the genus *Catomus* Allard, 1876 (Coleoptera: Tenebrionidae) in Iran. *Zoology in the Middle East*. 61(1): 64–68. DOI: 10.1080/09397140.2014.994307
- Nabozhenko M.V. 2015b. To the knowledge of Helopini (Coleoptera: Tenebrionidae) of Morocco. *Caucasian Entomological Bulletin*. 11(1): 33–37. DOI: 10.23885/1814-3326-2015-11-1-33-37
- Nabozhenko M.V. 2015c. Review of the genus *Cylindrinotus* Faldermann, 1837 (Coleoptera: Tenebrionidae: Helopini). *The Coleopterists Bulletin*. 69(mo4): 101–114. DOI: 10.1649/0010-065X-69.mo4.101
- Nabozhenko M.V. 2015d. New species of the genus *Adelphinus* Fairmaire et Coquerel, 1866 (Coleoptera: Tenebrionidae) from Iran. *Caucasian Entomological Bulletin*. 11(2): 363–365. DOI: 10.23885/1814-3326-2015-11-2-363-365
- Nabozhenko M.V. 2018a. Distribution, taxonomic abundance and diversity of darkling beetles of the tribe Helopini (Coleoptera: Tenebrionidae) in the Western Palaearctic. In: Materialy XX Yubileynoy Mezhdunarodnoy nauchnoy konferentsii “Biologicheskoye raznoobrazie Kavkaza i yuga Rossii”, posvyashchennoy pamyati vydayushchegosya uchenogo, doktora biologicheskikh nauk, Zasluzhennogo deyatelya nauki RD i RF, akademika Rossiyskoy ekologicheskoy akademii, professora Gayirbega Magomedovicha Abdurakhmanova [Materials of the XX Anniversary International Scientific Conference “Biological Diversity of the Caucasus and South of Russia”, dedicated to the memory of the outstanding scientist, Doctor of Biological Sciences, Honored Worker of Science of the Republic of Dagestan and the Russian Federation, Academician of the Russian Ecological Academy, Professor Gayirbeg Magomedovich Abdurakhmanov] (Makhachkala, 6–8 November 2019)]. Makhachkala: Institute of Applied Ecology of the Republic of Dagestan: 468–470 (in Russian).
- Nabozhenko M.V. 2018b. Review of the genus *Hedyphanes* Fischer von Waldheim, 1822 (Coleoptera: Tenebrionidae: Helopini) of Kazakhstan, Middle Asia, Iran and Afghanistan. *Entomological Review*. 98(5): 594–628. DOI: 10.1134/S0013873817050056
- Nabozhenko M.V. 2019. Zhuki-chernotelki triby Helopini (Coleoptera: Tenebrionidae) mirovoy fauny [Darkling beetles of the tribe Helopini (Coleoptera: Tenebrionidae) of the World fauna. SciD Abstract]. St Petersburg. 48 p. (in Russian).
- Nabozhenko M.V., Ando K. 2018. Subtribal, generic and subgeneric composition of darkling beetles of the tribe Helopini (Coleoptera: Tenebrionidae) in the Eastern Palaearctic. *Acta zoologica Academiae Scientiarum Hungaricae*. 64(4): 277–327. DOI: 10.17109/AZH.64.4.277.2018
- Nabozhenko M.V., Artokhin K.S. 2017. Description of the larva of *Nalassus* (*Helopondrus*) *sareptanus* (Allard, 1876) and a position of the subgenus *Helopondrus* Reitter, 1922 in the system of the tribe Helopini (Coleoptera: Tenebrionidae). In: Trudy Russkogo entomologicheskogo obshchestva. Vol. 88(1). Nasekomye i paukoobraznyye Priazov'ya [Proceedings of the Russian Entomological Society. Vol. 88(1). Insects and arachnids of the Cis-Azov Region]. St Petersburg: Russian Entomological Society: 72–79 (in Russian).
- Nabozhenko M.V., Bousquet Y., Bouchard P. 2012. Nomenclatural notes on the species recorded and described under the name “*Helops gracilis*” (Coleoptera: Tenebrionidae). *Annales zoologici*. 62(4): 725–731. DOI: 10.3161/00034541X624777
- Nabozhenko M., Grimm R. 2018. New and little known species of the tribe Helopini (Insecta: Coleoptera: Tenebrionidae) from Iran. *Veröffentlichungen des Naturkundemuseums Erfurt*. 37: 309–315.
- Nabozhenko M.V., Keskin B. 2014. New data about ‘nalassoid’ genera from south-eastern Anatolia with description of a new species of *Zophohelops* (Coleoptera: Tenebrionidae). *Acta Entomologica Musei Nationalis Pragae*. 54(1): 243–249.
- Nabozhenko M.V., Keskin B. 2016. Revision of the genus *Odocnemis* Allard, 1876 (Coleoptera: Tenebrionidae: Helopini) from Turkey, the

- Caucasus and Iran with observations on feeding habits. *Zootaxa*. 4202(1): 1–97. DOI: 10.11646/zootaxa.4202.1.1
- Nabozhenko M.V., Keskin B. 2017. Taxonomic review of the genus *Helops* Fabricius, 1775 (Coleoptera: Tenebrionidae) of Turkey. *Caucasian Entomological Bulletin*. 13: 41–49. DOI: 10.23885/1814-3326-2017-13-1-41-49
- Nabozhenko M.V., Lebedeva N.V., Nabozhenko S.V., Lebedev V.D. 2016. The taxocene of lichen-feeding darkling beetles (Coleoptera, Tenebrionidae: Helopini) in a forest-steppe ecotone. *Entomological Review*. 96(1): 101–113. DOI: 10.1134/S0013873816010115
- Nabozhenko M.V., Lillig M. 2013. A new subgenus and species of the genus *Hedyphanes* Fischer von Waldheim, 1820 (Coleoptera: Tenebrionidae: Helopini) from Israel and Egypt. *Zootaxa*. 3641(2): 188–192. DOI: 10.11646/zootaxa.3641.2.6
- Nabozhenko M.V., Löbl I. 2008. Tribe Helopini Latreille, 1802. In: Catalogue of Palaearctic Coleoptera. Volume 5. Tenebrionoidea. (I. Löbl, A. Smetana eds). Stenstrup: Apollo Books: 241–257.
- Nabozhenko M.V., Nikitsky N.B., Keskin B. 2017. Taxonomic review of the genus *Euboeus* s. str. Boieldieu, 1865 (= *Probaticus* s. str. Seidlitz, 1896, syn. n.) (Coleoptera, Tenebrionidae). *Zootaxa*. 4358(3): 494–506. DOI: 10.11646/zootaxa.4358.3.6
- Nabozhenko M.V., Nikitsky N.B., Aalbu R. 2016. Contributions to the knowledge of North American tenebrionids of the subtribe *Cylindrinotina* (Coleoptera: Tenebrionidae: Helopini). *Zootaxa*. 4136(1): 155–164. DOI: 10.11646/zootaxa.4136.1.7
- Nabozhenko M., Özgen I., Ivanushenko Yu. 2018. A new species of the genus *Entomogonus* Solier, 1848 (Coleoptera: Tenebrionidae) from Eastern Anatolia. *Zootaxa*. 4441(3): 549–554. DOI: 10.11646/zootaxa.4441.3.9
- Nabozhenko M.V., Tichý V. 2019. Darkling beetles of the tribe Helopini (Coleoptera: Tenebrionidae) of Jordan. *Far Eastern Entomologist*. 384: 1–9. DOI: 10.25221/fee.384.1
- Nóvak V. 2007. Icones insectorum Europae Centralis. Coleoptera Tenebrionidae. *Folia Heyrovskyana, series B*. 8: 1–24.
- Pica J. 1984. Zur Faunistik und Taxonomie der Tenebrionidae (Coleoptera) der Insel Kreta. *Türkiye bitki koruma dergisi*. 8: 17–31.
- Reiche L.J., Saulcy F. 1857. Espèces nouvelles ou peu connues de coléoptères, recueillis par M. F. de Saulcy, membre de l'Institut, dans son voyage en Orient. *Annales de la Société Entomologique de France. Sér. 3*. 5: 169–276.
- Reiche L.J. 1861. Species novae Coleopterorum descriptae, quae in Syria invenit Dom. Kindermann. *Wiener Entomologische Monatschrift*. 5: 1–8.
- Reitter E. 1902. Verschiedenes über die Coleopteren der Tenebrioniden-Abtheilung Helopina. *Deutsche Entomologische Zeitschrift*. 1901: 209–224.
- Reitter E. 1922. Bestimmungs-Tabellen der europäischen Coleopteren. H. 92. Tenebrionidae. 16. Teil: Unterfamilie Helopina, I. *Wiener Entomologische Zeitung*. 39: 1–44.
- Seidlitz G. von. 1896. Tenebrionidae. In: Kiesenwetter H. von, Seidlitz G. von. Naturgeschichte der Insecten Deutschlands. Erste Abteilung Coleoptera. Fünfter Band. Erste Hälfte. Berlin: Nicolaische Verlags-Buchhandlung: 609–800.
- Skopin N.G. 1964. Neue Tenebrioniden aus Zentralasien. III, nebst einigen systematischen sowie synonymischen Bemerkungen. *Annales Historico-Naturales Musei Nationalis Hungarici*. 56: 389–412.
- Skopin N.G. 1966. Neue Tenebrioniden aus Zentralasien. IV, nebst einigen systematischen sowie synonymischen Bemerkungen. *Annales Historico-Naturales Musei Nationalis Hungarici*. 58: 325–342.
- Soldati F. 2012. A new species of the genus *Probaticus* Seidlitz, 1896 from Greece (Insecta: Coleoptera: Tenebrionidae). *Annales zoologici*. 62(2): 221–225. DOI: 10.3161/000345412X652747
- Soldati F., Soldati L. 2001. A propos des sous-espèces françaises de *Nalassus ecoffeti* (Küster, 1850) (Coleoptera, Tenebrionidae, Cylindronotini). *Bulletin de la Société linnéenne de Bordeaux*. 29: 235–238.
- Sparacio I. 2007. Nuovi coleotteri di Sicilia (Coleoptera Carabidae e Tenebrionidae). *Il Naturalista siciliano*. 31: 249–259.
- Vauloger M. 1900. Contribution au catalogue des coléoptères du nord de l'Afrique. Helopini. *Annales de la Société Entomologique de France*. 68: 669–722.

Received / Поступила: 9.06.2019

Accepted / Принята: 26.06.2019