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To the knowledge of the genus *Ceratanisus* Gemminger, 1870 (Coleoptera: Tenebrionidae) of Anatolia and the Caucasus with the description of a new species from Georgia

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Abstract. The lectotype is designated for *Anisocerus funebris* Reitter, 1898 (now in the genus *Ceratanisus* Gemminger, 1870). This species is distributed in central and eastern Turkey, and specimens from Artvin Province (northeastern Turkey) in previous paper of the first author were erroneously identified as *C. funebris*. The new species *Ceratanisus arankae* Nabozhenko, **sp. n.** is described from Georgia (the first record of the genus in the country). The new species is most similar to *C. funebris*, from which it differs in the shape of the pronotum, elytral microsculpture and puncturation, the setation of the plantar surface of meso- and metatarsi and the structure of the aedeagus. The list of known *Ceratanisus* species with type localities is presented.

Key words: Coleoptera, Tenebrionidae, Pimeliinae, *Ceratanisus*, new species, lectotype, Georgia, Turkey.

К познанию рода *Ceratanisus* Gemminger, 1870 (Coleoptera: Tenebrionidae) Анатолии и Кавказа с описанием нового вида из Грузии

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Резюме. Для *Anisocerus funebris* Reitter, 1898 (сейчас в *Ceratanisus* Gemminger, 1870) обозначен лектотип. Этот вид распространен в Центральной и Восточной Турции, а экземпляры из провинции Артвин (Северо-Восточная Турция) в предыдущей работе первого автора были ошибочно определены как *C. funebris*. Новый вид *Ceratanisus arankae* Nabozhenko, **sp. n.** описан из Грузии (первая находка рода в стране). Новый вид наиболее похож на *C. funebris*, от которого отличается формой переднеспинки, микроскульптурой и пунктировкой надкрылий, опушением подошвенной стороны средних и задних лапок и строением эдеагуса. Представлен список известных видов *Ceratanisus* с типовыми местонахождениями.

Ключевые слова: Coleoptera, Tenebrionidae, Pimeliinae, *Ceratanisus*, новый вид, лектотип, Грузия, Турция.

Introduction

Darkling beetles of the tribe Ceratanisini from the Western Palaearctic were partly revised and described after old revisions in several publications [Reitter, 1898; Scupola, 1984; Soldati, Soldati, 2002, Ferrer, Avgın, 2011] under different generic names. Later, all generic names were synonymized with *Ceratanisus* Gemminger, 1870, which is now the only genus of the tribe in the Western and Central Palaearctic [Nabozhenko et al., 2016]. Nabozhenko and Yıldırım [2020] made additional contributions to the knowledge of *Ceratanisus* of Anatolia.

In total, 19 species of the genus are distributed in the Balkans, Anatolia, Transcaucasia and Central Asia (only one species) [Ferrer, Avgın, 2011; Iwan et al., 2020; Nabozhenko, Yıldırım, 2020]. Unfortunately, taxa described by Ferrer and Avgın were omitted in the catalogue of Palaearctic Coleoptera [Iwan et al., 2020].

Here we describe a new species from Transcaucasia and add information about *C. funebris* (Reitter, 1898).

Material and methods

The material is deposited in Zoological Institute of the Russian Academy of Sciences (ZIN, St Petersburg, Russia) and Hungarian Natural History museum (HNHM, Budapest, Hungary). Beetles were studied using binocular microscopes Micromed MC-4 Zoom Led and Leica MZ6 StereoZoom Microscope. Photographs of a new species were taken with a Canon EOS 5D Mark IV Body, Canon MP-E65MM F2.8 Macro lens and Canon Macro Twin Lite MT-26X-RT flash bulb, and stacking was done using Stackshot 3X with enlarged macro rails s/n 3734; the photosystem is installed on a Kaiser Copy Stand RS 1 reproduction machine. Images were stacked in Helicon Focus 7.7.4 Pro. Photographs of types of *C. funebris* were taken using Nicon camera with Nikon 200mm f/4D ED-IF AF Micro-Nikkor macrolens. A new species was cleaned in an ultrasonic bath with detergent at 70 °C, three times for 20 minutes with a break of several hours (with the ultrasound turned off and a temperature of 50 °C). The first author has studied

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types in HNHM in 2018, and photographs were taken by museum employee Aranka Grabant in 2024. Elytral length is measured along the suture from the edge of pronotum to the apex, width – at widest part.

Ceratanisus funebris (Reitter, 1898) (Figs 1–8)

Reitter, 1898: 106 (*Anisocerus*); Kaszab, 1959: 73; Ferrer, Avgın, 2011: 486, 488, figs 2C, D, 489, figs 3C, H, 490, 492, fig. 5A; Nabozhenko et al., 2016: 619.

Material (HNHM). Lectotype (sex unknown), designated here: "Mardin", "*funebris* m. Typ 1898.", "Typus *Anisocerus funebris* Rtt. Coll. Reitter", "Lectotypus *Anisocerus funebris* Reitter, 1898 des. M.V. Nabozhenko, 2024". Paralectotype (sex unknown): "*Anisocerus* Mardin", "Typus *Anisocerus funebris* Rtt. Coll. Reitter", "Paralectotypus *Anisocerus funebris* Reitter, 1898 det. M.V. Nabozhenko, 2024".

Notes. This species is known from Turkey: Kayseri [Kaszab, 1959], Elazığ [Ferrer, Avgın, 2011] and Mardin [Reitter, 1898] provinces. One specimen listed from Marmaris (Muğla Province) [Ferrer, Avgın, 2011] needs verification. Six specimens from Ardanuç (Artvin Province) erroneously determined as *C. funebris* [Nabozhenko, Yıldırım, 2020: fig. 1C] belong to a new species, which differs from *C. funebris* and *C. arankae* **sp. n.** in the oval body without constriction between prothorax and pterothorax and trapezoidal pronotum, widest at base. Unfortunately, these six specimens are unavailable for study for a long time and we cannot describe a new species.

Ceratanisus arankae Nabozhenko, **sp. n.** (Figs 9–18)

Material. Holotype, ♂ (ZIN): Georgia, Samtskhe–Javakheti, Vardzia, Mtkvari River valley, Nikoloz Church plateau, 41°22′42.96″N / 43°17′14.346″E, 1700 m, 2.09.2023 (V.O. Kozminykh).

Description. Body elongate-oval, with constriction between pro- and pterothorax, matt, black (Fig. 9). Body length 11 mm, width 4 mm.

Head (Fig. 11) widest at temple level, temples weakly rounded. Head wider at eye level than at genae level. Anterior margin of epistome widely emarginated. Lateral margin of head obliquely narrowed to epistome, without emargination between genae and lateral margin of epistome. Eyes strongly transverse (lateral view) weakly convex, narrowest at middle, upper portion larger than lower one. Fronto-epistomal suture expressed only on sides. Puncturation of head dorsally moderately coarse and sparse (interpuncture distance nearly 2 times as long as puncture diameter); puncturation sparser in middle of frons. Head dorsally with furrow extending from the lower part of eyes and located along anterior side of temples. Ventral side of head much coarsely and densely punctured and wrinkled on lateral sides of gula. Mentum strongly transverse, trapezoidal. Antennae comparatively short, reaching base of pronotum, moderately widened (Fig. 13). Ratio of length and width of antennomeres 2–11 as following (without narrow connection pieces): 1.6 : 2.4, 6 : 2.6, 4.5 : 2.9, 3.4 : 2.7, 3.2 : 2.5, 3.5 : 2.6, 3.2 : 3, 2.8 : 3, 2.5 : 3, 2.5 : 2.2.

Prothorax (Fig. 9). Pronotum bell-shaped, widest at middle, transverse (1.35 times as wide as long), 1.6 times as wide as head. Lateral margins shortly emarginated near anterior angles (Figs 9, 11), then weakly rounded to widest part, straight and narrowed from widest part to base; anterior margin straight, base slightly rounded at middle. Anterior angles widely rounded, obtuse, posterior ones narrowly rounded, weakly obtuse. All margins narrowly bordered. Disc transversely convex, sparsely punctured (interpuncture distance ~3 times as long as puncture diameter); punctures little lesser than on head. Prothoracic hypomera with coarse disorderly wrinkles. Prosternum coarsely shagreened, without visible puncturation. Prosternal process weakly convex, not protruded.

Pterothorax. Scutellar shield short, strongly transverse, triangular. Elytra elongate (1.6 times as long as wide), 1.97 times as wide as head, 1.22 times as wide and 2.7 times as long as pronotum. Elytral base slightly wider than pronotal one. Elytra strongly convex, with one unclear rib laterally, without striae. Puncturation fine and sparse, almost invisible against the background of thick shagreen microsculpture (fig. 10). Mesoventrite coarsely shagreened, with sparse coarse punctures. Metaventrite micro-shagreened, with smoothed fine, moderately coarse punctures.

Abdomen. Abdominal ventrites with fine, moderately dense puncturation (puncture diameter slightly lesser than interpuncture distance), ventrites 1 and 2 with matt shagreened areas on lateral sides. Genitalia. Inner sternite VIII weakly sclerotized, with deep triangular emargination in middle and widely rounded apices (Fig. 16). Inner tergite VIII with rounded apical margin, more sclerotized than sternite VIII, covered with sparse long setae (Fig. 17). Spiculum gastrale with thin rods, roundely connected at apex, blades narrowly oval (Fig. 18). Apical piece of aedeagus elongate, rhomboid, without apical setation, shortly bifurcate at apex, widest at middle, lateral margins straight from widest part to apex and to base (Figs 14, 15); basal piece also rhomboid, as wide as apical piece; median lobe comparatively narrow, subparallel in half, with wide merged baculi.

Legs moderately slender, tibiae straight, meso- and metatarsomeres bear strong short spines and dense long setae on plantar surface (Fig. 12).

Differential diagnosis. *Ceratanisus arankae* **sp. n.** differs from all Caucasian species by the densely shagreened elytra with poorly visible puncturation. The new species is most similar to *C. funebris* by shagreened elytra and body shape, but differs from the latter by the shape of the pronotum with clearly emarginated lateral margins near anterior angles (straight in *C. funebris* (Fig. 3)), the elytral puncturation almost invisible among shagreened microsculpture (clear in *C. funebris* (Fig. 4)) and plantar surface of meso- and metatarsi with dense long setation (only spines without setae in *C. funebris*). *Ceratanisus transcaucasicus* Nabozhenko, Ferrer, Kalashian et Abdurakhmanov, 2016 has a similar setation (as in the new species) of meso- and metatarsi [Nabozhenko et al., 2016: figs 8C, D]. The apical piece of the aedeagus in *C. arankae* **sp. n.** is most similar to those in *C. costipennis* Nabozhenko, Ferrer, Kalashian et Abdurakhmanov, 2016 [Nabozhenko et al., 2016: fig. 7D], but differs in the absence of apical setation. The aedeagus distinctly differs in *C. funebris* [Ferrer, Avgın, 2011: figs 2C, D] by the narrower fusiform (non-rhomboid) apical piece with rounded lateral sides. *Ceratanisus costipennis* additionally differs from the new species by the absence of plantar setation on meso- and metatarsi, body oval, without constriction between pro- and pterothorax, trapezoidal pronotum widest at base and several clear ribs on elytra.

Bionomics. The species was collected under stone in stony xerophytic biotope with volcanic soil (Fig. 19).

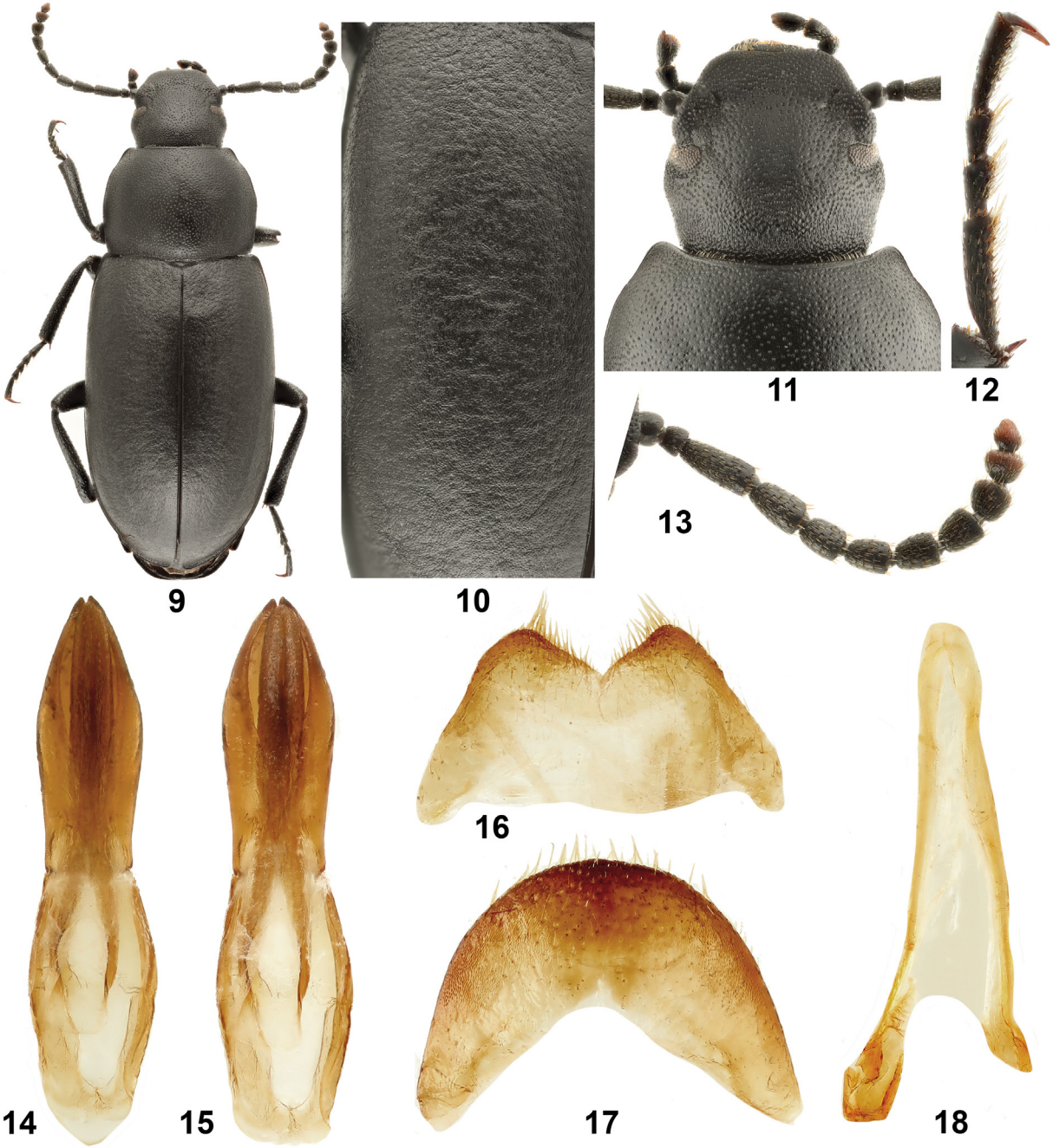
Etymology. The species is named in honour of Aranka Grabant, preparatory of Coleoptera collection in HNHM, who kindly and permanently help to the first author during work in HNHM and taking photographs of type specimens for many tenebrionid beetles.

Figs 1–8. *Ceratanisus funebris*, type specimens, habitus, details of structure and labels (photographed by Aranka Grabant, HNHM).

1–4, 7 – lectotype; 5–6, 8 – paralectotype. 1, 5 – habitus dorsally; 2, 6 – habitus laterally; 3 – pronotum; 4 – elytral microsculpture and puncturation; 7–8 – labels.

Рис. 1–8. *Ceratanisus funebris*, типовые экземпляры, габитус, детали строения и этикетки.

1–4, 7 – лектотип; 5–6, 8 – паралектотип. 1, 5 – габитус дорсально; 2, 6 – габитус латерально; 3 – переднеспинка; 4 – микроскульптура и пунктировка надкрылий; 7–8 – этикетки.



Figs 9–18. *Ceratanisus arankae* **sp. n.**, male, holotype, habitus and details of structure.

9 – habitus dorsally; 10 – elytral microsculpture and puncturation; 11 – head; 12 – metatarsus laterally; 13 – antenna; 14 – aedeagus ventrally, basal piece strictly horizontal, apical piece bent forward; 15 – the same, but apical piece strictly horizontal, and basal piece bent forward; 16 – inner sternite VIII; 17 – inner tergite VIII; 18 – spiculum gastrale.

Рис. 9–18. *Ceratanisus arankae* **sp. n.**, самец, голотип, габитус и детали строения.

9 – габитус дорсально; 10 – микроскульптура и пунктировка надкрылий; 11 – голова; 12 – задняя лапка латерально; 13 – антенна; 14 – эдеагус вентрально, базальная часть строго горизонтально, апикальная часть выгнута вперед; 15 – то же, но апикальная часть строго горизонтально, а базальная выгнута вперед; 16 – внутренний стернит VIII; 17 – внутренний тергит VIII; 18 – spiculum gastrale.

The list of known species of *Ceratanisus*

Ceratanisus allardi (Reitter, 1884). Type locality: Taygetos Mts. (Greece, Peloponnese).

Ceratanisus arankae Nabozhenko, **sp. n.** Type locality: Vardzia (Georgia).

Ceratanisus audiberti Ferrer et Avgın, 2011. Type locality: Nemrut volcano (Turkey, Bitlis Province).

Ceratanisus costipennis Nabozhenko, Ferrer, Kalashian et Abdurakhmanov, 2016. Type locality: Eryaman (Turkey, Ankara Province).

Ceratanisus funebris (Reitter, 1898). Type locality: Mardin (Turkey).

Ceratanisus graecus (Kraatz, 1877). Type locality: Athens (Greece).

Ceratanisus guerroumii (F. Soldati et L. Soldati, 2002). Type locality: Agios Nikolaos (Greece, Fokida).

Ceratanisus keskini Nabozhenko, Ferrer, Kalashian et Abdurakhmanov, 2016. Type locality: 38°38′48.9″N / 38°19′44.1″E, near Karababa (Turkey, Malatya Province);

Ceratanisus khnzoriani Nabozhenko, Ferrer, Kalashian et Abdurakhmanov, 2016. Type locality: Vedi (Armenia, Ararat Province).

Ceratanisus labriquei Ferrer et Avgın, 2011. Type locality: Nemrut volcano (Turkey, Bitlis Province).

Ceratanisus mucoreus (Waltl, 1838). Type locality: "Um Balkan" (Balkans).

Ceratanisus osellai (Scupola, 1984). Type locality: Akrovouni (Greece, Eastern Macedonia and Thrace).

Ceratanisus purcharti Nabozhenko, Ferrer, Kalashian et Abdurakhmanov, 2016. Type locality: environs of Ulupınar (Turkey, Kayseri Province).

Ceratanisus selimi Ferrer et Avgın, 2011. Type locality: Köseçobanlı (Turkey, Mersin Province).

Ceratanisus talyshensis Nabozhenko, Ferrer, Kalashian et Abdurakhmanov, 2016. Type locality: Qosmalyan (Azerbaijan, Lerik District).

Ceratanisus taygetanus (Reitter, 1898). Type locality: Taygetos Mts. (Greece, Peloponnese).

Ceratanisus transcaucasicus Nabozhenko, Ferrer, Kalashian et Abdurakhmanov, 2016. Type locality: Leketag (Azerbaijan, Nakhchivan Autonomous Republic).

Ceratanisus tristis (Faldermann, 1837). Type locality: "Morea" (Greece, Peloponnese).

Ceratanisus turkestanicus (Reitter, 1898). Type locality: Tashkent (Uzbekistan).

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Fig. 19. Type locality of *Ceratanisus arankae* **sp. n.**, surroundings of Vardzia monastery, Georgia.

Рис. 19. Местообитание *Ceratanisus arankae* **sp. n.**, окрестности монастыря Вардзиа, Грузия.

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