

## *Eustenomacidius egeuniversitatis* sp.n. – the first record of the tenebrionid genus in Turkey (Insecta: Coleoptera)

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**Abstract:** The new species *Eustenomacidius (Caucasohelops) egeuniversitatis* sp. n. is described from Southeastern Anatolia (Van Province). The species differs from two other representatives of the subgenus *Caucasonotus* Nabozhenko, 2006 by the absence of temple grooves (lower aspect of eye having a posterior ventral groove) and shiny body without microsculpture. It is the first record of the genus in Turkey. Data on bionomics and a key to species of the subgenus *Caucasonotus* are given. Mitochondrial cytochrome oxidase I (*cox1*) barcoding regions of type specimens were also sequenced and uploaded to GenBank.

**Key words:** *Eustenomacidius*, Tenebrionidae, Coleoptera, new species, barcoding, Turkey

### 1. Introduction

The genus *Eustenomacidius* with type species *Helops luridus* Ménétrés, 1848 was described by Nabozhenko (2006) in the subtribe Cylindrinotina of the tribe Helopini. The genus includes five species of the nominative subgenus from Central Asia (from Turkmenistan to Mongolia and China) and one species with two subspecies of the subgenus *Caucasohelops* Nabozhenko, 2006 from Transcaucasia and Iran. The species of *Eustenomacidius* are middle size (7–12 mm) beetles that differ from representatives of other genera of the subtribe Cylindrinotini by punctated prothoracic hypomera, very short, often reduced temple grooves, and epipleural carina reaching elytral apex. Males of the nominative subgenus have 'nalassoid' genitalia (Nabozhenko, 2005), while males of *Caucasohelops* have 'cylindrinotoid' genitalia. The bionomics of these beetles has not been studied previously.

### 2. Materials and methods

A new species of the subgenus *Caucasohelops* was collected in Van Province in Turkey during a joint Turkish–Russian expedition by Ege University. Adults of the species inhabit vertical rocks of Ereğ Dağ. The beetles hide in rocky crevices during the day and feed on epilithic foliose lichens at night. Morphological characters including male genitalia of type specimens were examined and photographed using

an Olympus SZ-70 stereomicroscope equipped with an Olympus C7070 digital camera.

Mitochondrial cytochrome oxidase I (*cox1*) barcoding regions of type specimens were also sequenced and uploaded to GenBank. Total genomic DNA was extracted from thoracic tissue using the Promega kit (A-2371). An 829 bp fragment of the *cox1* gene was amplified using primers C1-J-2183 (Jerry) and TL2-N-3014 (Pat) (Simon et al., 1994). Amplified products were sequenced (Medsantek, İstanbul, Turkey). Sequences were edited in Sequencher 5.0.1 (Gene Codes Corp.) and aligned using Clustal W (<http://www.genome.jp/tools/clustalw/>). Finally, sequences of two specimens were deposited in GenBank (Accession Numbers: KT598277 and KT600156).

### Abbreviations

ZDEU: Collection of the Department of Zoology of Ege University

ZIN: Museum of Zoological Institute of the Russian Academy of Sciences

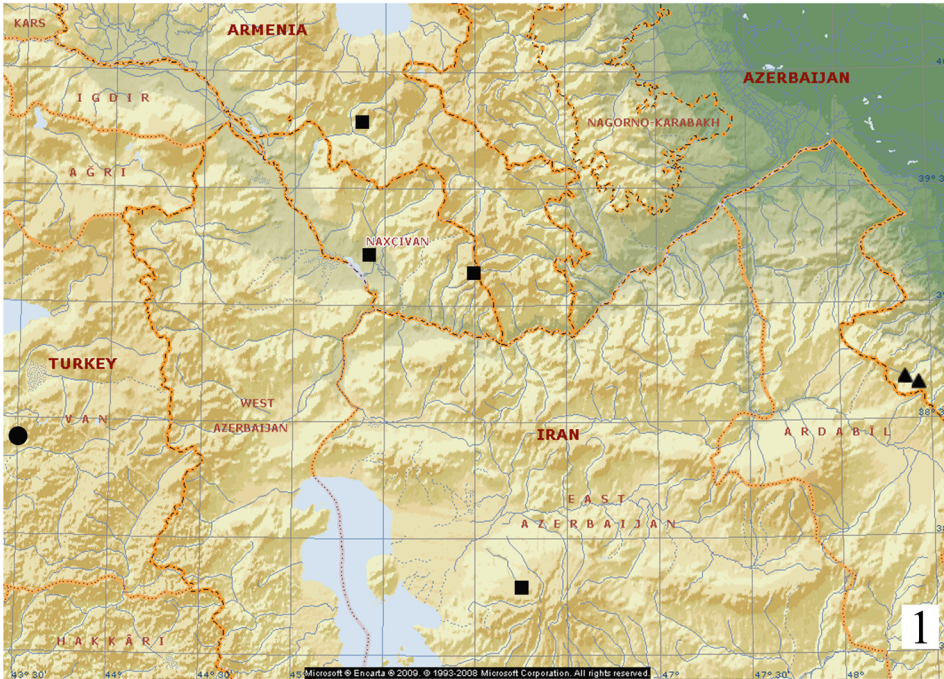
### 3. Results

*Eustenomacidius (Caucasohelops) svetlanae svetlanae* Nabozhenko, 2006

Nabozhenko, 2006: 817; Nabozhenko and Löbl, 2008: 241; Abdurakhmanov and Nabozhenko, 2011: 138, 286.

Distribution. Azerbaijan, Talysh Mts. (Figure 1).

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**Figures 1-3.** 1) *Eustenomacidius*, general view and distribution; distribution of the subgenus *Caucasohelops*: triangle – *E. svetlanae svetlanae*; square – *E. svetlanae araxi*; circle – *E. egeuniversitatis* sp. n. 2) *E. egeuniversitatis* sp. n., male; 3) the same, female.

*Eustenomacidius (Caucasohelops) svetlanae araxi*  
Nabozhenko, 2006

Nabozhenko, 2006: 819; Nabozhenko and Löbl, 2008: 241; Nabozhenko, 2009: 185; Abdurakhmanov and Nabozhenko, 2011: 138, 286.

Distribution. Azerbaijan (Nakhchivan), Iran (East Azerbaijan Province), Armenia (Vayots Dzor Province) (Figure 1).

*Eustenomacidius (Caucasohelops) egeuniversitatis* sp. n.

**Type material.** Holotype ♂ (ZDEU) and 17 paratypes (8♂♂, 2♀♀ in ZDEU; 3♂♂, 4♀♀ in ZIN): Turkey, Van Province, Ereğ Dağ, 2077–2600 m, N 38°25'53.1", E 43°29'03.6", 01.06.2013, leg. B. Keskin, M.V. and S.V. Nabozhenko, A. Pektaş (Figure 1).

**Description. Male.** Body length 8.5–9.5 mm, body width 2.9–3.2 mm. Male. Body slender, flattened, dark-brown, shiny. Anterior margin of clypeus straight with projected angles. Head widest on eye level. Eyes small, not convex. Head width 1.5 times the width of interocular space. Genae strongly regularly rounded. Outer margin of head between gena and clypeus with distinct sinuation. Fronto-clypeal suture and clypeus depressed. Dorsal punctation of head coarse, moderately dense, punctures round, their diameter subequal to distance between them or a little longer. Ventral side of head with very coarse and dense elongate punctations that are merged as wrinkles. Temple grooves (lower aspect of eye having a posterior ventral groove) are absent. Antennae long (reaching 1/3 of elytral length), with four apical antennomeres extending beyond base of pronotum.

Pronotum trapezoidal or weakly cordiform, weakly transverse (1.08 times as wide as long), widest before middle, 1.2 times as wide as head. Lateral margins from weakly to moderately rounded, sinuated near posterior angles. Anterior margin straight, base weakly rounded. Anterior angles obtuse with narrowly rounded apex, posterior angles right with acute apex. All margins narrowly beaded, only anterior margin with interrupt in middle bead. Disc of pronotum regularly weakly convex, only near posterior angles flattened. Punctation of pronotum not coarse, moderately sparse (distance between punctures more than diameter of punctures). Prothoracic hypomera not flattened, with coarse sparse punctation and small wrinkles in base. Prosternal process almost horizontal, not convex.

Elytra oval (1.78 times as long as wide), basally wider than base of pronotum, 1.78 times as wide as head, 1.5 times as wide and 2.8 times as long as pronotum. Punctures in stria merged in entire deep furrows. Interstria strongly convex, with sparse and fine punctation. Epipleura and dorsal epipleural carina reaching elytral apex.

Wingless. Mesoventrite with transverse coarse punctation. Mesepimera with coarse and sparse

punctation of round punctures. Metepisterna with less coarse punctation. Metaventrite slightly convex in anterior half, moderately coarse not dense punctuated. Abdominal ventrites bare, with fine, moderately coarse (puncture diameter subequal to distance between punctures) punctation. Abdominal ventrite 5 without depressions, not beaded apically.

Trochanters with one long seta. Femora and tibiae narrow, straight and long. Tarsi not widened, long; protibiae 1.44 times as long as protarsi; mesotibiae 1.1 times as long as mesotarsi; metatibiae 1.5 times as long as metatarsi (Figure 2) (compare with female in Figure 3). Aedeagus: apical piece of the new species are 'cylindronotoid' type like *E. svetlanae* Nabozhenko, 2006 (Figures 4–7), not bent laterally, dorso-ventrally flattened, long (near 3/4 length of basal piece), baculi of median piece not connected.

**Female.** Body length 8.9–11.8 mm, body width 3.2–4.4 mm. Body more robust. Antennae shorter (reaching 1/5 of elytral length), with only three apical antennomeres extending beyond base of pronotum. Pronotum wider (1.16–1.25 times as wide as long), 1.4 times as wide as head. Elytra wider and longer than in male, 1.75 times as long as wide, 2 times as wide as head, 1.45 times as wide and 3.15 times as long as pronotum (Figure 3).

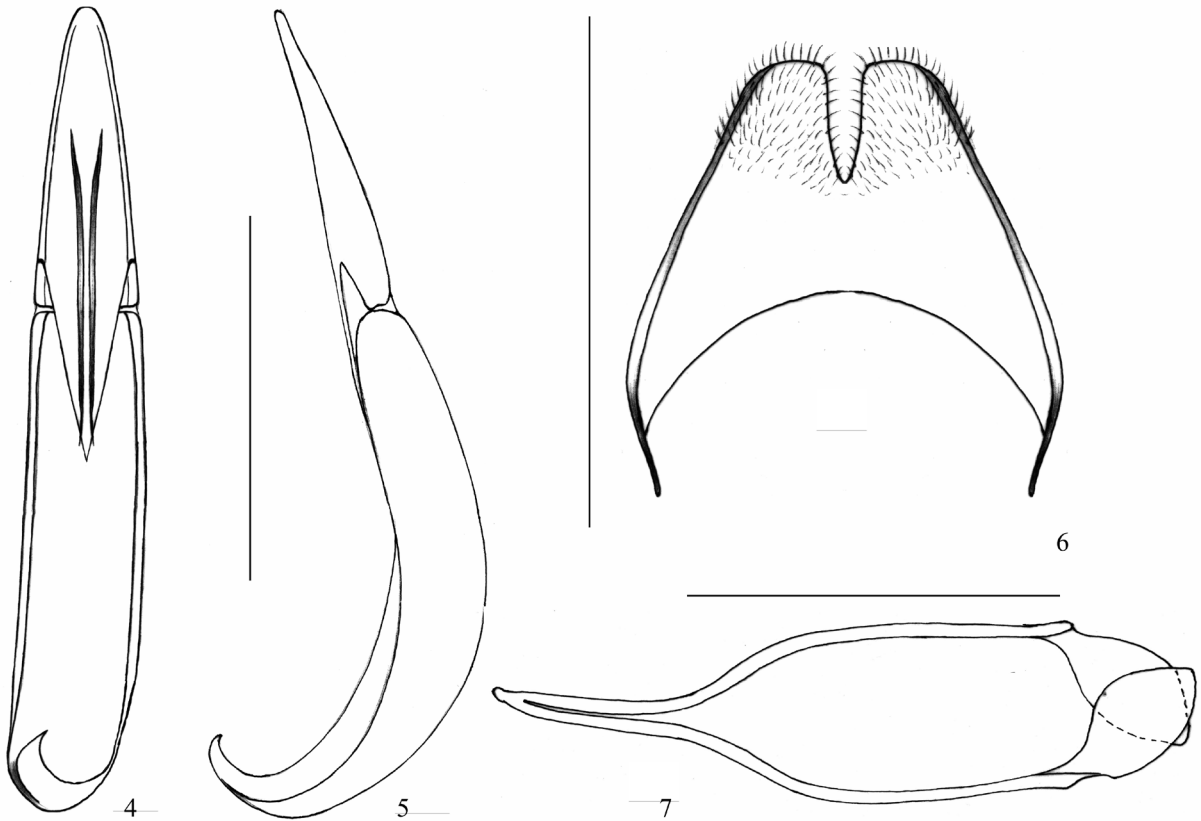
**Etymology.** The species is named in honor of the 60th anniversary of Ege University, İzmir.

**Differential diagnosis.** See the key. The species additionally differs from *E. svetlanae araxi* by reaching elytral apex epipleura, strongly convex interstriae and merged in deep furrow punctures.

#### Key to species of the subgenus *Caucasohelops*, the genus *Eustenomacidius*

1. Temple grooves are absent. Body shiny, without microsculpture ..... *E. egeuniversitatis* sp. n.
- Head ventrally with short, weakly depressed temple grooves near eyes. Body dull, with microsculpture .... 2
2. Epipleura reaching elytral apex. Ratio of width of head at level of eyes to distance between eyes 1.5 in male, 1.6 in female. Pronotum of female 1.4 times as wide as head ..... *E. svetlanae svetlanae*
- Epipleura not reaching elytral apex. Ratio of width of head at level of eyes to distance between eyes 1.4 in male, 1.5 in female. Female frequently with very wide and robust head, which is 0.77–0.87 times or, rarely, 0.71 times as wide as pronotum ..... *E. svetlanae araxi*

**Nomenclatural acts:** This work and the nomenclatural acts it contains have been registered in ZooBank. ZooBank Life Science Identifier (LSID) for this publication is: <http://zoobank.org/urn:lsid:zoobank.org:pub:9DB651B7-EEA1-4E68-A131-DF16C01D7B55>



Figures 4–7. Male genitalia of *Eustenomacidius egeuniversitatis* sp. n. 4) aedeagus, ventral view; 5) aedeagus, lateral view; 6) inner sternite VIII; 7) gastral specula. Scale – 1 mm.

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