

## A New Record of *Enochrus* Thomson, 1859 (Coleoptera: Hydrophilidae) for the Turkish Fauna

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### Abstract

A new record of the Hydrophilids, *Enochrus calabricus* (Ferro, 1986), is recorded from central Anatolia (Kayseri, Turkey). The ecological findings and morphological characters of the species are described and its aedeagus figure illustrated. Biological observations and distribution records for the new record is also presented. Diagnostic characters are supported with electron micrographs.

**Key words:** Coleoptera, Hydrophilidae, *Enochrus*, New Record, Turkey.

## Türkiye-Faunası İçin Yeni Bir *Enochrus* Thomson, 1859 (Coleoptera: Hydrophilidae) Kaydı

### Özet

Türkiye Hydrophilidae faunası için yeni bir kayıt olan *Enochrus calabricus* (Ferro, 1986), İç Anadolu Bölgesi (Kayseri, Türkiye) den kaydedildi. Türün ekolojik bulguları ve morfolojik karakterleri tanımlandı ve erkek genitalyası resimlerle gösterildi. Yeni tür için biyolojik gözlemler ve dağılım kayıtları da sunuldu. Teşhise ait karakterler electron mikroskobu mikrofotografı ile desteklendi.

**Anahtar kelimeler:** Kınkanatlılar, Hydrophilidae, *Enochrus*, yeni kayıt, Türkiye.

### 1. Introduction

*Enochrus* Thomson 1859 is a large genus of Hydrophilidae with a worldwide distribution [1-3]. They are particularly abundant in warmer climates. Most species of *Enochrus* occur in vegetated, lentic or somewhat lotic bodies of water. Although they are frequently collected and presented in most larger beetle collections, both their taxonomy and phylogenetic relationships are still insufficiently known due to: very little type material is available, ecological studies conducted by nonspecialists and many old records are based on misidentification [4-6].

The Turkish fauna has not been investigated completely until now. Up to date, 14 species of the *Enochrus* belonging to the family Hydrophilidae have been recorded from Turkey [2, 4-15]. Recently, Darılmaz and Kıyak [6] were summarized all known data on the *Enochrus*

species from Turkey adding some new data. All known *Enochrus* species from Turkey were also recorded and confirmed by Darılmaz and İncekara [16].

Erciyes is the highest mountain in central Anatolia. It is about 35 km in diameter. The altitude of the area varies from 1050 to 3917 m. It is considered to be the highest peak of the Anti-Taurus mountain range, a northeastern extension of the Taurus Mountains to the south, and belongs to the Alpide belt in Eurasia. In Sultan Sazlığı, very near area this mountain, very rich aquatic Coleoptera diversity was determined [17-18] previously. About 190 endemic plants also occur in the area [19].

This study adds one new *Enochrus* record, *Enochrus calabricus*, to the aquatic Coleoptera fauna of Turkey that belong to the subgenus *Lumetus* Zaitzev.

## 2. Materials and methods

Specimens were collected in different surveys for aquatic Coleoptera in Kayseri provinces. Morphologic and aedeagal characters were examined with a Nikon SMZ1500 Research Stereo and photographed Nikon E5400 after the beetles were killed by ethyl acetate or within 70% alcohol solution. Materials were deposited in the Zoology Museum of Atatürk University, Science Faculty, Department of Biology, Erzurum, Turkey.

## 3. Results

### *Enochrus (Lumetus) calabricus* (Ferro, 1986)

**Material Examined:** Kayseri, Erciyes Mountain, Hisarcik, 38°32'36K 35°31'45D, 2172m, 5♂♂, 30.VII.2010; 3♂♂, 24.VI.2011; 2♂♂, 24.VII.2011 (one of the male specimens is keep by Dr. Andrew Short (USA) in his private collection). Leg. Polat and Tasar. Locality is edge of running temporary, poorly vegetated water with a clayed bottom.

**Description:** Total body length: 5.0-6.2 mm. Body outline extremely oval; dorsal surface in generally reddish brown and in patches dark brown or black with regularly punctuation.

Head (figure 1.a): Frons dark black with same color as labrum. Clypeus dark black getting narrowed toward anterior in the middle and pale brown in front of eyes. Maxillar palpes yellowish, first segment's apical point and last segment's base black or dark brown.

Pronotum (figure 1.a): Widest near base, anterior corners distinctly narrowed, pale, evenly punctuated, black or dark brown in the center, getting pale yellowish brown to each of two near.

Elytra: Shining, dark or reddish brown with regularly rows.

Legs (figure 1.e): Hind and middle femur slightly narrowed and yellowish or reddish, covered with dense hydrofuge pubescence.

Aedeagus (figure 1.c): Distinctive, parameres distinctly narrowed, remarkable reentrant to inward apically. Bazal piece slender, equal length as parameres, or slightly shorter.

Ventral surface: Blackish. Mesosternal carina distinctive (figure 1.d). Without a

semicircular emargination in the distal edge of the last abdominal sternite (figure 1.b).



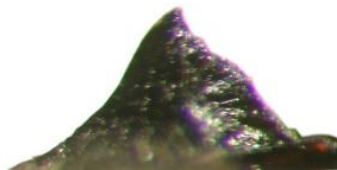
a



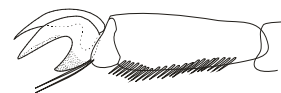
b



c



d



e

**Figure. 1:** Pronotum (a), Last sternite of abdomen (b), Aedeagus (c), Mesosternal carina (d) Pretarsus of right fore leg (traced from photograph) (e) of *Enochrus calabricus* (Scale: 1 mm for a-b, 0,5 mm for c, 0,25 mm for d-e).

#### 4. Discussion

*Enochrus calabricus* is placed in the subgenus *Lumetus* Zaitzev, due to two main characters: a) Without a semicircular emargination in the distal edge of the last abdominal sternite. b) Maxillar palpes are tall and the last segment remarkable shorter than next ahead.

Except for the genitalia, *Enochrus calabricus* is appear to be a "normal" looking species in the subgenus *Lumetus* externally, but easily distinguishable from all *Enochrus* species by its characteristic aedeagophore parameres sharply curved inwards apically.

Our specimens with the strange parameres were not found among other species of *Enochrus*, and therefore we compared with *E. segmentinotatus* specimens collected from Turkey. After detailed morphological examinations, we find out that our specimens are belonging to *Enochrus calabricus* (Dorsal surface, pronotum and clypeus are darker than *E. segmentinotatus*).

Samples of species were collected from the edge of running but temporary, poorly vegetated water with a clayed bottom. Since 2010, only five, 2011 January three, February two males have been collected. Therefore, it is not possible to provide any information about the habitat preference of *E. calabricus*. The number of *Enochrus* species, including new record, have now increased to 15. In Turkey, with its various geographical regions and different climates, the number of *Enochrus* species is doubtless much higher than that recorded so far. New studies should therefore be conducted on this group of insects but, unless detailed revisional research also containing type materials associated with the Palearctic region is performed, the taxonomic, systematic and ecological investigations on this genus will be limited.

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