

**GENERAL INFORMATION AND TIGER BEETLES  
CICINDELA HERBACEA; CALOMERA FISCHERI FISCHERI AND  
HOMODELA ISMENIA KILIKIENSIS COLLECTED FROM  
SOUTHEAST OF TURKEY (COLEOPTERA : CICINDELIDAE)**

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**ABSTRACT**

*Cicindela herbacea* Klug, 1832; *Calomera fischeri fischeri* (Adams, 1817); *Homodela ismenia kilikiensis* (Mandl, 1961) collected in southeast of Turkey were given with new locality records. Moreover, distribution of each species in Turkey and in the world, their chorotypes and ecologies of these species were presented in this study. Additionally, a general information about Cicindelini tribe was given.

**Key Words :** Cicindelidae, Coleoptera.

**TÜRKİYE’NİN GÜNEY DOĞUSUNDAN TOPLANAN *CICINDELA HERBACEA*, *CALOMERA FİSCHERİ FİSCHERİ* VE *HOMODELA İSMENİA KİLİKIENSİS* (COLEOPTERA : CİCİNDELİDAE) VE GENEL BİLGİLER**

**ÖZET**

Türkiye’nin Güney doğusundan toplanan *Cicindela herbacea* Klug, 1832; *Calomera fischeri fischeri* (Adams, 1817); *Homodela ismenia kilikiensis* (Mandl, 1961) yeni lokalite kayıtlarıyla birlikte verildi. İlâveten her türün Türkiye ve Dünya dağılımı, korotipleri ve ekolojileri hakkında bilgiler sunulmaktadır. Ayrıca Cicindelini tribüsü hakkında genel bilgiler eklendi.

**Anahtar Kelimeler :** Cicindelidae, Coleoptera.

**1. INTRODUCTION**

Tiger beetles have a worldwide distribution (except Tasmania, Antarctica and some remote oceanic islands) which covers a variety of habitats ranging from alpine meadows to desert grasslands and tropical rain forests (1, 2). They frequently inhabit flood prone habitats. More than 2000 species require habitats with access to bare ground, such as stream and pond edges, salt flats, dunes and open patches in grasslands (1, 3). Each species rarely occurs in more than one or a very few habitat types (4, 2). The total number of species currently known for the world tiger beetle fauna is 2328 (5).

Tiger beetles have also many different habitat distributions in Turkey. In order to assist the distribution of Cicindelidae in Turkey some publications presenting new locations have been done (6, 7).

The aim of this study is to add new locations to the distribution of tiger beetles *Cicindela herbacea* Klug, 1832, *Calomera fischeri fischeri* (Adams, 1817), and *Homodela ismenia kilikiensis* (Mandl, 1961) in the southeast of Turkey and to give information about the distribution of each species in Turkey and in the world, chorotypes (items of classification based on distribution patterns as inferred from the comparative analysis of the geographical ranges of species, recently proposed by Vigna Taglianti et al. (1999)) and ecologies of these species. Additionally, a general information about Cicindelini tribe is given.

## 2. MATERIAL AND METHODS

The material of this study consists of *C. herbacea*; *C. f. fischeri* and *H. i. kilikiensis*. Tiger beetles were collected from southeast of Turkey with a net between 2004 and 2005. The specimens are deposited in the Biology Department of Çukurova University.

Tiger beetles were then identified to species by using Trautner and Geigenmüller (1987), Cassola (1999) keys, and some articles about Cicindelidae.

### General Information About Tribe Cicindelini

#### Family CICINDELIDAE Csiki, 1906

#### Tribe CICINDELINI Sloane, 1906

**Adult :** Adult tiger beetles have a lot of different characters. The main differences are found in the structure of the head: the clypeus and the labrum are very broad, the former wider than the distance between the antennae; in addition, adult tiger beetles have big compound eyes which are wider than the pronotum, in general (1, 8, 9). Antennae are eleven-segmented, very filiform and they are inserted on the frons above clypeus and below the eyes. Legs are long and have five-segmented tarsi. Other common speciality among the species of the family is the long sickle shaped mandibles or the mandibles which are armed with several sharp teeth on the internal surface (1, 8, 10).

Tiger beetles have different colours. Some are plain black, but others are stunningly decorated in metallic green, brown, maroon, or purple, often with stripes or spots (1, 9).

**Larva :** The larva lacks cerci on the ninth abdominal segment, and the fifth tergite carries a pair of forwardly directed hooks which support the climbing of the larva in the burrow (8).

Larva of tiger beetles dig in the ground perpendicular to the surface, the depth varies greatly, depending on the type of soil and to geographic location. The big mandibles are used to dig the burrow and they stay at the top, waiting for small insects to pass close enough for capture (1, 3, 11). Seeing the larva of tiger beetles is very difficult. Because they are very sensitive to vibration of the ground. The entrance is not always open because the larva closes the entrance before molting, during pupation, estivation, hibernation and in similar situations, such as after eating, on rainy days and other conditions; the reason for this is that this makes larva feel safe. The larvae use the same burrow for all three instars, enlarging it as they develop to pupation. The extended larval period requires from 1 to 3 years or more to complete, depending on the species and environmental conditions (1, 3).

## 3. RESULTS

### Genus : *Cicindela* Linné, 1758

#### *Cicindela herbacea* Klug, 1832

**Material Examined :** Adana, Saimbeyli, 1050 m, 27.V.2004, 1♂; Adıyaman, Samsat, 450 m, 25.VII.2004, 2♀♀ (New Locality); Gaziantep, Islahiye, 500 m, 30.V.2004, 1♀; 05.IV.2005, 1♂; Nurdağı, 500 m, 30.V.2004, 1♀; Kahramanmaraş, Andırın, 1000 m, 27.V.2004, 1♂, 2♀♀; 15.VI.2005, 1♂; Göksun, Çardak, 1470 m, 27.V.2004, 1♀; 21.VI.2005, 1♂, 2♀♀; Mehmetbey (Su Tesisi), 1470 m, 27.V.2004, 9♂♂, 3♀♀; 19.VI.2004, 2♀♀; Osmaniye, Bahçe, 750 m, 20.V.2004, 2♀♀, 1♀; Düziçi, 350 m, 20.V.2004, 2♀♀. **Total : 33. (Fig. 1).**

**Distribution in Turkey :** Adana, Amanos Dağları, Amasya, Antalya, Alanya, Aydın,

Gaziantep, Hatay, Isparta, Karaman, Kahramanmaraş, Mersin, Osmaniye (12, 13, 14, 15).

**Distribution in the World :** Asia : Israel, Lebanon, Syria, Turkey (16).

**Chorotype :** Syro- Palaestinian endemic (17).

**Ecology :** Most of these were collected from sandy grass area.

**Body Length :** 11-12 mm



**Fig. 1.** *C. herbacea* (male and female).

**Genus :** *Calomera* Motschulsky, 1862

***Calomera fischeri fischeri* (M.F. Adams, 1817)**

**Material Examined :** Adana, İmamoğlu, 130 m, 29.V.2004, 2♂♂; Kozan, 150 m, 29.V.2004, 1♂; Adıyaman, Kahta, 700 m, 25.VII.2004, 2♀♀; Samsat, 450 m, 25.VII.2004, 1♂, 3♀♀; Kahramanmaraş, Andırın, 1000 m, 10.VIII.2004, 1♀; Baskonus, Yeniyanan (Akarsu Kenarı), 600 m, 21.VIII.2004, 2♀♀; 5.IX.2004, 1♂♂, 3♀♀; Yenice kale, 570 m, 10.VIII.2004, 2♂♂, 1♀; Gaziantep, Yavuzeli, 600 m, 20.V.2004, 1♀; Malatya, Doğanşehir, 1229 m, 30.VIII.2005, 1♂, 1♀; Karanlıkdere, 1350 m, 30.VIII.2005, 2♂♂, 1♀; Yeşilyurt, 1205 m, 30.VIII.2005, 2♀♀; Osmaniye, Kadirli, 130 m, 15.VI. 2004, 1♀ (**New Locality**); Sivas, Gürün, 1550 m, 28.VIII.2004, 2♂♂ (**New Locality**); Şanlıurfa, Halfeti, 600 m, 12.IV.2005, 1♂. **Total : 31.**

**(Fig. 2).**

**Distribution in Turkey :** Adana, Adıyaman, Antalya, Alanya, Bingöl, Bursa, Çankırı, Çorum, Denizli, Gaziantep, Gümüşhane, Elazığ, Erzincan, Erzurum, Fethiye, Hakkari Hatay, İçel, İskenderun, İzmir, İnegöl, Kahramanmaraş, Kars, Kayseri, Kütahya, Malatya, Mardin, Muğla, Nevşehir, Pamukkale, Tokat, Tunceli, Siirt, Silifke, Şanlıurfa (12, 13, 14, 15, 18).

**Distribution in the World :** Azerbaijan, Armenia, Talysh, Bulgaria, Greece (incl. Crete), Macedonia, Turkey, Cyprus, Iran, Israel, Jordan, Lebanon, Syria (9, 15, 16, 19); Southeast Europe, Asia Minor, Caucasus, Turkmenia (20).

**Chorotype :** Turano- European (17).

**Ecology :** Mostly, they were collected in pebbles and sand near streams.

**Body Length :** 11-12.5 mm



Fig. 2. *C. fischeri fischeri* (male and female).

Genus : *Homodela* Rivalier, 1950

*Homodela ismenia kilikiensis* (Mandl, 1961)

**Material Examined** : Adana, İmamoğlu, 130 m, 29.V.2004, 2♂♂, 1♀; Adıyaman, Gölbaşı, 970 m, 30.V.2004, 3♀♀ (**New Locality**); Kahramanmaraş, Göksun, Çardak, 1470 m, 2.VI.2004, 1♀; 19.VI.2004, 1♂, 3♀♀; Yavsan, 1650 m, 31.III.2004, 1♂; Gaziantep, Nurdağı, 500 m, 19.IV.2004, 2♀♀; Malatya, Doğanşehir, 1229 m, 30.VIII.2005, 1♀ (**New Locality**); Osmaniye, Hasanbeyli, 780 m, 10.V.2005, 3♂♂, 1♀. **Total : 19. (Fig. 3).**



Fig. 3. *H. ismenia kilikiensis* (male and female).

**Distribution in Turkey :** Adana, Ahır Dağ, Amanos Dağları, Antakya, Bingöl, Gaziantep, Hatay, İskenderun, Kahramanmaraş, Mersin, Nur Dağları, Osmaniye (12, 13, 14, 15, 21).

**Distribution in the World :** Asia : Turkey (16).

**Chorotype :** Anatolian endemic (17).

**Ecology :** Most of them were collected from sandy grass area in mountains.

**Body Length :** 12-13 mm

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