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Orijinal araştırma (Original article)

Contributions to the Turkish Braconidae (Hymenoptera) fauna with seven new records

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Summary

This study was carried out to contribute to parasitoid fauna of Braconidae family (Hymenoptera) of Turkey. Specimens were collected with swepping net from cultivated and non-cultivated plants in various habitats of Turkey during 2006- 2008. Among the collected species, *Chorebus flavipes* Goureau, 1851; *Dacnusa gentianae* Griffiths, 1967; *Exotela umbellina* Nixon, 1954; *Dinotrema intermissum* (Fischer, 1974); *Opius (Cryptognathopius) uttoisimilis* Fischer, 1999; *Opius (Agnopius) rex* Fischer, 1958 and *Utetes magnus* Fischer, 1958 are new records for the Turkish fauna.

Key words: Braconidae, Opiinae, Alysiinae new record, Turkey

Anahtar sözcükler: Braconidae, Opiinae, Alysiinae yeni kayıt, Türkiye

Introduction

The vast majority of braconids are primary parasitoids of other insects, especially upon the larval stages of Coleoptera, Diptera and Lepidoptera but also including some hemimetabolus insects (Aphids, Heteroptera, Embiidina). As parasitoids they almost invariably kill their hosts, although a few only cause their hosts to become sterile and less active. Both external and internal parasitoids are common in the family, and the latter forms often display elaborate physiological adaptations for enhancement of larval survival within host insects, including the co-option of endosymbiotic viruses for compromising host immune defenses (Stoltz & Vinson, 1979; Stoltz, 1986; Whitfield, 1990; Stoltz & Whitfield, 1992; Whitfield, 2002; Whitfield & Asgari, 2003).

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Early larval development in braconids has also yielded surprises, such as the discovery of relatively closely related genera that differ in such import aspects as syncitial versus holoblastic cleavage, normally characterizing major animal phyla (Grbic & Strand, 1998; Grbic, 2000). Parasitism of adult insects (especially of Hemiptera and Coleoptera) is also known, and members of two subfamilies (Mesostoinae & Doryctinae) form galls on plants (Infante et al., 1995; Austin & Dangerfield, 1998).

Farmers in Turkey frequently apply large quantities of insecticide, especially in greenhouse environments. Insecticides have a negative impact on beneficial fauna (Weintraub & Horowitz, 1998). To control pest insects by non chemical means, it is necessary first identify the key parasitoids species. In Turkey, many studies have been carried out on Braconidae fauna in Turkey until now especially by Beyarslan (Beyarslan, 1986, 1988, 1991, 1992, 1996, 1999, 2002a, b; Beyarslan & Inanç, 1997, 2001; Inanç & Beyarslan, 1990, 2001; Beyarslan et al., 2002, 2005, 2006; Fischer & Beyarslan, 2005a, b; Çetin Erdoğan & Beyarslan, 2009).

The aim of this study was to contribute to the naturally occurring parasitoids of Turkey.

Material and Methods

This study was carried out during 2006 and 2008 in various habitats of Turkey. Samples were collected with sweeping net. Collected samples were put in the 70% ethanol and brought to Muğla University, Science and Art Faculty, Biology Department, Entomology Laboratory. We sorted Braconidae specimens from the ethanol and sent to identify. These specimens were identified by Prof. Dr. Ahmet Beyarslan (Trakya University, Science and Art Faculty, Biology Department, Edirne). Collecting localities, in numerical sequence and their coordinates, altitudes, habitats and the dates were given. All specimens are deposited in the Muğla University, Science and Art Faculty, Biology Department, Entomology Laboratory and Trakya University, Biology Department, Entomology Laboratory, Turkey.

Results and Discussion

In this study, seven parasitoid species were identified. *Chorebus flavipes* Goureau, 1851; *Dacnusa gentianae* Griffiths 1967; *Exotela umbellina* Nixon 1954; *Dinotrema intermissum* (Fischer, 1974); *Opius (Cryptognathopius) uttoisimilis* Fischer, 1999; *Opius (Agnopius) rex* Fischer, 1958 and *Utetes magnus* Fischer, 1958 are new records for the Turkish fauna. Their habitat, distribution, host, sex and locality information were given. The taxa are presented alphabetically.

***Chorebus* Haliday, 1833**

***Chorebus flavipes* Goureau, 1851**

Material examined: Trabzon: Maçka, Sumela, 1180m, 12.IX.2006, weed, 3♀♀ 1♂.

General Distribution: Kazakhstan and Far East of Asiatic Russia (Tobias, 1998), Mongolia and Greece (Papp, 2005, 2007), Britain, Denmark, France, Germany, Ireland, Poland (Anonymous, 2007).

Distribution in Turkey: New record for Turkish fauna.

***Dacnusa* Haliday 1833**

***Dacnusa gentianae* Griffiths 1967**

Material examined: Gaziantep: Nurdağı, İçerisu (37° 09.889' N/ 36° 50.983' E), 561m, 06.IX.2006, 1♀, 1♂.

General Distribution: Austria, Germany, Poland (Anonymous, 2007).

Distribution in Turkey: New record for Turkish fauna.

***Dinotrema* Foerster 1862**

***Dinotrema intermissum* (Fischer, 1974)**

Material examined: Muğla: Köyceğiz, Kazancı Picnic area (36^0 59.508 N / 28^0 38.809 E) 9m, 03.XI.2007, collected with swepping net, 1♀.

General Distribution: Austria, Netherlands (Anonymous, 2007).

Distribution in Turkey: New record for the Turkish fauna.

***Exotela* Foerster, 1862**

***Exotela umbellina* Nixon 1954**

Material examined: Artvin: Borçka, Karagöl National Park (41° 23' 23" N 41° 51' 23" E) 1479m, 10.IX.2006, 1♀; Erzurum: İspir, Madenköprübaşı (40° 26' 51" N 40° 50' 63" E), 1251m, 09.IX.2006, 1♀; Rize: Ayder Plateau, Kaçkar Mountains National Park (41° 23' 23" N 41° 51' 23" E) 1468m, 11.IX.2006, 1♂.

General Distribution: Germany, Russia (Anonymous, 2007).

Distribution in Turkey: New record for Turkish fauna.

***Opius* Wesmael, 1853**

***Opius (Agnopius) rex* Fischer, 1958**

Material examined: Trabzon: Maçka, Sumela Monastery (40° 41.388.599' N/ 39° 39.422' E), 1180m, 12.IX.2006, collected with sweepping net, 1♂.

General Distribution: Britain (Pitkin et al. 2008), Austria, Bulgaria, Crete, Czech Rebuplic, Denmark, Finland, France, Germany, Hungary, Italy, Norway, Poland, Romania, Russia, Slovakia, Sweden, Switzerlan, Netherlands, Yugoslavia (Anonymous, 2007).

Distribution in Turkey: New record for the Turkish fauna.

***Opius (Cryptognathopius) uttoisimilis* Fischer, 1999.**

Material examined: Muğla: Yılanlı Mountain, Göktepe village (37° 26' 04" N 28° 33' 46" E), 436m, 01.X.2006, vegetables, 1♀.

General Distribution: Russia (Tobias, 2001).

Distribution in Turkey: New record for the Turkish fauna.

***Utetes* Foerster, 1862**

***Utetes magnus* Fischer, 1958**

Material examined: Muğla: Köyceğiz (36^0 57.590 N / 28^0 39.759 E), 8.IX.2006, collected with sweepping net, 3♂♂.

General Distribution: Palaearctic (Fischer, 1981, Fischer & Koponen, 1999, Belokobylskij et al., 2003).

Distribution in Turkey: New record for the Turkish fauna.

In this study a total of seven species belonging to two subfamilies (Alysiinae, Opiinae) and six genera (*Chorebus, Dacnusa, Dinotrema, Exotela, Opius, Utetes*) were identified. *C. flavipes*, *D. gentianae*, *E.umbellina*, *D. intermissum*, *O. (C.) uttoisimilis*, *O. (A.) rex, U. magnus* are new records for the Turkish Braconid fauna.

C. flavipes, *D.gentianae*, *D.intermissum*, *E. umbellina*, O. (A.) *rex,* O.(C.) *uttoisimilis*, these species given above are mostly leafminer parasitoids. However, *U. magnus* is parasitoid of *Rhagoletis alternata* (Diptera: Tephritidae). Because of their host preferences, Braconidae species can be considered as biological control agents against to Agromyzidae, Ephyridae and Tephritidae (*R. alternata*).

Braconidae species are very important to biological control of some pest insects especially to Agromyzidae as seen above.

Özet

Yedi yeni kayıtla Türkiye Braconidae (Hymenoptera) faunasına katkılar

Bu çalışma Türkiye'nin Braconidae (Hymenoptera) familyası faunasına katkıda bulunmak amacıyla gerçekleştirilmiştir. Örnekler 2006-2008 yılları arasında Türkiye'nin farklı coğrafi alanlarında, kültürü yapılan ve yapılmayan bitkilerden atrap yardımıyla toplanmıştır. Toplanan türler arasında, *Chorebus flavipes* Goureau, 1851; *Dacnusa gentianae* Griffiths 1967; *Exotela umbellina* Nixon, 1954; *Dinotrema intermissum* (Fischer, 1974); *Opius (Cryptognathopius) uttoisimilis* Fischer, 1999; *Opius (Agnopius) rex* Fischer, 1958 ve *Utetes magnus* Fischer, 1958 Türkiye faunası için yeni kayıtlardır.

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