

Four new parasitoid records of the subfamilies Euphorinae and Opiinae (Hymenoptera: Braconidae) from the Adıyaman province of Turkey

Emine ÇIKMAN^{1,*}, Ahmet BEYARSLAN²

¹Harran University, Agriculture Faculty, Plant Protection Department, 63300 Şanlıurfa - TURKEY

²Trakya University, Faculty of Arts and Sciences, Biology Department, Edirne - TURKEY

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Abstract: Four Euphorinae and Opiinae (Hymenoptera: Braconidae) parasitoid species, *Biosteres (Chilotrichia) arenarius* Stelfox, 1959, *Opius (Misophthora) bulgaricus* Fischer, 1959, *O. (Phaedrotoma) umlalaziensis* (Fischer, 1996), and *Perilitus (Microctonus) cerealium* Haliday, 1835 were recorded for the first time in Turkey. All species were collected from the Adıyaman province in 2004 and 2005. The general distribution and known hosts of each species are presented in this paper.

Key words: *Biosteres arenarius*, *Opius bulgaricus*, *O. umlalaziensis*, *Perilitus cerealium*, Braconidae, new record, Turkey

Adıyaman ili (Türkiye)'nden Euphorinae ve Opiinae (Hymenoptera: Braconidae) altfamilyalarına ait dört yeni parasitoid kaydı

Özet: Euphorinae ve Opiinae (Hymenoptera: Braconidae) altfamilyalarına ait dört parasitoid türü, *Biosteres (Chilotrichia) arenarius* Stelfox, 1959, *Opius (Misophthora) bulgaricus* Fischer, 1959, *O. (Phaedrotoma) umlalaziensis* (Fischer, 1996) ve *Perilitus (Microctonus) cerealium* Haliday, 1835 Adıyaman (Türkiye)'den ilk kez kaydedilmiştir. Saptanan türler 2004 ve 2005 yılları arasında toplanmıştır. Her bir türün bilinen konukçuları ve genel yayılışları verilmiştir.

Anahtar sözcükler: *Biosteres arenarius*, *Opius bulgaricus*, *O. umlalaziensis*, *Perilitus cerealium*, Braconidae, yeni kayıt, Türkiye

Opiinae is one of the largest subfamilies in the Braconidae, with over 1500 described species. About 100 of these have been reared from fruit-infesting Tephritidae (Diptera). All opiinae braconids reared to

date are koinobiont endoparasitoids of cyclorrhaphous Diptera, emerging from the puparium of their hosts. Hosts are known for only about one-third of the described species of Opiinae, with most of

* E-mail: eminecikman@yahoo.com

these records pertaining to Agromyzidae, Tephritidae, and Anthomyiidae (Shaw and Huddleston, 1991).

The subfamily Euphorinae includes 54 genera with containing about 1113 described species, and is distributed all around the world. This subfamily is a cosmopolitan lineage of small parasitoid wasps that use the adult, nymphal, and larval stages of various insects as their hosts. They are solitary, rarely gregarious, and usually koinobiont endoparasitoids of several different orders of insects including the following, in descending order of frequency: Coleoptera (especially the families Chrysomelidae and Curculionidae), Hymenoptera, Lepidoptera, Neuroptera, Hemiptera, Psocoptera, and Orthoptera. It is possible that species in this subfamily could potentially be a control agent against harmful insects (Shaw, 1988; Yu et al., 2006; Koldas et al., 2007).

Euphorinae and Opiinae fauna of Turkey have been investigated previously. There have been some important contributions conducted mostly by native researchers in the last 2 decades (Eroğlu, 1990; Fischer, 1992; Civelek et al., 2002; Beyarslan et al., 2004; Fischer and Beyarslan, 2005a, 2005b; Çıkman et al., 2006, 2008; Çıkman and Beyarslan, 2007).

This study reports some new records of Braconidae in Adiyaman province, southeastern Turkey.

The adult specimens were collected by sweep netting on both cultured and non-cultured plants in Adiyaman in 2004 and 2005. Specimens were killed and pinned for identification. The specimens were identified mainly using the keys and papers by Tobias (1986), Fischer (1986, 1972, 1977, 1990), Achterberg (1990), Achterberg and Quicke (1991), Belokobylskij (1993), and Fischer and Koponen (1999a, 1999b).

Localities, collecting dates, the number of specimens examined, hosts, and general distributions are given below.

The specimens are deposited in the collection of the Zoological Museum in the Trakya University Arts and Science Faculty, Biology Department, Edirne, Turkey.

List of the species

Subfamily: Euphorinae

Genus: *Perilitus* Nees von Esenbeck, 1818

Perilitus (Microctonus) cerealium Haliday, 1835

Material examined: *P. (M.) cerealium* was found in Adiyaman-Gölbaşı, Tecirli, on *Medicago sativa* L., on 15.09.2004 (2♂♂).

Hosts: *Chaetocnema hortensis* (Geoffroy), *Phyllotreta vittula* (Redtenbacher) (Col.: Chrysomelidae); *Hypera variabilis* Herbst. (Col.: Curculionidae), *Psylliodes attenuata* (Koch) (Hom.: Cicadellidae) (Yu et al., 2006).

General Distribution: Belgium, former Czechoslovakia, Finland, France, Germany, Ireland, Italy, Mongolia, Netherlands, Poland, Romania, Sweden, Switzerland, United Kingdom, former Yugoslavia. Eastern Palaearctic and Western Palaearctic (Yu et al., 2006).

Subfamily: Opiinae

Genus: *Biosteres* Foerster

Biosteres (Chilotrichia) arenarius (Stelfox, 1959)

Material examined: *B. (C.) arenarius* was found in Adiyaman-Besni, Sofraz, 18.10.2005 (1♂). In the collection locality, *Mentha* spp., *Lycopersicum esculentum* Mill., *M. sativa*., *Phalaris* spp., *Physalis* spp., *Solanum. Melongena* L., and *Xanthium* spp. were the dominant plant species, on 18.10.2005 (1♂).

Hosts: Unknown

General Distribution: France, Germany, Ireland, Moldova, Russia, (Eastern Palaearctic, Western Palaearctic) (Yu et al., 2006).

Genus: *Opius* Wesmael, 1853

Opius (Misophthora) bulgaricus Fischer, 1959

Material examined: *O. (M.) bulgaricus* was found in Adiyaman-Besni, Sofraz, 15.09.2004, (1♂). *Amaranthus* spp., *Lamium* spp., *Phalaris* spp., *Portulaca oleracea* L. were abundant plants in the collection area, Adiyaman- Besni, Sofraz, 17.10.2005 (1♀). *Lamium amplexicaula* L., *Mentha* spp., *M.*

sativa, *Phalaris* spp., *Physalis* spp., and *Xanthium* spp. were also abundant plants in the collection area. Adıyaman-Besni, Sofraz, 17.10.2005 (1♀). *S. melongena* and *L. esculentum* were abundant Adıyaman-Besni, Sofraz, 18.10.2005 (3♂♂, 2♀♀). *M. sativa*, *Phalaris* spp., and *Physalis* spp. were as well abundant plants in collection area.

Hosts: *Chromatomyia horticola* (Goureau) (Dip.: Agromyzidae) (Yu et al., 2006).

General Distribution: Austria; Bulgaria; Hungary; Italy, Switzerland. Europe; Western Palaearctic (Yu et al., 2006).

Opius (Phaedrotoma) umlalaziensis (Fischer, 1996)

Material examined: *O. (P.) umlalaziensis* was found in Adıyaman-Gölbaşı, Tecirli on *M. sativa*, on 15.09.2004 (1♂).

Hosts: Unknown

General Distribution: South Africa. Ethiopian Region (Yu et al., 2006).

Adıyaman is within the Iran steppephytogeographical region as well as the Irano-Turanian phytogeographical region, which covers eastern Anatolia up to Erzurum province and southern Anatolia, excluding southern parts of the region. It is a principally mountainous eastern region of Turkey, with cooler temperatures and average rainfall. It is covered with sparse forests of oak and pine, and is prevalently steppe.

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