

**Orijinal araştırma (Original article)**

## An additional contribution to the Ichneumoninae (Hymenoptera: Ichneumonidae) fauna of Turkey

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### Summary

In this present study, 46 species from six tribes belonging to Ichneumoninae were treated that, one genus (*Eurylabus*) and 15 species were new records for the Turkish fauna. For the known species new locations added and with this contribution, the species and genera of Ichneumoninae occurring in Turkey have increased to 173 and 53, respectively. A zoogeographical characterisation is given for each of the species.

**Key words:** Ichneumonidae, Ichneumoninae, new records, fauna, zoogeographical characterization, Turkey

**Anahtar sözcükler:** Ichneumonidae, Ichneumoninae, yeni kayıt, fauna, zoocoğrafik karakterizasyon, Türkiye

### Introduction

The Ichneumonidae, a huge group of hymenopter species, some of them are natural enemies of many economically important agricultural pests. Despite their important role in the biological pest control, the taxonomy, ecology, and geographical distribution of many groups of Ichneumonidae remain insufficiently known, even in well studied areas, such as Europe.

The subfamily Ichneumoninae is a very large group of Ichneumonidae with more than 1700 described species in the Palaearctic region (Yu et al., 2005). The Ichneumoninae species mainly parasitize lepidopteran larvae and pupae; the offspring always emerges from the pupa.

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Although, Fahringer & Friese (1921), Fahringer (1922), Heinrich (1978), Hilpert (1992) recorded some species from Turkey, studies on this subfamily were very restricted previously in Turkey. However, several contributions were conducted in last years (Kolarov et al., 1997; Yurtcan et al., 1999; Özbek et al., 2003; Çoruh et al., 2005; Riedel, 2008; Riedel et al., 2010; Çoruh & Özbek, 2011).

## Material and Methods

The Ichneumoninae recorded in the present paper were collected during 1971-2000 by the use of sweep netting, mainly in Eastern Turkey, totally 75 specimens. A few specimens were also obtained from Malaise traps. Most of the material is housed in the collection of the Entomology Museum Erzurum, Turkey (EMET). The tribes, genera and species are listed in the alphabetic order according the recent Interactive Catalogue of World Ichneumonidae (YU et al., 2005). The distributional records were also used from this catalogue.

## Results and Discussion

### Phaeogenini

#### *Dicaelotus (Gnathichneumon) mandibulator* (Aubert, 1958)

Material examined: Erzurum: Horasan, Aras Valley, 1500 m, 4.VI.2000, 1 ♀, leg. H. Özbek.

New for the Turkish fauna.

Distribution: known from Spain, France and Russia.

### Platylabini

#### *Apaeticus bellicosus* Wesmael, 1845

Material examined: Erzurum: Atatürk University field, 1850 m, 23.VII.1980, 1 ♂, leg. H. Özbek, 3.VII.1999, 1 ♂, leg. S. Çoruh.

Distribution: Western Palaearctic, known from Turkey (Riedel et al., 2010)

#### *Apaeticus inimicus* (Gravenhorst, 1820)

Material examined: Erzurum: Atatürk University field, 1850 m, 23.VI.1980, 1 ♀, leg. H. Özbek.

New for the Turkish fauna.

Distribution: Western Palaearctic.

#### *Platylabus neglectus* (Fonscolombe, 1847)

Material examined: Erzurum: Aşkale, 1700 m, 23.V.2000, 1 ♀, leg. Ö. Çalmaşur, Oltu, Tutmaç-Başaklı, 1900 m, 1.VII.2000, 1 ♀, leg. Ö. Çalmaşur.

New for the Turkish fauna.

Distribution: Palaearctic.

### **Heresiarchini**

#### ***Amblyjoppa fuscipennis*** (Wesmael, 1845)

Material examined: Erzurum: Palandöken Mt., 2400 m, 1.VII.1996, 2 ♂♂, 9.VII.1996, 1 ♂, leg. E. Yıldırım, 1 ♂, 23.VII.1996, 1 ♂, leg. S. Çoruh.

Distribution: Palaearctic, known from Turkey (Fahringier, 1922; Kolarov, 1995; Özbek et al., 2003)

#### ***Coelichneumon comitator*** (Linnaeus, 1758)

Material examined: Bayburt: Maden, 1650 m, 16.VI.2000, 1 ♂, leg. Ö. Çalmaşur.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

#### ***Coelichneumon erythromerus*** (Rudow, 1888)

Material examined: Erzurum: Atatürk University field, 1850 m, 6.VI.1971, 1 ♂, leg. M. Doğanlar.

Distribution: Palaearctic, known from Turkey (Heinrich, 1978).

#### ***Coelichneumon nigerrimus*** (Stephens, 1893)

Material examined: Artvin: Borcka, Karagöl, 1050 m, 8.VII.1994, 1 ♀, leg. E. Yıldırım.

New for the Turkish fauna.

Distribution: Palaearctic.

#### ***Coelichneumon nigritor*** Riedel, Coruh and Özbek, 2010

Material examined: Erzurum: Dutçu, Komyolu, 18.VII.1999, 1 ♂, leg. S. Çoruh.

Distribution: known from Turkey (Riedel et al., 2010).

#### ***Coelichneumon nudicoxator*** Aubert, 1966

Material examined: Erzurum: Dutçu, Komyolu, 18.VII.1999, 1 ♂, leg. S. Çoruh.

Distribution: Eastern Mediterranean, known from Turkey (Riedel et al., 2010).

#### ***Protichneumon fusorius*** (Linnaeus, 1761)

Material examined: Erzurum: Dutçu, Komyolu, 18.VII.1999, 1 ♂, leg. S. Çoruh; Kars: Sarıkamış, Karakurt, 1500 m, 2.V.2000, 1 ♀, leg. C. Güçlü.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

***Syspasis scutellator*** (Gravenhorst, 1829)

Material examined: Erzurum: Atatürk University field, 1850 m, 22.VII.1999, 1 ♂, leg. S. Çoruh.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

**Listrodromini**

***Anisobas cingulatellus*** Horstmann, 1997

Material examined: Bayburt: Kop Mt., 2400 m, 13.VIII.1997, 1 ♀, leg. Ö. Çalmaşur.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

***Neotypus nobilitator*** (Gravenhorst, 1807)

Material examined: Erzurum: Palandöken Mt., 2400 m, 29.VII.1996, 1 ♂, leg. S. Çoruh.

New for the Turkish fauna.

Distribution: Holarctis and Orientalis.

Remark: although *N. nobilitator* has very large distribution area it was first recorded from Turkey.

**Eurylabini**

***Eurylabus larvatus*** (Christ, 1791)

Material examined: Erzurum: Pasinler, Pelitli, 2200 m, 14.VII.1998, 1 ♂, leg. E. Yıldırım.

This genus and species are new for the Turkish fauna.

Distribution: Palaearctic.

**Ichneumonini**

***Aoplus castaneus*** (Gravenhorst, 1820)

Material examined: Erzurum: Ilıca, Rizekent, 1900 m, 10.VIII.1999, 1 ♂, leg. S. Çoruh.

New for the Turkish fauna.

Distribution: Palaearctic.

***Ctenichneumon cf. melanocastaneus*** (Gravenhorst, 1820)

Remark: Flagellum black, without whistish ring

Material examined: Erzurum: Tortum, Pehlivanlı, 12.VII.1992, 1 ♀, leg. E. Yıldırım.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010)

***Ctenichneumon panzeri*** (Wesmael, 1845)

Material examined: Erzurum: Dutçu, Kamyolu, 18.VII.1999, 1 ♂, leg. S. Çoruh.

Distribution: Palaearctic and Orientalis, known from Turkey (Riedel et al., 2010)

***Diphyus longimanus*** (Wesmael, 1857)

Material examined: Erzurum: Oltu, Sütkans, 1500 m, 25.VI.1996, 3 ♂♂, leg. E. Yıldırım.

New for the Turkish fauna.

Distribution: Europe, new for Turkey as well as Asian Continent. Additionally, Erzurum Province is easternmost distribution limit of its range for now.

***Diphyus mercatorius s.str.*** (Fabricius, 1793)

Remark: Flagellum black

Material examined: Erzurum: Güngörmez, 2500 m, 28.VII.1998, 1 ♂, leg. E. Yıldırım, Palandöken Mt., 2400 m, 17.VII.1990, 1 ♂, 23.VII.1996, 1 ♂, leg. E. Yıldırım, 1 ♂, leg. S. Çoruh.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010)

***Diphyus montivagans*** (Berthoumieu, 1897)

Material examined: Erzurum: Atatürk University field, 1850 m, 16.VII.1996, 1 ♂, leg. S. Tosun.

Distribution: Western Europe, known from Turkey (Heinrich, 1978)

***Diphyus pseudomercator*** Heinrich, 1978

Material examined: Erzurum: Tafta, 1900 m, 14.VII.1996, 1 ♀, leg. E. Yıldırım, Pasinler, 12.VI.1996, 1 ♀, leg. S. Çoruh.

Distribution: Western Palaearctic, known from Turkey (Riedel et al., 2010)

***Diphyus septemguttatus*** (Gravenhorst, 1829)

Material examined: Erzurum: Pasinler, Pelitli, 2200 m, 14.VII.1998, 1 ♂, leg. S. Çoruh.

New for the Turkish fauna.

Distribution: Palaearctic.

***Hoplismenus bidentatus*** (Gmelin, 1790)

Material examined: Erzurum: Aşkale, 1700 m, 23.V.2000, 1 ♀, leg. Ö. Çalmaşur.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

***Ichneumon bucculentus*** Wesmael, 1845

Material examined: Erzurum: Ilica, Atlıkonak, 2000 m, 11.VI.2000, 1 ♀, leg. S. Çoruh; Şenkaya, Turnalı, 1750 m, 25.VII.1996, 2 ♀♀, leg. E. Yıldırım.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

***Ichneumon cf. caedator*** Gravenhorst, 1829

Material examined: Artvin: Yusufeli, Altıparmak, 1100 m, 5.VII.1994, 1 ♀, leg. I. Aslan.

New for the Turkish fauna.

Distribution: Palaearctic.

***Ichneumon exilicornis*** Wesmael, 1857

Material examined: Erzurum: Ilica, Atlıkonak, 2000 m, 11.VI.2000, 1 ♀, leg. Ö. Çalmaşur.

Distribution: Western Palaearctic, known from Turkey (Riedel et al., 2010).

***Ichneumon fulvicornis*** Gravenhorst, 1829

Material examined: Erzurum: Pasinler, Çalıyazı, 2400 m, 11.VII.1997, 1 ♀, leg. Ö. Çalmaşur.

Distribution: Western Palaearctic, known from Turkey (Riedel et al., 2010)

***Ichneumon gracilicornis*** Gravenhorst, 1829

Material examined: Bayburt: Maden, 1650m, 16.VI.2000, 1 ♀, leg. Ö. Çalmaşur.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010)

***Ichneumon phaeostigmus*** Wesmael, 1857

Material examined: Erzurum: Aşkale 1950 m, 14.VII.1999, 1 ♂, leg. S. Çoruh.

Distribution: Western Palaearctic, known from Turkey (Riedel et al., 2010)

***Ichneumon primatorius*** Forster, 1771

Material examined: Erzurum: Oltu, Çamlıbel, Karakol, 1900 m, 1.VII.2000, 1 ♂, leg. Ö. Çalmaşur.

New for the Turkish fauna.

Distribution: Palaearctic.

***Ichneumon proletarius*** Wesmael, 1848

Material examined: Erzurum: Horasan 1750 m, 4.V.2000, 1 ♀, leg. H. Özbek; Kars: Sarıkamış, Yeniköy, 1950 m, 17.VIII.1998, 1 ♀, leg. I. Aslan.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

***Ichneumon quaesitorius*** Linnaeus, 1761

Material examined: Erzurum: Horasan, Aras Valley, 1500 m, 4.VI.2000, 1 ♀, leg. H. Özbek.

New for the Turkish fauna.

Distribution: Palaearctic.

***Ichneumon sarcitorius s.str.*** Linnaeus, 1758

Material examined: Erzincan: 23.VII.1996, 1 ♂, leg. S. Çoruh; Erzurum: Palandöken Mt., 2400 m, 7.VII.1996, 1 ♂, leg. S. Çoruh.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010)

***Ichneumon sarcitorius ssp. caucasicus*** Meyer, 1926

Material examined: Erzurum: Atatürk University field, 1850 m, 10.VI.2000, 1 ♀, leg. S. Çoruh, Ilica, Atlıkonak 2000 m, 11.VI.2000, 1 ♀, leg. Ö. Çalmaşur, Olur, Süngübayır, 1830 m, 24.VII.1996, 1 ♀, leg. I. Aslan.

Distribution: Iran and Russia, known from Eastern Turkey (Hilpert, 1992).

***Limerodops subsericans*** (Gravenhorst, 1820)

Material examined: Erzurum: Oltu, Başaklı-Tutmaç, 1900 m, 1.VII.2000, 1 ♂, leg. Ö. Çalmaşur.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010)

***Melanichneumon glaucatoriops*** Heinrich, 1972

Remark: The female differs slightly from the original description (Heinrich, 1972) by its coloration: the apical whitish bands on the metasomal tergites 2-4 only and not interrupted in the centre.

Material examined: Erzurum: Palandöken Mt., 2400 m, 9.VII.1996, 1 ♀, leg. S. Çoruh.

New for the Turkish fauna.

Distribution: Palearctic, known from Azerbaijan, Austria and Italy.

***Obtusodonta equitatoria*** (Panzer, 1786)

Material examined: Erzurum: Narman, 30.VI.1989, 1 ♂, leg. E. Yıldırım, Oltu, Sütkans, 18.VII.996, 1 ♀, leg. E. Yıldırım, Senkaya, Soğanlı Mt., 2450 m, 1 ♂, 12.VII.2005, leg. C. Güclü.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010)

***Pseudoamblyteles homocerus*** (Wesmael, 1854)

Material examined: Erzincan: Bahçe Kültürleri Araştırma Enstitüsü, 1250 m, 25.VI.1994, 1 ♀, leg. E. Yıldırım; Erzurum: Kombina, 22.VIII.1988, 1 ♂, leg. H. Özbek.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

***Rictichneumon lombardi*** (Berthoumieu, 1897)

Material examined: Erzurum: Palandöken 2400 m, 9.VII.1996, 2 ♀♀, 28.VI.1997, 1 ♂, leg. S. Çoruh, Ilica, Atlıkonak 1700 m, 11.VI.2000, 1 ♂, leg. Ö. Çalmaşur, Oltu, Tutmaç-Başaklı, 1700-2000 m, 2.VII.2000, 1 ♂, leg. H. Özbek, Aksuyayla, 2250 m, 14.VII.1996, 1 ♀, leg. E.Yıldırım.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

***Spilichneumon ammonius*** (Gravenhorst, 1820)

Material examined: Erzurum: Senkaya, Soğanlı Mt., 2350 m, 24.VI.1999, 1 ♀, leg. S. Çoruh.

New for the Turkish fauna.

Distribution: Palaearctic.

***Spilichneumon limnophilus*** (Thomson, 1888)

Material examined: Erzurum: Oltu, Tutmaç-Başaklı, 1900 m, 1.VII.2000, 1 ♀, leg. Ö. Çalmaşur, Sarısaz 1450 m, 1 ♀, 24.V.2000, leg. S. Çoruh.

New for the Turkish fauna.

Distribution: Palaearctic.

***Spilothyrates illuminatorius*** (Gravenhorst, 1820)

Material examined: Erzincan: 19.VII.1997, 1 ♀, leg. S. Çoruh.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010)

***Virgichneumon callicerus*** (Gravenhorst, 1820)

Material examined: Erzurum: Askale, Kop Mt., 2200m, 16.VI.2000, 1 ♀, leg. S. Çoruh, Tortum, Kaledibi, 19.VIII.1998, 1 ♂, leg. Ö. Çalmaşur.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).

***Virgichneumon maculicauda*** (Perkins, 1953)

Material examined: Erzurum: Ilica, Atlıkonak 1750 m, 29.VI.1999, 1 ♂, leg. Ö. Çalmaşur.

Distribution: Western Palaearctic and Azerbaijan, known from Turkey (Riedel et al., 2010).

***Vulgichneumon deceptor*** (Scopoli, 1763)

Material examined: Erzurum: Aşkale, 1950 m, 14.VII.1999, 1 ♂, leg. S. Çoruh.

Distribution: Palaearctic, known from Turkey (Riedel et al., 2010).



## Discussion

Kolarov (1995) listed 66 species of Ichneumoninae occurring in Turkey. Recently, several studies were conducted on this subfamily: Kolarov et al. (1997), Yurtcan et al. (1999), Özbek et al. (2003) and Çoruh et al. (2005) reported 94 species in 40 genera for Turkey. Later Riedel (2008) added ten species for the Turkish fauna. More recently, three new species, *Coelichneumon nigritor*, *Coelichneumon problematicus* and *Ichneumon sexcinctoides* were described and 53 species and 12 genera were added to the Turkish fauna (Riedel et al., 2010). With present contribution the Ichneumoninae species occurring in Turkey reached to 173 species in 53 genera. However, we should emphasize that we are still some way far from having a complete knowledge of Ichneumoninae species possibly existing in Turkey.

It is remarkable to note that more than 90% of the species have large distribution areas but many species recorded from Turkey for the first time. This situation increases the importance of such studies in the country.

### Zoogeographic characterizations

The zoogeographical characterization is based on the chorotype classification of the Near East fauna, which was proposed by Taglianti et al. (1999). The geographic distribution of above mentioned species can be divided into the following groups:

Holarctis range: *Neotypus nobilitator*.

Palaeartic range: *Ctenichneumon panzeri*, *C. melanocastaneus*, *Platylabus neglectus*, *Amblyjoppa fuscipennis*, *Coelichneumon comitator*, *C. erythromerus*, *C. nigerrimus*, *Protichneumon fusorius*, *Syspasis scutellator*, *Anisobas cingulatellus*, *Eurylabus larvatus*, *Aoplus castaneus*, *Diphyus mercatorius*, *D. septemguttatus*, *Hoplismenus bidentatus*, *Ichneumon bucculentus*, *I. caedato*, *I. gracilicornis*, *I. primatorius*, *I. proletarius*, *I. quaesitorius*, *I. sarcitorius*, *Limerodops subsericanst*, *Obtusodonta equitatoria*, *Pseudoamblyteles homocerus*, *Rictichneumon lombardi*, *Spilichneumon ammonius*, *S. limnophilus*, *S. illuminatorius*, *Virgichneumon callicerus*, *V. deceptor*, *V. maculicauda*.

Western Palaeartic chorotype: *Apaeleticus bellicosus*, *A. inimicus*, *Diphyus pseudomercator*, *Ichneumon exilicornis*, *I. fulvicornis*, *I. phaeostigmus*.

European chorotype: *Diphyus longimanus*.

Western European chorotype: *Diphyus montivagans*.

Centralasiatic-European-Mediterranean chorotype: *Dicaelotus (Gnathichneumon) mandibulator*.

E- Mediterranean chorotype: *Coelichneumon nudicoxator*.

Turanian chorotype: *Ichneumon sarcitorius* ssp. *caucasicus*.

Turano-Mediterranean chorotype: *Melanichneumon glaucatoriops*.

One species is so far Anatolian endemic: *Coelichneumon nigritor*.

## Özet

### Türkiye'nin Ichneumoninae (Hymenoptera: Ichneumonidae) faunasına ek bir katkı

Bu çalışmada, Ichneumoninae altfamilyasına ait, altı tribüse bağlı 46 tür tespit edilmiştir. Bunlardan 15 tür Türkiye faunası için yeni kayıttır. Bunlara ek olarak, bilinen türler için yeni lokasyonlar belirlenmiştir. Bu çalışma ile Türkiye'deki Ichneumoninae cins sayısı 53'e tür sayısı da 173'e yükselmiştir. Her bir tür için zoocoğrafik karakterler verilmiştir.

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