

Orijinal araştırma (Original article)

Ichneumonidae (Hymenoptera) from Anatolia III

Anadolu'dan Ichneumonidler (Hymenoptera) III

Janko KOLAROV¹

Saliha ÇORUH^{2*}

İrfan ÇORUH²

Summary

Faunistic data of 24 Ichneumoninae species from Anatolia (Turkey), including Erzurum, Giresun, Rize, Trabzon and Ordu (total 78 specimens) are presented. Of them 8 species - *Coelichneumon (Coelichneumon) bilineatus* (Gmelin), *Coelichneumon (Coelichneumon) desinatorius* (Thunberg), *Cratichneumon sexarmillatus* (Kriechbaumer), *Cratichneumon versator* (Thunberg), *Eupalamus wesmaeli* (Thomson), *Heterischnus excavatus* (Constantineanu), *Homotherus varipes* (Gravenhorst) and *Phaeogenes alternans* Wesmael are new records for Turkish fauna. Also, among them one species - *Heterischnus schachtii* at now is Turkish endemic. For each species short zoogeographical characterization is given.

Keywords. Ichneumonidae, Ichneumoninae, new records, Turkey, zoogeographical characterization

Özet

Bu çalışmada, Anadolunun farklı yerlerinden toplanan (Erzurum, Giresun, Rize, Trabzon and Ordu) (toplam 78 örnek) ve Ichneumoninae (Ichneumonidae) altfamilyasına ait 24 faunistik veri değerlendirilmiştir. Bunlardan *Coelichneumon (Coelichneumon) bilineatus* (Gmelin), *Coelichneumon (Coelichneumon) desinatorius* (Thunberg), *Cratichneumon sexarmillatus* (Kriechbaumer), *Cratichneumon versator* (Thunberg), *Eupalamus wesmaeli* (Thomson), *Heterischnus excavatus* (Constantineanu), *Homotherus varipes* (Gravenhorst) ve *Phaeogenes alternans* Wesmael Türkiye için yeni kayıt durumundadır. Ayrıca *Heterischnus schachtii* Türkiye için şu anda endemiktir. Her bir türe ait zoocoğrafik notlar da verilmiştir.

Anahtar sözcükler. Ichneumonidae, Ichneumoninae, yeni kayıtlar, Türkiye, zoocoğrafik karakterler

¹ University of Plovdiv, Faculty of Pedagogy, 24 Tsar Assen Str., 4000 Plovdiv, Bulgaria

² Atatürk University, Faculty of Agriculture, Department of Plant Protection, 25240 Erzurum, Turkey

*Sorumlu yazar (Corresponding author) e-mail: spekel@atauni.edu.tr

Alınış (Received): 22.08.2014

Kabul edilmiş (Accepted): 11.12.2014

Introduction

Ichneumonidae is the biggest hymenopteran family including 1579 genera and 24,281 described species (Yu et al., 2012). The family is accepted as one of the most diverse animal group (Grissell, 1999). However, it should be emphasized that every year many new species are added to this number.

In this part we include the species of subfamily Ichneumoninae. It is a very large group of Ichneumonidae with 424 genera and 4300 described species (Yu et al., 2012). This is the second largest subfamily of Ichneumonidae. They are koinobiont or idiobiont endoparasitoids of Lepidoptera. Members of this subfamily mainly parasitize lepidopteran larvae and pupae; the off spring always emerges from the pupa. Ichneumonines are often large, conspicuous colourful insects. They have a 5-sided areolet, a dorso ventrally flattened metasoma, without sternaulus and the clypeus is truncate exposing the labium (Rasnitsyn & Siitan, 1981).

Studies on Ichneumonidae of Turkey have gained acceleration, particularly, since the last one and a half decades. Çoruh et al. (2014b) reported 1033 species in 286 genera for Turkey Ichneumonidae fauna. With the below mentioned contributions (Kolarov & Çalmaşur, 2011; Çoruh et al., 2014c) and this paper, the numbers of Ichneumonidae fauna of Turkey reached to 1047 species and 286 genera.

In the present paper we report here 24 species in 15 genera of Ichneumoninae. 8 species (marked by asterisk) are new records for Turkey.

With this contribution, the species and genera of Ichneumoninae occurring in Turkey have increased to 190 and 53 respectively.

The aim of this study is to report Ichneumonidae species and plants species visited by Ichneumonids, collected from different localities in Anatolia in ongoing project (Kolarov et al., 2014a, Çoruh et al., 2014a).

Thus each new records of Ichneumonidae determined in the study may have contribute on Ichneumonidae fauna both in Turkey and in the world. This also will results to find relationships between determined plant species and Ichneumonidae.

Material and Methods

The ichneumonid samples were collected by insect net on different plants in the different localities in Anatolia (Fig. 1), during June, 2013. The materials are preserved in the Collection of Plovdiv University of (Bulgaria) for the present. The plant samples visited by Ichneumonid were collected by hand and were pressed and deposited at the Herbarium of Plant Protection Department (Erzurum). Plant specimens were identified according to Davis (1965-1988) and Herbarium of Atatürk University, Faculty of Agriculture, Department of Plant Protection by third author.

General distributions of the species and association plants of the species presented in the catalog were taken from Yu et al. (2012).

Weeds are very important nutrition source for all animals in nature. They are also very important resource as shelter for animals (Özer et al., 2001). The weeds are very important as pollen and nectar sources for Ichneumonidae species. Çoruh & Özbek (2005), Çoruh & Çoruh (2008) and Çoruh (2010) recorded associated plant species with Ichneumonidae in Turkey.

Based on this information, vegetation and habitat data of each species in studied area were given. In addition host plants of some ichneumonid species are also reported.



Figure 1. Map of study area.

Results and Discussion

A total of 24 species in 15 genera of Ichneumoninae from the different provinces of Anatolia were determined. The species list is given below.

Genus *Anisobas* Wesmael, 1844

Anisobas cingulatellus Horstmann, 1997

Material examined: Erzurum: Dadaşkent, 1850 m, 19.VI.2013, 2♂♂, leg. Kolarov & Çoruh.

Distribution: Afghanistan, Azerbaijan, Europe, Iran, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan and Turkey.

Habitat: Roadside, meadows area.

Vegetation: *Achillea biebersteinii*, *A. millefolium*, *Alopecurus myosuroides*, *Anthemis cretica*, *Cirsium arvense*, *Coronilla orientalis*, *Daucus carota*, *Eryngium billardieri*, *Euphorbia virgata*, *Falcaria vulgaris*, *Galium incanum*, *Lolium perenne*, *Plantago lanceolata*, *Plantago media*, *Poa annua*, *P. trivialis*, *Reseda lutea*, *Salvia verticillata*, *Seseli libanotis*, *Trifolium pratense*, *Urtica dioica*.

Associated plants with *A. cingulatellus*: *Anethum graveolens*, *Angelica sylvestris*, *Chaerophyllum aromaticum*, *Chaerophyllum bulbosum*, *Daucus carota*, *Daucus carota sativus*, *Euphorbia nicaeensis*, *Ferulago sylvatica*, *Heracleum sphondylium*, *Laserpitium latifolium*, *Peucedanum oreoselinum*, *Rubus* sp., *Ulex parviflorus* (Yu et al., 2012).

Remark: This species was collected on *Daucus carota* while feeding.

Genus *Coelichneumon* Thomson, 1893

**Coelichneumon (Coelichneumon) bilineatus* (Gmelin, 1790)

Material examined: Giresun: Eynesil, 88 m, 22.VI.2013, 1♀, leg. Kolarov & Çoruh.

Distribution: Europe and Japan. New record for Turkey.

Habitat: Semiwet area of the water's edge and hazelnuts area.

Vegetation: *Anthemis cretica*, *A. tinctoria*, *Cirsium arvense*, *Corylus avellana*, *Daucus carota*, *Epilobium parviflorum*, *Eryngium giganteum*, *Geranium asphodeloides*, *Heracleum platytaenium*, *Hypericum perforatum*, *Linum hypericifolium*, *Polygonum bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rubus hirtus*, *Salvia forskahlei*, *Thalictrum minus*, *Trifolium pratense*, *T. repens*, *Urtica dioica*.

Associated plants with *C. (C.) bilineatus*: not known (Yu et al., 2012).

**Coelichneumon (Coelichneumon) desinatorius* (Thunberg, 1822)

Material examined: Trabzon: Çaykara, Uzungöl, 1090 m, 21.VI.2013, 1♂. leg. Kolarov & Çoruh.

Distribution: Azerbaijan, Europe Iran. New record for Turkey.

Habitat: Meadows area.

Vegetation: *Alopecurus myosuroides*, *Cirsium arvense*, *Coronilla orientalis*, *Corylus avellana*, *Cynodon dactylon*, *Daucus carota*, *Festuca pratensis*, *Erigeron acer*, *Fragaria vesca*, *Geranium ibericum*, *Heracleum platytaenium*, *Lamium purpureum*, *Lolium temulentum*, *Plantago mejor*, *Poa annua*, *P. trivialis*, *Polygonum bistorta*, *Pteridium aquilinum*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus discolor*, *R. hirtus*, *Salvia verticillata*, *Seseli libanotis*, *Thalictrum minus*, *Trifolium pratense*.

Genus *Colpognathus* Wesmael, 1844

Colpognathus celerator (Gravenhorst, 1807)

Material examined: Giresun: Eynesil, 88 m, 22.VI.2013, 1♀, leg. Kolarov & Çoruh, Keşap, 95 m, 23.VI.2013, 2♂♂, leg. Kolarov & Çoruh; Ordu: Gülyalı, 100 m, 22.VI.2013, 1♀, leg. Kolarov & Çoruh; Trabzon: Çaykara, Uzungöl, 1090 m, 21.VI.2013, 1♀, leg. Kolarov & Çoruh.

Distribution: Palaearctic region.

Habitat: Semi-wet area of the water's edge and hazelnut area.

Vegetation: *Achillea millefolium*, *Alopecurus myosuroides*, *Anthemis cretica*, *A. tinctoria*, *Cirsium arvense*, *Coronilla orientalis*, *Corylus avellana*, *Cynodon dactylon*, *Daucus carota*, *Delphinium formosum*, *Festuca pratensis*, *Epilobium parviflorum*, *Erigeron acer*, *Fragaria vesca*, *Galium incanum*, *Geranium asphodeloides*, *G. ibericum*, *Heracleum pastinacifolium*, *Hypericum perforatum*, *Lamium purpureum*, *Linum hypericifolium*, *Lolium temulentum*, *L. perenne*, *Plantago major*, *Pteridium aquilinum*, *Paspalum paspalodes*, *Poa annua*, *P. trivialis*, *Polygonum bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus discolor*, *R. hirtus*, *Salvia forskahlei*, *S. verticillata*, *Seseli libanotis*, *Setaria glauca*, *Sorghum halepense*, *Thalictrum minus*, *Trifolium pratense*, *T. repens*, *Veronica gentianoides*, *Urtica dioica*.

Colpognathus divisus Thomson, 1891

Material examined: Erzurum: Gelinkaya, 1790 m, 19.VI.2013, 7♂♂, leg. Kolarov & Çoruh; Rize: İkizdere, 570 m, 24.VI.2013, 3♂♂, leg. Kolarov & Çoruh, Ovit Mt., 2400 m, 19.VI.2013, 4♂♂, leg. Kolarov & Çoruh; Trabzon: Of, 10 m, 20.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Armenia, Europe, Iran, Kazakhstan and Turkey.

Habitat: Meadows area.

Vegetation: *Achillea biebersteinii*, *A. millefolium*, *Alopecurus myosuroides*, *Anagallis arvensis*, *Anthemis cretica*, *A. tinctoria*, *Astragalus christianus*, *Cirsium arvense*, *Coronilla orientalis*, *Corylus avellana*, *Cynodon dactylon*, *Daucus carota*, *Delphinium formosum*, *Festuca pratensis*, *Erigeron acer*, *Eryngium billardieri*, *Equisetum palustre*, *Euphorbia virgata*, *Falcaria vulgaris*, *Ferula communis*, *Fragaria*

vesca, *Galium incanum*, *G. verum*, *Geranium asphodeloides*, *G. ibericum*, *G. sylvaticum*, *Heracleum pastinacifolium*, *H. platytaenium*, *Hypericum hyssopifolium*, *H. perforatum*, *Lamium purpureum*, *Linum hypericifolium*, *Lolium temulentum*, *Phleum phyleoides*, *Plantago media*, *Pteridium aquilinum*, *Pedicularis comosa*, *Poa annua*, *P. trivialis*, *Polygonum persicaria*, *P. bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus discolor*, *R. hirtus*, *Salvia forskahlei*, *S. verticillata*, *Seseli libanotis*, *Setaria glauca*, *Sorghum halepense*, *Tanacetum balsamita*, *Thalictrum minus*, *Trifolium pratense*, *Veronica gentianoides*, *Urtica dioica*.

Associated plants with *C. divisus*: *Adonis vernalis*, *Daucus carota*, *Deschampsia cespitosa*, *Ferulago sylvatica*, *Heracleum sphondylium*, *Telekia speciosa* (Yu et al., 2012).

Remark: This species was collected on *Heracleum* spp. while feeding.

Genus *Cratichneumon* Thomson, 1893

**Cratichneumon sexarmillatus* (Kriechbaumer, 1891)

Material examined: Rize: İkizdere, 570 m, 24.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Palaearctic region. New record for Turkey.

Habitat: Meadows area.

Vegetation: *Anagallis arvensis*, *Anthemis cretica*, *Conyza canadensis*, *Coronilla orientalis*, *Delphinium formosum*, *Erigeron acer*, *Eryngium giganteum*, *Equisetum palustre*, *Galium incanum*, *G. verum*, *Geranium asphodeloides*, *G. ibericum*, *Heracleum pastinacifolium*, *Hypericum perforatum*, *Linum hypericifolium*, *Lolium perenne*, *Phleum phyleoides*, *Pedicularis comosa*, *Poa annua*, *Polygonum persicaria*, *P. bistorta*, *Prunella vulgaris*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus hirtus*, *Salvia forskahlei*, *S. verticillata*, *Thalictrum minus*, *Trifolium pratense*, *Veronica gentianoides*.

**Cratichneumon versator* (Thunberg, 1822)

Material examined: Trabzon: Of, 10 m, 20.VI.2013, 1♀, leg. Kolarov & Çoruh.

Distribution: Palaearctic region. New record for Turkey.

Habitat: Roadside.

Vegetation: *Alopecurus myosuroides*, *Cirsium arvense*, *Coronilla orientalis*, *Corylus avellana*, *Cynodon dactylon*, *Daucus carota*, *Delphinium formosum*, *Festuca pratensis*, *Erigeron acer*, *Fragaria vesca*, *Geranium ibericum*, *Heracleum platytaenium*, *Lamium purpureum*, *Lolium temulentum*, *Plantago leuceolata*, *P. major*, *Poa annua*, *P. trivialis*, *Polygonum bistorta*, *Pteridium aquilinum*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus discolor*, *R. hirtus*, *Salvia verticillata*, *Seseli libanotis*, *Thalictrum minus*, *Trifolium pratense*.

Cratichneumon viator (Scopoli, 1763)

Material examined: Rize: Çayeli, Beyazsu, 10 m, 23.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Holarctic region.

Habitat: Meadows area.

Vegetation: *Anthemis cretica*, *Coronilla orientalis*, *Erigeron acer*, *E. annuus*, *Equisetum palustre*, *Galium incanum*, *G. verum*, *Geranium ibericum*, *G. sylvaticum*, *Heracleum pastinacifolium*, *Hypericum perforatum*, *Poa annua*, *Polygonum persicaria*, *P. bistorta*, *Rubus hirtus*, *Salvia forskahlei*, *S. verticillata*, *Trifolium pratense*.

Genus *Diphyus* Kriechbaumer, 1890

Diphyus pseudomercator Heinrich, 1978

Material examined: Giresun: Eynesil, 88 m, 22.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Armenia, Europe except north parts and Turkey.

Habitat: Semi-wet area of the water's edge and hazelnuts area.

Vegetation: *Anthemis cretica*, *A. tinctoria*, *Cirsium arvense*, *Corylus avellana*, *Daucus carota*, *Epilobium parviflorum*, *Eryngium giganteum*, *Geranium asphodeloides*, *Heracleum platytaenium*, *Hypericum perforatum*, *Linum hypericifolium*, *Salvia forskahlei*, *Polygonum bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rubus hirtus*, *Thalictrum minus*, *Trifolium pratense*, *T. repens*, *Urtica dioica*.

Associated plants with *D. pseudomercator* : not known (Yu et al., 2012).

Remark: This species was collected on *Epilobium parviflorum* and *Heracleum platytaenium* while feeding.

Genus *Eupalamus* Wesmael, 1844

**Eupalamus wesmaeli* (Thomson, 1886)

Material examined: Trabzon: Of, 10 m, 20.VI.2013, 1♀, leg. Kolarov & Çoruh.

Distribution: Europe and Kamchatka oblast of Russia. New record for Turkey.

Habitat: Roadside.

Vegetation: *Alopecurus myosuroides*, *Cirsium arvense*, *Coronilla orientalis*, *Corylus avellana*, *Cynodon dactylon*, *Daucus carota*, *Delphinium formosum*, *Festuca pratensis*, *Erigeron acer*, *Fragaria vesca*, *Geranium ibericum*, *Heracleum platytaenium*, *Lamium purpureum*, *Lolium temulentum*, *Plantago media*, *Poa annua*, *P. trivialis*, *Polygonum bistorta*, *Pteridium aquilinum*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus discolor*, *R. hirtus*, *Salvia verticillata*, *Seseli libanotis*, *Thalictrum minus*, *Trifolium pratense*.

Associated plants with *E. wesmaeli*: *Chaerophyllum aromaticum*, *Daucus carota*, *Erica* sp., *Heracleum sphondylium*, *Rubus fruticosus* (Yu et al., 2012).

Genus *Heterischnus* Wesmael, 1859

**Heterischnus excavatus* (Constantineanu, 1959)

Material examined: Giresun: Keşap, 95 m, 23.VI.2013, 1♂, 1♀, leg. Kolarov & Çoruh; Rize: İkizdere, 570 m, 24.VI.2013, 3♀♀, leg. Kolarov & Çoruh.

Distribution: Bulgaria, Czech Republic, Germany, Romania, and Russia (Karachayevo-Cherkesskaya oblast). New record for Turkey.

Habitat: Meadows and hazelnuts area.

Vegetation: *Anthemis cretica*, *A. tinctoria*, *Cirsium arvense*, *Corylus avellana*, *Daucus carota*, *Epilobium parviflorum*, *Eryngium giganteum*, *Geranium asphodeloides*, *Heracleum platytaenium*, *Hypericum perforatum*, *Linum hypericifolium*, *Polygonum bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rubus hirtus*, *Salvia forskahlei*, *Thalictrum minus*, *Trifolium pratense*, *T. repens*, *Urtica dioica*.

Note. The species was described only by female (Constantineanu, 1965). Later Kolarov (1986) described the male. On the material here we add some details to male description: Body 7.1 mm long.

Flagellum with 27 segments. Tyloids on 6-15 flagellar segments (on 14-15 segments shorter than previous).

Heterischnus schachtii Diller, 1995

Material examined: Erzurum: Gelinkaya, 1790 m, 19.VI.2013, 2 ♂♂, leg. Kolarov & Çoruh.

Distribution: Turkey.

Habitat: Meadows area.

Vegetation: *Achillea biebersteinii*, *A. millefolium*, *Alopecurus myosuroides*, *Anthemis cretica*, *Cirsium arvense*, *Coronilla orientalis*, *Daucus carota*, *Euphorbia virgata*, *Galium incanum*, *Pedicularis comosa*, *Poa annua*, *Polygonum persicaria*, *P. bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rhinanthus angustifolius*, *Salvia forskahlei*, *Salvia verticillata*, *Seseli libanotis*, *Setaria glauca*, *Trifolium pratense*.

Remark: This species was collected on *Seseli libanotis* while feeding.

Heterischnus truncator (Fabricius, 1798)

Material examined: Giresun: Keşap, 23.VI.2013, 1 ♂, leg. Kolarov & Çoruh; Trabzon: Of, 10 m, 20.VI.2013, 2 ♀♀, leg. Kolarov & Çoruh.

Distribution: Azerbaijan, Europe, Iran and Turkey.

Habitat: Hazelnuts area.

Vegetation: *Anthemis cretica*, *A. tinctoria*, *Cirsium arvense*, *Corylus avellana*, *Daucus carota*, *Epilobium parviflorum*, *Eryngium giganteum*, *Geranium asphodeloides*, *Heracleum platytaenium*, *Hypericum perforatum*, *Linum hypericifolium*, *Polygonum bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rubus hirtus*, *Salvia forskahlei*, *Thalictrum minus*, *Trifolium pratense*, *T. repens*, *Urtica dioica*.

Genus *Homotherus* Foerster, 1868

**Homotherus varipes* (Gravenhorst, 1829)

Material examined: Trabzon: Of, 10 m, 20.VI.2013, 1 ♂, leg. Kolarov & Çoruh.

Distribution: Palaearctic region. New record for Turkey.

Habitat: Roadside.

Vegetation: *Alopecurus myosuroides*, *Cirsium arvense*, *Coronilla orientalis*, *Corylus avellana*, *Cynodon dactylon*, *Daucus carota*, *Delphinium formosum*, *Festuca pratensis*, *Erigeron acer*, *Fragaria vesca*, *Geranium ibericum*, *Heracleum platytaenium*, *Lamium purpureum*, *Lolium temulentum*, *Plantago media*, *Poa annua*, *P. trivialis*, *Polygonum bistorta*, *Pteridium aquilinum*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus discolor*, *R. hirtus*, *Salvia verticillata*, *Seseli libanotis*, *Thalictrum minus*, *Trifolium pratense*.

Genus *Ichneumon* Linnaeus, 1758

Ichneumon ignobilis Wesmael, 1855

Material examined: Rize: İkizdere, 570 m, 24.VI.2013, 1 ♂, leg. Kolarov & Çoruh.

Distribution: Europe and Turkey.

Habitat: Meadows area.

Vegetation: *Anagallis arvensis*, *Anthemis cretica*, *Conyza canadensis*, *Coronilla orientalis*, *Delphinium formosum*, *Erigeron acer*, *Eryngium giganteum*, *Equisetum palustre*, *Galium incanum*, *G. verum*, *Geranium asphodeloides*, *G. ibericum*, *Heracleum pastinacifolium*, *Hypericum perforatum*, *Linum hypericifolium*, *Lolium perenne*, *Phleum phyleoides*, *Pedicularis comosa*, *Poa annua*, *Polygonum persicaria*, *P. bistorta*, *Prunella vulgaris*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus hirtus*, *Salvia forskahlei*, *S. verticillata*, *Thalictrum minus*, *Trifolium pratense*, *Veronica gentianoides*.

Associated plants with *I. ignobilis*: *Ferulago sylvatica*, *Vaccinium* sp. (Yu et al., 2012).

Ichneumon proletarius Wesmael, 1848

Material examined: Erzurum: Gelinkaya, 1790 m, 19.VI.2013, 20♂♂, leg. Kolarov & Çoruh; Rize: İkizdere, 570 m, 24.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Algeria, Azerbaijan, Europe, Georgia, Iran and Turkey.

Habitat: Meadows area.

Vegetation: *Achillea biebersteinii*, *A. millefolium*, *Alopecurus myosuroides*, *Anthemis cretica*, *Cirsium arvense*, *Coronilla orientalis*, *Daucus carota*, *Euphorbia virgata*, *Galium incanum*, *Pedicularis comosa*, *Poa annua*, *Polygonum persicaria*, *P. bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rhinanthus angustifolius*, *Salvia forskahlei*, *Salvia verticillata*, *Seseli libanotis*, *Setaria glauca*, *Trifolium pratense*.

Associate plants with *I. proletarius*: *Anethum graveolens*, *Angelica sylvestris*, *Anthriscus sylvestris*, *Chaerophyllum aromaticum*, *Daucus carota*, *Euphorbia virgata*, *Ferulago sylvatica*, *Heracleum sphondylium*, *Medicago sativa*, *Pastinaca graveolens*, *Peucedanum oreoselinum*, *Rubus fruticosus* (Yu et al., 2012).

Genus *Phaeogenes* Wesmael, 1844

**Phaeogenes alternans* Wesmael, 1845

Material examined: Rize: İkizdere, 570 m, 24.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Europe. New record for Turkey.

Habitat: Meadows area.

Vegetation: *Anagallis arvensis*, *Anthemis cretica*, *Conyza canadensis*, *Coronilla orientalis*, *Delphinium formosum*, *Erigeron acer*, *Eryngium giganteum*, *Equisetum palustre*, *Galium incanum*, *G. verum*, *Geranium asphodeloides*, *G. ibericum*, *Heracleum pastinacifolium*, *Hypericum perforatum*, *Linum hypericifolium*, *Lolium perenne*, *Phleum phyleoides*, *Pedicularis comosa*, *Poa annua*, *Polygonum persicaria*, *P. bistorta*, *Prunella vulgaris*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus hirtus*, *Salvia forskahlei*, *S. verticillata*, *Thalictrum minus*, *Trifolium pratense*, *Veronica gentianoides*.

Associated plants with *P. alternans*: not known (Yu et al., 2012).

Genus *Rictichneumon* Heinrich, 1961

Rictichneumon lombardi (Berthoumieu, 1897)

Material examined: Erzurum: Gelinkaya, 1790 m, 19.VI.2013, 1♀, leg. Kolarov & Çoruh.

Distribution: Albania, Bulgaria, France, Hungary, Israel, Romania, Switzerland and Turkey.

Habitat: Meadows area.

Vegetation: *Achillea biebersteinii*, *A. millefolium*, *Alopecurus myosuroides*, *Anthemis cretica*, *Cirsium arvense*, *Coronilla orientalis*, *Daucus carota*, *Euphorbia virgata*, *Galium incanum*, *Pedicularis comosa*, *Poa annua*, *Polygonum persicaria*, *P. bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rhinanthus angustifolius*, *Salvia forskahlei*, *Salvia verticillata*, *Seseli libanotis*, *Setaria glauca*, *Trifolium pratense*.

Genus *Stenichneumon* Thomson, 1893*Stenichneumon culpator* (Schrank, 1802)

Material examined: Giresun: Eynesil, 88 m, 22.VI.2013, 2♂♂, leg. Kolarov & Çoruh.

Distribution: Holarctic region.

Habitat: Semi-wet area of the water's edge and hazelnuts area.

Vegetation: *Anthemis cretica*, *A. tinctoria*, *Cirsium arvense*, *Corylus avellana*, *Daucus carota*, *Epilobium parviflorum*, *Eryngium giganteum*, *Geranium asphodeloides*, *Heracleum platytaenium*, *Hypericum perforatum*, *Linum hypericifolium*, *Salvia forskahlei*, *Polygonum bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rubus hirtus*, *Thalictrum minus*, *Trifolium pratense*, *T. repens*, *Urtica dioica*.

Genus *Stenodontus* Berthomieu, 1896*Stenodontus marginellus* (Gravenhorst, 1829)

Material examined: Erzurum: Gelinkaya, 1790 m, 19.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Europe, Japan and Turkey.

Habitat: Meadows area.

Vegetation: *Achillea biebersteinii*, *A. millefolium*, *Alopecurus myosuroides*, *Anthemis cretica*, *Cirsium arvense*, *Coronilla orientalis*, *Daucus carota*, *Euphorbia virgata*, *Galium incanum*, *Pedicularis comosa*, *Poa annua*, *Polygonum persicaria*, *P. bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rhinanthus angustifolius*, *Salvia forskahlei*, *S. verticillata*, *Seseli libanotis*, *Setaria glauca*, *Trifolium pratense*.

Genus *Virgichneumon* Heinrich, 1977*Virgichneumon callicerus* (Gravenhorst, 1820)

Material examined: Trabzon: Çaykara, Uzungöl, 1090 m, 21.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Azerbaijan, Europe, Iran, Kazakhstan, Siberia, Turkey and Western China.

Habitat: Meadows area.

Vegetation: *Alopecurus myosuroides*, *Cirsium arvense*, *Coronilla orientalis*, *Corylus avellana*, *Cynodon dactylon*, *Daucus carota*, *Delphinium formosum*, *Festuca pratensis*, *Erigeron acer*, *Fragaria vesca*, *Geranium ibericum*, *Heracleum platytaenium*, *Lamium purpureum*, *Lolium temulentum*, *Plantago media*, *Poa annua*, *P. trivialis*, *Polygonum bistorta*, *Pteridium aquilinum*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus discolor*, *R. hirtus*, *Salvia verticillata*, *Seseli libanotis*, *Thalictrum minus*, *Trifolium pratense*.

Genus *Vulgichneumon* Heinrich, 1962*Vulgichneumon deceptor* (Scopoli, 1763)

Material examined: Erzurum: Gelinkaya, 1790 m, 19.VI.2013, 1♂, 1♀, leg. Kolarov & Çoruh; Trabzon: Çaykara, Uzungöl, 1090 m, 21.VI.2013, 1♀, leg. Kolarov & Çoruh.

Distribution: Europe, Georgia, Kazakhstan and Turkey.

Habitat: Meadows area.

Vegetation: *Achillea biebersteinii*, *A. millefolium*, *Alopecurus myosuroides*, *Anthemis cretica*, *Cirsium arvense*, *Coronilla orientalis*, *Corylus avellana*, *Cynodon dactylon*, *Daucus carota*, *Delphinium*

formosum, *Euphorbia virgata*, *Erigeron acer*, *Festuca pratensis*, *Fragaria vesca*, *Geranium ibericum*, *Heracleum platytaenium*, *Lamium purpureum*, *Lolium temulentum*, *Pedicularis comosa*, *Plantago media*, *Poa annua*, *P. trivialis*, *Polygonum persicaria*, *P. bistorta*, *Prunella vulgaris*, *Pteridium aquilinum*, *Ranunculus kotschyi*, *Reseda lutea*, *Rhinanthus angustifolius*, *Rubus discolor*, *R. hirtus*, *Salvia forskahlei*, *S. verticillata*, *Seseli libanotis*, *Setaria glauca*, *Thalictrum minus*, *Trifolium pratense*.

***Vulgichneumon saturatorius* (Linnaeus, 1758)**

Material examined: Giresun: Eynesil, 88 m, 22.VI.2013, 1♂, 1♂, leg. Kolarov & Çoruh; Rize: Çayeli, Beyazsu, 10 m, 23.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Oriental region (Pakistan) and Palaeartic.

Habitat: Meadows and hazelnuts area.

Vegetation: *Anthemis cretica*, *A. tinctoria*, *Cirsium arvense*, *Corylus avellana*, *Daucus carota*, *Epilobium parviflorum*, *Eryngium giganteum*, *Geranium asphodeloides*, *Heracleum platytaenium*, *Hypericum perforatum*, *Linum hypericifolium*, *Polygonum bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rubus hirtus*, *Salvia forskahlei*, *Thalictrum minus*, *Trifolium pratense*, *T. repens*, *Urtica dioica*.

***Vulgichneumon suavis* (Gravenhorst, 1820)**

Material examined: Giresun: Eynesil, 88 m, 22.VI.2013, 2♂♂, leg. Kolarov & Çoruh; Rize: Çayeli, Beyazsu, 10 m, 23.VI.2013, 1♂, leg. Kolarov & Çoruh, İkizdere, 570 m, 24.VI.2013, 1♂, leg. Kolarov & Çoruh.

Distribution: Azerbaijan, Europe, Iran, Israel and Turkey.

Habitat: Meadows and hazelnuts area.

Vegetation: *Anthemis cretica*, *A. tinctoria*, *Cirsium arvense*, *Corylus avellana*, *Daucus carota*, *Epilobium parviflorum*, *Eryngium giganteum*, *Geranium asphodeloides*, *Heracleum platytaenium*, *Hypericum perforatum*, *Linum hypericifolium*, *Polygonum bistorta*, *Prunella vulgaris*, *Ranunculus kotschyi*, *Rubus hirtus*, *Salvia forskahlei*, *Thalictrum minus*, *Trifolium pratense*, *T. repens*, *Urtica dioica*.

Zoogeographical characterization

The zoogeographical characterization follows mainly the chorotype classification of the Near East fauna, proposed by Taglianti et al. (1999). After investigation of the recent geographic distribution of the species, listed above, they can be divided into the following groups:

1. Species distributed in two zoogeographical regions (Palaeartic and Oriental) - *Vulgichneumon saturatorius*.
2. Holarctic ranges have 2 species - *Cratichneumon viator* and *Stenichneumon culpator*.
3. With Palaeartic ranges are 7 species –transpalaeartic *Colpognathus celerator* and amphipalaeartic *Coelichneumon (Coelichneumon) bilineatus*, *Cratichneumon sexarmillatus*, *C. versator*, *Eupalamus wesmaeli*, *Homotherus varipes* and *Stenodontus marginellus*.
4. One species - *Virgichneumon callicerushas* Siberoeuropean range.
5. With Turano-Europeo-Mediterranean range is the species *Ichneumon proletarius*.
6. Turano-European ranges have *Anisobas cingulatellus*, *Coelichneumon (Coelichneumon) desinatorius*, *Colpognathus divisus*, *Heterischnus truncator*, *Vulgichneumon deceptor* and *Vulgichneumon suavis*.
7. With European ranges are the species *Diphyus pseudomercator*, *Heterischnus excavates*, *Ichneumon ignobilis*, *Phaeogenes alternans* and *Rictichneumon lombardi*.
8. One species - *Heterischnus schachti* at now is Turkish endemic.

Acknowledgements

The preparation of this article was supported by the Project Nr. BAP – 2012/234 (Atatürk Univeristy) and we are very thankful for it. We are indebted to Halil Çoruh (Erzurum) for collecting a few specimens.

References

- Constantineanu, M.I., 1965. Familia Ichneumonidae, subfamiliile Phaeogeninae si Alomyinae. (in Rumanian). Fauna Republicii Populare Romane, 9(5): 1-508.
- Çoruh, S., 2010. Composition, habitat distribution and seasonal activity of Pimplinae (Hymenoptera: Ichneumonidae) in North-East Anatolia region of Turkey. Anadolu Tarım Bilimleri Dergisi, 25(1): 28-36.
- Çoruh, S. & H. Özbek, 2005. New records of Cryptinae (Hymenoptera: Ichneumonidae) from Turkey with some hosts. Turkish Journal of Entomology, 29(3): 183-186.
- Çoruh, I. & S. Çoruh, 2008. Ichneumonidae (Hymenoptera) species associated with some umbelliferae plants occuring in Palandöken Mountains of Erzurum, Turkey. Turkish Journal of Zoology, 32: 121-124.
- Çoruh, S. & H. Özbek, 2011. New and little known some Ichneumonidae (Hymenoptera) species from Turkey with some ecological notes. Turkish Journal of Entomology, 35(1): 119-131.
- Çoruh, S. & H. Özbek, 2013. New and little known some Ichneumonidae species (Hymenoptera) from Turkey. Munis Entomology & Zoology, 8(1): 135-139.
- Çoruh, S., H. Özbek & J. Kolarov, 2005. A contribution to the knowledge of Ichneumonidae (Hymenoptera) from Turkey. Journal of the Entomological Research Society, 7(3): 53-57.
- Çoruh, S., H. Özbek, & M. Riedel, 2011. An additional contribution to the Ichneumoninae (Hymenoptera: Ichneumonidae) fauna of Turkey. Turkish Journal of Entomology, 35(3): 603-613.
- Çoruh, S., J. Kolarov & İ. Çoruh, 2014a. *Probles microcephalus* (Gravenhorst, 1829) a new record for the Turkish fauna (Hymenoptera: Ichneumonidae: Tersilochinae). Munis Entomology & Zoology, 9 (1): 451-456.
- Çoruh, S., J. Kolarov & İ. Çoruh, 2014b. Ichneumonidae (Hymenoptera) from Anatolia. II. Turkish Journal of Entomology, 38(3): 279-290.
- Çoruh, S., J. Kolarov & H. Özbek, 2014c. The fauna of Ichneumonidae (Hymenoptera) of eastern Turkey with zoogeographical remarks and host data. Journal of Insect Biodiversity, 2(16): 1-21.
- Çoruh, S., M. F. Gürbüz, J. Kolarov, M. Yurtcan, & A. Boncukçu, 2013: New and little known species of Ichneumonidae (Hymenoptera) for the Turkish fauna. Journal of the Entomological Research Society, 15(3): 71-83.
- Davis, P. H., 1965-1988: Flora of Turkey and the East Aegean Island. At the University Press, Edinburg, 10pp.
- Grissell, E. E., 1999. Hymenoptera biodiversity: some alien notions. American Entomology, 45: 235-244.
- Fahringer, J., 1922. Hymenopterologische Ergebnisse einer wissenschaftlichen Studienreise nach der Türkei und Kleinasien (mit Ausschluß des Amanusgebirges). Archiv für Naturgeschichte, A (88):149-222
- Fahringer, J. & H. Friese, 1921. Eine Hymenopteren-Ausbeute aus dem Amanusgebirge (Kleinasien und Nord-Syrien, südl. Armenien). Archiv für Naturgeschichte, A (87): 150-176.
- Heinrich, G., 1978. Eastern Palaearctic Ichneumoninae (in Russian). Academy of Sciences, Leningrad, 80 pp.
- Hilpert, H., 1992. Zur Systematik der Gattung Ichneumon Linnaeus, 1758 in der Westpalaearktis. Entomofauna, 6:1:389.
- Kolarov, J. 1986. New species of the subfamily Ichneumoninae (Hymenoptera: Ichneumonidae) new for the Bulgarian fauna. Acta Zoologica Bulgarica, 32: 19-29.
- Kolarov, J. & Ö. Çalmaşur, 2011. A study of Ichneumonidae (Hymenoptera) from North Eastern Turkey. Linzer Biologische Beiträge, 43(1): 777-782.
- Kolarov, J., İ. Çoruh, & S. Çoruh, 2014a. Ichneumonidae (Hymenoptera) from Anatolia. I. Linzer Biologische Beiträge, 46(2): 1517-1524.

- Kolarov, J., E. Yıldırım, S. Çoruh & M. Yüksel, 2014b: Contribution to the knowledge of the Ichneumonidae (Hymenoptera) fauna of Turkey, *Zoology in the Middle East*, 60(2): 154-161.
- Özbek, H., S. Çoruh, & J. Kolarov, 2003. A contribution to the Ichneumonidae fauna of Turkey. Subfamily Ichneumoninae (Hymenoptera). *Entomofauna*, 24: 157-163.
- Özer, Z., İ. Kadioğlu, H. Önen & H. Tursun, 2001. *Herbology (Weed Science)*. Gaziosmanpaşa University, Tokat, Turkey, 409 pp.
- Rasnitsyn, A. P. & U. V. Siitan, 1981. Ichneumoninae. In: D.R. Kasparyan (ed.), *A guide to the identification of insects of the European part of the USSR. Vol. 3. Hymenoptera*. Nauka Press, Moscow: Nauka Press. (in Russian)
- Riedel, M., 2008. Die Coelichneumon Arten (Hymenoptera, Ichneumonidae, Ichneumoninae) des Biologiezentrums Linz, Austria. *Linzer Biologische Beiträge*, 40: 1839-1859
- Riedel, M., S. Çoruh, & H. Özbek, 2010. Contribution to the Ichneumoninae (Hymenoptera, Ichneumonidae) fauna of Turkey, with description of three new species. *Turkish Journal of Entomology*, 34: 133-156.
- Riedel, M., S. Çoruh, & H. Özbek, 2011. New Records and little known Ichneumoninae (Hymenoptera: Ichneumonidae) from Turkey, with description of the male of *Melanichneumon glaucatorlops* Heinrich. *Journal of The Entomological Research Society*, 13(2): 105-112.
- Riedel, M., 2012. Revision der westpaläarktischen Arten der Gattung *Coelichneumon* Thomson Hymenoptera: Ichneumonidae: Ichneumoninae). *Linzer Biologische Beiträge*, 44: 1477-1611.
- Taglianti, A. V., P. A. Audisio, M. Biondi, M. A. Bologna, G. M. Carpaneto, A. de Biase, S. Fattorini, E. Piattella, R. Sindaco, A. Vrnchi & M. Zapparoli, 1999. A proposal for a chorotype classification of the Near East fauna, in the framework of the Western Palearctic region. *Biogeographia*, 20: 31-59.
- Yu, D.S., K. van Achterberg & K. Horstmann, 2012. *Taxapad 2012. Ichneumonoidae 2011*. Database on flash drive. (Web page: www.taxapad.com), Ottawa, Ontario