Acta entomologica serbica, 2016, 21: 123-132

UDC 595.792(560)
DOI: 10.5281/zenodo.198296

FAUNISTIC NOTES ON THE ICHNEUMONIDAE (HYMENOPTERA) OF TURKEY WITH A NEW RECORD

SALIHA ÇORUH[1] and JANKO KOLAROV[2]

1 Atatürk University, Faculty of Agriculture, Department of Plant Protection, 25240 Erzurum, Turkey
E-mail: spekel@atauni.edu.tr
2 University of Plovdiv, Faculty of Pedagogy, 24 Tsar Assen Str., 4000 Plovdiv, Bulgaria

Abstract

The present contribution is based upon ichneumonids collected from the northeastern part of Turkey (Bayburt, Erzurum and Kars) in 2007-2009. A total of 7 species belonging to the subfamilies Anomaloninae, Campopleginae, Cremastinae, Cryptinae, Ctenopelmatinae and Tryphoninae have been identified. Among them, *Chirotica insignis* (Gravenhorst, 1829) is a new record for Turkish fauna. *Anomalon cruentatum* (Geoffroy, 1785) and *Netelia* (*Netelia*) *dilatata* (Thomson, 1888) are very common in the study area. New data on the distribution of 6 known species are presented. Additionally, a short zoogeographical characterization is given for each of the species.

KEY WORDS: Hymenoptera, Ichneumonidae, new records, zoogeographical characterization, Turkey.

Introduction

The Hymenoptera are one of the four largest orders of insects, with over 152677 described species around the world (Zhang, 2013). All ichneumonids are parasitoids on various groups of insects and even spiders. They develop by feeding as larvae on a single immature host insect, which is killed by the ichneumonid (Gauld & Fitton, 1987).

Ichneumonids are common and conspicuous in all world terrestrial biomes, from the Arctic tundra, through equatorial rainforests, to sub-Antarctic islands. They are found in suburban gardens and pristine forests, in deserts and on waterside vegetation. Although ichneumonids are abundant in almost every habitat, some authors considered their species-richness to be highest in the northern temperate regions (Owen & Owen, 1974; Janzen, 1981; Gauld *et al*., 1992).

Studies of the Ichneumonidae fauna of Turkey have increased, particularly in the last two and a half decades. With the contributions of Çoruh & Kolarov, 2013; Çoruh & Özbek, 2013; Çoruh *et al*., 2013; Çoruh *et al*., 2014, 2014 b, 2014c; Kolarov *et al*., 2014a, 2014 b, 2014c; Özdan, 2014; Riedel *et al*., 2014; Yaman, 2014; Kolarov et al., 2015; Yurtcan and Kolarov, 2015; Kolarov et al., 2016 and Çoruh & Çalmaşur, 2016, the Ichneumonidae fauna of Turkey comprised 1173 species in 287 genera and 21 subfamilies. This number is increased to 1174 species with the present paper.

The aim of this study is to contribute to the record of Ichneumonidae fauna in Turkey as well as the world. The ichneumonid samples were collected by simple hand-netting and Malaise traps in different localities in northeastern Turkey (Bayburt, Erzurum and Kars) during 2007-2009 (Fig. 1). Species are listed in alphabetical order according the recent Interactive Catalogue of World Ichneumonidae (Yu *et al*., 2012). The distributional records from this catalogue were also used. At present, the collected materials are preserved in the Entomology Museum Erzurum, Turkey (EMET).

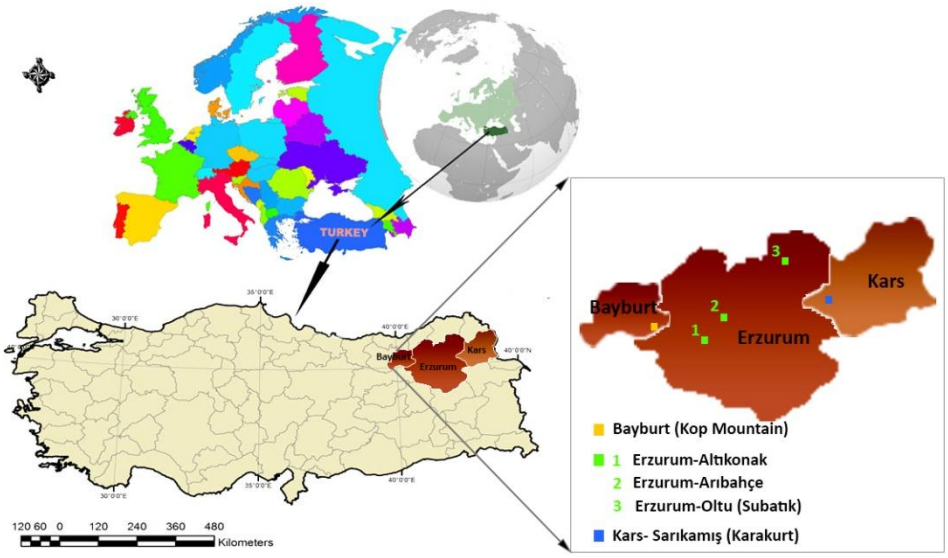

Figure 1. Map of study area.

In total, 7 species in 7 genera belonging to the subfamilies Anomaloninae, Campopleginae, Cremastinae, Cryptinae, Ctenopelmatinae and Tryphoninae from different provinces in northeastern Turkey are listed. The collection data, locations, general and Turkish distribution, host and associate plants, are given for each species. The newly recorded species is marked by an asterisk (*) in the text.

Results

In the present study a total of 7 ichneumonid species were recognized.

Subfamily Anomaloninae Viereck, 1918

Anomalon cruentatum (Geoffroy, 1785)

Material examined: Bayburt, Kop Mt., 2400 m a.s.l., 13.08.2007, 9♀♀, leg: S. Çoruh. Erzurum, Arıbahçe, 2300 m a.s.l., 20.07.2008, 14♂♂, 6♀♀, leg: Ö. Çalmaşur. Kars, Sarıkamış, Karakurt, 1500 m a.s.l., 8-14.09.2009, 7♀♀ (from Malaise trap).

Distribution in Turkey: Afyon, Muğla (Kolarov *et al*., 2002), Isparta (Gürbüz, 2004; Gürbüz, 2005; Gürbüz *et al*., 2009a, 2009b), Antalya, Bayburt, Bingöl, Diyarbakır, Erzincan, Erzurum, Iğdır, Kahramanmaraş, Kars (Çoruh *et al*., 2004), Adıyaman, Batman, Diyarbakır, Elazığ, Malatya, Mardin (Akkaya, 2005), Erzurum, Tunceli (Kolarov *et al*., 2014c).

Hosts: Coleoptera, Tenebrionidae: *Gonocephalum rusticum* (Olivier). Lepidoptera, Noctuidae: *Agrotis ipsilon* (Hufnagel); Notodontidae: *Cerura palestinensis* Bartel, *Ptilodon capucina* (L.) (Okyar & Yurtcan, 2007; Yu *et al*., 2012) on *Anthriscus sylvestris*, *Peucedanum oreoselinum* (Yu *et al*., 2012).

Distribution in the world: Palaearctic and Oriental regions.

Subfamily Campopleginae Foerster, 1869

Campoletis viennensis (Gravenhorst, 1829)

Material examined: Bayburt, Kop Mt., 2400 m a.s.l., 13.08.2007, 1♀, leg. Ö. Çalmaşur.

Distribution in Turkey: Adana (Kolarov & Beyaslan, 1995), Bayburt (Özbek *et al*., 2000, Çoruh *et al*., 2014b), Hatay (Çoruh *et al*., 2013; Çoruh *et al*., 2014b).

Hosts: Lepidoptera, Crambidae: *Ostrinia nubilalis* (Hübner); Geometridae: *Thera juniperata* (L.); Noctuidae: *Acosmetia caliginosa* (Hübner), *Athetis furvula* (Hübner); Pyralidae: *Ephestia kuehniella* Zeller, *Plodia interpunctella* (Hübner); Tortricidae: *Lobesia littoralis* (Westwood & Humphreys) (Yu *et al*., 2012) on *Angelica sylvestris*, *Erica* sp., *Peucedanum oreoselinum*, *Picea* sp. (Yu *et al*., 2012).

Distribution in the world: Palaearctic region.

Subfamily Cremastinae Förster,1869

Pristomerus luridus Kokujev, 1905

Material examined: Kars, Sarıkamış, Karakurt, 1500 m a.s.l., 8-4.09.2009, 1♀ (from Malaise trap).

Distribution in Turkey: Erzurum (Pekel & Özbek, 2000; Çoruh *et al*., 2014b).

Distribution in the world: Palaearctic region.

Subfamily Cryptinae Kirby, 1837

Cryptus viduatorius Fabricius, 1804

Material examined: Erzurum, Oltu, Subatık, 1350 m a.s.l., 17.05.2009, 1♀, leg. S. Çoruh.

Distribution in Turkey: Istanbul (Kolarov, 1995), Erzurum (Çoruh & Çoruh, 2008; Çoruh *et al*., 2014b), Rize (Çoruh *et al*., 2014a).

Hosts: Coleoptera, Cerambycidae: *Saperda populnea* (L.) Lepidoptera, Crambidae: *Loxostege sticticalis* (L.); Geometridae: *Alsophila aescularia* (Denis & Schiffermüller); Noctuidae: *Phlogophora meticulosa* (L.);

Tortricidae: *Sparganothis pilleriana* (Denis & Schiffermüller) (Yu *et al*., 2012) on *Anethum graveolens*, *Angelica sylvestris*, *Daucus carota*, *D. carota sativus*, *Euphorbia nicaeensis, E. virgata*, *Ferula communis*, *Heracleum sphondylium*, *Medicago sativa*; *Peucedanum oreoselinum* (Çoruh & Çoruh, 2008; Yu *et al*., 2012).

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

Distribution in the world: Palaearctic region.

**Chirotica insignis* (Gravenhorst, 1829)

Material examined: Kars, Sarıkamış, Karakurt, 1500 m a.s.l., 16-23.08.2009, 1♀ (from Malaise trap).

Host: Lepidoptera, Psychidae: *Canephora hirsuta* (Yu *et al*., 2012).

The main characters of the species are as follow: head and thorax almost completely red, only malar space, ocellar field, and parts beside scutellum and postscutellum darker (Fig. 2a). Malar space 1.3x as long as base of mandible. Malar space in profile slightly rounded. Face beneath the epistoma distinctly rugose. Frons with distinct transversal striation. Base of flagellum slender, first flagellomere 5.3x as long as wide (Fig. 2b). Flagellum red. Pronotum laterally with longitudinal rugae. Mesoscutum completely rugose, on median field more irregularly, on lateral fields transversally rugose. Front wing without areolet (Fig. 2c). Legs slender, femora III about 5.0x as long as wide. Metasomal terga 2 and 3 almost to apex strongly aciculate, in the apical fifth with fine and scattered punctures and smooth surface. Legs red, coxae brownish. Tibia III completely red. Base of metasoma brown, only a spot on postpetiolus reddish.

Distribution in the world: Western Palaearctic region.

Subfamily Ctenopelmatinae Forster, 1869

Pion fortipes (Gravenhorst, 1829)

Material examined: Erzurum, Oltu, Subatık, 1350 m a.s.l., 1♀, 17.05.2009, leg. S. Çoruh.

Distribution in Turkey: Istanbul (Kolarov, 1995), Erzurum (Özbek *et al*., 2000; Çoruh *et al*., 2014b), Isparta (Gürbüz *et al*., 2009 a, 2009 b).

Hosts: Hymenoptera, Argidae: *Arge rustica* (L.); Tenthredinidae: *Tenthredopsis excisa* (Thomson), *Tenthredopsis litterata* (Geoffroy) (Yu *et al*., 2012).

Distribution in the world: Palaearctic region.

Subfamily Tryphoninae Shuckard, 1840

Netelia dilatata (Thomson, 1888)

Material examined: Erzurum, Aziziye, Arıbahçe, 2300 m a.s.l., 20.07.2008, 11♂♂, leg. S. Çoruh; Atlıkonak, 2200 m a.s.l., 27.06.2008, 1♂, leg. Ö. Çalmaşur.

Distribution in Turkey: Erzurum (Kolarov *et al*., 1999), Ankara, Konya (Özdemir, 2001), Isparta (Gürbüz & Kolarov, 2006; Gürbüz *et al*., 2009b), Elazığ, Eskişehir, Malatya, Sivas (Yaman, 2014).

Host: on *Chaerophyllum temulum*, *Reseda lutea* (Yu *et al*., 2012).

Distribution in the World: Palaearctic region.

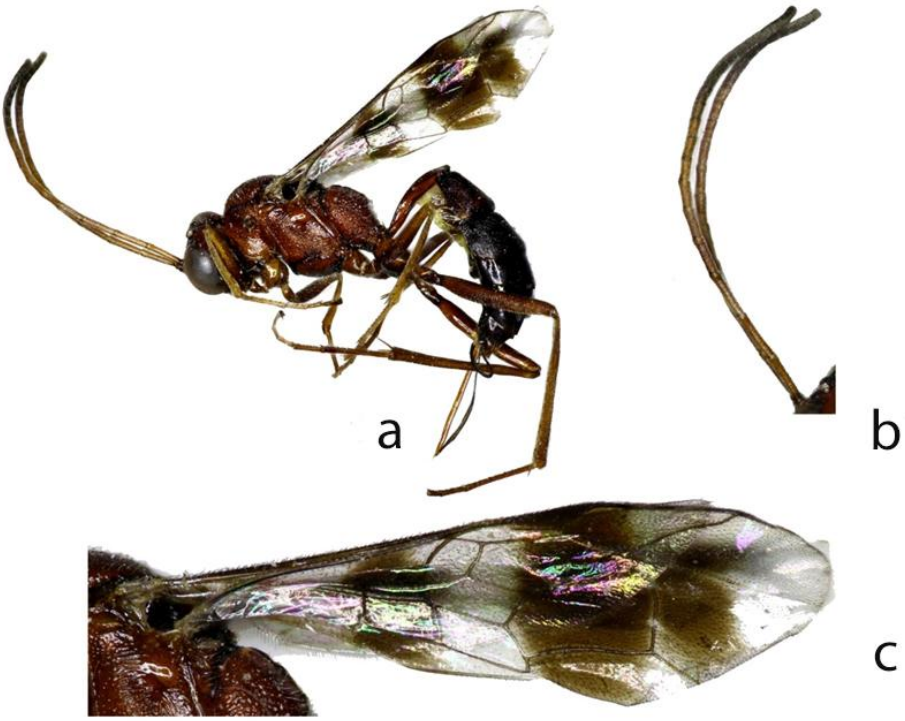

Figure 2. *Chirotica insignis* (Gravenhorst, 1829): a) general heading; b) antenna; c) fore wing.

Discussion

Ichneumonidae is the biggest hymenopteran family comprising around 1579 genera and 24281 described species in the world (Yu *et al*., 2012). The Ichneumonidae fauna of Turkey was not studied in detail until the 1990s. In the catalogue of Kolarov (1995), 383 species were listed. Since then many studies have been conducted by the authors of this paper as well as some others, and 1173 species were recognized in the last 25 years. With the present contribution, the number of Ichneumonidae for Turkish fauna is increased to 1174.

At present, about 4.8% of the all described ichneumonids from around the world are from Turkey (Fig. 3).

Turkey has an important topographic and climatic structure with its position at the junction of Asia, Africa and Europe. Every year several species are added to the Ichneumonidae fauna of Turkey.

Analysis of the distribution of Turkish Ichneumonidae reveals that currently 542 species occur in the eastern part of Anatolia and among them 261 are new records for Turkey. This means that the number of Ichneumonidae species recorded from eastern Anatolia amounts to 46% of the total number determined in Turkey (Fig. 4).

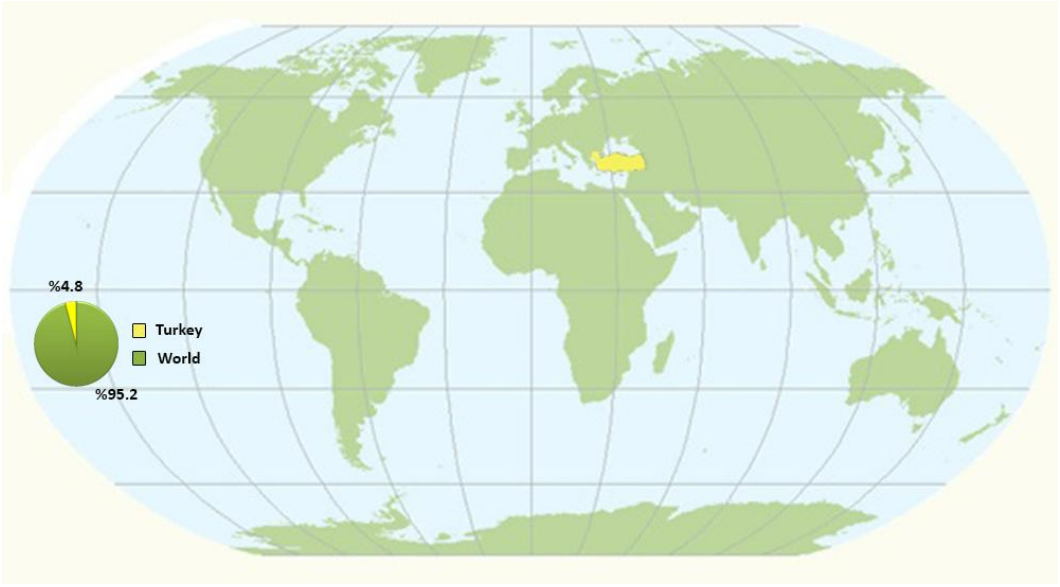

Figure 3. The percentage of determined Ichneumonidae species in Turkey and the world.

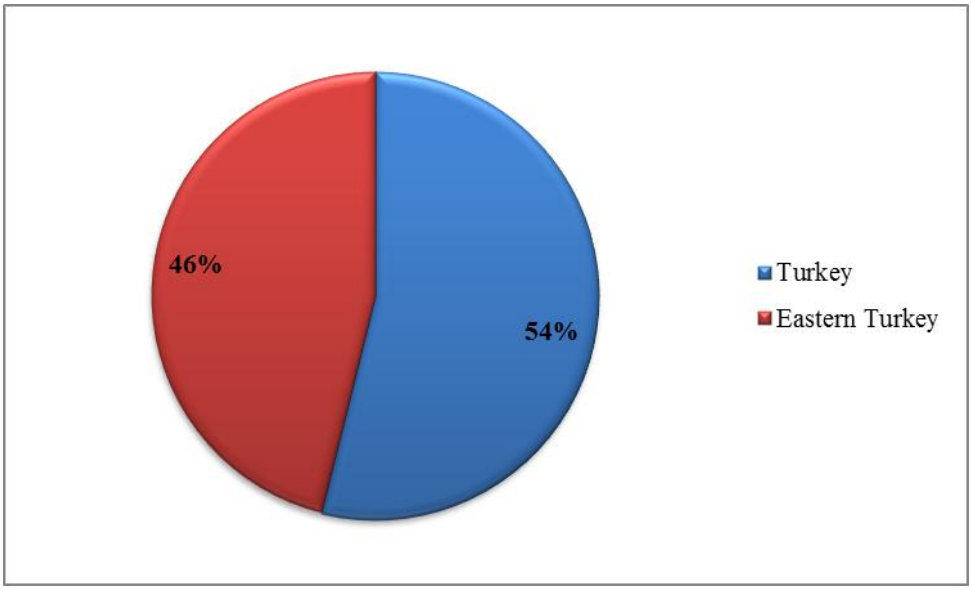

Figure 4. Distribution of determined Ichneumonidae species in Turkey and Eastern Turkey.

In the present study, 7 species in 7 genera belonging to the subfamilies Anomaloninae Campopleginae, Cremastinae, Ctenopelmatinae and Tryphoninae were recognized. Of these, *Chirotica insignis* is new record for Turkey, and *Pristomerus luridus* is newly recorded from Kars Province.

Among the species determined, *Anomalon cruentatum*, with 36 individuals, and *Netelia* (*Netelia*) *dilatata*, with 12 individuals, were the most widely distributed species in the researched areas (Tab. I).

Table I. Individual numbers (IN), altitude (A), collection months (CM), locations (CA), collection techniques (CT), distribution in Turkey (DT), plant visited (PV), distribution in the world (DW) of studied Ichneumonidae species.

Names of Taxa	IN	(A)	(CM)	(CA)	(CT)	(DT)	PV	(DW)
SUBFAMILY ANOMALONINAE								
1. *Anomalon cruentatum*	36	C, F	Jul, Aug, Sep	Bayburt, Erzurum, Kars	Insect net Malaise trap	Adıyaman, Afyon, Antalya, Batman, Bayburt, Bingöl, Diyarbakır, Erzincan, Erzurum, Iğdır, Isparta, Kahramanmaraş, Kars, Elazığ, Muğla Malatya, Mardin		ORR, PR
SUBFAMILY CAMPOPLEGINAE								
2. *Campoletis viennensis*	1	F	Aug	Bayburt	Insect net	Adana, Bayburt, Hatay		PR
Subfamily Cremastinae								
Pristomerus luridus	1	B	Sep	Kars	Malaise trap	Erzurum		PR
SUBFAMILY CRYPTINAE								
Cryptus viduatorius	1	B	March	Erzurum	Insect net	Erzurum	X	PR
3. *Chirotica insignis*	1	B	Aug	Kars	Malaise trap	New record		NA
SUBFAMILY CTENOPELMATINAE								
Pion fortipes	1	B	March	Erzurum	Insect net	Isparta, Istanbul, Erzurum		PR
SUBFAMILY TRYPHONINAE								
Netelia dilatata	12	E, F	Jun, Jul	Erzurum	Insect net	Ankara, Erzurum Elazığ, Eskişehir, Konya, Isparta Malatya, Sivas		PR

Collection altitude (CA) (meters): A: 1000-1250 m, B: 1251-1500 m, C: 1501-1750, D: 1751-2000 m, E: 2001-2250, F: 2251-2500 m. Collection months (CM): Mar: March, Apr: April, May: May, Jun: June, Jul: July, Aug: August, Sep: September, Oct: October). Distribution in the world (DW): NA: North Africa, ORR: Oriental region, P: Palaearctic region.

With one individual each, *Campoletis viennensis*, *Pristomerus luridus*, *Cryptus viduatorius*, *Chirotica insignis* and *Pion fortipes* were rare species in the researched area (Table 1). Moreover, only female *Campoletis viennensis*, *Pristomerus luridus*, *Cryptus viduatorius*, *Chirotica insignis* and *Pion fortipes* were found, whereas all the samples of *Netelia dilatata* were male.

Most of samples were collected at the flowering stage of plants either by net or Malaise trap (Table 1). A Malaise trap was placed near the Aras valley (Kars), which is a gateway region with many of the plants. Many insects were caught with this trap.

Samples were collected from different altitudes ranging from 1350 to 2400 m.

Plant-insect relationships are of great importance to ecosystems (Petanidou & Lamborn, 2005). In this study, *Cryptus viduatorius* was collected while feeding on *Daucus carota* L. This species was previously collected on both *D. carota* and *Ferula communis* L. (Çoruh & Çoruh, 2008). We observed that *D. carota* was very attractive to ichneumonids. *Cryptus viduatorius* is active in May-October (Tab. I).

Zoogeographical characterization

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

1. *Anomalon cruentatum* has the largest ranges in Palaearctic and Oriental regions.

2. *Chirotica insignis* is distributed only in the Western Palaearctic.

3. The other species − *Campoletis viennensis*, *Pristomerus luridus*, *Cryptus viduatorius, Pion fortipes and Netelia dilatata* − have Palaearctic ranges.

Acknowledgements

The authors are grateful to Dr. Önder Çalmaşur (Atatürk University, Turkey) for collecting some of the specimens. The present study was supported by the Project Nr. BAP – 2007/108 (Atatürk University).

References

Akkaya, A. (2005). Güneydoğu ve Doğu Anadolu Bölgesi'nde Anomaloninae, Banchinae, Collyriinae, Ophioninae ve Pimplinae (Hymenoptera: Ichneumonidae) türlerinin sistematik yönden incelenmesi. Dicle Üniversitesi, Diyarbakır, Turkey, 98 pp. (in Turkish).

Çoruh, S. & Çalmaşur, O. (2016). A new and additional records of the Ichneumonidae (Hymenoptera) from Turkey. Turkish Journal of Zoology, 40, (in press).

Çoruh, I. & Çoruh, S. (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., Gürbüz, M. F., Kolarov, J., Yurtcan, M. & Boncukçu, A. (2013). New and little known species of Ichneumonidae (Hymenoptera) for the Turkish Fauna. Journal of the Entomological Research Society, 15: 71–83.

Çoruh, S. & Kolarov, J. (2013). New data on Turkish Acaenitinae (Hymenoptera: Ichneumonidae) with description of a new species. Zoology in the Middle East, 59, 261–265.

Çoruh, S., Kolarov, J. & Çoruh, I. (2014a). Ichneumonidae (Hymenoptera) from Anatolia. II. Turkish Journal of Entomology, 38, 279–290.

Çoruh, S., Kolarov, J. & Özbek, H. (2014b). The fauna of Ichneumonidae (Hymenoptera) of eastern Turkey with zoogeographical remarks and host data. Journal of Insect Biodiversity, 2, 1–21.

Çoruh, S., Kolarov, J. & Çoruh, I. (2014c). Probles microcephalus (Gravenhorst, 1829) a new record for the Turkish fauna (Hymenoptera: Ichneumonidae: Tersilochinae). Munis Entomology & Zoology, 9, 451–456.

Çoruh, S., Özbek, H. & Kolarov, J. (2004). New and little known Anomaloninae (Hymenoptera, Ichneumonidae) from Turkey. Linzer Biologische Beitrage, 36, 1199–1204.

Çoruh, S. & Özbek, H. (2013). New and little known some Ichneumonidae species (Hymenoptera) from Turkey. Munis Entomology & Zoology, 8: 135–139.

Gauld, I. D. & Fitton, M. G. (1987). Sexual dimorphism in Ichneumonidae: a response to Hurlbutt. Biological Journal of the Linnean Society, 31, 291–300.

Gauld, I. D, Gaston, K. J. & Janzen, D. H. (1992). Plant allelochemicals, tritrophic interactions and the anomalous diversity of tropical parasitoids: the "nasty" host hypothesis. Oikos, 65, 353-357.

Gürbüz, M. F. (2004). Isparta İli Ichneumonidae (Hymenoptera) Familyası Türleri Üzerine Faunistik ve Sistematik Araştırmalar. Süleyman Demirel Üniversitesi, Isparta, Turkey (in Turkish).

Gürbüz, M. F. (2005). A Survey of the Ichneumonidae (Hymenoptera) of Isparta in Turkey. Linzer Biologische Beitrage, 39, 1809-1912.

Gürbüz, M. F., Aksoylar, Y. & Boncukcu, A. (2009a). A faunistic study on Ichneumonidae (Hymenoptera) in Isparta, Turkey. Linzer Biologische Beitrage, 41, 1969-1984.

Gürbüz, M. F., Kırtay, H. & Birol, O. (2009b). A study of Ichneumonidae (Hymenoptera) of Kasnak oak forest nature reserve in Turkey with new records. Linzer Biologische Beitrage, 41, 1985-2003.

Gürbüz, M. F., & Kolarov, J. (2006). A study of the Turkish Ichneumonidae (Hyenoptera). II. Tryphoninae. Journal of the Entomological Research Society, 8, 21-25.

Janzen, D. H. (1981). The peak in North American ichneumonid species-richness lies between 38° and 42° N. Ecology, 62, 532-537.

Kolarov, J. (1995). A catalogue of the Turkish Ichneumonidae (Hymenoptera). Entomofauna, 16, 137-188.

Kolarov, J., & Beyarslan, A. (1995). New and rare Turkish Campopleginae (Hymenoptera, Ichneumonidae). III. National Scientific Conference of Entomology, 18-20 Sept, 1995, Sofia, Bulgaria (pp. 18-21).

Kolarov, J., Çoruh, S. & Çoruh, I. (2014a). Ichneumonidae (Hymenoptera) from Anatolia. III. Turkish Journal of Entomology, 38, 377-388.

Kolarov, J., Çoruh, I. & Çoruh, S. (2014b). Ichneumonidae (Hymenoptera) from Anatolia. I Linzer Biologische Beitrage, 46, 1517-1524.

Kolarov, J., Çoruh, S. & Çoruh, I. (2015). Oxytorinae, a new subfamily for the Turkish fauna (Hymenoptera: Ichneumonidae). Turkish Journal of Zoology, 39, 832-835.

Kolarov, J., Çoruh, S., & Çoruh, I. (2016). A study of Ichneumonidae (Hymenoptera) from North Eastern Anatolia I. Turkish Journal of Zoology, 40, 40-56.

Kolarov, J., Özbek, H. & Yıldırım, E. (1999). New distributional data of the Turkish Ichenumoinidae (Hymenoptera). I. Pimplinae and Tryphoninae. Journal of the Entomological Research Society, 1, 9-15.

Kolarov, J., Yıldırım, E., Çoruh, S. & Yüksel, M. (2014c). Contribution to the knowledge of the Ichneumonidae (Hymenoptera) fauna of Turkey. Zoology in the Middle East, 60, 154-161.

Kolarov, J., Yurtcan, M. & Beyarslan, A. (2002). Ichneumonidae species of the Turkish Aegean Region. Parasitic wasps: evolution, systematics, biodiversity and biological control. International Symposium, 14–17 May 2001, Agroinform, Koszeg-Hungary (pp. 299-305).

Okyar, Z. & Yurtcan, M. (2007). Phytophagous Noctuidae (Lepidoptera) of the Western Black Sea Region and their ichneumonid parasitoids. Entomofauna, 28, 377-388.

Özdan, A. (2014). Gelincik Dağı Tabiat Parkı ve Kovada Gölü Milli Parkı (Isparta) Ichneumonidae (Hymenoptera) Faunası. Süleyman Demirel Üniversitesi, Isparta, Turkey.

Özdemir, Y. (2001). The species of Diplazontinae and Tryphoninae (Hymenoptera: Ichneumonidae) from Central Anatolia. Turkish Journal of Entomology, 25, 183-191.

Özbek, H., Pekel, S. & Kolarov, J. (2000). New distributional data of the Turkish Ichneumonidae (Hymenoptera) II. Ctenopelmatinae and Campopleginae. Journal of the Entomological Research Society, 2, 17-24.

Owen, D. F. & Owen, J. (1974). Species diversity in temperate and tropical Ichneumonidae. Nature, 249, 583-584.

Pekel, S. & Özbek, H. (2000) Erzurum ili Cremastinae (Hymenoptera: Ichneumonidae) altfamilyası üzerinde faunistik ve sistematik bir çalışma. Turkish Journal of Entomology, 24, 215-228.

Petanidou, T. & Lamborn, E. (2005). A land for flowers and bees: studying pollination ecology in Mediterranean communities. Plant Biosystems, 139, 279-294.

Riedel, M., Kolarov, J., Çoruh, S. & Özbek, H. (2014). A contribution to the Mesochorinae (Hymenoptera: Ichneumonidae) of Turkey. Zoology in the Middle East, 60, 217-221.

Taglianti, A.V., Audisio, P. A ., Biondi, M., Bologna, M. A., Carpaneto, G. M., Biase, A., Fattorini, S., Piattella, E., Sindaco, R., Vrnchi, A. & Zapparoli, M. (1999). A proposal for a chorotype classification of the Near East fauna, in the framework of the Western Palearctic region. Biogeographia, XX, 31-59.

Yaman, G. (2014). Türkiye Tryphoninae (Hymenoptera: Ichneumonıdae) türlerinin kontrol listesi. Trakya Universitesi, Edirne, Turkey (in Turkish).

Yu, D., Achterberg, C. van & Horstmann, K. (2012). Taxapad 2012, Ichneumonoidea 2011. Database on flash-drive. www.taxapad.com, Ottawa, Ontario, Canada.

Yurtcan, M. & Kolarov, J. (2015). A new species and additional records of the genus Collyria Schiodte, 1839 (Hymenoptera, Ichneumonidae) from Turkey. Zootaxa, 3985, 17-124.

Zhang, Z. Q. (2013). Phylum Arthropoda von Siebold, 1848. In: Zhang ZQ, Editors. Animal biodiversity: An outline of higher level classification and survey of taxonomic richness. Zootaxa 3703: 1-82.

ФАУНИСТИЧКИ ПРИКАЗ ICHNEUMONIDAE (HYMENOPTERA) ТУРСКЕ СА НОВИМ НАЛАЗИМА

САЛИХА ЧОРУХ и ЈАНКО КОЛАРОВ

Извод

У овом прилогу су обрађене Ichneumonidae сакупљене у североисточном делу Турске на локалитетима: Бајбурт, Ерзурум и Карс у периоду од 2007. до 2009. године. Идентификовано је седам врста које припадају подфамилијама: Anomaloninae, Campopleginae, Cremastinae, Cryptinae, Ctenopelmatinae и Tryphoninae. *Chirotica insignis* (Gravenhorst, 1829) је нова врста за фауну Турске. *Anomalon cruentatum* (Geoffroy, 1785) и *Netelia* (*Netelia*) *dilatata* (Thomson, 1888) су веома честе у истраживаном подручју. Обрађени су нови подаци о распрострањењу шест утврђених врста. Посебно је урађена зоогеогфска каратактеристика за сваку врсту.

Received February 16th, 2016
Accepted: May 26th, 2016