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Taxonomical and biogeographical evaluation of the subfamily Ichneumoninae (Hymenoptera: Ichneumonidae) in Turkey

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Abstract

This study evaluated to faunistical, ecological, zoogeographical distribution and hosts data of specimens belonging to the subfamily Ichneumoninae (Hymenoptera: Ichneumonidae) collected from different provinces in Turkey between 1990 and 2015. As a result of the study, 10 tribus, 61 genera and 215 species were identified. Samples were collected last twenty five years or recorded in this time from seven different regions of Turkey. With present knowledge, among them, *Coelichneumon paraviolaceiventris* RIEDEL, *Coelichneumon rufigaster* RIEDEL, *Heterischnus schachti* DILLER, *Magwengiella flavescens* BACHMAIER & DILLER and *Ichneumon sexcinctoides* RIEDEL, ÇORUH & ÖZBEK are endemic for Turkey. For each species details of composition, biogeographical and zoogeographical data, altitudinal distribution, seasonal dynamics, individual diversity, available host data, plants visited by adults and the first record of the species from Turkey are summarised.

Zusammenfassung

Vorliegende Arbeit behandelt die Ökologie Faunistik, Biogeografie und Wirtsdaten zu Vertretern der Unterfamilie Ichneumonidae (Hymenoptera, Ichneumonidae), die aus Aufsammlungen in verschiedenen türkischen Provinzen in den Jahren 1990 bis 2015 stammen. Als Ergebnis konnten 10 Triben, 61 Gattungen und 215 Arten nachgewiesen werden. Aus heutiger Sicht sind die Arten *Coelichneumon paraviolaceiventris* RIEDEL, *Coelichneumon rufigaster* RIEDEL, *Heterischnus schachtii* DILLER, *Magwengiella flavescens* BACHMAIER & DILLER und *Ichneumon sexcinctoides* RIEDEL, ÇORUH & ÖZBEK endemisch in der Türkei. Zu allen angeführten Arten werden unterschiedliche Angaben zu Biogeografie, Höhenverbreitung, Phänologie, Wirtsdaten, Blütenbesuch bzw. zu Neunachweisen in der Türkei angeführt.

Introduction

Parasitoid Hymenoptera can act as useful biodiversity indicators, as their abundance and richness may reflect the diversity of other arthropods (ANDERSON et al. 2011). Ichneumonidae is the biggest hymenopteran family including 1.579 genera and 24.281 described species (YU et al. 2012). However, it should be emphasized that every year many new species are added to this number.

Number of species Ichneumonidae in Turkey was recorded 1.056 in Taxapad (YU et al. 2012). As a result of many studies performed, we found several species so far unknown in Turkey. With the below mentioned contributions (ÇORUH & KOLAROV 2013, ÇORUH & ÖZBEK 2013, ÇORUH et al. 2013, ÇORUH et al. 2014a,b,c, KOLAROV et al. 2014a,b,c, ÖZDAN 2014, RIEDEL et al. 2014, YAMAN 2014, KOLAROV et al. 2015, YURTCAN & KOLAROV 2015, KOLAROV et al. 2016) the numbers of Ichneumonidae fauna of Turkey reached to about 1.172 species.

The subfamily Ichneumoninae is a worldwide subfamily of the parasitic wasp family Ichneumonidae. This is the second largest subfamily of Ichneumonidae with about 424 genera and 4300 species (YU et al. 2012). This group are koinobiont or idiobiont endoparasitoids of Lepidoptera. Ichneumonines are often large, conspicuous colourful insects. They have a 5-sided areolet, a dorso-ventrally flattened abdomen, a long sternaulus and the clypeus is truncate exposing the labium (RASNITSYN & SIITAN 1981)

Up to 1995 (KOLAROV 1995), only 65 ichneumonine species belonging to 27 genera have been documented (KOHL 1905, ROMAN 1910, FAHRINGER 1921-1922, SCHMIEDEKNECHT 1927, HEINRICH 1929, MEYER 1933, SCHIMITSCHEK 1944, SEDIVY 1959, IREN 1960, TOWNES et al. 1965, ONAT 1974, HEINRICH 1978, SOYDANBAY 1978, AUBERT 1981, KASPARYAN 1981, KHAN & ÖZER 1984, SAWONIEWICZ 1985, BACHMAIER & DILLER 1985, KOLAROV 1989, AVCI & ÖZBEK 1990, ÖNCÜER 1991, HILPERT 1992, AUBERT 1993, KOLAROV 1994). After 1995, with the below mentioned contributions (ÖZDEMİR 1996, YURTCAN et al. 1999, ÇORUH et al. 2002, ÖZBEK et al. 2003; ÇORUH et al. 2005, KOLAROV 2007, ÇORUH & ÖZBEK 2008, ÇORUH & KESDEK 2008, RIEDEL 2008, GÜRBÜZ

et al. 2008, RIEDEL et al. 2010, ÇORUH et al. 2011; EROĞLU et al. 2011, RIEDEL et al. 2011, ÇORUH & ÖZBEK 2013, KOLAROV et al. 2014a,b, ÖZDAN 2014) the numbers of Ichneumoninae fauna of Turkey reached to 215 species and 61 genera.

The aims of this study were as follows:

- i) To contribute seasonal dynamics, altitudinal positions, individual diversities,
- ii) To establish zoogeographical distributions,
- iii) To expand hosts and plants visited by adults of the Ichneumoninae species.

Materials and Methods

Adult specimens of ichneumonines were collected from various habitats of Anatolia (Fig. 1) using sweeping nets, malaise and light traps. Also a small portion of ichneumonid samples were obtained as parasitoid from different hosts under laboratory conditions. In addition to all these, two species were taken under stones.

Data taxonomic categories are listed in the alphabetic order according the recent Interactive Catalogue of World Ichneumonidae (YU et al. 2012). The distributional records were also used from this catalogue. Whole data of faunistic composition, ecological properties and zoogeographical distributions, visited plants by adults some species and hosts insects of ichneumonine species are given with tables and graphs.

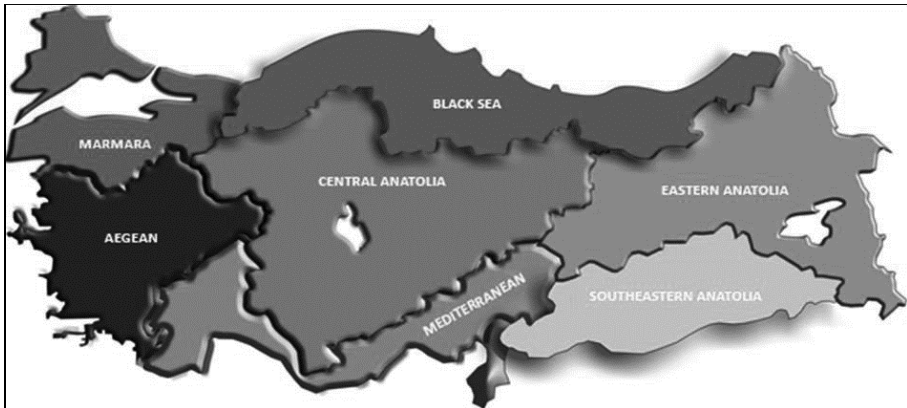


Fig. 1: The geographical regions of insects collected.

Result and Discussion

Ichneumoninae species used in this study were collected from Turkey between 1990 and 2015. Results of over 25 years were evaluated by different situations:

Faunistic evaluations:

So far a total, ten tribus, 61 genera and 215 species were recognized in Turkey. Among them, six genera and 20 species belong to tribe Alomyini FÖRSTER; a genus and a species with a tribes Ctenocalini HEINRICH, Eurylabini HEINRICH, Joppocryptini VIRECK and Zimmeriini HEINRICH; eight genera and 34 species belong to tribe Heresiarchini ASHMEAD; 31 genera and 128 species tribe Ichneumonini LATREILLE; four genera and 11 species tribe Listrodromini FÖRSTER; six genera and 14 species tribe Phaeogenini FÖRSTER, three genera and four species tribe Platylabini BERTHOUMIEU were recorded. Compared to the number of species in all tribus, tribe Ichneumonini species were found to be more common with their presence Turkey (Fig. 2). Besides, *Herpestomus brunnicornis* (GRAVENHORST) (with 195 individuals), *Amblyjoppa fuscipennis* (WESMAEL) (107), *Coelichneumon leucocerus* (GRAVENHORST) (91), *Diphyus mercatorius* s.str. (FABRICIUS) (48) *Ichneumon proletarius* WESMAEL (39), *Diphyus pseudomercator* HEINRICH (36), *Triptognathus atripes* (GRAVENHORST) (35) were the most common found in research areas (Table 1).

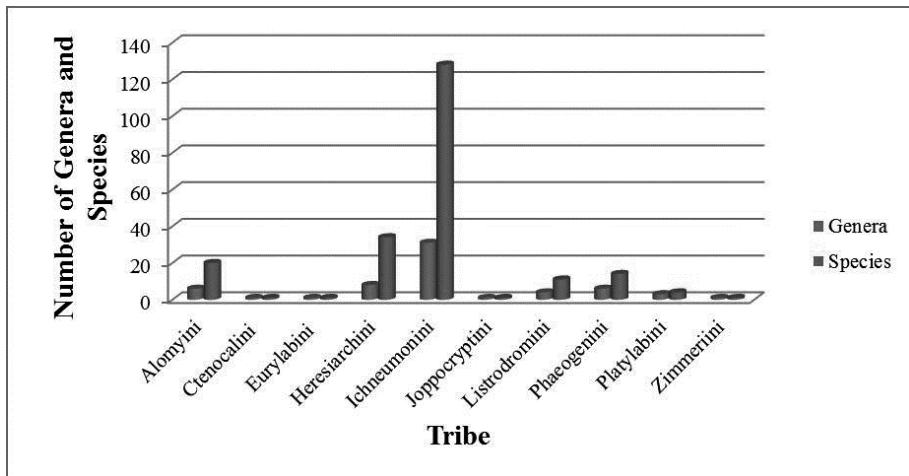
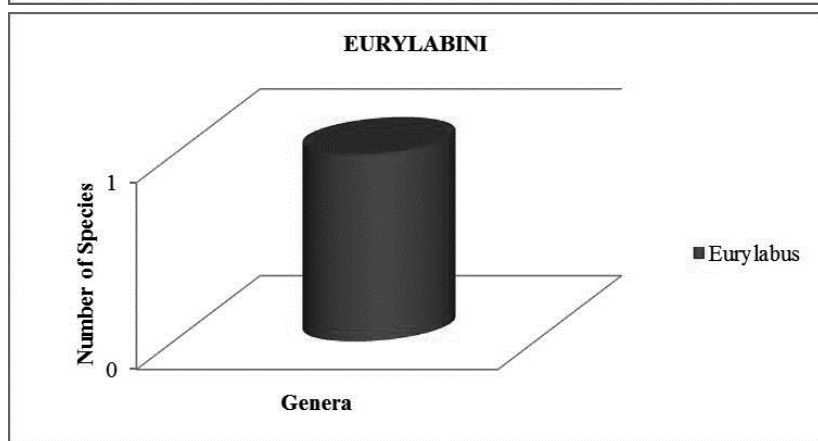
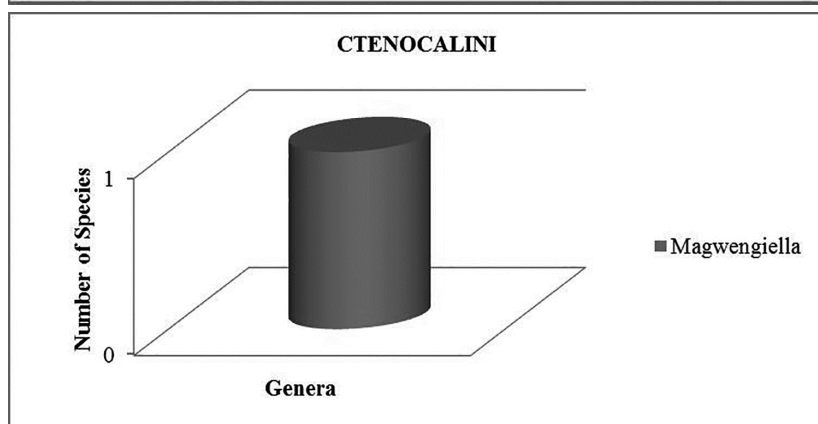
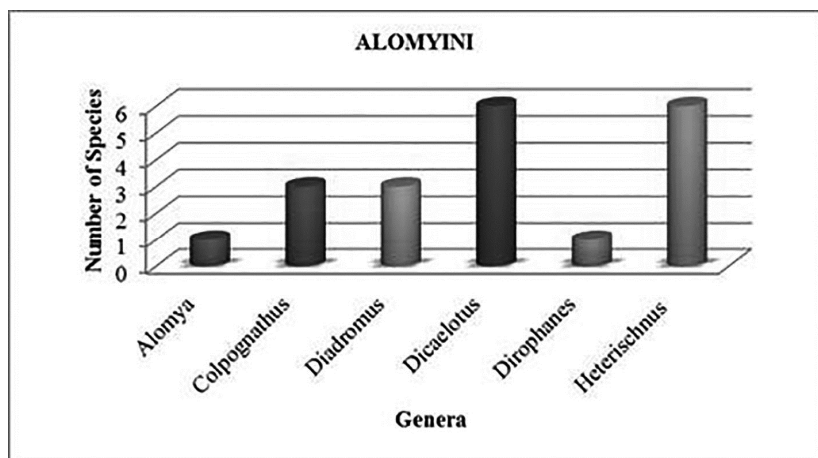
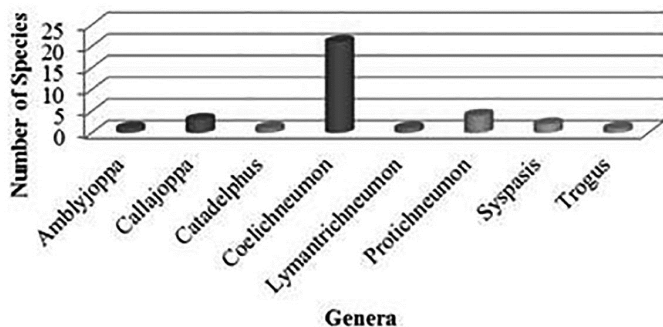


Fig. 2: Number of genera and species according to tribus.

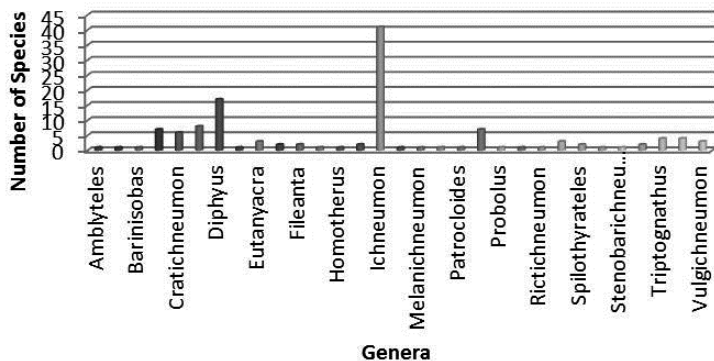
As shown in Table 1, 85 species (with 1 individual) were rarely found in Turkey. Numbers of genera according to each tribus are shown in the graph (Fig. 3a-3i).



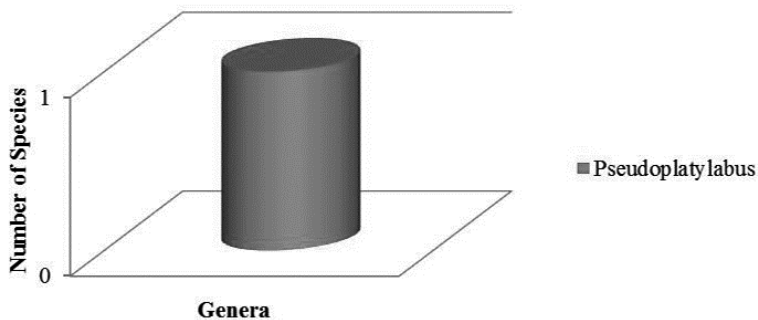
HERESIARCHINI



ICHNEUMONINI



JOPPOCRYPTINI



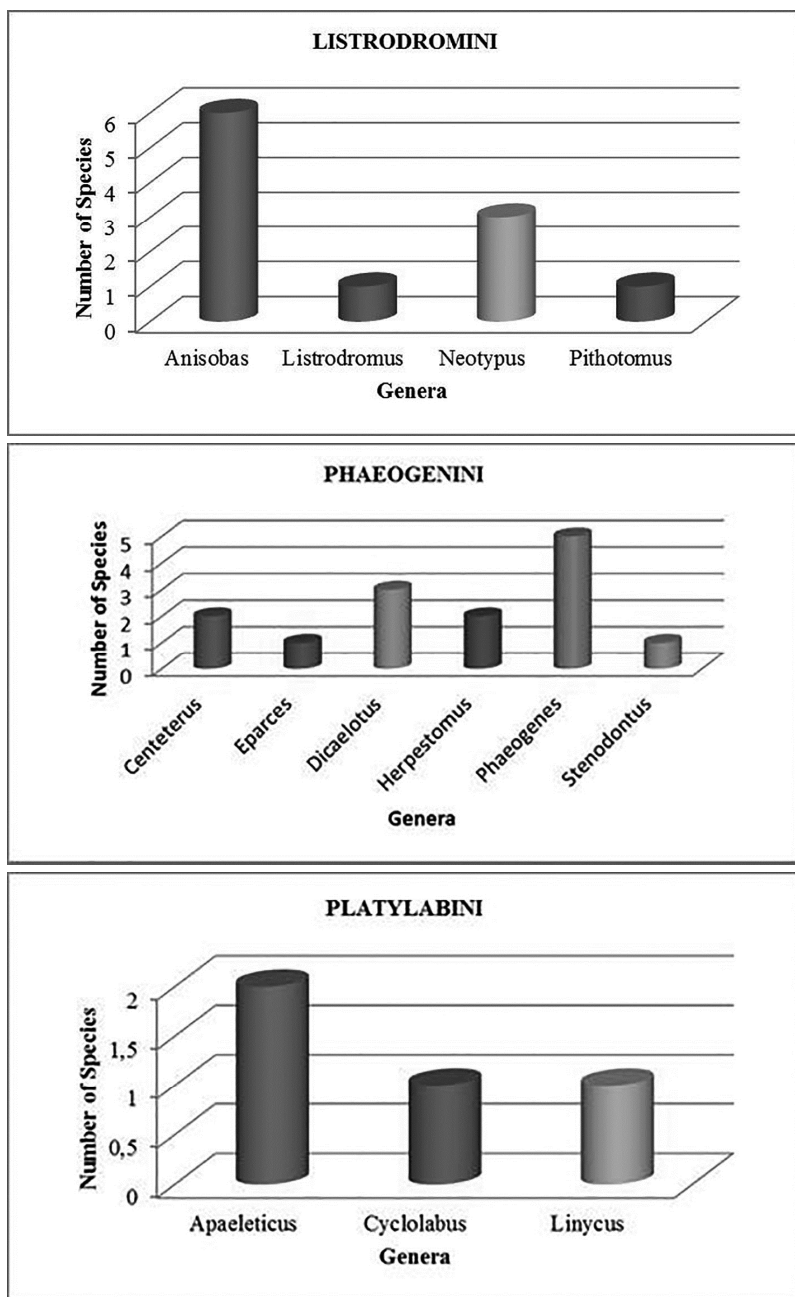


Fig. 3a-3i: Number of genera according to each tribe (Alomyini, Ctenocalini, Heresiarchini, Eurylabini, Ichneumonini, Joppocryptini, Listrodromini, Phaeogenini, Platylabini, Zimmeriini).

It is noted that *H. brunnicornis* is the most abundant species with the number of individuals in Turkey. As recorded in the literature, this species has distribution in 46 different countries in Eastern palaearctic, Europe and Western palaearctic. As a result, we can say that it can be adapted vegetation and climatic properties of the world.

Most of ichneumonine were collected from flowering stage of plants. Besides, many species were caught by malasia and light traps. Also *Trogus lapidator* and *Diphyus montivagans* were taken from under stones (ÇORUH & KESDEK 2008). *T. lapidator* was collected on September 18th, 2005. This finding indicated that it overwinter as adult stage in the Erzurum.

Ecological evaluations

Ichneumonines were collected different altitudes from collected areas. These altitudes were ranged from 0 m to 2500 m. DAUBENMIRE (1943) and FRAHM & GRADSTEIN (1991) mentioned that altitudinal zonation which supports different vegetation and animal species describes the natural layering of ecosystems. We found that a total of 58 species were collected from between 0-500 m, three species 501-750 m, 25 species 751-1000 m, 32 species 1001-1250 m, 54 species 1251-1500 m, 44 species 1501-1750 m, 77 species 1751-2000 m, 69 species 2001-2500 m (Table 1). We also found that 109 species were collected from only one altitude. This indicates that most of them are represented by a single individual or they are collected same localities. Our results show that *Colpognathus armatus*, *Diphyus amatorius*, *D. pseudomercator*, *Ichneumon proletarius*, *Obtusodonta equitatoria* and *Virgichneumon callicerus* were collected from five; *Amblyjoppa fuscipennis* also was collected from six different altitudes. So we can say that more than 50% of all species were collected between 1751-2500 m altitudes (Fig. 4).

Considering seasonal dynamics of these species in Turkey, species collected between March-November months of the years in general. It seems that ichneumonine species are active during nine months of the year But June and July had denser other months according to ichneumonid population (Fig. 5).

Table 1: Data of collected species: Individual numbers (IN), vertical distribution (VD), seasonal dynamics (SD), geographical regions (GR), zoogeographical regions (ZR), host records (HR), plant visited records (PVR), first record of Turkey (FRT) of specimens.

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
TRIBE: ALOMYINI FÖRSTER, 1869								
<i>Alomya PANZER 1806</i>								
<i>Alomya debellator</i> (FABRICIUS, 1775)	1	A	August	MR	E, WP		X	FAHRINGER (1922)
<i>Colpognathus</i> WESMAEL, 1844								
<i>Colpognathus armatus</i> THOMSON, 1891	7	C,E,F,G,H	July	CAR, EAR	E, EP, WP			ÖZBEK et al. (2003)
<i>Colpognathus celerator</i> (GRAVENHORST, 1807)	6	A, E	June, July	BSR, MR	E, EP, WP			ÇORUH & ÖZBEK (2008)
<i>Colpognathus divisus</i> THOMSON, 1891	15	A,H	June	BSR, EAR	E, EP, WP		X	KOLAROV (2007)
<i>Diadromus</i> WESMAEL, 1844								
<i>Diadromus albinotatus</i> (GRAVENHORST, 1829)	2	E	June, November	MR	E, WP			ÖZDAN (2004)
<i>Diadromus collaris</i> (GRAVENHORST, 1829)	23	D,G	June, July, August, September	AR, CAR, EAR	AFR, AUR, E, EP, NTR, OCR,	X		AVCI & ÖZBEK (1990)
<i>Diadromus subtilicornis</i> (GRAVENHORST, 1829)	20	D,G	July, September	CAR, EAR	ORR, WP E, EP, NEAR, WP	X		AVCI & ÖZBEK (1990)
<i>Dicaelotus</i> WESMAEL, 1844								
<i>Dicaelotus erythrogaster</i> (HOLMGREN, 1890)	1	D	September	CAR	E, WP	X		ÖZDEMİR (1996)
<i>Dicaelotus</i> (<i>Gnathichneumon</i>) <i>mandibulator</i> (AUBERT, 1958)	1	E	June	EAR	E, WP			ÇORUH et al. (2011)
<i>Dicaelotus montanus</i> (DE STEFANI, 1885)	1	C	August	EAR	E, WP			KOLAROV (1989)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Dicaelotus morosator</i> AUBERT, 1969	1	A	?	MR	E, WP	X	X	ONAT (1974)
<i>Dicaelotus pumilus</i> (GRAVENHORST, 1829)	1	E	May	MR	E, EP, WP			ÖZDAN 2014
<i>Dicaelotus rufilimbatus</i> (GRAVENHORST, 1820)	2	D	March, July	CAR	E, WP	X		KOLAROV (1989)
<i>Dirophanes</i> FÖRSTER, 1868								
<i>Dirophanes invisor</i> (THUNBERG, 1822)	3	D,E	June	CAR	E, EP, WP	X		ÖZDEMİR (1996)
<i>Heterischnus</i> WESMAEL, 1859								
<i>Heterischnus anomalus</i> (WESMAEL, 1857)	3	D,E,G	May, July, August	BSR, EAR	E, WP			ÖZBEK et al. (2003)
<i>Heterischnus excavatus</i> (CONSTANTINEANU, 1959)	5	A,B	June	BSR	E, WP			KOLAROV et al. (2014b)
<i>Heterischnus ridibundus</i> COSTA 1885	8	A	August	MR	E, WP			YURTCAN et al. (1999)
* <i>Heterischnus schachtii</i> DILLER, 1995	1	F	June	EAR	WP		X	KOLAROV et al. (2014b)
<i>Heterischnus thoracicus</i> (GRAVENHORST, 1829)	7	A,E,G	August	EAR, MR	E, WP			YURTCAN et al. (1999)
<i>Heterischnus truncator</i> (FABRICIUS, 1798)	6	A,H,E	June, August, November	BSR, EAR, MR, MR	E, EP, WP			KOLAROV (1989)
TRIBE: CTENOCALINI HEINRICH, 1938								
<i>Magwengiella</i> BACHMAIER & DILLER, 1985								
* <i>Magwengiella flavescens</i> BACHMAIER & DILLER 1985	1	F	August	SAR	WP			BACHMAIER & DILLER (1985)
TRIBE: EURYLABINI HEINRICH, 1934								
<i>Eurylabus</i> WESMAEL, 1845								
<i>Eurylabus larvatus</i> (CHRIST, 1791)	2	H	July	EAR	E, EP, WP			RIEDEL et al. (2010)
TRIBE: HERESIARCHINI ASHMEAD 1900								
<i>Amblytoppa</i> CAMERON, 1902								

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Amblyjappa fuscipennis</i> (WESMAEL, 1844)	107	B,C,D,E,H	June, July, August	BSR, CAR, EAR, MR	ORR		x	FAHRINGER (1922)
Callajoppa CAMERON, 1903								
<i>Callajoppa citrogaster</i> (SCHRANK, 1781)	1	H	July	EAR	E, EP, NEAR, WP			ÖZBEK et al. (2003)
<i>Callajoppa exaltatoria</i> (PANZER, 1804)	1	F	?	CAR	E, EP, NEAR, WP	X		FAHRINGER (1922)
<i>Callajoppa exaltatoria armenica</i> HEINRICH (1978)	1	H	August	EAR	WP North East Turkey			HEINRICH (1978)
Catadelphus WESMAEL, 1854								
<i>Catadelphus arrogator</i> (FABRICIUS, 1781)	1	G	June	EAR	E, WP			ÖZBEK et al. (2003)
Coelichneumon THOMSON, 1893								
<i>Coelichneumon</i> (C.) <i>bilineatus</i> (GMELIN, 1790)	1	A	June	BSR	E, EP, WP			KOLAROV et al. (2014b)
<i>Coelichneumon bohemani</i> (HOLMGREN, 1864)	2	H	July	EAR	E, WP			RIEDEL et al. (2010)
<i>Coelichneumon comitator</i> (LINNAEUS, 1758)	7	D,E,G,H	June, July, August	CAR, EAR	E, EP, WP			ÖZBEK et al. (2003)
<i>Coelichneumon</i> (C.) <i>consimilis</i> (WESMAEL, 1845)	1	E	August	EAR	E, WP			KOLAROV et al. (2014a)
<i>Coelichneumon</i> (C.) <i>desinatorius</i> (THUNBERG, 1822)	1	C	June	BSR	E, EP, WP			KOLAROV et al. (2014b)
<i>Coelichneumon dorsosignatus</i> BERTHOUMIEU, 1894	5	A,D,G,H	July, August	CAR, EAR, Mtr	E, EP, WP			KOLAROV (1994)
<i>Coelichneumon falsificus</i> (WESMAEL, 1845)	1	D	April	CAR	E, EP, WP			? ÖZDEMİR (1996)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Coelichneumon fasciatus</i> (GMELIN, 1790)	1	G	July	EAR	E, EP, WP			ÖZBEK et al. (2003)
<i>Coelichneumon erythromerus</i> (RUDOW, 1888)	3	G	June	Anatolia, EAR	E, WP			HEINRICH (1978)
<i>Coelichneumon</i> (C.) <i>lacrymator</i> (FONSCOOMBE, 1847)	1	E	August	EAR	E, EP, WP			KOLAROV et al. (2014)
<i>Coelichneumon leucocerus</i> (GRAVENHORST, 1820)	91	G,H	July, August	CAR, EAR	E, EP, WP		X	FAHRINGER (1922)
<i>Coelichneumon nigerrimus</i> (STEPHENS, 1893)	2	D	July	BSR	E, EP, WP			RIEDEL et al. (2010)
<i>Coelichneumon nigricornis</i> (WESMAEL, 1845)	7	E,H	June, July	EAR	E, WP			ÖZBEK et al. (2003)
<i>Coelichneumon nigritor</i> RIEDEL, ÇORUH & ÖZBEK, 2010	3	H,G	July	EAR	WP			RIEDEL et al. (2010)
<i>Coelichneumon nudicoxator</i> AUBERT, 1966	4	G	June, July	EAR	NEAR			RIEDEL (2008)
<i>Coelichneumon orbitor</i> (THUNBERG, 1822)	2	F,H	June	EAR	E, EP,			ÖZBEK et al. (2003)
	1	?	?	Anatolia	ORR, WP			RIEDEL (2008)
* <i>Coelichneumon pararudis</i> RIEDEL, 2008	1	?	?	Anatolia	E, WP			RIEDEL (2008)
<i>Coelichneumon paraviolaceiventris</i> RIEDEL, 2008					WP			
<i>Coelichneumon problematicus</i> RIEDEL, ÇORUH & ÖZBEK, 2010	2	H	July	EAR	EP, WP			RIEDEL et al. (2010)
<i>Coelichneumon rudis</i> (FONSCOLOMBE, 1847)	5	A,E	October	EAR, Mtr	E, WP			GÜRBÜZ et al. (2008)
* <i>Coelichneumon rufigaster</i> RIEDEL, 2008	1	?	?	Anatolia	WP			RIEDEL (2008)
<i>Lymantrichneumon</i> HEINRICH, 1968								

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Lymantrichneumon disparis</i> (PODA, 1761)	1	A, D	July	CAR	E, EP, ORR, WP		X	FAHRINGER (1922)
<i>Protichneumon</i> THOMSON, 1893								
<i>Protichneumon coqueberti</i> (WESMAEL, 1848)	32	E, H	June, July, August	EAR	E, WP		X	ÇORUH et al. (2013)
<i>Protichneumon fusorius</i> (LINNAEUS, 1761)	22	D, E, H	June, July, August	Anatolia, BSR, EAR	E, EP, WP		X	ROMAN (1910)
<i>Protichneumon pisorius</i> (LINNAEUS, 1758)	1	?	?	Anatolia	E, EP, WP			ROMAN (1910)
<i>Protichneumon similatorius</i> (FABRICIUS, 1798)	1	C	April	CAR	E, EP, WP			ÖZDEMİR (1996)
<i>Syspasis</i> TOWNES, 1965								
<i>Syspasis carinator</i> (FABRICIUS, 1798)	1	E	August	EAR	E, WP			RIEDEL et al. (2010)
<i>Syspasis scutellator</i> (GRAVENHORST, 1829)	3	E, G	June, July	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Trogus</i> PANZER, 1806								
<i>Trogus lapidator</i> (FABRICIUS, 1787)	3	G, H	June, July, September	EAR	E, EP, NEAR, ORR, WP			ÖZBEK et al. (2003)
TRIBE: ICHNEUMONINI LATREILLE, 1802								
<i>Amblyteles</i> WESMAEL, 1844								
<i>Amblyteles armatorius</i> (FÖRSTER, 1771)	4	A, C	April, August, May	MR	E, EP, WP		X	FAHRINGER (1921)
<i>Aoplus</i> TISCHBEIN, 1874								
<i>Aoplus castaneus</i> (GRAVENHORST, 1820)	3	H, G	July, August	EAR	E, EP, WP			ÇORUH et al. (2011)
<i>Barinisobas</i> HEINRICH, 1972								
<i>Baranisobas ridibundus</i> (GRAVENHORST, 1829)	2	F, H	July	EAR	E, WP			RIEDEL et al. (2010)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
Barichneumon THOMSON, 1893								
<i>Barichneumon albicaudatus</i> (FONSCOLOMBE, 1847)	2	D,H	May, July	CAR, EAR	E, EP, WP			ÖZDEMİR (1996)
<i>Barichneumon bitumulatus</i> (GRAVENHORST, 1829)	9	E,G	May, June, July, September	EAR	E, EP, WP			AUBERT (1993)
<i>Barichneumon chionomus</i> (WESMAEL, 1845)	2	C,G	August, September	CAR, EAR	E, WP			ÖZDEMİR (1996)
<i>Barichneumon manni</i> (KRIECHBAUMER, 1888)	1	A	?	MR	E, WP			SCHMIEDEKNECHT (1927)
<i>Barichneumon peregrinator</i> (LINNAEUS, 1758)	1	E	November	MR	E, EP, WP			ÖZDAN (2014)
<i>Barichneumon perversus</i> (KRIECHBAUMER, 1893)	1	C	September	CAR	E, WP			? ÖZDEMİR (1996)
<i>Barichneumon plagiatarius</i> (WESMAEL, 1848)	1	E	July	EAR	E, WP			RIEDEL et al. (2010)
Cratichneumon THOMSON, 1893								
<i>Cratichneumon corsicator</i> (LINNAEUS, 1758)	2	A,E	July	EAR, MR	E, EP, WP		X	FAHRINGER (1921)
<i>Cratichneumon fugitivus</i> (GRAVENHORST, 1829)	1	E	May	EAR	E, WP			RIEDEL et al. (2010)
<i>Cratichneumon fabricator</i> FABRICIUS, 1793	2	A	July	EAR, MR	E, EP, WP	X	X	FAHRINGER (1921)
<i>Cratichneumon sexarmillatus</i> (KRIECHBAUMER, 1891)	1	A	June	BSR	E, EP, WP			KOLAROV et al. (2014b)
<i>Cratichneumon versator</i> (THUNBERG, 1822)	1	A	June	BSR	E, EP, WP			KOLAROV et al. (2014b)
<i>Cratichneumon viator</i> (SCOPOLI, 1763)	3	A	June, November	BSR, MR	E, EP, NEAR, WP	X		FAHRINGER (1922)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
Ctenichneumon THOMSON, 1894								
<i>Ctenichneumon castigator</i> (FABRICIUS, 1793)	2	F,H	July	EAR	E, EP, NTR, WP			RIEDEL et al. (2010)
<i>Ctenichneumon divisorius</i> (GRAVENHORST, 1820)	3	A,G,H	July, August, September	ER, EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ctenichneumon finereus</i> (GEOFFROY, 1785)	1	G	September	EAR	E, EP, ORR, WP			RIEDEL et al. (2010)
<i>Ctenichneumon inspector</i> (WESMAEL, 1845)	4	H	July	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ctenichneumon melanocastanus</i> GRAVENHORST, 1829	5	F,H	June, July, August	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ctenichneumon nitens</i> (CHRIST, 1791)	1	E	July	EAR	E, EP, WP			RIEDEL et al. (2011)
<i>Ctenichneumon panzeri</i> (WESMAEL, 1845)	5	F,G	June, July, August	EAR	AUR, E, EP, ORR, WP			RIEDEL et al. (2010)
<i>Ctenichneumon repentinus</i> (GRAVENHORST, 1820)	6	G,H	May, June, July, August	EAR	E, EP, WP			RIEDEL et al. (2010)
Diphyus KRIECHBAUMER, 1890								
<i>Diphyus amatori</i> (MÜLLER, 1776)	11	A,D,F,G,H	June, July, August	BSR, EAR	E, EP, WP			?ÖZBEK et al. (2003)
<i>Diphyus fossorius</i> (LINNAEUS, 1758)	1	G	July	EAR	E, EP, WP			RIEDEL et al. (2011)
<i>Diphyus inopinus</i> HEINRICH, 1972	1	G	July	EAR	E, WP			RIEDEL et al. (2011)
<i>Diphyus longinatus</i> (WESMAEL, 1857)	22	E	June	EAR	E, WP			RIEDEL et al. (2010)
<i>Diphyus luctatorius</i> (LINNAEUS, 1758)	2	A	August	MR	E, EP, WP		X	Fähringer (1922)
<i>Diphyus mercatorius</i> s.str. (FABRICIUS, 1793)	48	F,G,H	June, July, August	Anatolia, EAR	E, EP, WP			HEINRICH (1978)
<i>Diphyus mercatorius ponticus</i> HEINRICH, 1978	1	?	?	Anatolia	Eastern Turkey,			HEINRICH (1978)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
Iran								
<i>Diphyus montivagans</i> BERTHOUMIEU, 1987	5	A,E,F,H	July	BSR, CAR, EAR, MR	E, WP			HEINRICH (1978)
<i>Diphyus ochromelas</i> (CHRIST, 1790)	5	A,H	July, August	EAR, MR	E, EP, WP		X	FAHRINGER (1922)
<i>Diphyus palliatorius</i> (GRAVENHORST, 1829)	3	A,G	July, August	BSR, EAR, MR	E, EP, ORR, WP		X	FAHRINGER (1922)
<i>Diphyus pseudomercator</i> (HEINRICH, 1978)	36	A,D,E,F,G	June, July, August	EAR, MR	E, WP		X	HEINRICH (1978)
<i>Diphyus pseudomercator hexaleucus</i> (HEINRICH, 1978)	7	D,F,G,H	June, July	EAR, SAR	Georgia, Turkey, Armenia			HEINRICH (1978)
<i>Diphyus quadripunctorius</i> (MÜLLER, 1776)	5	A,C,E	April, June, July	BSR, EAR, MR	E, EP, WP		X	FAHRINGER (1922)
<i>Diphyus quinquecinctus</i> s.str (KRIECHBAUMER, 1891)	1	E	June	CAR	E, EP, WP			KOHL (1905)
<i>Diphyus raptorius</i> LINNAEUS, 1758	1	A	August, September	MR	E, EP, ORR, WP			YURTCAN (1999)
<i>Diphyus septemguttatus</i> (GRAVENHORST, 1829)	2	H	July	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Diphyus trifasciatus</i> (GRAVENHORST, 1829)	4	E	July, September	MR	E, EP, WP			ÖZDAN (2004)
Eupalamus WESMAEL 1845								
<i>Eupalamus wesmaeli</i> (THOMSON, 1886)	1	A	June	BSR	E, EP, WP			KOLAROV et al. (2014b)
Eutanyacra CAMERON, 1903								
<i>Eutanyacra glaucatoria</i> (FABRICIUS, 1793)	1	G	August	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Eutanyacra picta</i> (SCHRANK, 1776)	1	G	July	EAR	E, EP, ORR, WP			RIEDEL et al. (2010)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Eutanyacra ruficornis</i> (BERTHOUMIEU, 1894)	1	G	June	EAR	WP			ÇORUH & ÖZBEK (2013)
Exephanes WESMAEL, 1844								
<i>Exephanes ischioxanthus</i> (GRAVENHORST, 1829)	4	F, G	July	EAR	E, WP			RIEDEL et al. (2010)
<i>Exephanes ulbrichti</i> HINZ, 1957	1	G	May	EAR	E, WP			ÖZBEK et al. (2003)
Fileanta CAMERON, 1901								
<i>Fileanta flavolaeta</i> BERTHOUMIEU, 1892	2	E, G	August	CAR, EAR	EP, WP			HEINRICH (1978)
<i>Fileanta radoscowskii</i> BERTHOUMIEU, 1892	1	?	?	Anatolia	EP, ORR, WP			HEINRICH (1978)
Heptopelmus WESMAEL, 1844								
<i>Heptopelmus melanogaster</i> (GMELIN, 1790)	2	D, H	July	EAR	E, EP, WP			RIEDEL et al. (2010)
Homotherus FÖRSTER, 1868								
<i>Homotherus locutor</i> (THUNBERG, 1824)	1	F	July	EAR	E, EP, WP			RIEDEL et al. (2010)
Hoplismenus GRAVENHORST, 1829								
<i>Hoplismenus axillatorius</i> (THUNBERG, 1822)	1	E	June	EAR	E, EP, WP			KOLAROV et al. (2014a)
<i>Hoplismenus bidentatus</i> (GMELIN, 1790)	5	A, E, F	April, June, August	EAR, MR	E, WP			KOLAROV (1989)
Ichneumon LINNAEUS, 1758								
<i>Ichneumon albicollis</i> s.str. WESMAEL, 1857	1	?	?	Anatolia	E, EP, WP			HILPERT (1992)
<i>Ichneumon alius</i> TISCHBEIN, 1879	1	?	?	Anatolia	E, EP, WP			HILPERT (1992)
<i>Ichneumon balteatus</i> WESMAEL, 1845	3	C, F	June, August	CAR, EAR	E, EP, WP			ÖZDEMİR (1996)
<i>Ichneumon bucculentus</i> WESMAEL, 1845	11	A, F, G, H	June, July, August	AR, MR, EAR, CAR	E, EP, NEAR, WP	X		FAHRINGER (1922)
<i>Ichneumon caedator</i> GRAVENHORST, 1829	1	E	July	EAR	E, EP, WP			ÇORUH et al. 2011

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Ichneumon caloscelis</i> WESMAEL, 1845	2	E	September	MtR	E, WP			ÖZDAN (2014)
<i>Ichneumon cessator</i> MÜLLER, 1776	2	F, G	June, July	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ichneumon confisor</i> GRAVENHORST, 1820	1	G	June	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ichneumon coniger</i> TISCHBEIN, 1876	2	F	June, July	EAR	E, WP			RIEDEL et al. (2010)
<i>Ichneumon curtulus</i> KRIECHBAUMER, 1882	2	H	June, August	EAR	E, EP, WP			ÇORUH & ÖZBEK (2011)
<i>Ichneumon erythromerus</i> WESMAEL, 1857	1	G	June	EAR	E, WP			RIEDEL et al. (2010)
<i>Ichneumon exilicornis</i> WESMAEL, 1857	5	G, H	June, July	EAR	E, WP			RIEDEL et al. (2010)
<i>Ichneumon extensorius</i> LINNAEUS, 1758	2	G, F	June, July	BSR, CAR	E, EP, WP		X	FAHRINGER (1921)
<i>Ichneumon fubicornis</i> GRAVENHORST, 1829	4	G, H	May, June	EAR	E, WP			RIEDEL et al. (2010)
<i>Ichneumon gracilentus</i> WESMAEL, 1844	1	?	July	Asia Minor	E, EP, WP		X	FAHRINGER (1922)
<i>Ichneumon gracilicornis</i> GRAVENHORST, 1829	4	F, G, H	July	Anatolia, EAR	E, EP, WP			HILPERT (1992)
<i>Ichneumon gratus</i> WESMAEL, 1855	1	G	June	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ichneumon haematofemur</i> HEINRICH, 1980	2	H	June	Anatolia, EAR	E, WP			KOLAROV (1995)
<i>Ichneumon ignobilis</i> WESMAEL, 1855	2	A, E	June, July	BSR, EAR	E, WP			RIEDEL et al. (2010)
<i>Ichneumon languidus</i> WESMAEL, 1845	1	F	June	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ichneumon lautatorius</i> DESVIGNES, 1856	10	C, G, H	June, July, September	AR, EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ichneumon ligatorius</i> THUNBERG, 1822	1	?	?	Anatolia	E, EP, WP			HILPERT (1992)
<i>Ichneumon minorius</i> DESVIGNES, 1856	3	E, G	July, August	Anatolia, BSR, EAR	E, WP			HILPERT (1992)
<i>Ichneumon ostentator</i> HEINRICH, 1978	6	C, G, H	May, June, July	Anatolia, EAR	E, WP			HEINRICH (1978)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Ichneumon phaeostigmus</i> WESMAEL, 1857	2	G,H	July	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ichneumon primatorius</i> FÖRSTER, 1771	2	G	July	EAR	E, EP, WP			ÇORUH et al. 2011
<i>Ichneumon proletarius</i> WESMAEL, 1848	39	A,E,F,G,H	June, July, August, September	Anatolia, BSR, EAR	E, EP, WP			HILPERT (1992)
<i>Ichneumon quaestorius</i> LINNAEUS, 1761	1	E	June	EAR	E, EP, WP			ÇORUH et al. (2011)
<i>Ichneumon sarcitorius</i> s. str. LINNAEUS, 1758	14	C, F, H	June, July	Anatolia, CAR, EAR	E, EP, OCR, WP			HILPERT (1992)
<i>Ichneumon sarcitorius caucasicus</i> MEYER, 1926	4	G,H	June, July	Eastern Anatolia, EAR	Eastern Turkey, Iran, Kyrgyzstan			HILPERT (1992)
<i>Ichneumon sexcinctus</i> GRAVENHORST, 1829	1	G	June	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>*Ichneumon sexcinctoides</i> RIEDEL, ÇORUH & ÖZBEK, 2010	2	H	July	EAR	WP			RIEDEL et al. (2010)
<i>Ichneumon simulans</i> TISCHBEIN, 1873	1	?	?	Anatolia	NTR			HILPERT (1992)
<i>Ichneumon stramentarius</i> GRAVENHORST, 1820	2	A,H	July	BSR, MR	E, WP		X	FAHRINGER (1992)
<i>Ichneumon stramentor</i> RASNITSIN, 1984	1	?	?	Anatolia	E, WP			HILPERT (1992)
<i>Ichneumon suspiciosus</i> WESMAEL, 1845	1	D	June	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ichneumon terminatorius</i> GRAVENHORST, 1820	6	D,F,G	July, August	CAR, EAR, MR	E, WP		X	FAHRINGER (1992)
<i>Ichneumon tuberculipes</i> WESMAEL, 1848	1	A	July	CAR	E, EP, WP			RIEDEL et al. (2010)
<i>Ichneumon vaefer meridionalis</i> HEINRICH, 1929	2	F,H	June	EAR	?			RIEDEL et al. (2010)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Ichneumon veressi</i> (KISS, 1915)	1	?	?	Anatolia	E, WP			HILPERT (1992)
<i>Ichneumon xanthorius xanthorius</i> FORSTER, 1771	1	A	May	Anatolia, AR	E, EP, WP			HILPERT (1992)
<i>Limerodops</i> HEINRICH, 1949								
<i>Limerodops subsericans</i> (GRAVENHORST, 1820)	4	E, G	June, July	BSR, EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Melanichneumon</i> THOMSON, 1893								
<i>Melanichneumon glaucatorius</i> HEINRICH, 1972	2	F, H	June	Erzurum	E, EP, WP			ÇORUH et al. (2011)
<i>Obtusodonta</i> HEINRICH, 1962								
<i>Obtusodonta equitatoria</i> (PANZER, 1786)	11	A,C,D,E,F	July, July, August	Anatolia, CAR, EAR, MR	E, EP, WP	X		KHAN & ÖZER (1984)
<i>Parocloides</i> HEINRICH, 1961								
<i>Parocloides sputator</i> (FABRICIUS, 1793)	3	A,D	August	MR, MR	EP	X		FAHRINGER (1922)
<i>Platylabops</i> HEINRICH, 1950								
<i>Platylabops humilis</i> (WESMAEL, 1857)	1	G	July	EAR	E, WP			RIEDEL et al. (2011)
<i>Platylabops iridipennis</i> (GRAVENHORST, 1829)	5	E,F	May	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Platylabops neglectus</i> (FONSCOLOMBE, 1847)	2	F,G	May, July	EAR	E, EP, WP			ÇORUH et al. 2011
<i>Platylabops ochlkei</i> (HEINRICH, 1972)	1	G	July	EAR	E, WP			RIEDEL et al. (2010)
<i>Platylabops tricingulatus</i> (GRAVENHORST, 1820)	2	A,C	July, September	BSR, CAR	E, EP, WP			ÖZDEMİR (1996)
<i>Platylabops vibratorius</i> (THUNBERG, 1824)	1	G	July	EAR	E, WP			RIEDEL et al. (2011)
<i>Platylabops zagoriensis</i> HEINRICH, 1930	2	C,D	September	CAE	E, WP			ÖZDEMİR (1996)
<i>Probolus</i> WESMAEL, 1844								

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Probolus crassulus</i> HORSTMANN, 2000	7	A,F,H	June, July, August	Anatolia, BSR, EAR	E, WP			HORSTMANN (2000)
<i>Pseudoamblyteles</i> HEINRICH, 1926								
<i>Pseudoamblyteles homocerus</i> (WESMAEL, 1857)	16	C,E,D,G	July, August	CAR, EAR	E, EP, NEAR, WP	X		AVCI & ÖZBEK (1990)
<i>Rictichneumon</i> HEINRICH, 1961								
<i>Rictichneumon lombardi</i> (BERTHUMIEU, 1897)	22	A,G,E,H	June, July	EAR	E, WP			ÖZBEK et al. (2003)
<i>Spilichneumon</i> THOMSON, 1894								
<i>Spilichneumon ammonius</i> (GRAVENHORST, 1820)	1	H	June	EAR	E, EP, WP			ÇORUHU et al. (2011)
<i>Spilichneumon limnophilus</i> (THOMSON, 1888)	2	E,G	May, July	EAR	E, EP, WP			ÇORUHU et al. (2011)
<i>Spilichneumon occisorius</i> (FABRICIUS, 1793)	17	C,D,E,H	July, August, September, October	BSR, EAR, CAR, MR	E, EP, WP			ÖZDEMİR (1996)
<i>Spilothyrates</i> HEINRICH, 1968								
<i>Spilothyrates illuminatorius</i> (GRAVENHORST, 1820)	4	C,D,G	July, September	CAR, EAR	E, EP, WP			ÖZDEMİR (1996)
<i>Spilothyrates nuptatorius</i> (FABRICIUS, 1793)	2	C,H	May, July	EAR	E, WP			RIEDEL et al. (2010)
<i>Stenichneumon</i> THOMSON, 1893								
<i>Stenichneumon culpator</i> (SCHRANK, 1802)	3	A,C	June, September	BSR, EAR	E, EP, NEAR, WP			RIEDEL et al. (2010)
<i>Stenobarichneumon</i> HEINRICH, 1961								
<i>Stenobarichneumon basiglyptus</i> KRIECHBAUMER, 1890	1	A	October	MR	E, EP, WP			YURTCAN (1999)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
Thyratelles PERKINS, 1953								
<i>Thyratelles camelinus</i> (WESMAEL, 1845)	9	B,F,G	June, August, September	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Thyratelles tardus</i> (BERTHOUMIEU, 1897)	2	G	July	EAR	E, EP, WP			ÖZBEK et al. (2003)
Triptognathus BERTHOUMIEU, 1904								
<i>Triptognathus atripes</i> (GRAVENHORST, 1820)	35	F,G,H	June, July, August	CAR, EAR	E, EP, WP			KOHL (1905)
<i>Triptognathus fumigator</i> (GRAVENHORST, 1820)	3	G,H	June, July	EAR	E, EP, WP			RIEDEL et al. (2011)
<i>Triptognathus unidentatus</i> BERTHOUMIEU, 1894	2	F	?	CAR, EAR	E, EP, WP			HEINRICH (1978)
<i>Triptognathus unifasciatus</i> (SPINOLA, 1843)	5	F,G	June, August	Anatolia, EAR	E, EP, WP			HEINRICH (1978)
Virgichneumon HEINRICH, 1977								
<i>Virgichneumon albosignatus</i> (GRAVENHORST, 1829)	6	G,H	June, July, August	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Virgichneumon callicerus</i> (GRAVENHORST, 1820)	18	A,D, F,G,H	June, July, August	BSR, EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Virgichneumon digrammus</i> (GRAVENHORST, 1820)	6	E,F,G,H	June, July, August	EAR, MfR	E, EP, WP			RIEDEL et al. (2010)
<i>Virgichneumon maculicauda</i> (PERKINS, 1953)	29	F,H	June, July	EAR	E, EP, WP			RIEDEL et al. (2010)
Virgichneumon HEINRICH, 1962								
<i>Virgichneumon deceptor</i> (SCOPOLI, 1763)	8	C,H	March, June, July	EAR, CAR	E, EP, WP			ÖZDEMİR (1996)
<i>Virgichneumon saturatorius</i> (LINNAEUS, 1758)	6	A,F,G	March, June, July	BSR, EAR, MfR	E, EP, ORR, WP			RIEDEL et al. (2010)
<i>Virgichneumon suavis</i> (GRAVENHORST, 1820)	5	A,F	June, August	BSR, EAR	E, EP, WP			RIEDEL et al. (2010)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
TRIBE JOPPOCRYPTINI VIERECK, 1918								
<i>Pseudoplatylabus</i> SMITS VAN BURGST, 1920								
<i>Pseudoplatylabus violentus</i> (GRAVENHORST, 1829)	1	C	August	EAR	E, NEAR, WP			RIEDEL et al. (2010)
TRIBE LISTRODROMINI FÖRSTER, 1869								
<i>Anisobas</i> WESMAEL, 1845								
<i>Anisobas brombacheri</i> HEINRICH, 1933	3	A,G,H	July, August	EAR	E, EP, WP			ÖZBEK et al. (2003)
<i>Anisobas cingulatus</i> HORSTMANN, 1997	16	A,D,E,H	April, July, August, September	CAR, EAR, MR, MR	E, EP, WP E, EP, WP	X		KOHL (1905)
<i>Anisobas seyrigi</i> HEINRICH, 1933	1	?	?	Anatolia	E, EP, WP			SELFÄ et al. (1988)
<i>Anisobas hostilis</i> (GRAVENHORST, 1820)	5	A,E,H	June, July, August	EAR, MR	E, EP, WP			YURTCAN (1999)
<i>Anisobas rebellis</i> WESMAEL, 1845	6	E,F	June, July, August, October	BSR, CAR, EAR, EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Anisobas seyrigi</i> HEINRICH, 1934	3	C	May	Anatolia, EAR	E, EP, WP			SELFÄ et al. (1988)
Listrodromus WESMAEL, 1845								
<i>Listrodromus nyctemeris</i> (GRAVENHORST, 1820)	3	E,F	June	EAR	E, EP, WP			ÖZBEK et al. (2003)
Neotypus FÖRSTER, 1868								
<i>Neotypus corensis</i> UCHIDA, 1930	1	G	July	EAR	E, EP, NEAR, WP			RIEDEL et al. (2010)
<i>Neotypus nobilitator</i> (GRAVENHORST, 1807)	1	H	July	EAR	E, EP, NEAR, ORR, WP			ÇORUH et al. (2011)
<i>Neotypus melanoccephalus</i> (GMELIN, 1790)	1	A	August	MR	E, EP, WP	X		FAHRINGER (1922)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Pithotomus</i> KRIECHBAUMER, 1888								
<i>Pithotomus rufiventris</i> KRIECHBAUMER, 1888	1	A	?	MR	E, WP			KOLAROV (1989)
TRIBE PHAEOGENINI FÖRSTER, 1869								
<i>Centetarius</i> WESMAEL 1845								
<i>Centetarius nigricornis</i> THOMPSON, 1891	1	D	July	CAR	E, WP			ÖZDEMİR (1996)
<i>Centetarius major</i> WESMAEL, 1845	1	D	May	CAR	E, EP, WP			ÖZDEMİR (1996)
<i>Eparces</i> FÖRSTER, 1869								
<i>Eparces grandiceps</i> THOMPSON, 1891	1	A	August	MR	E, WP			YURTCAN (1999)
<i>Dicaelotus</i> WESMAEL 1845								
<i>Dicaelotus montanus</i> (DE STEFANI 1885)	1	H	August	CAR	E, WP			KOLAROV (1989)
<i>Dicaelotus morosator</i> AUBERT, 1969	1	A	?	MR	E, WP	X	X	ONAT (1974)
<i>Dicaelotus rufilimbatus</i> (GRAVENHORST, 1820)	1	D	July	CAR	E, WP			KOLAROV (1989)
<i>Herpestomus</i> WESMAEL 1845								
<i>Herpestomus arridens</i> (GRAVENHORST, 1829)	3	E	May, July	MR	E, EP, WP			ÖZDAN (2014)
<i>Herpestomus brunnicornis</i> (GRAVENHORST, 1829)	19	C,D	May, June, July	CAR	E, EP, WP	X		IREN (1960)
<i>Phaogenes</i> WESMAEL, 1845								
<i>Phaogenes alemanus</i> WESMAEL, 1845	1	A	June	BSR	E, WP			KOLAROV et al. (2014b)
<i>Phaogenes corcyrensis</i> BERTHOUMIEU, 1901	1	?	?	Anatolia	E, WP			KASPARYAN (1981)
<i>Phaogenes nigridens</i> WESMAEL, 1844	2	A	?	BSR, MR	E, EP, NEAR, WP	X		ÖZDEMİR (1981)
<i>Phaogenes planifrons</i> WESMAEL, 1844	1	A	?	MR	E, EP, WP			KOLAROV (1989)
<i>Phaogenes rusticatus</i> WESMAEL, 1844	2	A	?	MR	E, EP, WP	X		SOYDANBAY (1978)

Names of Taxa	IN	VD (metre)	SD	GR	ZR	HR	PVR	FRT
<i>Stenodontus</i> BERTHOUMIEU, 1897								
<i>Stenodontus marginellus</i> (GRAVENHORST, 1829)	1	G	June	EAR	E, EP, WP			KOLAROV et al. (2014b)
TRIBE PLATYLABINI BERTHOUMIEU, 1904								
<i>Apaeleticus</i> WESMAEL, 1844								
<i>Apaeleticus inimicus</i> (GRAVENHORST, 1820)	1	G	June	EAR	E, WP			ÇORUH et al. (2011)
<i>Cyclolabus</i> HEINRICH, 1936								
<i>Cyclolabus pactor</i> (WESMAEL, 1845)	1	H	July	EAR	E, EP, WP			RIEDEL et al. (2010)
<i>Linyceus</i> CAMERON 1903								
<i>Linyceus exhortator</i> (FABRICIUS, 1793)	3	G,H	July	CAR, EAR	E, EP, NEAR, WP		X	FAHRINGER (1922)
TRIBE ZIMMERIINI HEINRICH, 1934								
<i>Cottheresiarches</i> TELENGA, 1929								
<i>Cottheresiarches dirus</i> (WESMAEL, 1853)	1	A	March	MR	E, WP	X		KOLAROV (1991)

Remarks: Vertical distribution (VD) (metre): A: 0-500 m, B: 501-750 m, C: 751-1000 m, D: 1001-1250 m, E: 1251-1500 m, F: 1501-1750 m, G: 1751-2000 m, H: 2001-2500 m.

Geographical regions (GR): AR: Aegean Region, BSR: Black Sea Region, CAR: Central Anatolia Region, EAR: Eastern Anatolia Region, MR: Marmara Region, MTR: Mediterranean Region, SAR: Southeastern Anatolia.

Zoogeographical regions (ZR): AFR: Afrotropical Region, EUR: Australian Region, E: Europe, EP: Eastern Palaearctic, NEAR: Nearctic Region, NTR: Neotropical Region, OCR: Oceanic Region, ORR: Oriental Region, WP: Western Palaearctic Region.

Table 2. Provinces and references of collected species in Turkey.

Names of Taxa	Distributions in Turkey	Reference (s)
TRIBE: ALOMYINI FÖRSTER, 1869		
<i>Alomya</i> <i>Alomya</i> PANZER, 1806		
<i>Alomya debellator</i> (FABRICIUS, 1775)	Istanbul	FAHRINGER (1922), KOLAROV (1995)
<i>Colpognathus</i> WESMAEL, 1844		
<i>Colpognathus armatus</i> THOMSON, 1891	Ankara, Erzincan, Erzurum	ÖZBEK et al. (2003), ÇORUH & ÖZBEK (2008)
<i>Colpognathus celerator</i> (GRAVENHORST, 1807)	Giresun, Isparta, Ordu, Trabzon	ÇORUH & ÖZBEK (2008), KOLAROV et al. (2014b), ÖZDAN (2014)
<i>Colpognathus divisus</i> THOMSON, 1891	Erzurum, Rize, Trabzon	KOLAROV (2007)
<i>Diadromus</i> WESMAEL, 1844		
<i>Diadromus albinotatus</i> (GRAVENHORST, 1829)	Isparta	ÖZDAN (2014)
<i>Diadromus collaris</i> (GRAVENHORST, 1829)	Ankara, Aydın, Erzurum, Kırşehir, Konya, Muğla, Yozgat	ÖZDEMİR (1996), KOLAROV et al. (2002), ÖZBEK et al. (2003), ÇORUH et al. (2013)
<i>Diadromus subtilicornis</i> (GRAVENHORST, 1829)	Ankara, Erzurum	ÖZDEMİR (1996), ÖZBEK et al. (2003)
<i>Dicaelotus</i> WESMAEL, 1844		
<i>Dicaelotus erythrogaster</i> (HOLMGREN, 1890)	Ankara	ÖZDEMİR (1996)
<i>Dicaelotus (Gnathichneumon) mandibulator</i> (AUBERT, 1958)	Erzurum	ÇORUH et al. (2011)
<i>Dicaelotus montanus</i> (DE STEFANI, 1885)	Eskişehir	KOLAROV (1989), KOLAROV (1995)
<i>Dicaelotus morosator</i> AUBERT, 1969	Adapazarı	ONAT (1974), ÖNCÜER (1991), KOLAROV (1995)
<i>Dicaelotus pumilus</i> (GRAVENHORST, 1829)	Isparta	ÖZDAN (2014)
<i>Dicaelotus rufilimbatus</i> (GRAVENHORST, 1820)	Ankara, Niğde	KOLAROV (1989), KOLAROV (1995), ÖZDEMİR (1996)
<i>Dirophanes</i> FÖRSTER, 1868		
<i>Dirophanes invisor</i> (THUNBERG, 1822)	Ankara	ÖZDEMİR (1996)
<i>Heterischnus</i> WESMAEL, 1859		
<i>Heterischnus anomalus</i> (WESMAEL, 1857)	Artvin, Erzurum	ÖZBEK et al. (2003)
<i>Heterischnus excavatus</i> (CONSTANTINEANU, 1959)	Giresun, Rize	KOLAROV et al. (2014b)
<i>Heterischnus ridibundus</i> COSTA, 1885	Kırklareli, Tekirdağ	YURTCAN et al. (1999)
<i>Heterischnus schachtii</i> DILLER, 1995	Erzurum	KOLAROV et al. (2014b)
<i>Heterischnus thoracicus</i> (GRAVENHORST, 1829)	Erzurum, Kırklareli, Tekirdağ	YURTCAN et al. (1999), ÖZBEK et al. (2003)
<i>Heterischnus truncator</i> (FABRICIUS, 1798)	Isparta, Istanbul, Erzurum, Giresun, Rize	KOLAROV (1989), KOLAROV (1995), YURTCAN (1999), ÖZBEK et al. (2003), KOLAROV et al. (2014b), ÖZDAN (2014)
TRIBE: CTENOCALINI HEINRICH, 1938		
<i>Magwengiella</i> BACHMAIER & DILLER, 1985		
<i>Magwengiella flavescens</i> BACHMAIER & DILLER, 1985	Hakkari	BACHMAIER & DILLER (1985), KOLAROV (1995)

Names of Taxa	Distributions in Turkey	Reference (s)
TRIBE: EURYLABINI HEINRICH, 1934		
<i>Eurylabus</i> WESMAEL, 1845		
<i>Eurylabus larvatus</i> (CHRIST, 1791)	Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
TRIBE: HERESIARCHINI ASMEAD, 1900		
<i>Amblyjoppa</i> CAMERON, 1902		
<i>Amblyjoppa fuscipennis</i> (WESMAEL, 1844)	Artvin, Erzurum, Istanbul, Niğde	FAHRINGER (1922), ÖZBEK et al. (2003), ÇORUH & ÇORUH (2008), RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Callajoppa</i> CAMERON, 1903		
<i>Callajoppa cirrogaster</i> (SCHRANK, 1781)	Erzurum	ÖZBEK et al. (2003)
<i>Callajoppa exaltatoria</i> (PANZER, 1804)	Niğde	FAHRINGER (1922), KOLAROV (1995)
<i>Callajoppa exaltatoria armenica</i> HEINRICH, 1978	Kars	HEINRICH (1978), KOLAROV (1995)
<i>Catadelphus</i> WESMAEL, 1854		
<i>Catadelphus arrogator</i> (FABRICIUS, 1781)	Erzurum	ÖZBEK et al. (2003)
<i>Coelichneumon</i> THOMSON, 1893		
<i>Coelichneumon</i> (C.) <i>bilineatus</i> (GMELIN, 1790)	Giresun	RIEDEL et al. (2010), KOLAROV et al. (2014b)
<i>Coelichneumon bohemani</i> (HOLMGREN, 1864)	Erzurum	RIEDEL et al. (2010)
<i>Coelichneumon comitator</i> (LINNAEUS, 1758)	Ankara, Bayburt, Erzurum, Tunceli	ÖZBEK et al. (2003), RIEDEL et al. (2010), ÇORUH et al. (2011), KOLAROV et al. (2014a)
<i>Coelichneumon</i> (C.) <i>consimilis</i> (WESMAEL, 1845)	Tunceli	KOLAROV et al. (2014a)
<i>Coelichneumon</i> (C.) <i>desinatorius</i> (THUNBERG, 1822)	Trabzon	KOLAROV et al. (2014b)
<i>Coelichneumon dorsosignatus</i> BERTHOUMIEU, 1894	Antalya, Artvin, Erzurum, Niğde	KOLAROV (1994), KOLAROV (1995), RIEDEL et al. (2010), ÇORUH & ÇORUH (2012)
<i>Coelichneumon falsificus</i> (WESMAEL, 1845)	Kırşehir	? ÖZDEMİR (1996)
<i>Coelichneumon fasciatus</i> (GMELIN, 1790)	Erzurum	ÖZBEK et al. (2003)
<i>Coelichneumon erythromerus</i> (RUDOW, 1888)	Anatolia, Erzurum	HEINRICH (1978), ÇORUH et al. (2011); ÇORUH & ÖZBEK (2013)
<i>Coelichneumon</i> (C.) <i>lacrymator</i> (FONSCOOMBE, 1847)	Tunceli	KOLAROV et al. (2014)
<i>Coelichneumon leucocerus</i> (GRAVENHORST, 1820)	Erzurum, Niğde	FAHRINGER (1922), KOLAROV (1995), ÖZBEK et al. (2003), ÇORUH & ÇORUH (2008)
<i>Coelichneumon nigerrimus</i> (STEPHENS, 1893)	Artvin	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Coelichneumon nigricornis</i> (WESMAEL, 1845)	Erzurum	ÖZBEK et al. (2003)
<i>Coelichneumon nigritor</i> RIEDEL, ÇORUH & ÖZBEK, 2010	Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Coelichneumon nudicoxator</i> AUBERT, 1966	Eastern Anatolia, Erzurum	RIEDEL (2008), RIEDEL et al. (2010), ÇORUH et al. (2011)

Names of Taxa	Distributions in Turkey	Reference (s)
<i>Coelichneumon orbitator</i> (THUNBERG, 1822)	Erzurum	ÖZBEK et al. (2003)
<i>Coelichneumon pararudis</i> RIEDEL, 2008	Anatolia	RIEDEL (2008)
<i>Coelichneumon paraviolaceiventris</i> RIEDEL, 2008	Anatolia	RIEDEL (2008)
<i>Coelichneumon problematicus</i> RIEDEL, ÇORUH & ÖZBEK, 2010	Erzurum	RIEDEL et al. (2010)
<i>Coelichneumon rudis</i> (FONSCOLOMBE, 1847)	Adana, Eskişehir	GÜRBÜZ et al. (2008), EROĞLU et al. (2011)
<i>Coelichneumon rufigaster</i> RIEDEL, 2008	Anatolia	RIEDEL (2008)
<i>Lymantrichneumon</i> HENRICH, 1968		
<i>Lymantrichneumon disparis</i> (PODA, 1761)	Niğde	FAHRINGER (1922), KOLAROV (1995)
<i>Protichneumon</i> THOMSON, 1893		
<i>Protichneumon coqueberti</i> (WESMAEL, 1848)	Erzurum	ÖZBEK et al. (2003), ÇORUH & ÇORUH (2008)
<i>Protichneumon fusorius</i> (LINNAEUS, 1761)	Artvin, Anatolia, Erzurum	ROMAN (1910), TOWNES et al. (1965), KOLAROV (1995), ÇORUH et al. (2003), ÇORUH & ÇORUH (2008), RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Protichneumon pisorius</i> (LINNAEUS, 1758)	Anatolia	ROMAN (1910), HEINRICH (1929), MORLEY (1915), TOWNES et al. (1965), KASPARYAN (1981), KOLAROV (1995)
<i>Protichneumon similatorius</i> (FABRICIUS, 1798)	Ankara	ÖZDEMİR (1996)
<i>Syspasis</i> TOWNES, 1965		
<i>Syspasis carinator</i> (FABRICIUS, 1798)	Kars	RIEDEL et al. (2010)
<i>Syspasis scutellator</i> (GRAVENHORST, 1829)	Erzurum, Kars	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Trogus</i> PANZER, 1806		
<i>Trogus lapidator</i> (FABRICIUS, 1787)	Erzurum	ÖZBEK et al. (2003), ÇORUH & KESDEK (2008)
TRIBE: ICHNEUMONINI LATREILLE, 1802		
<i>Amblyteles</i> WESMAEL, 1844		
<i>Amblyteles armatorius</i> (FÖRSTER, 1771)	Istanbul, Tekirdağ	FAHRINGER (1921-1922), KOLAROV (1990, 1995)
<i>Aoplus</i> TISCHBEIN, 1874		
<i>Aoplus castaneus</i> (GRAVENHORST, 1820)	Erzurum	ÇORUH et al. (2011), ÇORUH & ÖZBEK (2013)
<i>Baranisobas</i> HEINRICH, 1972		
<i>Baranisobas ridibundus</i> (GRAVENHORST, 1829)	Erzurum	RIEDEL et al. (2010)
<i>Barichneumon</i> THOMSON, 1893		
<i>Barichneumon albicaudatus</i> (FONSCOLOMBE, 1847)	Erzurum, Konya	ÖZDEMİR (1996), RIEDEL et al. (2010)
<i>Barichneumon bilumulatus</i> (GRAVENHORST, 1829)	Anatolia, Erzurum	AUBERT (1993), RIEDEL et al. (2010)

Names of Taxa	Distributions in Turkey	Reference (s)
<i>Barichneumon chionomus</i> (WESMAEL, 1845)	Eskişehir, Kars	ÖZDEMİR (1996), RIEDEL et al. (2010)
<i>Barichneumon manni</i> (KRIECHBAUMER, 1888)	Bursa	SCHMIEDEKNECHT (1927), MEYER (1933), AUBERT (1981), KOLAROV (1995)
<i>Barichneumon peregrinator</i> (LINNAEUS, 1758)	Isparta	ÖZDAN (2014)
<i>Barichneumon perversus</i> (KRIECHBAUMER, 1893)	Eskişehir	? ÖZDEMİR (1996)
<i>Barichneumon plagarius</i> (WESMAEL, 1848)	Erzurum	RIEDEL et al. (2010)
<i>Cratichneumon</i> THOMSON, 1893		
<i>Cratichneumon coruscator</i> (LINNAEUS, 1758)	İçel, Istanbul, Konya, Niğde	FAHRINGER (1921, 1922), KOLAROV (1995)
<i>Cratichneumon fugitivus</i> (GRAVENHORST, 1829)	Erzincan	RIEDEL et al. (2010)
<i>Cratichneumon fabricator</i> FABRICIUS, 1793	Erzurum, Istanbul, Kars	FAHRINGER (1921), KOLAROV (1995)
<i>Cratichneumon sexarmillatus</i> (KRIECHBAUMER, 1891)	Rize	KOLAROV et al. (2014b)
<i>Cratichneumon versator</i> (THUNBERG, 1822)	Trabzon	KOLAROV et al. (2014b)
<i>Cratichneumon viator</i> (SCOPOLI, 1763)	Bursa, Istanbul, Rize	FAHRINGER (1922), KOLAROV (1995); KOLAROV et al. (2014b)
<i>Ctenichneumon</i> THOMSON, 1894		
<i>Ctenichneumon castigator</i> (FABRICIUS, 1793)	Erzurum, Erzincan	RIEDEL et al. (2010), RIEDEL et al. (2011)
<i>Ctenichneumon divisorius</i> (GRAVENHORST, 1820)	Ardahan, Erzurum, Manisa	RIEDEL et al. (2010)
<i>Ctenichneumon funereus</i> (GEOFFROY, 1785)	Erzurum	RIEDEL et al. (2010)
<i>Ctenichneumon inspector</i> (WESMAEL, 1845)	Erzurum	RIEDEL et al. (2010)
<i>Ctenichneumon melanocastanus</i> GRAVENHORST, 1829	Bayburt, Erzurum, Kars	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Ctenichneumon nitens</i> (CHRIST, 1791)	Erzurum	RIEDEL et al. (2011)
<i>Ctenichneumon panzeri</i> (WESMAEL, 1845)	Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Ctenichneumon repentinus</i> (GRAVENHORST, 1820)	Bayburt, Erzurum	RIEDEL et al. (2010)
<i>Diphyus</i> KRIECHBAUMER, 1890		
<i>Diphyus amatorius</i> (MÜLLER, 1776)	Erzincan, Erzurum, Kars, Trabzon	?ÖZBEK et al. (2003), RIEDEL et al. (2010)
<i>Diphyus fossorius</i> (LINNAEUS, 1758)	Erzurum	RIEDEL et al. (2011)
<i>Diphyus inopinus</i> HEINRICH, 1972	Erzurum	RIEDEL et al. (2011)
<i>Diphyus longimanus</i> (WESMAEL, 1857)	Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Diphyus luctatorius</i> (LINNAEUS, 1758)	Istanbul	FAHRINGER (1922), KOLAROV (1989), KOLAROV (1995)
<i>Diphyus mercatorius</i> s.str. (FABRICIUS, 1793)	Anatolia, Erzurum, Kars	HEINRICH (1978), KOLAROV (1995), ÖZBEK et al. (2003), RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Diphyus mercatorius ponticus</i> HEINRICH, 1978	Anatolia	HEINRICH (1978), KOLAROV (1995)

Names of Taxa	Distributions in Turkey	Reference (s)
<i>Diphyus montivagans</i> BERTHOUMIEU, 1987	Gümüşhane, Erzurum, Hatay, Sivas	HEINRICH (1978), SAWONIEWICZ (1985), KASPARYAN (1981), KOLAROV (1995), ÇORUH et al. (2011); ÇORUH et al. (2005), ÇORUH and ÇORUH (2012)
<i>Diphyus ochromelas</i> (CHRIST, 1790)	Erzurum, Istanbul	FAHRINGER (1921), KOLAROV (1995), RIEDEL et al. (2010)
<i>Diphyus palliatorius</i> (GRAVENHORST, 1829)	Artvin, Istanbul, Niğde	FAHRINGER (1922), KOLAROV (1995), RIEDEL et al. (2010)
<i>Diphyus pseudomercator</i> HEINRICH, 1978	Erzincan, Erzurum, Giresun	HEINRICH (1978), KOLAROV (1995), ÖZBEK et al. (2003), RIEDEL et al. (2010), ÇORUH et al. (2011), KOLAROV et al. (2014b)
<i>Diphyus pseudomercator hexaleucus</i> HEINRICH, 1978	Diyarbakır, Erzurum	HEINRICH (1978), KOLAROV (1995), ÖZBEK et al. (2003), ÇORUH & ÇORUH (2012)
<i>Diphyus quadripunctorius</i> (MÜLLER, 1776)	Artvin, Erzurum, Istanbul	FAHRINGER (1922), KOLAROV (1989), KOLAROV (1995), RIEDEL et al. (2010)
<i>Diphyus quinquecinctus</i> s.str. (KRIECHBAUMER, 1891)	Kayseri	KOHL (1905), KOLAROV (1995)
<i>Diphyus raptorius</i> LINNAEUS, 1758	Edime	YURTCAN (1999)
<i>Diphyus septemguttatus</i> (GRAVENHORST, 1829)	Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Diphyus trifasciatus</i> (GRAVENHORST, 1829)	Isparta	ÖZDAN (2014)
Eupalamus WESMAEL, 1845		
<i>Eupalamus wesmaeli</i> (THOMSON, 1886)	Trabzon	KOLAROV et al. (2014b)
Eutanyacra CAMERON, 1903		
<i>Eutanyacra glaucatoria</i> (FABRICIUS, 1793)	Kars	RIEDEL et al. (2010)
<i>Eutanyacra picta</i> (SCHRANK, 1776)	Erzurum	RIEDEL et al. (2010)
<i>Eutanyacra ruficornis</i> (BERTHOUMIEU, 1894)	Erzurum	ÇORUH & ÖZBEK (2013)
Exephanes WESMAEL, 1844		
<i>Exephanes ischioxanthus</i> (GRAVENHORST, 1829)	Erzurum	RIEDEL et al. (2010)
<i>Exephanes ulbrichti</i> HINZ, 1957	Erzurum	ÖZBEK et al. (2003)
Fileanta CAMERON 1901		
<i>Fileanta flavolaeta</i> BERTHOUMIEU, 1892	Sivas, Van	HEINRICH (1978), KOLAROV (1995)
<i>Fileanta radoszkowskii</i> THUNBERG, 1892	Anatolia	HEINRICH (1978), KOLAROV (1995)
Hepiophelmus WESMAEL, 1844		
<i>Hepiophelmus melanogaster</i> (GMELIN, 1790)	Artvin, Erzurum	RIEDEL et al. (2010)
Homotherus FOESTER, 1868		
<i>Homotherus locutor</i> (THUNBERG, 1824)	Erzurum	RIEDEL et al. (2010)
<i>Homotherus varipes</i> (GRAVENHORST, 1829)	Trabzon	KOLAROV et al. (2014b)
Hoplismenus GRAVENHORST, 1829		
<i>Hoplismenus axillatorius</i> (THUNBERG, 1822)	Tunceli	KOLAROV et al. (2014a)

Names of Taxa	Distributions in Turkey	Reference (s)
<i>Hoplismenus bidentatus</i> (GMELIN, 1790)	Erzurum, Istanbul, Tunceli	KOLAROV (1989), KOLAROV (1995), RIEDEL et al. (2010), ÇORUH et al. (2011), KOLAROV et al. (2014b)
<i>Ichneumon</i> LINNAEUS, 1758		
<i>Ichneumon albicollis</i> s.str. WESMAEL, 1857	Anatolia	HILPERT (1992), KOLAROV (1995)
<i>Ichneumon alius</i> TISCHBEIN, 1879	Anatolia	ÖZBEK (1992), KOLAROV (1995)
<i>Ichneumon balteatus</i> WESMAEL, 1845	Ankara, Erzurum	ÖZDEMİR (1996), RIEDEL et al. (2010)
<i>Ichneumon bucculentus</i> WESMAEL, 1845	Bayburt, Erzurum, Istanbul, Niğde	FAHRINGER (1922), HILPERT (1992), KOLAROV (1995), RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Ichneumon caedator</i> GRAVENHORST, 1829	Artvin	ÇORUH et al. (2011)
<i>Ichneumon caloscelis</i> WESMAEL, 1845	Isparta	ÖZDAN (2014)
<i>Ichneumon cessator</i> MÜLLER, 1776	Erzurum	RIEDEL et al. (2010)
<i>Ichneumon confusor</i> GRAVENHORST, 1820	Kars	RIEDEL et al. (2010)
<i>Ichneumon coniger</i> TISCHBEIN, 1876	Erzurum	RIEDEL et al. (2010)
<i>Ichneumon curtulus</i> KRIECHBAUMER, 1882	Bayburt, Erzurum	ÇORUH & ÖZBEK (2011)
<i>Ichneumon erythromerus</i> WESMAEL, 1857	Erzurum	RIEDEL et al. (2010)
<i>Ichneumon exilicornis</i> WESMAEL, 1857	Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Ichneumon extensorius</i> LINNAEUS, 1758	Erzurum, Niğde	FAHRINGER (1921), KOLAROV (1995), RIEDEL et al. (2010)
<i>Ichneumon fulvicornis</i> GRAVENHORST, 1829	Bayburt, Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Ichneumon gracilentus</i> WESMAEL, 1844	Asia minor	FAHRINGER (1922), KOLAROV (1995)
<i>Ichneumon gracilicornis</i> GRAVENHORST, 1829	Anatolia, Bayburt, Erzurum	HILPERT (1992), KOLAROV (1995), RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Ichneumon gratus</i> WESMAEL, 1855	Erzurum	RIEDEL et al. (2010)
<i>Ichneumon haematofemur</i> HEINRICH, 1980	Anatolia, Erzurum	HILPERT (1989), KOLAROV (1995), RIEDEL et al. (2010)
<i>Ichneumon ignobilis</i> WESMAEL, 1855	Erzurum, Rize	RIEDEL et al. (2010), KOLAROV et al. (2014b)
<i>Ichneumon languidus</i> WESMAEL, 1845	Erzurum	RIEDEL et al. (2010)
<i>Ichneumon lautatorius</i> DESVIGNES, 1856	Erzurum, Iğdır, Muğla	RIEDEL et al. (2010)
<i>Ichneumon ligatorius</i> THUNBERG, 1822	Anatolia	HILPERT (1992), KOLAROV (1995)
<i>Ichneumon minutorius</i> DESVIGNES, 1856	Anatolia, Artvin, Erzurum	HILPERT (1992), KOLAROV (1995), RIEDEL et al. (2010)
<i>Ichneumon ostentator</i> HEINRICH, 1978	Anatolia, Erzurum	HEINRICH (1978), HILPERT (1992), KOLAROV (1995), RIEDEL et al. (2010)
<i>Ichneumon phaeostigmus</i> WESMAEL, 1857	Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Ichneumon primatorius</i> FÖRSTER, 1771	Erzurum	ÇORUH et al. (2011), RIEDEL et al. (2011)
<i>Ichneumon proletarius</i> WESMAEL, 1848	Anatolia, Ardahan, Artvin, Erzurum, Kars, Rize	HILPERT (1992), KOLAROV (1995), ÇORUH et al. (2011), RIEDEL et al. (2010), KOLAROV et al. (2014b)
<i>Ichneumon quaesitorius</i> LINNAEUS, 1761	Erzurum	ÇORUH et al. (2011)

Names of Taxa	Distributions in Turkey	Reference (s)
<i>Ichneumon sarcitorius</i> s. str. LINNAEUS, 1758	Anatolia, Çankırı, Bayburt, Erzurum	HILPERT (1992), KOLAROV (1995), ÖZDEMİR (1996), Kolarov et al. (1997), RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Ichneumon sarcitorius caucasicus</i> MEYER, 1926	Eastern Anatolia, Erzurum	HILPERT (1992), KOLAROV (1995), ÇORUH et al. (2011)
<i>Ichneumon sexcinctus</i> GRAVENHORST, 1829	Erzurum	RIEDEL et al. (2010)
<i>Ichneumon sexcinctoides</i> RIEDEL, ÇORUH & ÖZBEK, 2010	Erzurum	RIEDEL et al. (2010)
<i>Ichneumon simulans</i> TISCHBEIN, 1873	Anatolia	HILPERT (1992), KOLAROV (1995)
<i>Ichneumon stramentarius</i> GRAVENHORST, 1820	Bayburt, Istanbul	FAHRINGER (1922), KOLAROV (1995), RIEDEL et al. (2010)
<i>Ichneumon stramentor</i> RASNITSIN, 1984	Anatolia	HILPERT (1992)
<i>Ichneumon suspiciosus</i> WESMAEL, 1845	Erzurum	RIEDEL et al. (2010)
<i>Ichneumon terminatorius</i> GRAVENHORST, 1820	Istanbul, Erzincan, Erzurum, Niğde	FAHRINGER & FRIESE (1921), FAHRINGER (1922), HILPERT (1992), KOLAROV (1995), RIEDEL et al. (2010)
<i>Ichneumon veressi</i> (KISS, 1915)	Anatolia	HILPERT (1992)
<i>Ichneumon tuberculipes</i> WESMAEL, 1848	Amasya	RIEDEL et al. (2010)
<i>Ichneumon vafer meridionalis</i> HEINRICH, 1929	Erzurum	RIEDEL et al. (2010)
<i>Ichneumon xanthorius xanthorius</i> FÖRSTER, 1771	Anatolia, Denizli	HILPERT (1992), ÖZBEK et al. (2003)
<i>Limerodops</i> HEINRICH, 1949		
<i>Limerodops subsericans</i> (GRAVENHORST, 1820)	Artvin, Kars, Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011), ÇORUH & ÖZBEK (2013)
<i>Melanichneumon</i> THOMSON, 1893		
<i>Melanichneumon glaucatoriops</i> HEINRICH, 1972	Erzurum	ÇORUH et al. (2011), RIEDEL et al. (2011)
<i>Obtusodonta</i> HEINRICH, 1962		
<i>Obtusodonta equitatoria</i> (PANZER, 1786)	Anatolia, Ankara, Bayburt, Edime, Erzurum, Istanbul	KHAN & ÖZER (1984), RASNITSIN (1984), KOLAROV (1989), ÖNCÜER (1991), ÖZDEMİR (1996), YURTCAN (1999), RIEDEL et al. (2010), ÇORUH et al. (2011), ÇORUH & ÖZBEK (2013)
<i>Patrocloides</i> HEINRICH, 1961		
<i>Patrocloides sputator</i> (FABRICIUS, 1793)	Hatay, Istanbul	FAHRINGER (1922), SCHIMITSCHEK (1944), KOLAROV (1995)
<i>Platylabops</i> HEINRICH, 1950		
<i>Platylabops humilis</i> (WESMAEL, 1857)	Erzurum	RIEDEL et al. (2011)
<i>Platylabus iridipennis</i> (GRAVENHORST, 1829)	Erzurum, Kars	RIEDEL et al. (2010)
<i>Platylabus neglectus</i> (FONSCOLOMBE, 1847)	Erzurum	ÇORUH et al. (2011)
<i>Platylabus oehlkei</i> (HEINRICH, 1972)	Erzurum	RIEDEL et al. (2010)
<i>Platylabus tricingulatus</i> (GRAVENHORST, 1820)	Artvin, Eskişehir	ÖZDEMİR (1996), RIEDEL et al. (2010)
<i>Platylabus vibratorius</i> (THUNBERG, 1824)	Erzurum	RIEDEL et al. (2011)

Names of Taxa	Distributions in Turkey	Reference (s)
<i>Platylabus zagoriensis</i> HEINRICH, 1930	Eskişehir, Kırşehir	ÖZDEMİR (1996)
<i>Probolus</i> WESMAEL, 1844		
<i>Probolus crassulus</i> HORSTMANN, 2000	Anatolia, Bayburt, Erzurum, Rize, Trabzon	RIEDEL et al. (2010)
<i>Pseudoamblyteles</i> HEINRICH, 1926		
<i>Pseudoamblyteles homocerus</i> (WESMAEL, 1857)	Konya, Erzurum, Erzincan	AVCI & ÖZBEK (1990), ÖZDEMİR (1996), ÖZBEK et al. (2003), RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Rictichneumon</i> HEINRICH, 1961		
<i>Rictichneumon lombardi</i> (BERTHOUMIEU, 1897)	Erzurum	ÖZBEK et al. (2003), RIEDEL et al. (2010), ÇORUH et al. (2011), KOLAROV et al. (2014b)
<i>Spilichneumon</i> THOMSON, 1894		
<i>Spilichneumon ammonius</i> (GRAVENHORST, 1820)	Erzurum	ÇORUH et al. (2011)
<i>Spilichneumon limnophilus</i> (THOMSON, 1888)	Erzurum	ÇORUH et al. (2011)
<i>Spilichneumon occisorius</i> (FABRICIUS, 1793)	Bolu, Erzurum, Isparta, Eskişehir, Erzurum, Konya	ÖZDEMİR (1996), ÖZBEK et al. (2003), ÖZDAN (2014)
<i>Spilothyrates</i> HEINRICH, 1968		
<i>Spilothyrates illuminatorius</i> (GRAVENHORST, 1820)	Ankara, Erzurum, Erzincan, Kırşehir	ÖZDEMİR (1996), ÖZBEK et al. (2003), RIEDEL et al. (2010), KOLAROV and CALMAŞUR, (2011); ÇORUH et al. (2011)
<i>Spilothyrates nuptatorius</i> (FABRICIUS, 1793)	Erzurum, Iğdır	RIEDEL et al. (2010)
<i>Stenichneumon</i> THOMSON, 1893		
<i>Stenichneumon culpator</i> (SCHRANK, 1802)	Erzurum, Giresun	RIEDEL et al. (2010), KOLAROV et al. (2014b)
<i>Stenobarichneumon</i> HEINRICH, 1961		
<i>Stenobarichneumon basiglyptus</i> KRIECHBAUMER, 1890	Istanbul	YURTCAN (1999)
<i>Thyrates</i> PERKINS, 1953		
<i>Thyrates camelinus</i> (WESMAEL, 1845)	Ardahan, Erzurum, Kars	RIEDEL et al. (2010)
<i>Thyrates tardus</i> (BERTHOUMIEU, 1897)	Ardahan	ÖZBEK et al. (2003)
<i>Triptognathus</i> BERTHOUMIEU, 1904		
<i>Triptognathus atripes</i> (GRAVENHORST, 1820)	Kayseri, Bayburt, Erzurum	KOHL (1905), KOLAROV (1995), RIEDEL et al. (2011)
<i>Triptognathus</i> cf. <i>fumigator</i> (GRAVENHORST, 1820)	Erzurum	RIEDEL et al. (2011)
<i>Triptognathus unidentatus</i> BERTHOUMIEU, 1894	Erzurum, Niğde	HEINRICH (1978), KOLAROV (1995)
<i>Triptognathus unifasciatus</i> (SPINOLA, 1843)	Anatolia, Bayburt, Erzurum	HEINRICH (1978), RIEDEL et al. (2011)
<i>Virgichneumon</i> HEINRICH, 1977		
<i>Virgichneumon albosignatus</i> (GRAVENHORST, 1829)	Bayburt, Erzurum	RIEDEL et al. (2010)

Names of Taxa	Distributions in Turkey	Reference (s)
<i>Virgichneumon callicerus</i> (GRAVENHORST, 1820)	Bayburt, Bingöl, Erzincan, Erzurum, Trabzon	RIEDEL et al. (2010), ÇORUH et al. (2011), KOLAROV et al. (2014b)
<i>Virgichneumon digrammus</i> (GRAVENHORST, 1820)	Erzurum, Isparta	RIEDEL et al. (2010), ÖZDAN (2014)
<i>Virgichneumon maculicauda</i> (PERKINS, 1953)	Bayburt, Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Virgichneumon</i> HEINRICH, 1962		
<i>Virgichneumon deceptor</i> (SCOPOLI, 1763)	Erzurum, Nevşehir, Trabzon	HEINRICH (1996), RIEDEL et al. (2010), ÇORUH et al. (2011), KOLAROV et al. (2014b)
<i>Vulgichneumon saturatorius</i> (LINNAEUS, 1758)	Adana, Ardahan, Erzurum, Giresun, Rize	RIEDEL et al. (2010); ÇORUH et al. (2013), KOLAROV et al. (2014b)
<i>Vulgichneumon suavis</i> (GRAVENHORST, 1820)	Erzurum, Giresun, Rize	RIEDEL et al. (2010), KOLAROV et al. (2014b)
TRIBE JOPPOCRYPTINI VIERECK, 1918		
<i>Pseudoplatylabus</i> SMITS VAN BURGST, 1920		
<i>Pseudoplatylabus violentus</i> (GRAVENHORST, 1829)	Iğdır	RIEDEL et al. (2010)
TRIBE LISTRODROMINI FÖRSTER, 1869		
<i>Anisobas</i> WESMAEL, 1845		
<i>Anisobas brombacheri</i> HEINRICH, 1933)	Erzurum	ÖZBEK et al. (2003)
<i>Anisobas cingulatellus</i> HORSTMANN, 1997	Bayburt, Edirne, Isparta, Erzurum, Kayseri, Konya, Tekirdağ, Tunceli	KOHL (1905), SEDIVY (1959), ÖNCÜER (1991), KOLAROV (1995), YURTCAN (1999), ÇORUH et al. (2005), RIEDEL et al. (2010); ÇORUH et al. (2013), KOLAROV et al. (2014a), KOLAROV et al. (2014b), ÇORUH et al. (2011), ÖZDAN (2014)
<i>Anisobas seyrigi</i> HEINRICH, 1933	Anatolia	SELFA et al. (1988), KOLAROV (1995)
<i>Anisobas hostilis</i> (GRAVENHORST, 1820)	Erzurum, Kars, Tekirdağ	YURTCAN (1999), ÖZBEK et al. (2003), RIEDEL et al. (2010)
<i>Anisobas rebellis</i> WESMAEL, 1845	Artvin, Bingöl, Erzurum, Konya, Tunceli	RIEDEL et al. (2010); KOLAROV et al. (2014b)
<i>Anisobas seyrigi</i> HEINRICH, 1934	Anatolia, Tunceli	SELFA et al. (1988), KOLAROV (1995); KOLAROV et al. (2014b)
<i>Listrodromus</i> WESMAEL, 1845		
<i>Listrodromus nycthemerus</i> (GRAVENHORST, 1820)	Erzurum	ÖZBEK et al. (2003), RIEDEL et al. (2010)
<i>Neotypus</i> FÖRSTER, 1868		
<i>Neotypus coreensis</i> UCHIDA, 1930	Erzurum	RIEDEL et al. (2010)
<i>Neotypus nobilitator</i> (GRAVENHORST, 1807)	Erzurum	ÇORUH et al. (2011)
<i>Neotypus melanocephalus</i> (GMELIN, 1790)	Istanbul	FAHRINGER (1922), KOLAROV (1995)
<i>Pithotomus</i> KRIECHBAUMER, 1888		
<i>Pithotomus rufiventris</i> KRIECHBAUMER, 1888	Istanbul	KOLAROV (1989), KOLAROV (1995)
TRIBE PHAEOGENINI FÖRSTER, 1869		
<i>Centeterus</i> WESMAEL, 1845		
<i>Centeterus nigricornis</i> THOMPSON, 1891	Nevşehir	ÖZDEMİR (1996)

Names of Taxa	Distributions in Turkey	Reference (s)
<i>Centeterus major</i> WESMAEL, 1845	Konya	ÖZDEMİR (1996)
<i>Eparces</i> FÖRSTER, 1869		
<i>Eparces grandiceps</i> THOMSON, 1891	Tekirdağ	YURTCAN (1999)
<i>Dicaelotus</i> WESMAEL 1845		
<i>Dicaelotus montanus</i> (DE STEFANI, 1885)	Eskişehir	KOLAROV (1989), KOLAROV (1995)
<i>Dicaelotus morosator</i> AUBERT, 1969	Adapazarı	ONAT (1974), ÖNCÜER (1991), KOLAROV (1995)
<i>Dicaelotus rufilimbatus</i> (GRAVENHORST, 1820)	Niğde	KOLAROV (1989), KOLAROV (1995)
<i>Herpestomus</i> WESMAEL, 1845		
<i>Herpestomus aridens</i> (GRAVENHORST, 1829)	Isparta	ÖZDAN (2014)
<i>Herpestomus brunnicornis</i> (GRAVENHORST, 1829)	Ankara, Eskişehir, Nevşehir	İREN (1960), SOYDANBAY (1978), ÖNCÜER (1991), ÖZDEMİR (1996)
<i>Phaeogenes</i> WESMAEL, 1845		
<i>Phaeogenes alternans</i> WESMAEL, 1845	Rize	
<i>Phaeogenes corcyriensis</i> BERTHOUMIEU, 1901	Anatolia	KASPARYAN (1981), KOLAROV (1986), KOLAROV (1995), KOLAROV et al. (2014)
<i>Phaeogenes nigridens</i> WESMAEL, 1844	Black Sea, Istanbul	ÖZDEMİR (1981), KOLAROV (1989), ÖNCÜER (1991), KOLAROV (1995)
<i>Phaeogenes planifrons</i> WESMAEL, 1844	Istanbul	KOLAROV (1989), KOLAROV (1995)
<i>Phaeogenes rusticatus</i> WESMAEL, 1844	Bursa	SOYDANBAY (1978), KOLAROV (1995)
<i>Stenodontus</i> BERTHOUMIEU, 1897		
<i>Stenodontus marginellus</i> (GRAVENHORST, 1829)	Erzurum	KOLAROV et al. (2014b)
TRIBE PLATYLABINI BERTHOUMIEU, 1904		
<i>Apaeleticus</i> WESMAEL, 1844		
<i>Apaeleticus bellicosus</i> WESMAEL, 1845	Bayburt, Erzurum	RIEDEL et al. (2010), ÇORUH et al. (2011)
<i>Apaeleticus inimicus</i> (GRAVENHORST, 1820)	Erzurum	RIEDEL et al. (2011)
<i>Cyclolabus</i> HEINRICH 1936		
<i>Cyclolabus pactor</i> (WESMAEL, 1845)	Erzurum	RIEDEL et al. (2010)
<i>Linytus</i> CAMERON, 1903		
<i>Linytus exhortator</i> (FABRICIUS, 1793)	Erzurum, Niğde	FAHRINGER (1922), KOLAROV (1995), ÖZBEK et al. (2003)
TRIBE ZIMMERIINI HEINRICH, 1934		
<i>Cotiheresiarches</i> TELENGA, 1929		
<i>Cotiheresiarches dirus</i> (WESMAEL, 1853)	South Trakia	KOLAROV (1995)

Table 3: Parasitoid ichneumonines obtained from different hosts and references in Turkey.

Names of Taxa	Hosts Name	Order and Family of Hosts	Reference (s)
TRIBE: ALOMYINI FÖRSTER, 1869			
Diadromus WESMAEL, 1844			
<i>Diadromus collaris</i> (GRAVENHORST, 1829)	<i>Plutella maculipennis</i> CURT.	Lepidoptera: Plutellidae	ÖZDEMİR (1996), AVCI & ÖZBEK (1990)
<i>Diadromus subtilicornis</i> (GRAVENHORST, 1829)	<i>Plutella maculipennis</i> CURT.		ÖZDEMİR (1996), AVCI & ÖZBEK (1990)
Dicaelotus WESMAEL, 1844			
<i>Dicaelotus erythrogaster</i> (HOLMGREN, 1890)	<i>Lobesia botrana</i> DEN et. SCHIFF.	Lepidoptera: Tortricidae	ÖZDEMİR (1996)
<i>Dicaelotus morosator</i> AUBERT, 1969	<i>Scrobipalpa pcellatella</i> BOYD.	Lepidoptera: Gelechiidae	ÖNCÜER (1991), KOLAROV (1995)
<i>Dicaelotus rufilimbatus</i> (GRAVENHORST, 1820)	<i>Lobesia botrana</i> DEN et. SCHIFF.	Lepidoptera: Tortricidae	ÖZDEMİR (1996)
Dirophanes FÖRSTER, 1868			
<i>Dirophanes invisor</i> (THUNBERG, 1822)	<i>Tortrix viridana</i> L.	Lepidoptera: Tortricidae	ÖZDEMİR (1996)
TRIBE: HERESIARCHINI ASHMEAD, 1900			
Callajoppa CAMERON, 1903			
<i>Callajoppa exaltatoria</i> (PANZER, 1804)	<i>Agrius convolvuli</i> L.	Lepidoptera: Sphingidae	FAHRINGER (1922), KOLAROV (1995)
Cratichneumon THOMSON, 1893			
<i>Cratichneumon fabricator</i> FABRICIUS, 1793	<i>Abraxas pantaria</i> (L.)	Lepidoptera: Geometridae	ÖZBEK & CALMAŞUR (2010)
<i>Cratichneumon viator</i> (SCOPOLI, 1763)	<i>Plusia gamma</i> L.	Lepidoptera: Noctuidae	FAHRINGER (1922), KOLAROV (1995)
Obtusodonta HEINRICH, 1962			
<i>Obtusodonta equitatoria</i> (PANZER, 1786)	<i>Agrotis</i> sp.	Lepidoptera: Noctuidae	KHAN & ÖZER (1981), KOLAROV (1995), ÖZDEMİR (1996)

Names of Taxa	Hosts Name	Order and Family of Hosts	Reference (s)
<i>Patrocloides</i> HEINRICH, 1961			
<i>Patrocloides sputator</i> (FABRICIUS, 1793)	<i>Plusia gamma</i> L.	Lepidoptera: Noctuidae	FAHRINGER (1922), SCHIMITSCHEK (1944), KOLAROV (1995)
<i>Pseudoamblyteles</i> HEINRICH, 1926			
<i>Pseudoamblyteles homocernis</i> (WESMAEL, 1857)	<i>Autographa gamma</i> (L.)	Lepidoptera: Noctuidae	AVCI & ÖZBEK (1996), ÖZDEMİR (1996)
TRIBE PHAEOGENINI FÖRSTER, 1869			
<i>Dicaelotus</i> WESMAEL, 1844			
<i>Dicaelotus morosator</i> AUBERT, 1969	<i>Scrobipalpa ocellatella</i> BOYD.	Lepidoptera: Gelechiidae	ÖNCÜER (1991), KOLAROV (1995)
<i>Herpestomus</i> WESMAEL, 1845			
<i>Herpestomus brunnicornis</i> (GRAVENHORST, 1829)	<i>Yponomeuta malinellus</i> ZELL.	Lepidoptera: Yponomeutidae	SOYDANBAY (1978), ÖNCÜER (1991), ÖZDEMİR (1996)
	<i>Yponomeuta padellus</i> L.	Lepidoptera: Yponomeutidae	
	<i>Yponomeuta rorellus</i> Hb.	Lepidoptera: Yponomeutidae	
	<i>Yponomeuta</i> sp.	Lepidoptera: Yponomeutidae	
<i>Phaogenes</i> WESMAEL, 1845			
<i>Phaogenes nigridens</i> WESMAEL, 1844	<i>Ostrinia nubilalis</i> Hb.	Lepidoptera: Pyralidae	ÖZDEMİR (1981), KOLAROV (1995)
<i>Phaogenes rusticatus</i> WESMAEL, 1844	<i>Carpocapsa molesta</i> BUSCK	Lepidoptera: Tortricidae	SOYDANBAY (1978), KOLAROV (1995)
TRIBE ZIMMERIINI HEINRICH, 1934			
<i>Coitheresiarches</i> TELENGA, 1929			
<i>Coitheresiarches dirus</i> (WESMAEL, 1853)	<i>Eriogaster lanestris</i> L.	Lepidoptera: Lasiocampidae	KOLAROV (1995)

Table 4: Pants visited by ichneumonines adults in Turkey.

Insect Species	Plant Species	Family of Plant Species	Reference (s)
TRIBE: ALOMYINI FÖRSTER, 1869			
Alomya <i>Alomya</i> PANZER 1806			
<i>Alomya debellator</i> (FABRICIUS, 1775)	<i>Ligustrum vulgare</i> L. <i>Eryngium maritimum</i> L.	Oleaceae Apiaceae	FAHRINGER (1922), KOLAROV (1995)
Colpognathus WESMAEL, 1844			
<i>Colpognathus divistus</i> THOMSON, 1891	<i>Heracleum</i> sp.	Apiaceae	KOLAROV et al. (2014b)
Dicaelotus WESMAEL, 1844			
<i>Dicaelotus morosator</i> AUBERT, 1969	<i>Beta vulgaris</i> L.	Chenopodiaceae	ÖNCÜER (1991), KOLAROV (1995)
Heterischnus WESMAEL, 1859			
<i>Heterischnus schachtii</i> DILLER, 1995	<i>Seseli libanotis</i> (L.) W. KOCH	Apiaceae	KOLAROV et al. (2014b)
TRIBE: HERESIARCHINI ASHMEAD, 1900			
Amblyioppa CAMERON, 1902			
<i>Amblyioppa fuscipennis</i> (WESMAEL, 1844)	<i>Sambucus ebulus</i> L. <i>Seseli libanotis</i> (L.) W. KOCH	Caprifoliaceae Apiaceae	FAHRINGER (1922), KOLAROV (1995) ÇORUH & ÇORUH (2008)
Coelichneumon THOMSON, 1893			
<i>Coelichneumon leucocerus</i> (GRAVENHORST, 1820)	<i>Ferula communis</i> L. <i>Tanacetum armenum</i> (DC.) SCH. BIP. <i>Heracleum pastinacifolium</i> K. KOCH	Apiaceae Asteraceae Apiaceae	ÇORUH & ÇORUH (2008) FAHRINGER (1922), KOLAROV (1995) ÇORUH & ÇORUH (2012)
<i>Coelichneumon dorsosignatus</i> BERTHOUMIEU, 1894	<i>Mentha longifolia</i> (L.) HUDSON <i>Myricaria germanica</i> (L.) DESV. <i>Salix triandra</i> L.	Lamiaceae Tamaricaceae Salicaceae	ÇORUH & ÇORUH (2012) ÇORUH & ÇORUH (2012)
Lymantrichneumon HENRICH, 1968			
<i>Lymantrichneumon disparis</i> (PODA, 1761)	<i>Acantholimon venustum</i> BOISS.	Plumbaginaceae	FAHRINGER (1922), KOLAROV (1995)
Protichneumon THOMSON, 1893			
<i>Protichneumon coqueberti</i> (WESMAEL, 1848)	<i>Seseli libanotis</i> (L.) W. KOCH	Apiaceae	ÇORUH & ÇORUH (2008)

Insect Species	Plant Species	Family of Plant Species	Reference (s)
<i>Protichneumon fusorius</i> (LINNAEUS, 1761)	<i>Seseli libanotis</i> (L.) W. KOCH	Apiaceae	ÇORUH & ÇORUH (2008)
TRIBE: ICHNEUMONINI LATREILLE, 1802			
<i>Amblyteles</i> WESMAEL, 1844			
<i>Amblyteles armatorius</i> (FÖRSTER, 1771)	<i>Heracleum platytaenium</i> BOISS.	Apiaceae	FAHRINGER (1922), KOLAROV (1995)
<i>Cratichneumon</i> THOMSON, 1893			
<i>Cratichneumon coruscator</i> (LINNAEUS, 1758)	<i>Sambucus ebulus</i> L.	Caprifoliaceae	FAHRINGER (1922), KOLAROV (1995)
	<i>Tanacetum armenum</i> (DC.) SCH. Bip.	Asteraceae	FAHRINGER (1922), KOLAROV (1995)
	<i>Sambucus ebulus</i> L.	Caprifoliaceae	FAHRINGER (1921), KOLAROV (1995)
<i>Cratichneumon fabricator</i> FABRICIUS, 1793	<i>Fraxinus excelsior</i> (L.)	Oleaceae	ÖZBEK and CALMAŞUR (2010)
<i>Diphyus</i> KRIECHBAUMER, 1890			
<i>Diphyus luctatorius</i> (LINNAEUS, 1758)	<i>Sambucus ebulus</i> L.	Caprifoliaceae	FAHRINGER (1922), KOLAROV (1995)
<i>Diphyus montivagans</i> BERTHOUMIEU, 1987	<i>Epilobium angustifolium</i> L.	Onagraceae	ÇORUH & ÇORUH (2012)
<i>Diphyus ochromelas</i> (CHRIST, 1790)	<i>Daucus carota</i> L.	Apiaceae	FAHRINGER (1922), KOLAROV (1995)
<i>Diphyus palliatorius</i> (GRAVENHORST, 1829)	<i>Daucus carota</i> L.	Apiaceae	FAHRINGER (1922), KOLAROV (1995)
<i>Diphyus pseudomercator</i> HEINRICH, 1978	<i>Epilobium parviflorum</i> SCHREB.	Onagraceae	KOLAROV et al. (2014b)
	<i>Heracleum platytaenium</i> BOISS.	Apiaceae	ÇORUH & ÇORUH (2012)
	<i>Heracleum pastinacifolium</i> K. KOCH	Apiaceae	ÇORUH & ÇORUH (2012)
	<i>Epilobium angustifolium</i> L.	Onagraceae	ÇORUH & ÇORUH (2012)
	<i>Mentha longifolia</i> (L.) HUDSON	Lamiaceae	ÇORUH & ÇORUH (2012)
	<i>Myricaria germanica</i> (L.) DESV.	Tamaricaceae	ÇORUH & ÇORUH (2012)
	<i>Salix triandra</i> L.	Salicaceae	ÇORUH & ÇORUH (2012)
	<i>Sambucus ebulus</i> L.	Caprifoliaceae	FAHRINGER (1922), KOLAROV (1995)
<i>Diphyus quadripunctatorius</i> (MÜLLER, 1776)			
<i>Ichneumon</i> LINNAEUS, 1758			
<i>Ichneumon bucculentus</i> WESMAEL, 1845	<i>Sambucus ebulus</i> L.	Caprifoliaceae	FAHRINGER (1922), HILPERT (1992), KOLAROV (1995)
	<i>Daucus carota</i> L.	Apiaceae	FAHRINGER (1922), HILPERT (1992), KOLAROV (1995)

Insect Species	Plant Species	Family of Plant Species	Reference (s)
	<i>Heracleum platytaenium</i> BOISS.	Apiaceae	FAHRINGER (1922), HILPERT (1992), KOLAROV (1995)
<i>Ichneumon extensorius</i> LINNAEUS, 1758	<i>Chrysanthemum argentatum</i> WILLD.	Asteraceae	FAHRINGER (1921), KOLAROV (1995)
<i>Ichneumon gracilentus</i> WESMAEL, 1844	<i>Sambucus ebulus</i> L.	Caprifoliaceae	FAHRINGER (1921), KOLAROV (1995)
<i>Ichneumon stramentarius</i> GRAVENHORST, 1820	<i>Daucus carota</i> L.	Apiaceae	FAHRINGER (1921), KOLAROV (1995)
<i>Ichneumon terminatorius</i> GRAVENHORST, 1820	<i>Heracleum platytaenium</i> BOISS.	Apiaceae	FAHRINGER (1921), HILPERT (1922), KOLAROV (1995)
<i>Neotypus melanocephalus</i> (GMELIN, 1790)	<i>Daucus carota</i> L.	Apiaceae	FAHRINGER (1922), KOLAROV (1995)
TRIBE LISTRODROMINI FÖRSTER, 1869			
<i>Anisobas</i> WESMAEL, 1845			
<i>Anisobas cingulatus</i> HORSTMANN, 1997	<i>Daucus carota</i> L.	Apiaceae	KOLAROV et al. (2104b)
TRIBE PHAEOGENINI FÖRSTER, 1869			
<i>Dicaelotus</i> WESMAEL, 1844			
<i>Dicaelotus morosator</i> AUBERT, 1969	<i>Beta vulgaris</i> L.	Chenopodiaceae	ÖNCÜER (1991), KOLAROV (1995)
TRIBE PLATYLABINI BERTHOUMIEU, 1904			
<i>Linytus</i> CAMERON, 1903			
<i>Linytus exhortator</i> (FABRICIUS, 1793)	<i>Daucus carota</i> L.	Apiaceae	FAHRINGER (1922), KOLAROV (1995)

We analysed that ichneumonine species seasonal changes *Diadromus collaris*, *Barichneumon bilunulatus*, *Ctenichneumon repentinus*, *Ichneumon proletarius*, *Spilichneumon occisorius*, *Anisobas cingulatellus* and *Anisobas rebellis* were collected from four different months in a year. We can say that these species were more abundant in nature.

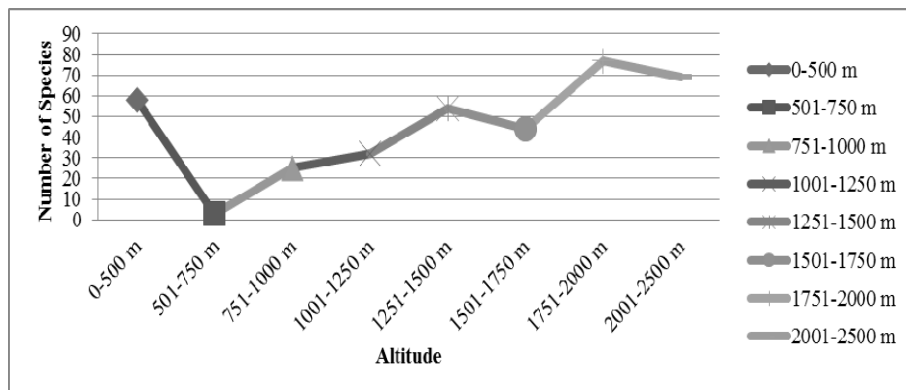


Fig. 4: Distributions of species according to altitude.

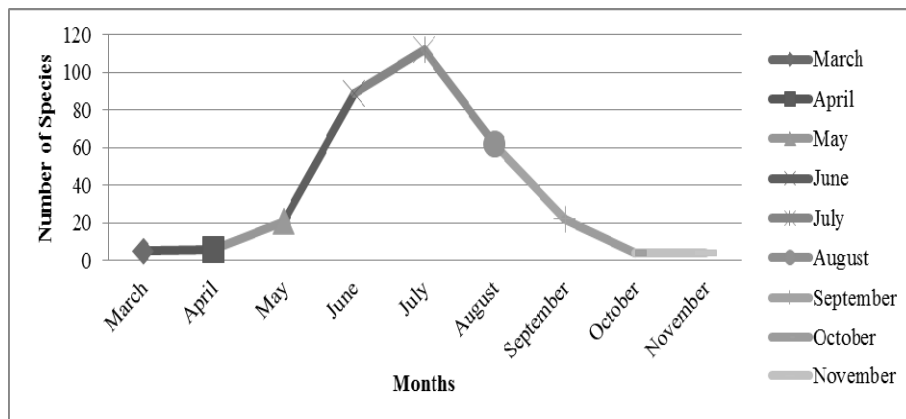


Fig. 5: Distributions of species according to months.

On the basis of the ecological data recorded in the present study, *Ichneumon proletarius* are adapted to both each altitude and different climatic conditions.

According to Chi-Square test, the ecological factors shown that there are significant differences between altitudes and months (Fig. 6-7).

	Observed N	Expected N	Residual
3,00	3	45,3	-42,3
25,00	25	45,3	-20,3
32,00	32	45,3	-13,3
44,00	44	45,3	-1,3
54,00	54	45,3	8,8
58,00	58	45,3	12,8
69,00	69	45,3	23,8
77,00	77	45,3	31,8
Total	362		

Test Statistics

	Number
Chi-Square	92,453 ^a
df	7
Asymp. Sig.	,000

a 0 cell(0,0%) have expected frequencies less than 5. The minimum expected cell frequency is 45,3
Fig. 6: Altitude of species according to Chi-Square test.

Zoogeographical distribution

Collected samples were found seven different regions in Turkey (Table 1). It is understood that 145 species were distributed in the Eastern Anatolia Region. The most important reason is that done a large part of the studies by researchers of the area in Turkey. Also, 34, 16, 43, 34, 2 and 2 species were distributed in Marmara, Mediterranean, Central Anatolia, Black Sea, Aegean and Southeastern Anatolia region respectively (Fig. 8). In addition to all this, Table 2 shows that the species collected from the province in seven different regions. Among them, *Heterischnus truncator*, *Amblyjoppa fuscipennis*, *Diphyus montivagans*, *Ichneumon bucculentus*, *Spilichneumon occisorius*, *Anisobas cingulatellus* were collected from four regions. It is obvious that *I. bucculentus* is a common species that is widely distributed in the Turkey.

	Observed N	Expected N	Residual
4,00	8	40,6	-32,6
5,00	5	40,6	-35,6
6,00	6	40,6	-34,6
21,00	21	40,6	-19,6
22,00	22	40,6	-18,6

	Observed N	Expected N	Residual
62,00	62	40,6	21,4
89,00	89	40,6	48,4
112,00	112	40,6	71,4
Total	325		

Test Statistics

	Number
Chi-Square	299,222 ^a
df	7
Asymp. Sig.	,000

a 0 cell (0,0%) have expected frequencies less than 5. The minimum expected cell frequency is 40,6
Fig. 7: Months of species according to Chi-Square test.

However, 141 species of 214 species were collected from a single region. When regions are compared, distributions are found heterogeneous between regions according to Chi-Square (Fig. 9).

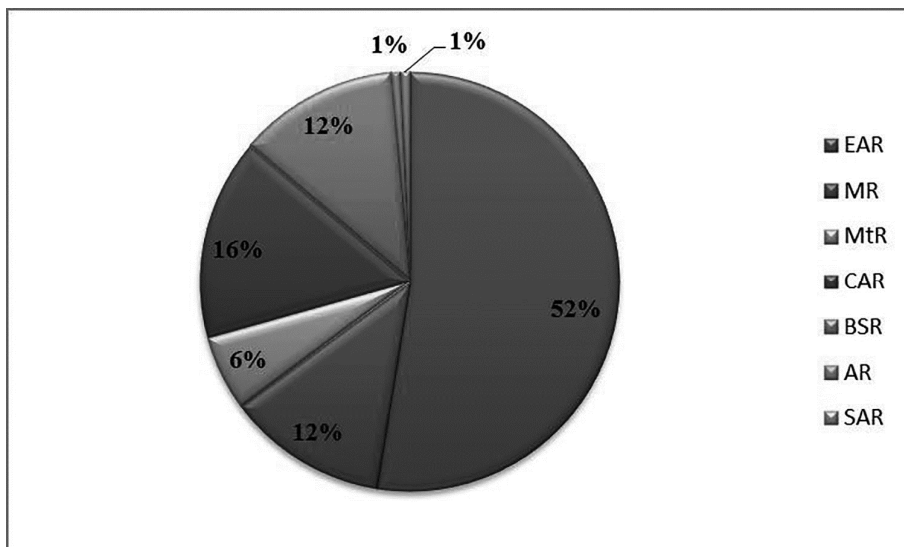


Fig. 8: Distributions of species according to regions of Turkey.

Remarks: AR: Aegean Region, BSR: Black Sea Region, CAR: Central Anatolia Region, EAR: Eastern Anatolia Region, MR: Marmara Region, MtR: Mediterranean Region, SAR: Southeastern Anatolia.

	Observed N	Expected N	Residual
2,00	4	55,2	-51,2
16,00	16	55,2	-39,2
34,00	68	55,2	12,8
43,00	43	55,2	-12,2
145,00	145	55,2	89,8
Total			

Test Statistics

	Number
Chi-Square	227,080 ^a
df	4
Asymp. Sig.	,000

a 0 cell (0,0%) have expected frequencies less than 5. The minimum expected cell frequency is 55,2

Fig. 9: Distribution regions species according to Chi-Square test.

Distributions of the species according to zoogeographical regions are as follows: 203 species present Western Palaearctic, 195 species present European, 134 species present East Palaearctic, 14 species present Nearctic, 13 species present Oriental, two species present Oceanic, three species present Neotropical, one species present Afrotropical and one two present Australian. According to these results, Western Palaearctic and European have the highest numbers of species (Fig. 10 and Table 1).

Among this 215 species, *Trogus lapidator*, *Ctenichneumon panzeri* and *Neotypus nobilitator* showed distribution in five different regions. According to YU et al (2012), *Diadromus collaris* has the widest distribution areas (65 country and eight different regions) in the world. Same species distributed three regions in Turkey. This can be interpreted as follows: This wide range distribution is due to rich host availabilities of the species besides their eurytolerant nature (YU et al. 2007). Interestingly, *Coelichneumon paraviolaceiventris*, *Coelichneumon rufigaster*, *Heterischnus schachtii*, *Magwengiella flavescens* and *Ichneumon sexcinctoides* are found only Turkey. They are marked by an asterisk (*) endemic to Anatolia. Besides, *Coelichneumon nigritor* is distributed only Azarbaijan and Turkey; *Coelichneumon problematicus* is distributed Iran and Turkey and *Coelichneumon pararudis* is distributed Kyrgyzstan and Turkey. It is think that this three species are rarely species for the world. According to Table 1, eight species showed single distribution area in zoogeographical regions.

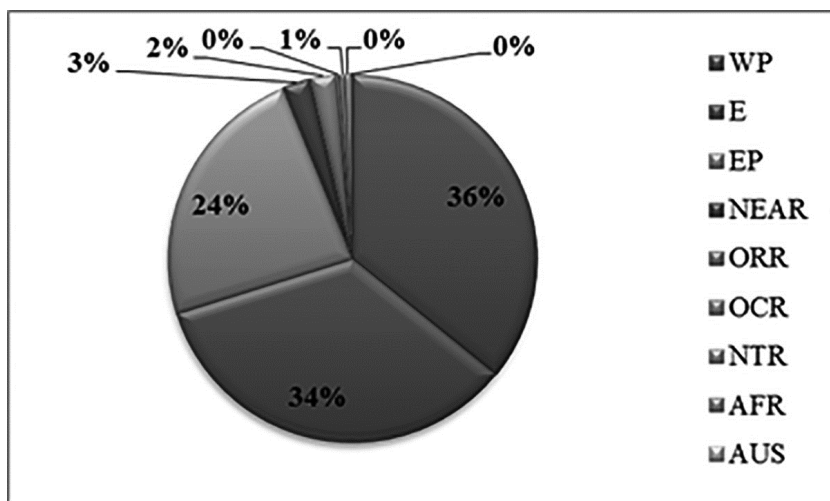


Fig. 10: Distributions of species according to zoogeographical regions.

Remarks: **AFR:** Afrortopikal Region, **AUR:** Australian Region, **E:** Europe, **EP:** Eastern Palaearctic, **NEAR:** Nearctic Region, **NTR:** Neotropikal Region, **OCR:** Oceanic Region, **ORR:** Oriental Region, **WP:** Western Palaearctic.

Host and plant visited by adults' evaluations

Parasitoid wasps occur worldwide and can be a significant mortality factor in pest populations. Most parasitoid species depend on floral nectar to complete part of their lifecycle (SYME 1975, IDRIS & GRAFIUS 1995). Parasitoid wasps need to eat frequently to avoid starvation, and many species have increased longevity and fecundity when provided with floral resources (BAGGEN & GURR 1998, SIEKMANN et al. 2001). A variety of crops, weeds, and wild plants can occur on agricultural landscapes, but not all of these species provide resources for parasitoid wasps. Some of the plant species do not produce nectar, while others may have long or complicated corollas that can limit nectar availability for small wasps and other short mouthed insects (VATTALA et al. 2006).

Ichneumoninae is an enormous but morphologically relatively uniform group that is nearly all larvae-pupal or pupal endoparasitoids of Lepidoptera. Our results showed that totally 17 ichneumonine species obtained from different hosts in Turkey (Table 3). All of these hosts belong to Lepidoptera order. According to these results, *Herpestomus brunnicornis* was obtained from 3 different *Yponomeuta* spp. (*Yponomeuta malinellus* Zell. *Y. padellus* L., *Y. rorellus* Hb.). According to YU et al. (2012), it abtained from *Choristoneura murinana*, *Ethmia bipunctella*, *Plutella xylostella*, *Yponomeuta cagnagella*, *Yponomeuta euonymella*, *Yponomeuta evonymella*, *Yponomeuta malinella*, *Yponomeuta padella*, *Yponomeuta plumbella*, *Yponomeuta rorrella*, *Yponomeuta variabilis*, *Yponomeuta vigintipunctata*. Therefore, it used as biological control agents for *Yponomeuta* spp. in the world (COSSENTINE 2002, UNRUH et al. 2003).

At the same time, *Diadromus collaris* (GRAVENHORST) (Hymenoptera: Ichneumonidae) is an important pupal endoparasitoid of the diamondback moth, *Plutella xylostella* (L.) (Lepidoptera: Plutellidae), one of the most destructive pests of cruciferous vegetables worldwide (WATERHOUSE et al. 1993). It has been recorded in many parts of the world as one of the major biological control agents of *P. xylostella* (WATERHOUSE & NORRIS 1987, MUSTATA 1992, WAKISAKA et al. 1992, ALI & KARIM 1995, HE et al. 1996, CHAUHAN et al. 1997, KFIR 1997, LIU et al. 2000). Our results confirm the literature.

Several plant species have been recorded as associated host plants for ichneumonid species (YU et al. 2012). Host plant associations are evaluated graphically, showing 29 ichneumonines were collected when feed with different plant species in Turkey. It appears from field studies, *Ichneumon bucculentus* was visited *Sambucus ebulus*, *Daucus carota*, *Heracleum platytaenium*. According to YU et al (2012) this species was visited nine plants. From among them, *Daucus carota* and *Heracleum platytaenium* are similar to our results for *Ichneumon bucculentus*. Plants compared listed in Table 4 that *Sambucus ebulus* and *Daucus carota* are the species most frequently visited by ichneumonines.

In conclusion, our study revealed that the faunistic knowledge of the Ichneumonidae from Turkey has received very little attention from researchers till 1995. After 1995, faunistic studies have increased and gained a new dimension. According to Science Station Index (SCI) during for last 10 years, published articles regarding Ichneumonidae from Turkey were indicated in graph (Fig. 11). We believe that this present study will be a base source for new investigations and promote to prepare a new Ichneumonidae catalogue for Turkey in near future.

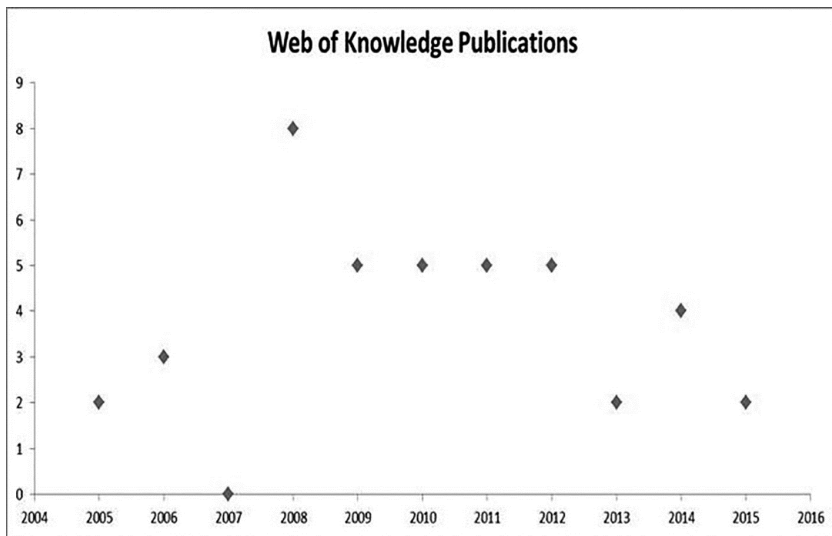


Fig. 11: Publications according to Science Station Index in Turkey.

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