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Ephialtini tribe (Hymenoptera, Ichneumonidae, Pimplinae) of Turkish Thrace region

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Abstract

In this study, specimens of Ephialtini (Hymenoptera: Ichneumonidae: Pimplinae) collected from a total of 75 localities dispersed over 8 different habitats of Turkish Thrace region between the years 1992 and 2002, were evaluated and a total of 23 species were identified. Of these, 5 species are new records for the Turkish fauna. Furthermore, collection periods and beneficial notes on habitats and zoogeographies for each species were given. Among the identified species, *Scambus rufator* AUBERT 1964 and *Perithous romanicus* CONSTANTINEANU & CONSTANTINEANU 1968 have a Europeo-Mediterranean chorotype. On the other hand, whereas Sibero-European is represented by only 1 species, 2 species have Asiatic-European, 2 species have Westpaleartic, 6 species have Holarctic and 3 species have Palearctic chorotypes. The rest 7 species are the ones that show multiregional distribution. *Exeristes roborator* (FABRICIUS, 1793), *Zaglyptus multicolor* (GRAVENHORST 1829) and *Z. varipes* (GRAVENHORST 1829) are the most common species in Turkish Thrace region. These three species show a wide ranged distribution and occur in different habitats throughout the research area and were considered to be eurytolerant in terms of their habitat preference.

Key words: Zoogeography, Habitat Preference, Turkish Thrace, Ichneumonidae, Ephialtini.

Zusammenfassung

Vorliegende Arbeit behandelt türkische Ephialtini (Hymenoptera: Ichneumonidae: Pimplinae) aus der Region Thrace, die im Zeitraum 1992 bis 2002 an 75 verschiedenen Orten und acht unterschiedlichen Habitaten gesammelt wurden. Daraus ergaben sich 23 verschiedene Arten, die folgenden 5 davon sind neu für die Türkei: *Scambus vesicarius* (RATZBURG 1844), *Perithous romanicus* CONSTANTINEANU & CONSTANTINEANU 1968, *Gregopimpla inquisitor* (SCOPOLI 1763), *Tromatobia ovivora* (BOHEMAN 1821) und *Clitopyga rufator* HOLMGREN 1856. Die Verbreitungstypen der einzelnen Taxa wurden festgehalten.

Introduction

Ichneumonidae is the largest family of the Hymenoptera with at least 60.000 species recorded worldwide (TOWNES 1969). Among this family, about 1.490 species found all over the world constitute the Pimplinae subfamily, of which 330 have been recorded throughout the Palearctic region (YU & HORSTMAN 1997). Ephialtini, whose members are ectoparasitoids of immature Coleoptera, Diptera, Hymenoptera, Lepidoptera, Neuroptera and Araneida, is one of the largest tribe of Pimplinae (KASPARYAN 1981; FITTON et al. 1987, 1988; GAULD & BOLTON 1988; WAHL 1993; SHAW 1998; GÜLTEKIN et al. 2004; FINCH 2005; YU et al. 2006).

The earliest studies on Turkish Ephialtini fauna were carried out by KOHL (1905) and FAHRINGER (1922). KOLAROV (1995) reviewed studies performed until then in Turkish Ichneumonidae catalog. Similar valuable projects continued to be done including Ephialtini records (KOLAROV & BEYARSLAN 1994, KOLAROV et al. 1997a, 1997b, 1999, 2002, ÇORUH et al. 2002, KASPARYAN & GÜLTEKIN, 2002, KOLAROV & GÜRBÜZ 2004, GÜRBÜZ & AKSOYLAR 2005). A total of 47 Ephialtini species have been recorded so far with these studies.

This study was carried on in 75 localities in Turkish Thrace Region between the years 1992 and 2002 (Fig. 1, Tab. 1).

Our study area, Turkish Thrace, extends over 23.485 km² with deciduous and coniferous forests covering 20 % of the region. These forests are mainly situated on the Ganos and Koru Mountains in the southern and on the Istranca Mountains in the northern part of the region. The rest of the study area is meadows (20 %) and cultivated land (60 %).

Ganos and Istranca mountains are heavily forested areas in the region. Ganos Mountains are generally constituted of Eosen-Oligosen masses. It lies in NE-SE direction and its highest point is 920 m. Istranca Mountains, located in the north, did not undergo a glacier stage in Pleistocene and its highest point is 1081 m. Ganos and Istranca Mountains have been partly protected against human settling since its topographic structure is unsuitable for agricultural cultivation.

With the present study, aiming to aid in the identification and understanding of the Turkish Ephialtini, their distributions and habitat preferences, chorotype and habitat preference tables were prepared and discussed (Tab. 2-3). It is also the first extensive study on the subject in the region. New records for Turkey and Turkish Thrace faunas were given with asterisk (*) and plus (+), respectively.

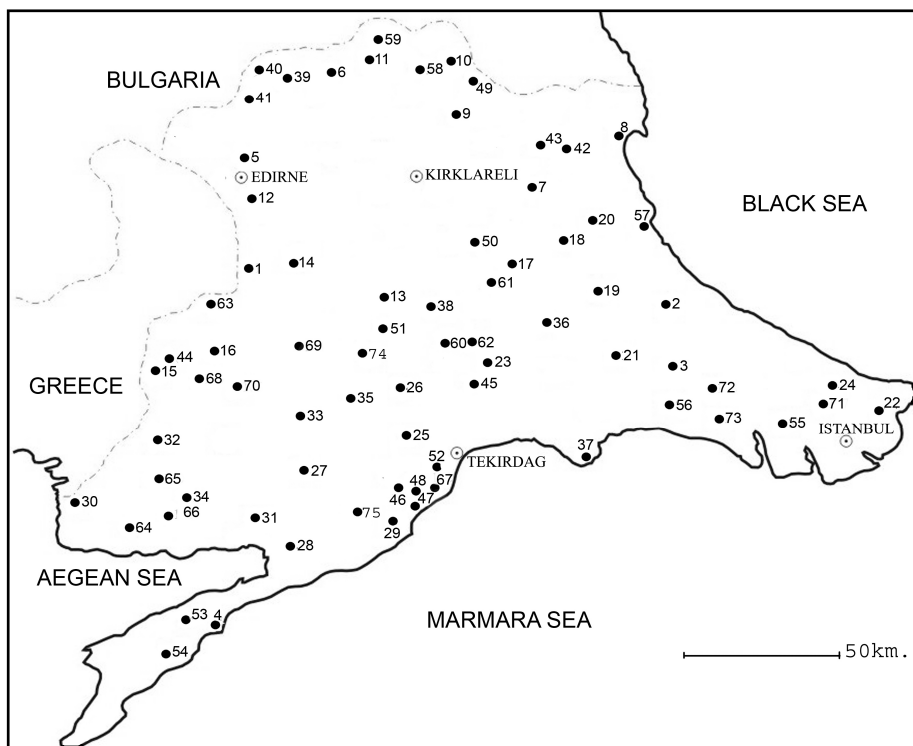


Fig. 1: Studied localities throughout the Turkish Thrace region.

Tab. 1: Locality and habitats of Turkish Thrace Ephialtini.

Localities no	Localities	Habitat
1	Edirne-Uzunköprü-Saçlımüsellim	Oak forest
2	İstanbul-Çatalca-Binkılıç	Pasture
3	İstanbul-Silivri-Küçüksinekli	Pasture
4	Çanakkale-Gelibolu	Pasture
5	Edirne-Tavuk Ormanı	Mix forest
6	Edirne-Lalapaşa-Vaysal	Oak forest
7	Kırklareli-Pınarhisar-Yenice	Oak forest
8	Kırklareli-Demirköy-İğneada	Mix forest
9	Kırklareli-Dereköy	Oak forest
10	Kırklareli-Dereköy-Çağalayık	Oak forest

Localities no	Localities	Habitat
11	Kırklareli-Kofçaz-Aşağıkanara	Oak forest
12	Edirne-Hadımağa	Orchards
		Pasture
13	Kırklareli-Babaeski-Alpullu	Pasture
14	Edirne-Havsa-Çukurköy	Pasture
15	Edirne-Meriç-Küplü	Pasture
16	Edirne-Meriç-Paşayenice	Pasture
17	Kırklareli-Pınarhisar-Sütlüce	Willow and poplar woodlands
18	Kırklareli-Vize	Willow and poplar woodlands
		Pasture
19	Tekirdağ-Saray	Oak forest
20	Kırklareli-Vize-Kömürköy	Willow and poplar woodlands
21	Tekirdağ-Çerzekköy	Oak forest
22	İstanbul-Sarıyer-Bilezikçi Çiftliği	Mix forest
23	Tekirdağ-Murathı-Aşağısevindikli	Willow and poplar woodlands
24	İstanbul-Kısırmandıra	Mix forest
25	Tekirdağ-Ferhadanlı	Willow and poplar woodlands
26	Tekirdağ-Hayrabolu-Kandamış	Willow and poplar woodlands
27	Tekirdağ-Malkara	Willow and poplar woodlands
28	Çanakkale-Gelibolu-Evreşe	Willow and poplar woodlands
29	Tekirdağ-Şarköy-Güzelköy	Willow and poplar woodlands
		Oak forest
30	Edirne-Enez	Pine forest
31	Edirne-Keşan-Korudağı	Pine forest
32	Edirne-İpsala	Clover fields
33	Tekirdağ-Malkara-Tekkeköy	Willow and poplar woodlands
34	Edirne-Keşan-Karahisar	Pasture
35	Tekirdağ-Hayrabolu-Susuzmüsellim	Crop fields
36	Tekirdağ-Saray-Beyazköy	Pasture
37	Tekirdağ-Çorlu-Marmara Ereğlisi	Pasture
38	Kırklareli-Lüleburgaz-Türkgeldi D.Ü.Çiftliği	Orchards
39	Edirne-Lalapaşa-Doğanköy	Oak forest
40	Edirne-Lalapaşa-Uzunbayır	Clover fields
41	Edirne-Suakacağı	Willow and poplar woodlands
42	Kırklareli-Demirköy	Mix forest
43	Kırklareli-Demirköy-Balaban	Mix forest
44	Edirne-Meriç-Subaşı	Pasture

Localities no	Localities	Habitat
45	Tekirdağ-Murathı	Willow and poplar woodlands
46	Tekirdağ- Ganos-Radar	Oak forest
47	Tekirdağ-Uçmakdere	Orchards
48	Tekirdağ-Işıklar	Oak forest
49	Kırklareli-Dereköy-Gümrük	Mix forest
50	Kırklareli-Lüleburgaz-Ceylanköy	Pasture
51	Tekirdağ-Hayrabolu-Lahana	Clover fields
52	Tekirdağ-Yazırköy	Orchards
53	Çanakkale-Gelibolu-Fındıklı	Pasture
54	Çanakkale-Eceabat-İlgardere	Orchards
55	İstanbul-Çatalca-Ömerli	Willow and poplar woodlands
56	İstanbul-Silivri-Büyükkılıçlı	Willow and poplar woodlands
57	Kırklareli-Vize-Kıyıköy	Willow and poplar woodlands
58	Kırklareli-Kofçaz-Ahmetler	Oak forest
59	Kırklareli-Kofçaz-Beyci	Willow and poplar woodlands
60	Kırklareli-Lüleburgaz-Çengelli	Willow and poplar woodlands
61	Kırklareli-Lüleburgaz-Emirali	Willow and poplar woodlands
62	Kırklareli-Seyitler	Willow and poplar woodlands
63	Edirne-Meriç-Akçadam	Willow and poplar woodlands
64	Edirne-Enez-Hasköy	Willow and poplar woodlands
65	Edirne-İpsala-Kocahıdır	Willow and poplar woodlands
66	Edirne-Keşan-Barağı	Willow and poplar woodlands
67	Tekirdağ-Naip	Pasture
68	Edirne-U.köprü-Balabankoru	Willow and poplar woodlands
69	Edirne-U.köprü-Çöpköy	Clover fields
70	Edirne-U.köprü-Karapınar	Willow and poplar woodlands
71	İstanbul-G.paşa-Boğazköy	Orchards
72	İstanbul-Silivri-Akören	Pasture
73	İstanbul-Silivri-Ortaköy	Orchards
74	Tekirdağ-Hayrabolu	Willow and poplar woodlands
75	Tekirdağ-Malkara-Çınarlıdere	Willow and poplar woodlands

Material and Methods

Adult specimens of Ephialtini were collected from pastures, willow and poplar woodlands, clover and crop fields, orchards, pine, oak and mixed forests at different altitudes in Turkish Thrace between the years 1992 and 2002. A sweeping-net was used for diurnal specimens while a light trap was used for nocturnal species. The specimens were compared with relevant literature data, material from Bulgaria previously collected and identified by Dr J. Kolarov and with specimens stored at the Hungarian Natural History Museum. Taxonomical analyses employed methods described in earlier papers (TOWNES 1969, KASPARYAN 1981, FITTON et al. 1988, KOLAROV 1997). We followed YU et al. (2006) for general distributions of the species. The study material is kept at the Biology Department of Trakya University (TU).

Results

+*Exeristes arundinis* (KRIECHBAUMER 1887)

Material examined: **35:** (110m), 15.08.1995, 1 ♀; **37:** (20m), 07.08.1995, 1 ♂.

General Distribution: Eastern Palearctic, Europe, Western Palearctic.

***Exeristes roborator* (FABRICIUS 1793)**

Material examined: **2:** (200m), 03.10.1992, 1 ♀; **12:** (41m), 09.10.2001, 1 ♂; **29:** (400m), 08.09.1999, 1 ♂; 24.08.2000, 2 ♀ ♀; **30:** (15m), 27.06.1993, 2 ♂ ♂; **34:** (180m), 06.08.1993, 1 ♀; **40:** (200m), 05.07.1997, 2 ♂ ♂; **44:** (50m), 13.09.1997, 2 ♂ ♂; **45:** (54m), 07.09.1999, 1 ♀, 2 ♂ ♂; **52:** (60m), 23.08.2000, 1 ♀, 2 ♂ ♂; **55:** (80m), 15.06.2001, 1 ♀; **60:** (60m), 18.07.2001, 2 ♀ ♀; **68:** (15m), 13.07.2002, 1 ♀.

General Distribution: Eastern Palearctic, Ethiopian, Europe, Oriental, Western Palearctic.

***Fredegunda diluta* (RATZEBURG 1852)**

Material examined: **29:** (400m), 22.06.1995, 1 ♀; **56:** (150m), 15.06.2001, 1 ♀, 1 ♂.

General Distribution: Europe, Western Palearctic.

+*Endromopoda arundinator* (FABRICIUS 1804)

Material examined: **4:** (10m), 06.05.1993, 1 ♀; **32:** (70m), 05.08.1993, 1 ♀; **45:** (54m), 07.09.1999, 1 ♀; **54:** (20m), 08.06.2001, 1 ♀; **68:** (15m), 13.07.2002, 1 ♂; **69:** (60m), 13.07.2002, 1 ♀.

General Distribution: Eastern Palearctic, Europe, Western Palearctic.

***Endromopoda detrita* (HOLMGREN 1860)**

Material examined: 7: (700m), 19.07.1994, 1♂; 9: (400m), 17.07.2001, 1♂; 17: (110m), 22.06.1993, 2♀♀; 19: (150m), 16.06.2001, 3♀♀; 20: (180m), 23.06.1993, 1♀; 21: (110m), 23.06.1993, 1♀; 23: (90m), 24.06.1993, 2♀♀; 26: (70m), 25.06.1993, 1♀; 28: (20m), 26.06.1993, 1♀; 29: (400m), 08.09.1999, 1♀; 43: (400m), 06.07.1997, 1♀, 1♂; 47: (300m), 24.08.2000, 1♀; 48: (110m), 25.08.2000, 1♀; 59: (170m), 17.07.2001, 1♂; 61: (60m), 18.07.2001, 1♀; 63: (85m), 27.07.2001, 1♀; 13.07.2002, 1♀; 64: (80m), 02.08.2001, 1♀, 1♂; 68: (15m), 13.07.2002, 1♀; 71: (60m), 14.07.2002, 1♂; 72: (15m), 14.07.2002, 1♀, 2♂♂.

General Distribution: Eastern Palearctic, Europe, Nearctic, Oriental, Western Palearctic.

+*Endromopoda phragmitidis* (PERKINS 1957)

Material examined: 10: (620m), 17.07.2001, 1♀; 18: (150m), 25.07.2000, 1♀; 19: (150m), 16.06.2001, 1♀; 38: (60m), 03.08.1996, 1♀; 45: (54m), 07.09.1999, 1♀; 52: (60m), 23.8.2000, 1♀; 63: (85m), 27.07.2001, 6♀♀; 68(15m), 13.07.2002, 1♀; 70: (50m), 13.07.2002, 1♀; 72: (15m), 14.07.2002, 1♀.

General Distribution: Eastern Palearctic, Europe, Western Palearctic.

***Scambus brevicornis* (GRAVENHORST 1829)**

Material examined: 7: (700m), 19.07.1994, 1♀, 1♂; 04.10.1999, 1♀; 12: (41m), 25.10.2001, 1♀; 20: (180m), 23.06.1993, 1♂; 26: (70m), 25.06.1993, 1♀; 39: (370m), 24.09.1998, 1♀; 42: (390m), 15.09.1999, 1♀; 46: (700m), 08.09.1999, 1♀; 24.08.2000, 1♀; 48: (110m), 23.10.2001, 3♀♀; 67: (30m), 23.10.2001, 1♀.

General Distribution: Holarctic.

+*Scambus calobatus* (GRAVENHORST 1829)

Material examined: 3: (170m), 03.10.1992, 1♀; 24: (70m), 25.06.1993, 1♂; 41: (55m), 05.07.1997, 1♂.

General Distribution: Eastern Palearctic, Europe, Western Palearctic.

+*Scambus elegans* (WOLDSTEDT 1877)

Material examined: 53: (40m), 07.06.2001, 1♀.

General Distribution: Eastern Palearctic, Europe, Western Palearctic.

+*Scambus foliae* (CUSHMAN 1938)

Material examined: 75: (210m), 26.07.2000, 1♂.

General Distribution: Europe, Western Palearctic.

+*Scambus nigricans* (THOMSON 1877)

Material examined: **5:** (40m), 07.05.2002, 1♀; **9:** (400m), 17.07.2001, 1♂; **18:** (150m), 25.07.2000, 1♀; **22:** (30m), 16.06.2001, 1♀; **25:** (150m), 25.06.1993, 1♂; **26:** (70m), 25.06.1993, 1♂; **33:** (170m), 05.08.1993, 1♀; **35:** (110m), 06.08.1993, 1♀; **43:** (400m), 06.07.1997, 1♂; **65:** (90m), 02.08.2001, 1♀; **72:** (15m), 14.07.2002, 1♀; **74:** (40m), 19.06.1993, 1♀.

General Distribution: Holarctic.

***Scambus rufator* AUBERT 1964**

Material examined: **42:** (390m), 15.09.1999, 1♀.

General Distribution: Europe, Western Palearctic.

****Scambus vesicarius* (RATZEBURG 1844)**

Material examined: **6:** (380m), 29.05.1993, 1♀; **14:** (30m), 19.06.1993, 1♀; **19:** (150m), 22.06.1993, 1♀; **62:** (65m), 18.07.2001, 1♀.

General Distribution: Holarctic.

+*Ephialtes manifestator* (LINNAEUS 1758)

Material examined: **8:** (10m), 19.07.1994, 1♀.

General Distribution: Eastern Palearctic, Europe, Nearctic, Oriental, Western Palearctic.

****Perithous romanicus* CONSTANTINEANU & CONSTANTINEANU 1968**

Material examined: **52:** (60m), 23.8.2000, 1♀.

General Distribution: Europe, Western Palearctic (Bulgaria, Romania and Turkey).

***Perithous divinator* (ROSSI 1790)**

Material examined: **12:** (41m), 12.10.1999 (Nocturnal), 1♀; 13.07.2002, 1♂; **29:** (400m), 08.09.1999, 1♀; **47:** (300m), 24.08.2000, 1♂; **63:** (85m), 27.07.2001, 1♂.

General Distribution: Eastern Palearctic, Europe, Nearctic, Oriental, Western Palearctic.

****Gregopimpla inquisitor* (SCOPOLI 1763)**

Material examined: **13:** (40m), 18.06.1993, 1♂; **15:** (50m), 21.06.1993, 1♂; **20:** (180m), 23.06.1993, 2♂♂; **23:** (90m), 24.06.1993, 1♂; **25:** (150m), 25.06.1993, 2♂♂; **26:** (70m), 25.06.1993, 2♂♂; **27:** (220m), 25.06.1993, 2♂♂; **29:** (400m), 26.06.1993, 2♂♂.

General Distribution: Holarctic.

***Tromatobia ornata* (GRAVENHORST 1829)**

Material examined: **5:** (40m), 22.05.1993, 1♀; **48:** (110m), 25.08.2000, 1♂; **61:** (60m), 18.07.2001, 1♀.

General Distribution: Eastern Palearctic, Europe, Oriental, Western Palearctic.

****Tromatobia ovivora* (BOHEMAN 1821)**

Material examined: **11:** (450m), 20.06.1994, 1♀.

General Distribution: Eastern Palearctic, Europe, Nearctic, Neotropic, Oceanic, Western Palearctic.

+*Tromatobia variabilis* (HOLMGREN 1856)

Material examined: **1:** (100m), 01.08.1992, 1♂; **32:** (70m), 27.07.2000, 1♀; **50:** (60m), 25.07.2000, 1♂; **51:** (70m), 26.07.2000, 1♂; **56:** (150m), 15.06.2001, 1♀; **73:** (50m), 14.07.2002, 1♂.

General Distribution: Holarctic.

***Zaglyptus multicolor* (GRAVENHORST 1829)**

Material examined: **5:** (40m), 07.05.2002, 1♀; **15:** (50m), 21.06.1993, 1♂; **31:** (350m), 09.09.1999, 1♀; **47:** (300m), 08.09.1999, 1♂; **48:** (110m), 09.09.1999, 2♀ ♀; 25.08.2000, 1♂; **66:** (85m), 02.08.2001, 1♀, 2♂ ♂.

General Distribution: Eastern Palearctic, Europe, Oriental, Western Palearctic.

***Zaglyptus varipes* (GRAVENHORST 1829)**

Material examined: **9:** (400m), 05.06.1993, 1♀; **12:** (41m), 09.10.2001, 2♀ ♀, 3♂ ♂; **16:** (60m), 21.06.1993, 1♀; **32:** (70m), 05.08.1993, 1♂; **36:** (85m), 12.08.1993, 1♀; **38:** (60m), 25.07.2002, 1♀; **45:** (54m), 07.09.1999, 1♂; **46:** (700m), 08.09.1999, 1♂; **48:** (110m), 24.8.2000, 1♀; **49:** (430m), 23.07.2000, 1♂; **57:** (15m), 16.06.2001, 1♂; **58:** (570m), 17.07.2001, 2♀ ♀; **61:** (60m), 17.07.2001, 1♂.

General Distribution: Holarctic.

****Clistopyga rufator* HOLMGREN 1856**

Material examined: **12:** (41m), 09.10.2001, 1♀; 25.10.2001, 1♀.

General Distribution: Eastern Palearctic, Europe, Western Palearctic.

Tab. 2: Chorotypes of Turkish Thrace Ephialtini

Holarctic	<i>Scambus brevicornis</i> <i>Scambus nigricans</i> <i>Scambus vesicarius</i> <i>Gregopimpla inquisitor</i> <i>Tromatobia variabilis</i> <i>Zaglyptus varipes</i>
Palearctic	<i>Endromopoda arundinator</i> <i>Endromopoda phragmitidis</i> <i>Scambus calobatus</i>
West-Palearctic	<i>Fredegunda diluta</i> <i>Scambus elegans</i>
Asiatic-European	<i>Exeristes arundinis</i> <i>Clistopyga rufator</i>
Sibero-European	<i>Scambus foliae</i>
Europeo-Mediterranean	<i>Scambus rufator</i> <i>Perithous romanicus</i>

Tab. 3: Habitat preference of Turkish Ephialtini.

Habitat Species	Pasture	Mix forest	Oak forest	Orchards	willow and poplar woodlands	Pine Forest	Clover fields	Crop Fields	Total
<i>Exeristes arundinis</i>	+							+	2
<i>Exeristes roborator</i>	+		+	+	+	+	+		6
<i>Fredegunda diluta</i>			+		+				2
<i>Endromopoda arundinator</i>	+			+	+		+		4
<i>Endromopoda detrita</i>	+	+	+	+	+				5
<i>Endromopoda phragmitidis</i>	+		+	+	+				4
<i>Scambus brevicornis</i>	+	+	+		+				4
<i>Scambus calobatus</i>	+	+			+				3
<i>Scambus elegans</i>	+								1
<i>Scambus foliae</i>					+				1
<i>Scambus nigricans</i>	+	+	+		+			+	5

Habitat Species	Pasture	Mix forest	Oak forest	Orchards	willow and poplar woodlands	Pine Forest	Clover fields	Crop Fields	Total
<i>Scambus rufator</i>		+							1
<i>Scambus vesicarius</i>	+		+		+				3
<i>Ephialtes manifestator</i>		+							1
<i>Perithous romanicus</i>				+					1
<i>Perithous divinator</i>	+		+	+	+				4
<i>Gregopimpla inquisitor</i>	+				+				2
<i>Tromatobia ornata</i>		+	+		+				3
<i>Tromatobia ovivora</i>			+						1
<i>Tromatobia variabilis</i>	+		+	+	+		+		5
<i>Zaglyptus multicolor</i>	+	+	+	+	+	+			6
<i>Zaglyptus varipes</i>	+	+	+	+	+		+		6
<i>Clistopyga rufator</i>	+								1
Total numbers of species for each habitat	16	9	13	9	16	5	4	2	

Discussion

Among the species determined with this study, *Scambus vesicarius*, *Perithous romanicus*, *Gregopimpla inquisitor*, *Tromatobia ovivora* and *Clistopyga rufator* are new records for Turkey fauna. So, number of Ephialtini species in Turkey was increased to 52. *Exeristes arundinis*, *Endromopoda arundinator*, *E. phragmitidis*, *Scambus calobatus*, *S. elegans*, *S. foliae*, *S. nigricans*, *Ephialtes manifestator*, *T. ornata* and *T. variabilis* are new records for Turkish Thrace.

8 different habitats in Turkish Thrace were investigated during the study (Tab. 3). The most preferred habitats are willow and poplar woodlands and pasture with 16 species for each, followed by oak forest with 13 species. Arid conditions in Turkish Thrace following June cause Ephialtini species to be present in willow and poplar woodlands localized along humid regions and in pasture. The least preferred habitat is crop field with only 2 species. This preference pattern can be thought to be due to host distributions and food preference.

Exeristes roborator, *Zaglyptus multicolor* and *Z. varipes* are the most common species in Turkish Thrace region with their presence in 6 different habitats. These three species show a wide ranged distribution and occur in different habitats throughout the research area. They were considered to be eurytolerant in terms of their habitat preference. As

they are commonly found in Palearctic region and in neighboring countries of Turkey, their presence in Turkish Thrace is an expected situation.

The Istranca Mountains to the north and the Ganos and Koru Mountains to the south of the research area are covered with natural forests. With this study, 11 species from Istranca Mountains and 12 species from Ganos Mountains were determined. The rich species numbers here depend on the natural forest structure, seldom or even lack of agricultural fields and thus on lack of agricultural chemical applications. *Scambus rufator*, *Perithous romanicus*, *Ephialtes manifestator*, *Tromatobia ovivora* were only determined in forest areas in Istranca and Ganos Mountains. It is reasonable to consider these species as to be arboreal in terms of their habitat preference. *S. elegans* was found only in maguis-pseudomagus while *Exeristes arundinis* and *Endromopoda arundinator* were found in both maguis-pseudomagus and anthropogenic steppe areas. On the other hand, *Clistopyga rufator* is a species found only in anthropogenic steppe areas.

Light traps were used to obtain nocturnal specimens and only one specimen of *Perithous divinator* from only one locality was caught. Despite this, Ephialtini species shouldn't be regarded as to possess a nocturnal habit because this only 1 specimen most probably was caught just by chance.

Many scientists interested in biogeography proposed and used the term "chorotype" by grouping geographical distributions of plants and animals. TAGLIANTI et al. (1999) divided Holarctic region into 13 chorotypes. Our present species were grouped according to this classification and the corresponding chorotypes for each species were given in Tab. 2. Among the 6 chorotypes for the specimens collected in the research area, Holarctic and Palearctic chorotypes were represented with the highest species numbers; 6 species for Holarctic and 3 species for Palearctic. Seven species with multiregional distributions were not included. Among these seven species, *Tromatobia ornata* and *Zaglyptus multicolor* show distribution in Oriental region and *Exeristes roborator* show distribution in Ethiopian and Oriental regions in addition to Palearctic region. Similarly, *Endromopoda detrita*, *Ephialtes manifestator* and *Perithous divinator* show distribution in Oriental region and *T. ovivora* shows distribution in Oceanic and Neotropic regions in addition to Holarctic region. This wide range distribution is due to rich host availabilities of the species besides their eurytolerant nature (KASPARYAN 1981, YU et al. 2006).

Clistopyga rufator from the Asiatic- European chorotype was determined in our research area and so its southern range of distribution was expanded. Turkey is also the southern border for distribution range of *Fredegunda diluta* from West-Palearctic chorotype. *Scambus rufator* has a Europeo-Mediterranean chorotype with its eastern border of distribution range being Turkey and it doesn't occur further in the east of Turkey. Another Europeo-Mediterranean chorotype, *Perithous romanicus*, has so far been determined from only Romania and Bulgaria. Its presence in our research area shows that this species is a Balkan subendemic.

Determination of *Exeristes arundinis*, *Scambus rufator*, *S. elegans*, *S. foliae*, *Perithous romanicus*, *Fredegunda diluta* and *Clistopyga rufator*, all occurring rarely in Palearctic, in a geographically small area as Turkish Thrace is an important point showing biological diversity of Turkey.

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