

**CHECK-LIST OF THE FAMILY CIMBICIDAE OF TURKEY
AND SOME BIOLOGICAL OBSERVATIONS
(HYMENOPTERA: SYMPHYTA)**

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ABSTRACT: A total of 17 species in six genera of the sawfly family Cimbicidae were found in Turkey. The material was collected in various provinces, mainly in the eastern part of the country, during 1987-2009. The paper gave an updated list of species together with distribution records from own observations and literature. Five species are reported as new to Turkey, namely *Cimbex femoratus* (Linné, 1758), *Corynis crassicornis* (Rossi, 1790), *Corynis orientalis* (Konow, 1898), *Corynis similis* (Mocsáry, 1880) and *Trichiosoma latreillii* Leach, 1817. New localities are added for previously known species.

KEY WORDS: Cimbicidae, Symphyta, sawfly, fauna, new records, Turkey.

The suborder Symphyta includes those Hymenoptera, which are structurally primitive, most families and superfamilies are relatively small taxa containing, world-wide, about 8755 species (Taeger & Blank, 2008). Symphytans may be recognized by the absence of a marked constriction between the first and second abdominal segments, and by the possession of at least one closed anal cell in the forewing. The larvae have well-developed head capsule and most have thoracic legs; the majority of free-feeding larvae are caterpillar-like with abdominal prolegs. With the exception of the Orussidae the larvae are phytophagous (Gauld & Bolton, 1988; Goulet & Huber, 1993).

The Tenthredinoidea is the largest superfamily of Symphyta, contains 8 families and, 7230 species in these families and, 196 species in the family of Cimbicidae (Taeger & Blank, 2008). The Cimbicidae are a small family of large-bodied, often hairy sawflies. The family is distinctive in having antennae with a prominent apical club or knob and 6 to 7-segmented. Some members of Cimbicidae are among the largest Hymenoptera. One of them, *Cimbex americana* Leach, is a spectacular insect as it is the largest sawfly (adult about 3 cm long, larva 5 cm long) that attracts attention when found (Goulet & Huber, 1993).

Larva polypodous, with eight pairs of abdominal prolegs; antenna 2-segmented. The Larva is the size of the little finger, it coils itself into a tight spiral and drops when disturbed. Larvae are solitary herbivores and eat leaves of honeysuckle (*Lonicera*), willow (*Salix*), elm (*Ulmus*), snowberry (*Symphoricarpos*), and sometimes other plants as Rosaceae. The larva of most species feed on woody angiosperm (Gauld & Bolton, 1988; Goulet & Huber, 1993; Anon., 2009). Adult buzzes when picked up; when touched, the spines on its powerful legs generally cause pain that is intense enough to cause it to be dropped. The males of many species have enlarged hind legs and mandibles which they use in fights with rival males for the possession of females (Gauld & Bolton, 1988; Goulet & Huber, 1993).

With the exception of a few scattered studies on a few incurious species (Birkardeşler, 1961; Tuatay, 1963; Acatay, 1969; Özeren, 1970; Baş, 1973; Altınayar, 1976) sawfly fauna of Turkey has not been studied previously. Faunal and systematic studies were carried out by Benson (1968) and Wolf (1968);

Benson published a comprehensive paper on sawflies of Turkey and described many new species and subspecies. Özbek (1986) detected *Fenusa pusilla* Lep. (Tenthredinidae) as a new pest on *Betula verrucosa* Ehr.. Recently, Güçlü & Özbek (1999) recognized *Messa hortulana* (Klug) as a new poplar pest and more recently Çalmaşur & Özbek (2004a,b) made contributions on the Tenthredinidae fauna of Turkey. The same authors recognized two sawfly species, *Heterarthrus ochropoda* (Klug) and *Nematus salicis* (Linnaeus) as new records and new pests on poplar and willow respectively (Çalmaşur & Özbek, 2004c, 2006a). Additionally, Özbek & Çalmaşur (2005) listed several sawflies species as pest of *Rosa* spp. in Turkey and finally they prepared a checklist for the family Argidae occurring in Turkey (Çalmaşur & Özbek, 2006b). There is no any special study on Cimbicidae in Turkey up to now.

Present paper is aimed to update my present-day knowledge on the Turkish species of Cimbicidae.

MATERIAL AND METHODS

In the present study more than 78 specimens have been collected by sweeping plants, with an insect net, mostly by the authors, mainly in eastern Turkey during 1987-2009. Few specimens have been reared from larvae in cages in the laboratory. The species have already been recorded, but no representatives found in this study were also added. Specimens were examined with stereoscopic microscope for diagnosis. Identification of the species was made according to Zhelochovtsev (1988) and by comparing the specimens with aforesaid museum collections. Undetermined specimens were identified by D.R. Smith. Within the genera the species are listed alphabetically. The genera and species are listed in the alphabetic order according Taeger & Blank (2008). I also use the distributional records from this publication and Zhelochovtsev (1988). All records are arranged in the following way "province, town, collecting locality, geographic name, and altitude if known, date of collecting, and number of individuals". The name of the province from which a particular species is recorded for the first time is given in the bold type. The material mentioned in this study is deposited in the Entomology Museum Erzurum, Turkey (EMET).

RESULTS

List of the species as follows:

***Abia aenea* (Klug, 1820)**

Distribution: Austria, Belgium, Czech Republic, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Latvia, Luxembourg, Poland, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 2008), Turkey: Trabzon (Benson, 1968).

Host Plant: *Lonicera*, *Symphoricarpos* (Zhelochovtsev, 1988; Liston, 1995).

***Abia sericea* (Linné, 1767)**

Distribution: Austria, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, Latvia, Macedonia, Netherlands, Poland, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine (Liston, 1995; Taeger & Blank, 2008), Turkey: Istanbul, Mersin, Samsun (Benson, 1968; Chevin & Chenon, 1982).

Material examined: **Ardahan:** Posof, Aşık Zülali, 2200 m, 25.VII.2005, 1 specimen. **Bayburt:** Kopdağı, 2100 m, 25.VI.2004, 1 specimen. **Bilecik:** 600 m, 15.VII.1995, 1 specimen. **Erzurum:** İlca, Eğerti, 1900 m, 28.VI.1997, 1 specimen; Oltu, Tutmaç-Başaklı, 2000 m, 01.VII.2000, 1 specimen; Pasinler, Çalyazı, 2400 m, 10.VII.1997, 1 specimen; Tortum, Çataldere, 1950-2500 m, 12.VII.2001, 1 specimen; Uzundere, Dikyar, 1750 m, 10.VII.1994, 1 specimen.

Host Plants: *Succisa pratensis*, *Knautia arvensis*, *Fragaria* (Zhelochovtsev, 1988; Liston, 1995, Taeger & Blank, 1998). *Dipsacus* (Savina & Liston, 2009).

***Cimbex femoratus* (Linné, 1758)**

Distribution: Austria, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, Japan, Korea (North + South Korea), Latvia, Luxembourg, Macedonia, Netherlands, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Ukraine (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 2008).

Material Examined: Erzurum: University Fields, 1850 m, 03.III.2000, 4 specimens, 07.V. 2001, 5 specimens, 25.V.2000, 12 specimens, 07.VI.2003, 1 specimen, 14.VI.2004, 1 specimen.

Host Plant: *Betula pendula*, *B. pubescens* (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 1998).

New for the Turkish fauna.

Biological observations: The Birch sawfly (*Cimbex femoratus* L.) is a new pest for Turkey on *Betula pendula* Ehr. in Erzurum during May - July. The eggs are laid in the leaves of the birch tree. The larvae resembles a caterpillar, has eleven pairs of extremities, is slow-moving and light green in colour with a dark dorsal stripe and dark spots round the spiracles. The larvae rest on the underneath of birch leaves during the day at the shape of spiral, feeding on birch leaves at night. When threatened they spray haemolymph to a distance of 15-20 cm. I observed only one generation a year in the ecological conditions of Erzurum. Most of the material was obtained from overwintered larvae in the laboratory.

***Corynis caucasica* (Mocsáry, 1886)**

Distribution: Bulgaria, Iran, Turkey, Yugoslavia (Serbia and Montenegro) (Liston, 1995; Taeger & Blank, 2008), Turkey: Amasya, Edirne, Trabzon (Benson, 1968).

Host Plant: Unknown.

***Corynis crassicornis* (Rossi, 1790)**

Distribution: Albania, Austria, Belgium, Bosnia and Herzegovina, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Luxembourg, Macedonia, Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Switzerland, Ukraine, Yugoslavia (Serbia and Montenegro) (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 2008).

Material Examined: Artvin: Şavşat, Karagöl, 1750 m, 08.VII.1998, 1 specimen. **Erzurum:** Palandöken, 2400 m, 01.VI.1996, 1 specimen; Uzundere, Yedigöller, 1100 m, 17.V.1998, 1 specimen.

Host Plant: *Sedum acre*, *S. album* (Zhelochovtsev, 1988; Taeger & Blank, 1998).

New for the Turkish fauna as well as Asian Continent.

***Corynis frontina* (Konow, 1905)**

Distribution: Greece, Turkey (Taeger & Blank, 2008), Turkey: Amasya, Ankara, Artvin, Balıkesir, Gümüştane, Mersin, Samsun (Benson, 1968; Chevin & Chenon, 1982).

Host Plant: Unknown.

***Corynis italica* (Lepeletier, 1823)**

Distribution: Croatia, France, Greece, Italy, Spain, Switzerland, Turkey, Ukraine, Yugoslavia (Serbia and Montenegro) (Liston, 1995; Taeger & Blank, 2008), Turkey: Amasya, Bursa, Isparta (Benson, 1968; Chevin & Chenon, 1982).

Host Plant: Adults visit flowers of *Geranium molle* (Liston, 1995).

***Corynis krueperi* (Stein, 1876)**

Distribution: Greece, Libya, Macedonia, Turkey (Liston, 1995; Taeger & Blank, 2008), Turkey: Amasya, Bursa (Benson, 1968).

Host Plant: Unknown.

***Corynis lateralis* (Brullé, 1832)**

Distribution: Bulgaria, France, Greece, Kazakhstan, Macedonia, Romania, Russia, Spain, Turkey, Ukraine (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 2008), Turkey: Amasya, Ankara, Artvin (Benson, 1968).

Material Examined: **Artvin:** Genye Dağı, 1850 m, 28.VII.2004, 1 specimen. **Erzurum:** Ilıca, Atlıkonak, 2400 m, 29.VI.2001, 1 specimen; İspir, Fısırk Kalesi, 2300 m, 12.VII.2001, 1 specimen; KöprükÖy, Örentaş, 2100 m, 12.VI.2001, 2 specimens; Oltu, Tutmaç-Başaklı, 1900 m, 01.VII.2000, 1 specimen; Pasinler, Çalıyazı, 2400 m, 10.VII.1997, 1 specimen; Pazaryolu, Karataş, 2200 m, 05.VII.2000, 1 specimen; Tortum, 1550 m, 10.VI.1987, 2 specimens. **Gümüşhane:** Vauk Geçidi, 1850 m, 21.VI.2001, 1 specimen.

Host Plant: Unknown.

***Corynis mutabilis* (Tischbein, 1852)**

Distribution: Bulgaria, Greece, Turkey, Ukraine (Taeger & Blank, 2008), Turkey: Amasya, Antalya, Çankırı, Erzurum, Konya, Mersin, Trabzon (Benson, 1968; Wolf, 1968).

Material Examined: **Erzincan:** Avclar, 1350 m, 25.V.2005, 1 specimen. **Erzurum:** Ilıca, Atlıkonak, 2100 m, 21.VI.2004, 1 specimen; Horasan, Yukarı Bademli, 1950 m, 24.VI.1999, 1 specimen.

Host Plant: Unknown.

***Corynis orientalis* (Konow, 1898)**

Distribution: Iraq, Israel, Lebanon, Syria (Benson, 1968).

Material Examined: **Diyarbakır:** Silvan, 17.IV.1995, 1 specimen.

Host Plant: Unknown.

New for the Turkish fauna.

***Corynis obscura* (Fabricius, 1775)**

Distribution: Albania, Austria, Belgium, Bulgaria, Croatia, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Macedonia, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, Ukraine (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 2008), Turkey: Bolu, Erzurum, Trabzon (Benson, 1968; Wolf, 1968).

Material Examined: **Ardahan:** Posof, Aşık Zilal, 2200 m, 25.VII.2005, 2 specimens. **Artvin:** Genye Dağı, 1600 m, 10.VI.2005, 1 specimen; Şavşat, 1500 m, 10.VI.2005, 1 specimen. **Erzurum:** Oltu, Başaklı, 1850 m, 14.VII.2004, 1 specimen, 09.VIII.2000, 1 specimen, 22.VIII.2001, 1 specimen; Çamlıbel, 1600 m, 26.VII.2000, 5 specimens, Tutmaç-Başaklı, 1700-2000 m, 31.VII.2001, 2 specimens; Tortum, Uzun kavak, 1800 m, 12.VII.2001, 1 specimen; University Campus, 1850 m, 21.VIII.1996, 1 specimen. **Gümüşhane:** Vauk Geçidi, 1850 m, 21.VI.2001, 1 specimen, 24.VI.2001, 1 specimen. **Rize:** İkizdere, Çamlık, 1600 m, 29.VII.2000, 1 specimen.

Host Plant: *Geranium silvaticum*, *G. sanguineum* (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 1998).

***Corynis reticulata* Benson, 1954**

Distribution: Israel, Turkey (Taeger & Blank, 2008), Turkey: Niğde (Benson, 1968).

Material Examined: **Kars:** Aras Vadisi, Akkurt, 1600 m, 18.V.2002, 1 specimen.

Malatya: Arapgir, 1250 m, 16.V.2002, 3 specimens.

Host Plant: Unknown

Remark: Kars is the north-easternmost distribution of *C. reticulata*.

***Corynis similis* (Mocsáry, 1880)**

Distribution: Crete, Cyprus, Greece, Israel, Jordan, Lebanon, Syria (Liston, 1995; Taeger & Blank, 2008).

Material Examined: **Hatay:** Bademli, 6 km W Hassa, 850 m, 13.V.2002, 2 specimens.

Host Plant: *Papaver* sp. (Liston, 1995).

New for the Turkish fauna.

***Palaeocimbex quadrimaculata* (Müller, 1766)**

Distribution: Austria, Belgium, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Israel, Macedonia, Netherlands, Portugal, Romania, Slovakia, Spain, Turkey, Ukraine (Benson, 1968; Liston, 1995; Taeger & Blank, 2008), Turkey: İzmir (Wolf, 1968).

Host Plant: *Prunus spinosa*, *Pyrus*, *Crataegus* (Liston, 1995).

***Pseudoclavellaria amerinae* (Linné, 1758)**

Distribution: Austria, Bulgaria, China, Croatia, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Macedonia, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, Ukraine, Yugoslavia (Serbia and Montenegro) (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 2008), Turkey: Gümüshane (Benson, 1968).

Material Examined: Erzurum: Tortum, Aşağı Meydanlar, 1750 m, 21.V.1995, 1 specimen. **Kars:** Sarıkamış, Karakurt, 1550 m, 02.V.2000, 1 specimen, 26.V.2000, 1 specimen.

Host Plant: *Salix fragilis*, *S. caprea*, *Populus* (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 1998).

***Trichiosoma latreillii* Leach, 1817**

Distribution: Austria, Belgium, China, Czech Republic, Great Britain, Hungary, Mongolia, Netherlands, Russia, Slovakia, Ukraine (Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 2008).

Material Examined: Bayburt: Kopdağı, 2000 m, 25.VI.2004, 2 specimen.

Host Plant: *Betula*, *Salix* (Zhelochovtsev, 1988; Liston, 1995).

New for the Turkish fauna.

DISCUSSION

With this study, the list of Cimbicidae (Symphyta, Hymenoptera) is increased to a total of 23 species in six genera in Turkey. Of these, *Cimbex femoratus*, *Corynis crassicornis*, *Corynis orientalis*, *Corynis similis* and *Trichiosoma latreillii* are new for Turkish fauna (Benson, 1968; Wolf, 1968; Chevin & Chenon 1982; Zhelochovtsev, 1988; Liston, 1995; Taeger & Blank, 2008). There is no detailed faunal study on this group except for above researchers, current data in this paper is contributed determining Turkish fauna. Distribution data and host plant ranges are reviewed for Cimbicidae in Turkey. Brief biological data regarding *Cimbex femoratus* is newly produced from Turkey and it is also an important pest on *Betula pendula* in Erzurum.

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