

The Fauna and Systematics of the Genus *Tephritis* Latreille, 1804 (Diptera: Tephritidae) with a Key to the Species of *Tephritis* in Turkey

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Abstract: This study is based on *Tephritis* species collected from 25 provinces in Turkey during 1999-2003. Twenty-two species of *Tephritis* were recognized, of which *Tephritis mariannae* Merz is a new record for the fauna of Turkey. Identification keys to the species were prepared. The locality, host plants and figures of wing pattern of each species are given. Distribution of the species in Turkey and worldwide is included.

Key Words: *Tephritis*, Tephritidae, Key, Systematic, Fauna, Turkey

Türkiye *Tephritis* Latreille, 1804 (Diptera: Tephritidae) Türlerinin Tanı Anahtarı ile *Tephritis* Cinsinin Sistematığı ve Faunası

Özet: Bu çalışma 1999 - 2003 yılları arasında Türkiye'den toplanan *Tephritis* Latreille türlerine dayanmaktadır. Türkiye'nin 25 ilinden 22 *Tephritis* türü belirlenmiş olup *T. mariannae* Merz Türkiye faunası için yeni kayıttır. Tespit edilen türler için teşhis anahtarı hazırlanmıştır. Her bir türün lokalitesi, konukçu bitkileri ve kanat deseni verilmiştir. Türlerin Dünya ve Türkiye'deki yayılışları belirtilmiştir.

Anahtar Sözcükler: *Tephritis*, Tephritidae, Tanı Anahtarı, Sistematik, Fauna, Türkiye

Introduction

Tephritis is the sixth largest genus of Tephritidae and third largest genus in the Tephritinae, with about 170 species (Wang, 1996; Norrbom et al., 1999; Korneyev and Dilberk, 2000). Although the genus is known from most zoogeographic regions, the majority of the species (about 120) are palaeartic. The most comprehensive key to species is Hering's (1944). Modern keys to species for several countries are available (e.g., Freidberg and Kugler, 1989, for Israel and nearby areas; Merz, 1994, for North and Central Europe; White, 1988, for Great Britain; Wang, 1996, for China; Kütük and Özgür 2003, for Turkey), but neither modern comprehensive treatments nor a phylogeny for the genus are available.

Tephritis is distinguished from all other Tephritinae genera by the following combination of characters (only the major characters are listed; more complete lists of characters can be found in Freidberg and Kugler (1989) and Merz (1994)): 2 orbital setae, anterior setae acuminate and dark (brown or blackish), posterior setae usually lanceolate and pale (whitish or yellowish; in 2 species brown or black); 2 dark frontal setae; dorsocentral setae situated on or slightly posterior to transverse suture; scutellum flat, with 2 pairs of setae, apical setae about 0.5-0.6 times as long as basal setae; wing pattern highly variable among the species, usually reticulate with well-developed apical fork, sometimes stellate [as in *T. cometa* (Loew)], or even banded [as in *T. postica* (Loew)]; oviscapae somewhat flattened dorsoventrally.

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Most species of *Tephritis* infest the flower heads of Asteraceae hosts, collectively belonging to several tribes, with or without the induction of galls. A few species induce the formation of galls in stems or roots of Asteraceae (Freidberg, 1984; Merz, 1994).

Materials and Methods

The specimens were collected by insect net from various locations in Turkey during 1999-2003. Adult specimens were collected from the flower heads by insect net. The specimens were killed in a killing jar. Specimens were collected from 25 provinces in Turkey. The specimens of *Tephritis* were deposited at the museum of İnönü University, Department of Biology, Malatya.

Species were identified according to Hering (1944), Freidberg and Kugler (1989), and Merz (1994). The terminology follows primarily White et al. (2000), Merz (1994), Freidberg and Mathis (1986), and Freidberg and Kugler (1989). Extensive synonymy is given in Thompson (1998). Host plants were determined by Şemsettin Civelek (Firat University, Department of Biology, Elazığ, Turkey) and Necattin Türkmen (Çukurova University, Department of Biology, Adana, Turkey).

An identification key to the species was prepared. Material examined, their host range, distribution and pictures of wing of all species were given. The body and wing measurements of species were presented. For convenience, the following species accounts are presented in alphabetical order.

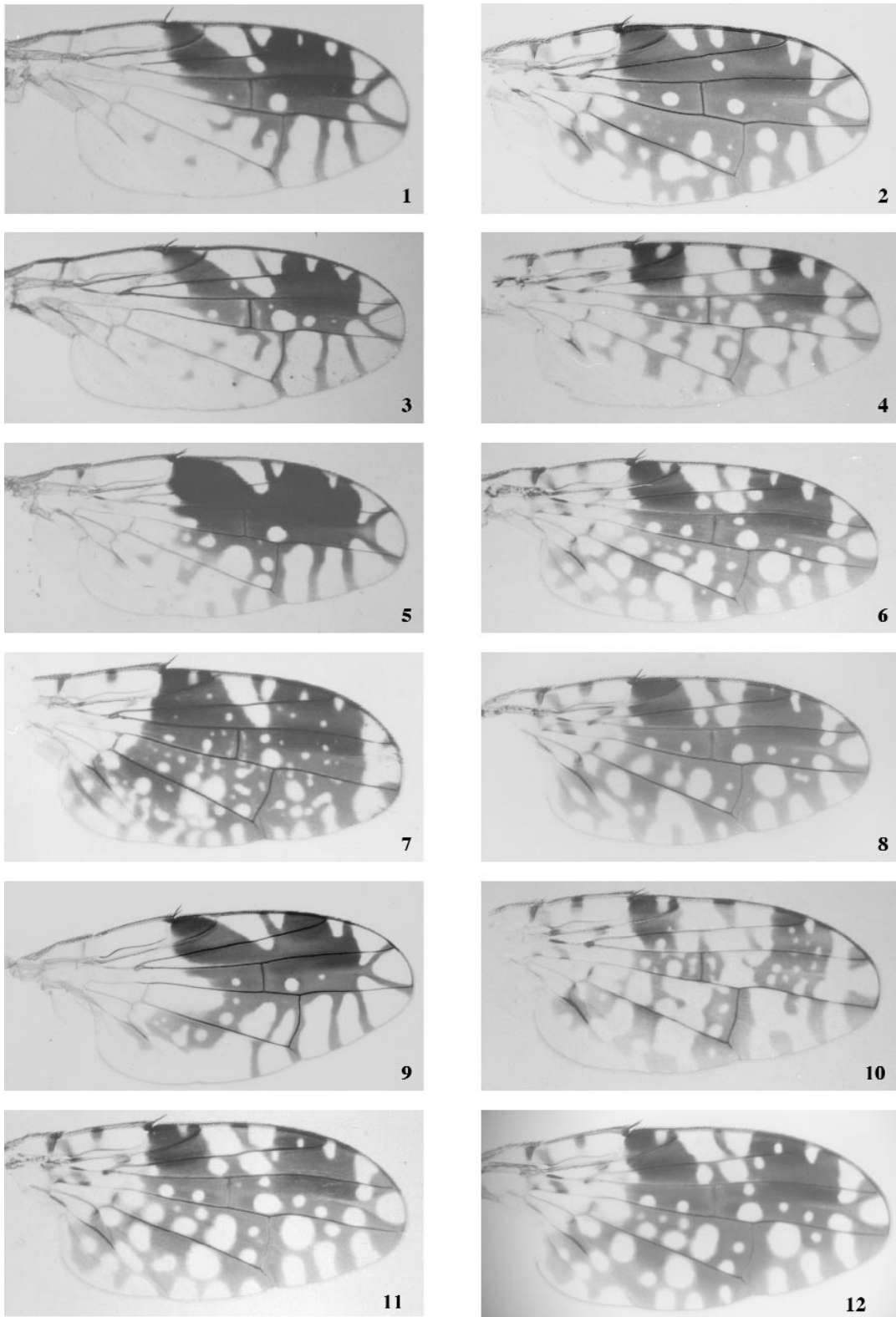
Results

Twenty-two species (*Tephritis acanthiophilopsis*, *T. carmen*, *T. cometa*, *T. dioscurea*, *T. divisa*, *T. fallax*, *T. formosa*, *T. frauenfeldi*, *T. hurvitzii*, *T. hyoscyami*, *T. mariannae*, *T. matricariae*, *T. merzi*, *T. nigricauda*, *T. postica*, *T. praecox*, *T. pulchra*, *T. recurrens*, *T. sauteri*, *T. separata*, *T. simplex* and *T. vespertina*) were collected during 1999-2003. *Tephritis mariannae* is a new record for the fauna of Turkey. For the first time, a modern comprehensive key was prepared for species of *Tephritis* collected from Turkey. Distribution of the species in Turkey and worldwide is stated. Host plants of the species are given.

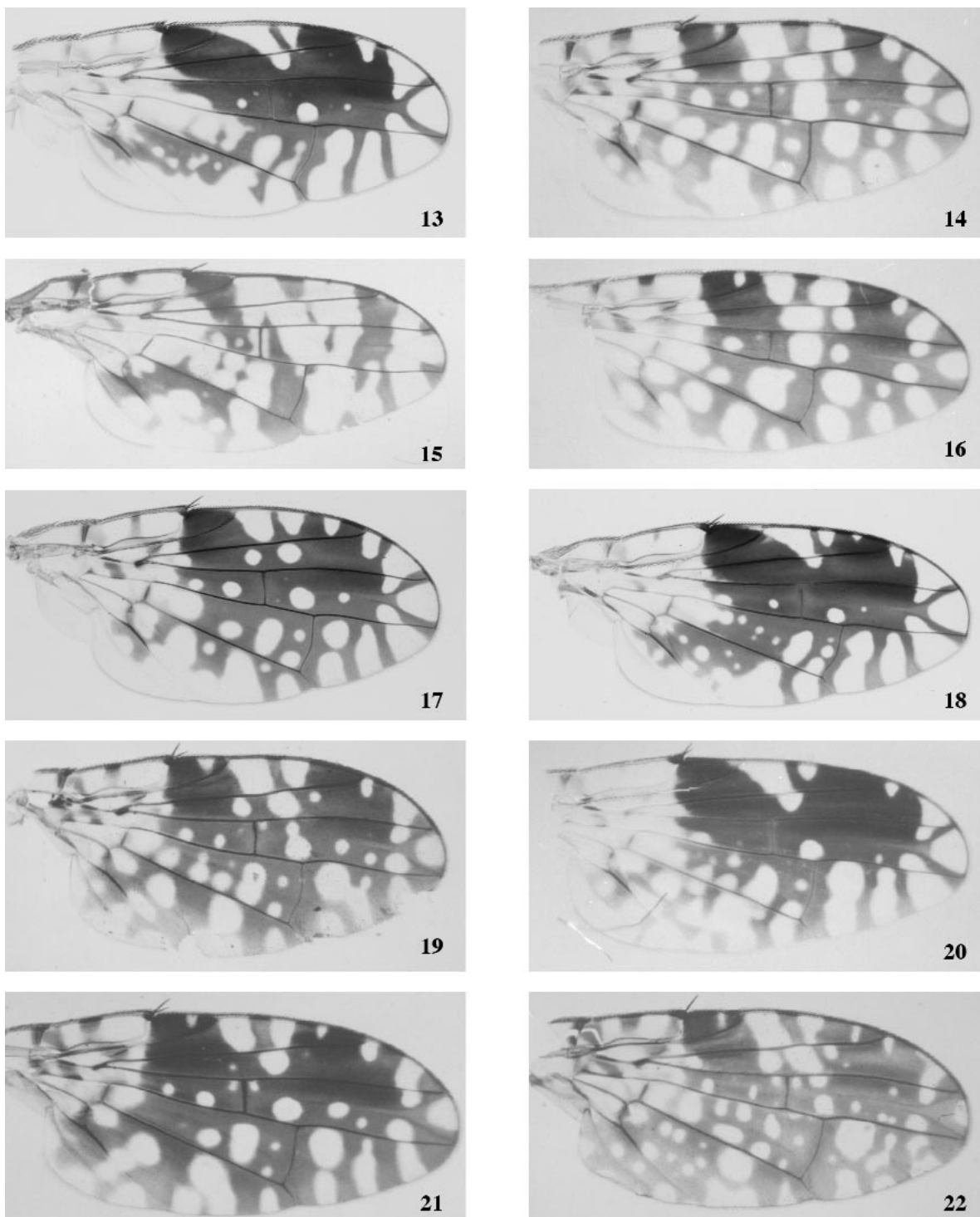
Key to Species of *Tephritis* in Turkey

1. Apical fork absent; only isolated brown spots present at end of veins R_{4+5} and M (Figures 7, 10, 15) 2
 - Apical fork present (Figures 1, 2, 11, 12) 4
2. Brown spots are larger on wing; hyaline areas are smaller (Figure 7) *formosa* (Loew)
 - Brown spots are smaller; hyaline area is enlarged on wing (Figures 10, 15) 3
3. Pterostigma is hyaline on tip; 5-6 around hyaline areas present in cells r_{4+5} and br; the pattern of wing bigger in these cells. (Figure 10) *hyoscyami* (Linneaus)
 - Pterostigma is completely dark brown; only 1-2 hyaline areas present in cells r_{4+5} and br; the pattern of wing not big in these cells (Figure 15) *postica* (Loew)
4. Branches of apical fork uniformly narrow along their entire length (Figures 1, 2, 3) 5
 - Branches of apical fork widen distinctly towards wing margin (Figures 11, 12, 21) 13
5. Three hyaline areas present in cell r_1 (Figures 1, 2, 3, 17, 18) 6
 - Two hyaline areas present in cell r_1 (Figures 5, 9, 13, 20) 10
6. Brown or black pattern distinctly present in cell cua_1 (Figures 3, 17, 18) 7
 - Brown or black pattern absent in cell cua_1 or a few small spots present (Figures 1, 3) 9
7. Cell r_{2+3} near crossvein R-M with 2 hyaline spots, 1 aligned proximal and 1 distal to crossvein (Figure 17) *pulchra* (Loew)
 - Cell r_{2+3} near crossvein R-M with only 1 hyaline spot, 1 aligned distal to crossvein (Figures 2, 18) 8
8. Two big hyaline spots in cell r_1 not reaching vein R_{2+3} ; arms of apical fork slightly broadened distally (Figure 2) *carmen* Hering
 - Two big hyaline spots in cell r_1 reaching vein R_{2+3} ; arms of apical fork not broadened distally (Figure 18) *recurrens* Loew

9. Frons about 1.8 times as long as eyes wide; third segment of antenna about 1.7 times as long as wide; 2 or more hyaline areas present in cell m (Figure 3).
..... *cometa* (Loew)
- Frons about 1.2 times as long as eyes wide; third segment of antenna about 1.4 times as long as wide; only 1 hyaline area present in cell m (Figure 1)
..... *acanthiophilopsis* Hering
10. Only 1 hyaline spot present near and posterior of crossvein R-M in cell r_{4+5} (Figure 5) .. *divisa* Rondani
- Two hyaline spots present near and posterior of crossvein R-M in cell r_{4+5} (Figures 9, 13, 20) 11
11. Hyaline spots absent near and anterior of crossvein R-M in cell br (Figures 9, 13, 20)...*separata* Rondani
- Two hyaline spots present near and posterior of crossvein R-M in cell br (Figures 9, 13, 20) 12
12. Hyaline base of wing without small gray or blackish markings; dark preapical ray in cell dm usually reaching hind margin of wing even if interrupted in middle (Figure 9); mesonotum with indistinct striation *hurvitzi* Freidberg
- Hyaline base of wing with small gray or blackish markings; dark preapical ray in cell dm usually not reaching hind margin of wing (Figure 13); mesonotum with distinct black and gray striation *merzi* Freidberg-Kütük
13. Three hyaline spots present in cell r_1 (Figures 6, 11, 12, 21, 22) 14
- Two hyaline spots present in cell r_1 (Figures 4, 8, 14, 16, 19) 18
14. Three hyaline spots (2 bigger and 1 small) present in cell r_{2+3} (Figures 6, 11, 12, 22) 15
- Only 1 or 2 hyaline spots (1 bigger and 1 small) present in cell r_{2+3} (Figure 21) *simplex* (Loew)
15. Third small hyaline spot not reaching costal margin of wing in cell r_{2+3} ; this hyaline spot rounded (Figures 11, 12) 16
- Third small hyaline spot reaching costal margin of wing in cell r_{2+3} ; this hyaline spot not rounded (Figures 11, 12) 17
16. The indentation at apex of aculeus as long as wide at apex of aculeus *mariannae* Merz
- The indentation at apex of aculeus 0.3 times as long as wide at apex of aculeus *matricariae* (Loew)
17. Mesonotum is gray pollinose; third segment of antenna about 1.4 times as long as wide; apical scutellar setae about 0.4 times as long as basal scutellar setae; apical fork completely broad and hyaline areas between apical fork is small. (Figure 22) *vespertina* (Loew)
- Mesonotum is brown pollinose; third segment of antenna about 2 times as long as wide; apical scutellar setae about 0.6 times as long as basal scutellar setae; apical fork only at apex broad and hyaline areas between apical fork is bigger (Figure 6) *fallax* (Loew)
18. Cell r_{2+3} near crossvein R-M with 2 hyaline spots (Figures 8, 16) 19
- Cell r_{2+3} near crossvein R-M with 3 hyaline spots (Figures 4, 14, 19) 20
19. The hyaline spot present in pterostigma; 2 large hyaline spots present in cell d (Figure 16) *praecox* (Loew)
- The hyaline spot absent in pterostigma; 5 hyaline spots (large or small) present in cell d (Figure 8) *frauenfeldi* Hendel
20. Vein m 3 times as long as penultimate part *sauteri* Merz
- Vein m 3.8 or more times as long as penultimate part 21
21. Four hyaline spots present in cell r_{4+5} ; the biggest hyaline spot reaching vein R_{4+5} (Figure 14) *nigricauda* (Loew)
- Six hyaline spots present in cell r_{4+5} ; the biggest hyaline spot not reaching vein R_{4+5} (Figure 14) *dioscurea* (Loew)



Figures 1-12. The wings pattern of *Tephritis*: 1- *T. acanthiophilopsis*, 2- *T. carmen*, 3- *T. cometa*, 4- *T. dioscurea*, 5- *T. divisa*, 6- *T. fallax*, 7- *T. formosa*, 8- *T. frauenfeldi*, 9- *T. hurvitzi*, 10- *T. hyoscyami*, 11- *T. mariannae*, 12- *T. matricariae*.



Figures 13-22. The wing pattern of *Tephritis*: 13- *T. merzi*, 14- *T. nigricauda*, 15- *T. postica*, 16- *T. praecox*, 17- *T. pulchra*, 18- *T. recurrens*, 19- *T. sauteri*, 20- *T. separata*, 21- *T. simplex*, 22- *T. vespertina*.

***Tephritis* Latreille, 1804**

Nouv. Dict. Hist. nat., 24 (Sec. 3): 196.

Type species: *Musca arnicae* Linnaeus, 1758: *Syst. Nat. Ed.*, 10, 1: 600.

Extensive synonymy and bibliography in Thompson (1998).

***Tephritis acanthiophilopsis* Hering, 1938**

Konowia, 16: 243-251 (*Tephritis*).

(Figure 1)

Material examined: 2 ♂♂, 2 ♀♀, Antalya (Akseki, Bucakkışla), 37.03 N, 31.48 E, 1175 m, 12.VII.2000; 3 ♂♂, 2 ♀♀, Isparta (Yenişarbademli), 37.43 N, 31.17 E, 1800 m 27.VI.2000; 3 ♂♂, 2 ♀♀, Kahramanmaraş (Göksun, Hutuş), 37.58 N, 36.20 E, 1655 m, 21.VI.2002.

Host plants: *Cirsium arvense*, *C. vulgare*, *Carduus nutans* and *Centaurea iberica* (Merz, 1994).

Distribution: Turkey (Thompson, 1998).

Measurements (length in mm): Male: body 3.8-4.4; wing 3.6-4.8. Female: body 4.3-5.4; wing 3.8-4.8.

***Tephritis carmen* Hering, 1937**

Mitt. Zool. Mus. Berl., 2: 244-264 (*Tephritis*).

Material examined: 2 ♂♂, 1 ♀, Adana (Tufanbeyli, Doğanbeyli), 38.05.55 N, 36.10.01 E, 1455 m, 30.V.2002.

Host Plants: *Scorzonera hispanica* (Merz, 1994).

Distribution: Belgium, Spain, Switzerland, Austria, France, Ukraine, Italy, Bulgaria and Turkey (Merz, 1994; Thompson, 1998; Özgür and Kütük, 2003).

Measurements (length in mm): Male: body 3.0-3.6; wing 2.9-3.6. Female: body 4.4-5.4; wing 3.5-4.4.

***Tephritis cometa* (Loew, 1844)**

Stettin. Entomol. Ztg., 1: 156-158 (*Trypeta*).

Material examined: 2 ♂♂, 4 ♀♀, Antalya (Akseki, Göktepe plateau), 37.40 N, 32.00 E, 2100 m, 13.VII.1999; 3 ♂♂, Antalya (Elmalı, Elmalisu), 36.34 N, 32.21 E, 1320 m, 10.VII.2000; 2 ♂♂, 4 ♀♀, Burdur (Yeşilova, Yarışlar), 37.35 N, 29.57 E, 930 m, 25.VI.1999; 5 ♂♂, 4 ♀♀, Burdur (Yeşilova, Salda), 37.29 N, 29.36 E, 1180 m, 23.VI.2000; 2 ♂♂, Burdur (Soğanlı), 37.34 N, 30.15 E, 1515 m, 15.VII.2000; 4 ♂♂, Burdur (Yeşilova, Salda), 37.29 N, 29.36 E, 1175 m,

16.VII.2000; 3 ♂♂, 2 ♀♀, Hatay (Samandağı, Çörükler), 36.04 N, 36.00 E, 175 m, 14.VI.2002; 1 ♂, 2 ♀♀, Isparta (Yalvaç, Sultan mountain), 38.15 N, 31.22 E, 1570 m, 15.VI.1999; 4 ♂♂, 9 ♀♀, Isparta (Yalvaç, Sultan mountain), 38.16 N, 31.25 E, 1520 m, 08.VI.1999; 4 ♂♂, Isparta (Yenişarbademli), 37.43 N, 31.20 E, 1440 m, 14.VII.1999; 2 ♂♂, Isparta (Aksu, Çayır plateau), 37.47 N, 31.14 E, 1880 m, 14.VII.1999; 3 ♂♂, 3 ♀♀, Isparta (Aksu, Yakaköy), 37.43 N, 31.17 E, 1800 m, 27.VI.2000; 3 ♀♀, Isparta (Yenişarbademli, Dedegöl mountain), 37.41 N, 31.20 E, 1524 m, 13.VII.2000; 1 ♂, 2 ♀♀, Isparta (Aksu, Dedegöl mountain), 37.42 N, 31.14 E, 1610 m, 13.VII.2000; 2 ♂♂, 3 ♀♀, Isparta (Keçiborlu, Özbahçe), 38.01 N, 30.21 E, 1330 m, 19.VII.2000; 2 ♀♀, Isparta (Uluborlu, İleydağ), 38.03 N, 30.23 E, 1175 m, 13.VI.2001; 3 ♂♂, 5 ♀♀, Samsun (Ladik, Küpecik), 40.52 N, 36.04 E, 965 m, 14.VI.2003.

Host plants: *Cirsium gaillardotii*, *C. vulgare*, *C. arvense*, and *C. palustre* (Giray, 1979; White, 1988; Freidberg and Kugler, 1989; Merz, 1994).

Distribution: West and Middle Asia, Israel, Afghanistan, Russia, Estonia, Latvia, Lithuania, Ukraine, Moldova, Azerbaijan, Georgia, Armenia, Kazakhstan, Uzbek, Tajikistan, Kirghis, Turkomanas, Switzerland, England, Germany and Turkey (Foote, 1984; White, 1988; Freidberg and Kugler, 1989; Merz, 1994; Kütük and Özgür, 2003).

Measurements (length in mm): Male: body 3.5-3.8; wing 3.5-3.6. Female: body 3.9-4.5; wing 3.5-4.1.

***Tephritis dioscurea* (Loew, 1856)**

Programm K. Realschule zu Meseritz, 1856: 1-57 (*Trypeta*).

Material examined: 4 ♂♂, 3 ♀♀, Adana (Saimbeyli, Obruk plateau), 38.02 N, 36.06 E, 1480 m, 30.05.2002; 4 ♂♂, 4 ♀♀, Adana (Tufanbeyli, Doğanbeyli), 38.05 N, 36.10 E, 30.05.2002; 6 ♂♂, 8 ♀♀, Amasya (Taşova, Borabay lake), 40.47 N, 36.07 E, 1265 m, 15.06.2003; 2 ♂♂, 4 ♀♀, Çankırı (İlgaz, Kırkpınar), 41.00 N, 33.38 E, 1700 m, 12.06.2003; 2 ♂♂, Hatay (Yayladağı, Hisarcık), 35.57 N, 36.06 E, 14.06.2002; 2 ♂♂, Hatay (Yayladağı, Sungur), 35.59 N, 36.06 E, 935 m, 14.06.2002; 3 ♂♂, 5 ♀♀, Kahramanmaraş (Göksun, Hutuş), 37.58 N, 36.20 E, 1656 m, 09.08.2001; 2 ♂♂, 1 ♀, Kahramanmaraş (Andrın, Kaleboynu), 37.41 N, 36.27 E, 1335 m, 20.06.2002; 2 ♂♂, Kahramanmaraş (Göksun, Keklikoluk), 38.11 N, 36.27 E, 1630 m,

20.06.2002; 3 ♂, 4 ♀, Kahramanmaraş (Göksun, Hutaş), 37.58 N, 36.20 E, 1655 m, 21.06.2002; 2 ♂, 2 ♀, Kırıkkale (Keskin), 39.38 N, 33.37 E, 1100 m, 12.06.2003; 2 ♂, 1 ♀, Mersin (Erdemli, Gavuruçtuğu), 36.55 N, 34.07 E, 1650 m, 24.06.2002; 1 ♂, 1 ♀, Sivas (Koyulhisar, Eğriçimen plateau), 40.21 N, 37.22 E, 1616 m, 18.06.2003; 2 ♂, 1 ♀, Tarabzon (Maçka, Başarköy), 40.42 N, 39.20 E, 1470 m, 17.06.2003.

Host plants: *Achillea millefolium*, *Artemisia absinthium*, *A. crithmifolia* and *Chrysanthemum corymbosum* (Asteraceae) (Hendel, 1927; Merz, 1994).

Distribution: Sweden, France, Hungary, Austria, Germany, Switzerland, Russia, Estonia, Latvia, Lithuania, Ukraine, Moldova, Azerbaijan, Armenia, Georgia, Kazakhstan, and Turkey (Foote, 1984; Merz, 1994; Thompson, 1998; Kütük, 2005).

Measurements (length in mm): Male: body 2.4-3.5; wing 2.3-3.4. Female: body 2.8-4.3; wing 2.3-3.8.

Tephritis divisa Rondani, 1871

Bull. Soc. Entomol. Ital., 3: 3-24 (*Tephritis*).

Material examined: 2 ♂, 4 ♀, Amasya (Taşova, Borabay lake), 40.47 N, 36.07 E, 1265 m, 15.06.2003; 2 ♀, Kahramanmaraş (Göksun, Hutaş), 37.58 N, 36.20 E, 1656 m, 09.08.2001; 2 ♂, 1 ♀, Kahramanmaraş, (Göksun, Püren), 37.56 N, 36.30 E, 1625 m, 09.08.2001.

Host plants: *Picris echioides* (Merz, 1994).

Distribution: Switzerland, Spain, France, Italy, Greece (Crete), Israel and Turkey (Thompson, 1998; Kütük, 2005).

Measurements (length in mm): Male: body 3.2-4.0; wing 3.0-3.7. Female: body 3.3-4.8; wing 3.1-4.0.

Tephritis fallax (Loew, 1844)

Zool. Entomol., 5: 312-437 (*Trypeta*).

Material examined: 2 ♂, 3 ♀, Adana (Pozantı, Alpu), 37.28.35 N, 34.54.17 E, 1120 m, 25.V.2001; 4 ♂, 6 ♀, Adana (Balcalı), 37.02.30 N, 35.21.55 E, 100 m, 28.V.2001; 6 ♂, 5 ♀, Adana (Pozantı, Hamidiye), 37.32.46 N, 34.58.51 E, 1330 m, 27.VI.2001; 5 ♂, 7 ♀, Adana (Yumurtalık, Haylazlı), 36.46.59 N, 35.38.43 E, 52 m, 02.V.2002; 21 ♂, 13 ♀, Adana (Pozantı, Alpu), 37.28.35 N, 34.54.17 E, 1120 m, 28.V.2002; 6 ♂, 4 ♀, Adana (Tufanbeyli, Doğanbeyli), 38.05.55 N, 36.10.01 E, 1455 m, 30.V.2002; 12 ♂, 8 ♀, Adana

(Feke, Tenkerli), 37.45.54 N, 35.54.33 E, 790 m, 31.V.2002; 2 ♂, 1 ♀, Hatay (Belen, Kıcı), 36.29 N, 36.16 E, 575 m, 08.V.2002; 1 ♂, 1 ♀, Mersin (Erdemli, Gavuruçtuğu), 36.55 N, 34.07 E, 1650 m, 24.V.2002.

Host plants: *Leontodon hispidus* (Merz, 1994).

Distribution: Distribution: Russia, Estonia, Latvia, Lithuania, Ukraine, Kazakhstan, Germany, Romania, Poland, Switzerland, Sweden and Turkey (Foote, 1984; Merz, 1994; Thompson, 1998; Özgür and Kütük, 2003).

Measurements (length in mm): Male: body 3.6-4.1; wing 3.6-4.2. Female: body 4.3-4.9; wing 3.8-4.4.

Tephritis formosa (Loew, 1844)

Zool. Entomol., 5: 312-437 (*Trypeta*).

Material examined: 5 ♂, 3 ♀, Adana (Balcalı), 37.01.59 N, 35.21.40 E, 60 m, 04. V.2000; 5 ♂, 5 ♀, Adana (Pozantı, Alpu), 37.28.35 N, 34.54.17 E, 1120 m, 17.V.2001; 2 ♀, Adana (Pozantı, Dağdibi), 37.38.28 N, 34.59.10 E, 1220 m, 17.V.2001; 2 ♂, Adana (Saimbeyli, Obruk), 38.02.15 N, 36.06.49 E, 1480 m, 30.V.2001; 6 ♂, 4 ♀, Adana (Feke, Tenkerli), 37.45.54 N, 35.54.33 E, 790 m, 31.V.2002; 2 ♂, 4 ♀, Antalya (Alanya, Şihlar), 36.39 N, 32.25 E, 1250 m, 16.V.1999; 1 ♂, 1 ♀, Antalya (Alanya, Demirtaş), 36.26 N, 32.12 E, 80 m, 17.V.1999; 2 ♂, 4 ♀, Antalya (Manavgat, Eminler), 36.59 N, 31.12 E, 200 m, 10.VII.1999; 4 ♂, 6 ♀, Antalya (Elmalı, Gömbe), 36.33 N, 29.36 E, 1960 m, 11.VII.1999; 5 ♂, 9 ♀, Antalya (Alanya, Gevne valley), 36.51 N, 32.21 E, 1585 m, 10.VII.2000; 16 ♂, 8 ♀, Burdur (Gölhisar), 37.05 N, 29.31 E, 910 m, 20.V.1999; 1 ♂, Burdur (Yeşilova, Güney), 37.30 N, 29.30 E, 1000 m, 23.VI.2000; 6 ♂, 8 ♀, Burdur (Gölhisar), 37.05 N, 29.31 E, 910 m, 15.VI.2001; 1 ♂, 1 ♀, Hatay (Yayladağı, Sungur), 35.59 N, 36.06 E, 935 m, 14.VI.2002; 4 ♂, 2 ♀, Isparta (Yalvaç, Sultan mountain), 38.15 N, 31.22 E, 1600 m, 08.VII.1999; 1 ♂, 2 ♀, Isparta (Yalvaç, Eleği), 38.19 N, 31.07 E, 1260 m, 08.VII.1999; 1 ♂, 4 ♀, Isparta (Keçiborlu, Özbahçe), 38.01 N, 30.21 E, 1300 m, 09.VII.1999; 2 ♂, 2 ♀, Kahramanmaraş (Andrın), 37.33 N, 36.21 E, 990 m, 20.VI.2002; 1 ♂, Kahramanmaraş (Göksun, Acıelma), 38.00 N, 36.25 E, 1675 m, 21.VI.2002; 3 ♂, 6 ♀, Kastamonu (Çatalzeytin, Çağlar), 41.52 N, 34.07 E, 1025 m, 13.VI.2003; 2 ♀, Osmaniye (Yarpuz), 37.02 N, 36.26 E, 1075 m, 11.VI.2002; 3 ♂, Osmaniye (Kadirli, Kayasuyu), 37.26 N, 36.12 E, 375 m, 20.VI.2002; 6 ♂, 6 ♀, Sinop (Yenikonak, Bakır), 41.53 N, 34.49 E, 520 m, 14.VI.2003.

Host plants: *Sonchus oleraceus*, *S. aspera*, *S. arvensis*, *Hypochaeris radicata*, and *Crepis virens* (White, 1988; Freidberg and Kugler, 1989; Merz, 1994).

Distribution: Caucasus, Israel, Iran, Russia, Ukraine, Moldova, Azerbaijan, Georgia, Armenia, England, Switzerland, Germany and Turkey (Hendel, 1927; Foote, 1984; White, 1988; Freidberg and Kugler, 1989; Merz, 1994; Thompson, 1998, Kütük and Özgür, 2003; Özgür and Kütük, 2003).

Measurements (length in mm): Male: body 4.0-4.8; wing 4.0-4.5. Female: body 5.0-6.2; wing 4.2-4.6.

Tephritis frauenfeldi Hendel, 1927

E Linder Ed., 5: 129-221 (*Tephritis*).

Material examined: 3 ♂♂, 2 ♀♀, Adana (Feke, Tenkerli), 37.45.54 N, 35.54.33 E, 790 m, 31.V.2002.

Host plants: *Jurinea mollis* (Merz, 1994).

Distribution: Austria, Slovakia, Hungary, Romania, Italy, Switzerland, Estonia, Latvia, Russia, Ukraine, Lithuania, Moldova, Albania and Turkey (Foote, 1984; Merz, 1994; Thompson, 1998; Özgür and Kütük, 2003).

Measurements (length in mm): Male: body 3.4-4.1; wing 3.6-4.2. Female: body 4.3-5.0; wing 3.8-4.4.

Tephritis hurvitzii Freidberg, 1981

J. Wash. Acad. Sci., 70: 25-28 (*Tephritis*).

Material examined: 4 ♂♂, ♀, Adana (Pozantı, Alpu), 37.28.35 N, 34.54.17 E, 1120 m, 01.V.2001; 2 ♂♂, Adana (Pozantı, Hamidiye), 37.32.27.N, 34.59.15 E, 1445 m, 17.V.2002; 1 ♂, 2 ♀♀, Antalya (Elmalı, Çalınar), 36.54 N, 30.02 E, 1200 m, 11.VII.1999; 1 ♂, 3 ♀♀, Antalya (İbradı, İbradı plateau), 37.15 N, 31.28 E, 1270 m, 13.VII.2000; 4 ♂♂, 2 ♀♀, Burdur (Karacaören), 37.32. N, 30.13 E, 1435 m, 15.VII.2000; 1 ♂, 2 ♀♀, Denizli (Çardak, Acıgöl), 37.49 N, 29.45 E, 860 m, 19.VII.2000; 2 ♂♂, 4 ♀♀, Hatay (Yayladağı, Saksak), 35.57 N, 36.06 E, 940 m, 10.V.2002; 2 ♂♂, 3 ♀♀, Isparta (Keçiborlu), 37.56 N, 30.14 E, 1065 m, 22.V.1999; 2 ♂♂, 1 ♀, Isparta, Yalvaç, Yarıkkaya, 38.27 N, 31.02 E, 1450 m, 08.VII.1999; 2 ♀♀, Isparta (Yalvaç, Eleği), 38.19 N, 31.07 E, 1260 m, 08.VII.1999; 1 ♂, 1 ♀, Isparta (Keçiborlu, Özbahçe), 38.01 N, 30.21 E, 1300 m, 09.VII.1999; 3 ♂, 2 ♀♀, Isparta (Aksu, Çayır plateau), 37.49 N, 31.11 E, 1900 m, 14.VI.2000; 2 ♀♀, Isparta (Yalvaç, Sultan mountain), 38.15 N, 31.22 E, 1560 m, 20.VII.2000; 2 ♂♂, Muğla (Köyceğiz, Yayla), 37.03 N, 28.47 E, 1790 m, 17.VII.2000.

Host plants: *Scorzonera syrica* and *Tragopogon longirostris* (Freidberg and Kugler, 1989).

Distribution: Greece, Cyprus, Iran, Russia, Uzbek, Israel and Turkey (Foote, 1984; Thompson, 1998; Kütük and Özgür, 2003; Özgür and Kütük, 2003).

Measurements (length in mm): Male: body 4.5-5.2; wing 3.6-4.6. Female: body 5.3-6.1; wing 4.5-5.0.

Tephritis hyoscyami (Linnaeus, 1758)

Syst. Nat. Ed. 10, 1: 1-824 (*Musca*).

Material examined: 2 ♂♂, 2 ♀♀, Adana (Saimbeyli, Obruk plateau), 38.02 N, 36.06 E, 1480 m, 30.V.2002; 2 ♂♂, 1 ♀, Adana (Tufanbeyli, Doğanbeyli), 38.05 N, 36.10 E, 1455 m, 30.V.2002; 1 ♂, 1 ♀, Antalya (Alanya, Şihlar), 36.39 N, 32.25 E, 1250 m, 16.V.1999; 1 ♂, Antalya (İbradı, İbradı plateau), 37.16 N, 31.17 E, 1300 m, 23.VI.1999; 1 ♀, Antalya (İbradı), 37.15 N, 31.28 E, 1270 m, 13.VII.2000; 2 ♂♂, Muğla (Köyceğiz, Yayla), 37.03 N, 28.47 E, 1790 m, 17.VII.2000; 3 ♂♂, 5 ♀♀, Samsun (Ladik, Küpecik), 40.52 N, 36.04 E, 965 m, 16.VI.2003;

Host plants: *Carduus crispus*, *C. defloratus*, *C. personata* and *C. aconthoides* (Merz, 1994).

Distribution: North and Middle Europe, Russia, Estonia, Latvia, Ukraine, Lithuania, Moldova, Azerbaijan, Georgia, Armenia, China, Switzerland and Turkey (Foote, 1984; Thompson, 1998; Merz, 1994; Kütük and Özgür, 2003).

Measurements (length in mm): Male: body 3.5-4.5; wing 3.3-4.2. Female: body 4.7-5.9; wing 3.6-4.7.

Tephritis mariannae Merz, 1992

Mitt. Schweiz. Entomol. Ges., 65: 227-239 (*Tephritis*).

Material examined: 4 ♂♂, 3 ♀♀, Adana (Pozantı, Alpu), 37.28 N, 34.54 E, 1120 m, 31.V.2001; 2 ♂♂, 4 ♀♀, Giresun (Keşap, Düzköy), 40.58 N, 38.36 E, 20 m, 16.VI.2003; 5 ♂♂, 3 ♀♀, Gümüşhane (Kırciova), 40.21 N, 39.43 E, 1860 m, 17.VI.2003; 3 ♂♂, 6 ♀♀, Ordu (Ünye, Tekkiraz), 41.01 N, 37.12 E, 400 m, 15.VI.2003; 2 ♂♂, 2 ♀♀, Trabzon (Çaykara, Kabataş), 40.46 N, 40.15 E, 340 m, 17.VI.2003.

Host plants: *Leontodon hispidis* (Merz, 1994).

Distribution: Switzerland (Merz, 1994). This species is a new record for the fauna of Turkey.

Measurements (length in mm): Male: body 3.4-4.0; wing 3.2-3.8. Female: body 4.2-4.9; wing 3.5-4.2.

Tephritis matricariae (Loew, 1844)

Zool. Entomol., 5: 312-437 (*Trypeta*).

Material examined: 1 ♂, Adana (Pozantı, Kamışlı), 37.33.50 N, 34.57.01 E, 1150 m, 17.V.2001; 1 ♂, Adana (Pozantı, Alpu), 37.28.35 N, 34.54.17 E, 1120 m, 25.V.2001; 2 ♂♂, Adana (Kozan, Çulluşağı), 37.42 40 N, 35.53.09 E, 885 m, 05.VI.2001; 1 ♂, 2 ♀♀, Adana (Tufanbeyli, Doğanbeyli), 38.05.55 N, 36.10.01 E, 1455 m, 30.V.2002; 2 ♂♂, Hatay (Belen, Kıcı), 36.29 N, 36.16 E, 575 m, 08.V.2002; 2 ♀♀, Isparta (Yenişarbademli), 37.41 N, 31.21 E, 1230 m, 12.VI.2001.

Host plants: *Crepis taraxacifolia*, *C. foetida* and *C. vesicaria* (Merz, 1994).

Distribution: North Europe, North Africa and Egypt, Netherlands, Austria and Turkey (Foote, 1984; Thompson, 1998; Özgür and Kütük, 2003).

Measurements (length in mm): Male: body 3.7-4.2; wing 3.3-3.7. Female: body 4.6-5.2; wing 3.5-4.1.

Tephritis merzi Freidberg and Kütük, 2002

Israel. J. Zoology, 48: 295-311 (*Tephritis*).

Material examined: 49 ♂♂, 32 ♀♀, Mersin (Silifke, Büyükeceli), 36.33 N, 34.03 E, 90 m, 12.V.2000; 1 ♂, 1 ♀, Antalya (İbradı), 37.06 N, 31.34 E, 1270 m, 13.VII.2000.

Host plants: *Scorzonera kotsyi* (Freidberg and Kütük, 2002).

Distribution: Turkey (Freidberg and Kütük, 2002).

Measurements (length in mm): Male: body 4.2-4.5; wing 3.5-4.1. Female: body 4.5-5.2; wing 4.2-5.0.

Tephritis nigricauda (Loew, 1856)

Programm. K. Realschule Meseritz, 1856: 1-57 (*Trypeta*).

Material examined: 2 ♂♂, 1 ♀, Antalya (Alanya, Kaplanhanı), 36.35 N, 32.22 E, 1228 m, 16.V.1999; 5 ♀♀, Antalya (Alanya, Demirtaş), 36.26 N, 32.12 E, 80 m, 16.V.1999; 5 ♂♂, 3 ♀♀, Antalya (Manavgat, Oymapınar), 36.53 N, 31.30 E, 40 m, 17.V.1999; 2 ♂♂, 5 ♀♀, Antalya (Manavgat, Sağırini), 37.04 N, 31.14 E, 100 m, 17.V.1999; 2 ♂♂, 3 ♀♀, Antalya (Elmalı), 36.50 N, 29.54 E, 1600 m, 17.VI.1999; 2 ♂♂, 3 ♀♀, Antalya (Kaş, Sinekçibeli), 36.26 N, 29.39 E, 1490 m, 21.V.2000; 3

♀♀, Antalya (İbradı, İbradı plateau), 37.19 N, 31.26 E, 1225 m, 13.VII.2000; 1 ♂, 2 ♀♀, Burdur (Göhlisar), 37.05 N, 29.31 E, 910 m, 20.V.1999; 3 ♀♀, Burdur (Yeşilova, Eşeler mountain), 37.30 N, 29.39 E, 1390 m, 21.V.1999; 3 ♂♂, Burdur (Ağlasun, Yeşilbaşköy), 37.39 N, 30.27 E, 1400 m, 15.VII.2000; 3 ♂♂, Burdur (Soğanlı), 37.34 N, 30.15 E, 1515 m, 15.VII.2000; 1 ♂, 1 ♀, Burdur (Yeşilova, Salda), 37.29 N, 29.36 E, 1185 m, 13.VI.2001; 2 ♂♂, Isparta (Eğirdir, Akbelenli), 37.34 N, 30.52 E, 890 m, 19.V.2000; 2 ♂♂, 2 ♀♀, Isparta (Yenişarbademli, Yakaköy), 37.43 N, 31.18 E, 1780 m, 27.VI.2000; 3 ♂♂, Isparta (Aksu, Çayır plateau), 37.45 N, 31.14 E, 1760 m, 14.VII.2000; 2 ♀♀, Isparta (Sütçüler, Sipahiler), 37.38 N, 30.59 E, 1185 m, 15.VII.2000; 2 ♀♀, Isparta (Sütçüler), 37.31 N, 30.57 E, 960 m, 15.VII.2000; 2 ♂♂, 2 ♀♀, Isparta (Keçiborlu, Özbahçe), 38.01 N, 30.21 E, 1330 m, 19.VII.2000; 2 ♂♂, 4 ♀♀, Isparta (Yalvaç, Sultan mountain), 38.15 N, 31.22 E, 1560 m, 20.VII.2000; 1 ♂, 2 ♀♀, Mersin (Erdemli, Sorgun), 36.52 N, 34.06 E, 1545 m, 24.V.2002.

Host plants: *Anthemis arvensis*, *Achillea millefolium* and *A. ptarmica* (Merz, 1994).

Distribution: Austria, Switzerland, Italy, Russia, Estonia, Latvia, Lithuania, Ukraine, Moldova, Syria, Afghanistan and Turkey (Foote, 1984; Merz, 1994; Thompson, 1998; Kütük and Özgür, 2003).

Measurements (length in mm): Male: body 3.0-3.6; wing 3.1-3.5. Female: body 3.5-4.5; wing 3.0-3.8.

Tephritis postica (Loew, 1844)

Zool. Entomol., 5: 312-437 (*Trypeta*).

Material examined: 8 ♂♂, 4 ♀♀, Adana (Danışment), 36.49.11 N, 35.20.36 E, 14 m, 13.IV.2001; 6 ♂♂, 5 ♀♀, Adana (Camili), 36.54. 15 N, 35.2934 E, 15 m, 13.IV.2001; 5 ♂♂, 2 ♀♀, Adana (Hocalı), 37.16.33 N, 35.47.14 E, 105 m, 26.IV.2001; 5 ♂♂, 4 ♀♀, Adana (Haylazlı), 36.47.14 N, 35.43.20 E, 155 m, 02.V.2001; 5 ♂♂, 8 ♀♀, Adana (Pozantı), 37.23.49 N, 34.51.28 E, 855 m, 18.V.2001; 3 ♂♂, 3 ♀♀, Adana (Karaisalı, Güvenc), 37.13.11 N, 35.05.26 E, 180 m, 23.V.2001; 8 ♂♂, 4 ♀♀, Adana (Karataş, Karagöçer), 36.43.34 N, 35.07.25 E, 17 m, 02.V.2002; 7 ♂♂, 3 ♀♀, Adana (Yumurtalık, Zeynepi), 36.43.16 N, 35.34.17 E, 19 m, 02.V.2002; 2 ♂♂, 4 ♀♀, Adana (Ceyhan, Doruk), 36.53.14 N, 35.46.36 E, 69 m, 03.V.2002; 3 ♂♂, 5 ♀♀, Adana (Arabalı), 37.02.14 N, 35.08.38 E, 62 m, 21.V.2002; 8 ♂♂, 7 ♀♀, Adana (Karaisalı, Kırılan), 37.15.40 N, 34.59.44 E, 517 m, 23.V.2002; 3

♂♂, 7 ♀♀, Adana (Feke, Değirmenuşağı), 37.50.59 N, 35.45.58 E, 965 m, 30.V.2002; 2 ♂♂, 3 ♀♀, Adana (Saimbeyli, Gürleşen), 37.54.11 N, 36.04.40 E, 30.V.2002; 5 ♂♂, 7 ♀♀, Adana (Tufanbeyli, Doğanbeyli), 38.05.55 N, 36.10.01 E, 1455 M, 30.V.2002; 3 ♂♂, 1 ♀, Antalya (Kaş, Ahatlı), 36.15 N, 29.41 E, 390 m, 20.V.2000; 2 ♀♀, 1 ♀, Antalya (Kaş, Sinekçibeli) 36.26 N, 29.39 E, 1490 m, 21.V.2000; 2 ♂♂, 1 ♀, Antalya (Elmalı, Yakaçiftlik), 36.38 N, 29.55 E, 1040 m, 14.VI.2001; 2 ♂♂, Aydın (Karacasu, Ataeymir), 37.41 N, 28.47 E, 640 m, 23.V.2000; 1 ♂, 2 ♀♀, Burdur (Göhlisar), 37.06 N, 29.37 E, 1000 m, 20.V.1999; 6 ♂♂, 3 ♀, Burdur (Yeşilova, Karaatlı), 37.38 N, 29.43 E, 1150 m, 25.VI.1999; 2 ♂♂, Burdur (Bucak, Çobanlar), 37.15 N, 30.48 E, 135 m, 19.V.2000; 1 ♂, Burdur (Göhlisar, Karapınar), 37.00 N, 29.32 E, 1020 m, 23.VI.2000; 1 ♂, Burdur (Ağlasun) 37.39 N, 30.27 E, 1400 m, 15.VII.2000; 3 ♂♂, 7 ♀♀, Denizli (Serinhisar), 37.37 N, 29.17 E, 1250 m, 21.V.1999; 11 ♂♂, 8 ♀♀, Denizli (Çavdır, Acıgöl), 37.48 N, 29.42 E, 900 m, 22.V.1999; 2 ♀♀, Denizli (Acıpayam, Bedirbey), 37.20 N, 29.35 E, 860 m, 23.VI.2000; 2 ♂♂, 2 ♀♀, Denizli (Tavas, Solmaz), 37.30 N, 28.33 E, 920 m, 18.VII.2000; 2 ♂♂, Denizli (Serinhisar), 37.35 N, 29.23 E, 1080 m, 18.VII.2000; 3 ♂♂, Isparta (Yalvaç, Kuyucak), 38.12 N, 31.13 E, 1200 m, 15.VI.1999; 5 ♂♂, 6 ♀♀, Isparta, (Senirkent, Gençali), 38.13 N, 31.03 E, 925 m, 16.VI.1999; 2 ♂♂, Isparta (Sütçüler, Ayvalıpınar), 37.40 N, 31.01 E, 1070 m, 24.VI.1999; 2 ♂♂, 1 ♀, Isparta, 37.51 N, 30.59 E, 1025 m, 25.VI.1999; 4 ♂♂, 1 ♀, Isparta (Yalvaç, Sücüllü), 38.22 N, 31.08 E, 1170 m, 08.VII.1999; 2 ♀♀, Isparta (Eğirdir, Kovada lake), 37.37 N, 3.52 E, 927 m, 19.V.2000; 4 ♂♂, 2 ♀♀, Isparta (Eğirdir, Yukarı gökdere), 37.34 N, 30.43 E, 432 m, 19.V.2000; 6 ♂♂, 4 ♀♀, Isparta (Yalvaç, Sücüllü), 38.22 N, 31.08 E, 1200 m, 21.VI.2000; 13 ♂♂, 6 ♀♀, Isparta (Sütçüler, Kuzca), 37.39 N, 30.59 E, 1250 m, 26.VI.2000; 3 ♂♂, 1 ♀, Isparta (Aksu, Karaği), 37.45 N, 31.07 E, 1210 m, 27.VI.2000; 4 ♂♂, 3 ♀♀, Isparta (Şarkikaraağaç, Belceğiz), 37.59 N, 31.18 E, 1150 m, 27.VI.2000; 3 ♂♂, 1 ♀, 37.03 N, 31.48 E, 1175 m, 12.VII.2000; 2 ♂♂, 1 ♀, Isparta (Uluborlu, İleydağ), 38.01 N, 30.23 E, 1160 m, 19.VII.2000; 3 ♂♂, 1 ♀, Isparta (Yenişarbademli, Yakaköy), 37.44 N, 31.14 E, 1414 m, 12.VI.2001; 2 ♂♂, 2 ♀♀, Isparta (Uluborlu, İleydağ), 38.03 N, 30.23 E, 1172 m, 13.VI.2001; 4 ♂♂, 4 ♀♀, Kahramanmaraş (Andrın, Bostandere), 37.44 N, 36.27 E, 1275 m, 20.VI.2002; 6 ♂♂, 8 ♀♀, Nevşehir (Sulusaray), 38.42 N, 34.41 E, 1045 m, 11.VI.2003; 3 ♂♂, 5 ♀♀, Nevşehir (Hacıbektaş), 38.51 N, 34.34 E, 1305 m, 12.VI.2003.

Host plants: *Onopordum cynarocephalum* and *O. acanthium* (Freidberg and Kugler, 1989; Merz, 1994).

Distribution: North Europe, West Asia, Iran, Italy, Spain, Israel, France, Switzerland, Germany and Turkey (Giray, 1979; Foote, 1984; Merz, 1994; Kütük and Özgür, 2003; Özgür and Kütük, 2003).

Measurements (length in mm): Male: body 5.5-7.0; wing 4.7-5.9. Female: body 7.5-11.3; wing 5.5-6.5.

Tephritis praecox (Loew, 1844)

Zool. Entomol., 5: 312-437 (*Trypeta*).

Material examined: 3 ♂♂, 4 ♀♀, Adana (Karaisali, Demirçit), 37.12 N, 34.58 E, 415 m, 23.V.2002.

Host plants: *Calendula arvensis* (Merz, 1994).

Distribution: Southern Europe, Israel, Italy, Spain, Switzerland, England, Austria, Afghanistan, North Africa, Canary Islands and Turkey (Giray, 1979; Foote, 1984; Merz, 1994; Thompson, 1998).

Measurements (length in mm): Male: body 2.4-2.8; wing 2.5-3.0. Female: body 3.0-3.8; wing 2.9-3.4.

Tephritis pulchra (Loew, 1844)

Zool. Entomol., 5: 312-437 (*Trypeta*).

Material examined: 3 ♂♂, 4 ♀♀, Adana (Tufanbeyli, Doğanbeyli), 38.05 N, 36.10 E, 1455 m, 30.V.2002.

Host plants: *Scorzonera cana* and *S. laciniata* (Freidberg and Kütük, 2002).

Distribution: Ukraine, Moldova, Russia, Italy, Spain, North Africa and Turkey (Foote, 1984; Merz, 1994; Thompson, 1998).

Measurements (length in mm): Male: body 3.5-4.2; wing 3.2-3.7. Female: body 4.8-5.2; wing 3.6-4.0.

Tephritis recurrens Loew, 1869

Z. Ges. Naturw., 34 (7/8): 1-24 (*Tephritis*).

Material examined: 3 ♂♂, 2 ♀♀, Denizli (Acıpayam, Çakır), 37.18 N, 29.20 E, 825 m, 16.VII.2000; 2 ♂♂, 2 ♀♀, Kırıkkale (Keskin), 39.28 N, 33.37 E, 1100 m, 12.VI.2003.

Host plants: *Scorzonera* sp. (Merz, 1994).

Distribution: Southern Europe to Kazakhstan and Caucasus, Russia, China, Ukraine, Moldova, Azerbaijan, Armenia, Georgia and Turkey (Giray, 1979; Foote, 1984; Thompson, 1998).

Measurements (length in mm): Male: body 3.4-4.0; wing 3.2-3.7. Female: body 3.9-4.4; wing 3.6-4.0.

Tephritis sauteri Merz, 1992

Entomologic Scand., 23 (2): 215-231 (*Tephritis*).

Material examined: 1 ♂, 1 ♀, Antalya, Alanya, Şıhlar, 36.39 N, 32.25 E, 1250 m, 16.V.1999; 1 ♂, Antalya, İbradı, İbradı plateau, 37.16 N, 31.17 E, 1300 m, 23.VI.1999; 1 ♀, Antalya, İbradı, İbradı, plateau, 37.15 N, 31.28 E, 1270 m, 13.VII.2000; 2 ♂♂, Muğla, Köyceğiz, Yayla, 37.03 N, 28.47 E, 1790 m, 17.VII.2000.

Host plants: *Aster alpinus* and *Scorzonera syriaca* (Merz, 1994; Kütük and Özgür, 2003).

Distribution: Switzerland Greece and Turkey (Merz, 1994; Kütük and Özgür, 2003).

Measurements (length in mm): Male: body 3.6-4.0; wing 3.2-3.7. Female: body 4.5-5.0; wing 3.4-4.0.

Tephritis separata Rondani, 1871

Bull. Soc. Entomol. Ital., 3: 3-24 (*Tephritis*).

Material examined: 2 ♂♂, Adana (Karahana), 37.01 N, 35.09 E, 70 m, 23.V.2001; 2 ♂♂, 2 ♀♀, Adana (Feke), 37.50 N, 35.53 E, 625 m, 05.VI.2001; 3 ♂♂, Adana (Pozantı, Hamidiye), 37.32 N, 34.58 E, 1330 m, 27.VI.2001; 3 ♂♂, 2 ♀♀, Isparta (Keçiborlu, Özbahçe), 38.01 N, 30.21 E, 1300 m, 09.VII.1999; 1 ♂, 3 ♀♀, Isparta (Yenişarbademli), 37.43 N, 31.16 E, 1620 m, 14.VII.2000; 2 ♀♀, Kayseri (Sarız, Uzunahmet), 38.33 N, 36.26 E, 1795 m, 19.VI.2003.

Host plants: *Leucanthemum vulgare*, *Picris hieracioides* and *Centaurea iberica*. (White, 1988; Merz, 1994; Kütük and Özgür, 2003).

Distribution: Italy, Spain, Albania, France, Switzerland, England, Estonia, Latvia, Lithuania, Russia, Ukraine and Turkey (Foote, 1984; White, 1988; Merz, 1994; Kütük and Özgür, 2003).

Measurements (length in mm): Male: body 3.8-4.5; wing 3.6-4.0. Female: body 4.5-5.6; wing 3.6-4.3.

Tephritis simplex (Loew, 1844)

Zool. Entomol., 5: 312-437 (*Trypeta*).

Material examined: 1 ♂, 2 ♀♀, Antalya (Alanya, Gökbel plateau), 36.35 N, 32.21 E, 1450 m, 10.VII.2000; 1 ♂, 2 ♀♀, Isparta (Yenişarbademli, Gölgeci mountain), 37.43 N, 31.17 E, 1760 m, 14.VII.1999; 2 ♂♂, Muğla (Fethiye,

Uğurlu), 36.37 N, 29.20 E, 140 m, 22.V.2000; 3 ♂♂, 1 ♀, Muğla (Köyceğiz, Yayla), 37.03 N, 28.47 E, 1790 m, 17.VII.2000.

Host plants: *Crepis albida*, *Cirsium vulgare* and *C. arvense* (Merz, 1994; Kütük and Özgür, 2003).

Distribution: North Europe, Cyprus, Israel, Tunisia, Albania, Austria, Switzerland, Germany and Turkey (Merz, 1994; Thompson, 1998; Kütük and Özgür, 2003).

Measurements (length in mm): Male: body 3.7-4.1; wing 3.2-3.8. Female: body 4.5-5.3; wing 3.4-4.1.

Tephritis vespertina (Loew, 1844)

Zool. Entomol., 5: 312-437 (*Trypeta*).

Material examined: 3 ♂♂, Adana (Kozan, Çulluuşağı), 37.42 N, 35.53 E, 885 m, 05.VI.2001; 2 ♂♂, 2 ♀♀, Adana (Tufanbeyli, Doğanbeyli), 38.05 N, 36.10 E, 1455 m, 30.V.2002; 2 ♂♂, 2 ♀♀, Çankırı (Ilgaz, Kırkpınar), 41.00 N, 33.38 E, 1700 m, 12.VI.2003; 2 ♂♂, 4 ♀♀, Isparta (Yenişarbademli), 37.44 N, 31.27 E, 1070 m, 13.VII.1999; 3 ♂♂, 1 ♀, Isparta (Yenişarbademli), 37.42 N, 31.24 E, 1180 m, 13.VII.2000; 2 ♂♂, 2 ♀♀, Isparta (Yenişarbademli), 37.41 N, 31.21 E, 1230 m, 12.VI.2001; 2 ♂♂, 3 ♀♀, Kayseri (Sarız, Uzunahmet), 38.33 N, 36.26 E, 1795 m, 19.VI.2003; 2 ♂♂, 1 ♀, Kırşehir (Karıncalar), 39.15 N, 34.01 E, 1270 m, 12.VI.2003.

Host plants: *Hypochoeris radicata* (Merz, 1994).

Distribution: North Europe, Switzerland, Russia, Italy, Austria, Germany, North Africa and Turkey (Foote, 1984; Merz, 1994; Kütük and Özgür, 2003).

Measurements (length in mm): Male: body 3.6-4.2; wing 3.3-3.9. Female: body 4.3-5.1; wing 3.7-4.2.

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