

Contribution to the *Empis* (Subgenus *Empis*) (Empididae, Diptera) Fauna of Turkey

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Received: 09.08.2007

Abstract: Specimens of the subgenus *Empis* collected from different parts of Turkey between 1992 and 2006 were evaluated. Ten species of this genus were identified and 9 of these are the first records for the Turkish fauna.

Key Words: *Empis*, Empididae, Diptera, fauna, new records, Turkey

Türkiye'nin *Empis* (Subgenus *Empis*) (Empididae, Diptera) Faunasına Katkı

Özet: 1992 ve 2006 yılları arasında Türkiye'nin farklı yerlerinden toplanan *Empis* altcinsine ait örnekler değerlendirilmiştir. Bu altcinsine ait 10 tür tespit edilmiş olup bunlardan 9 tür Türkiye faunası için yeni kayıttır.

Anahtar Sözcükler: *Empis*, Empididae, Diptera, fauna, yeni kayıtlar, Türkiye

Introduction

The subgenus *Empis* is one of the largest subgenera of *Empis* and 106 species are listed in the recent Palaearctic catalogue (Chvála and Wagner, 1989). Syrovátka studied *Empis* s. str. in the last 3 decades and revised the types described by Becker, Loew, Meigen, and Strobl (Syrovátka and Chvála, 1986; Syrovátka, 1991, 1995). In his studies he tried to classify the species of *Empis* s. str. into potential natural groups according to the structure of the male genitalia. First 4 groups, namely *E. pennipes*-, *E. pilosa*-, *E. chioptera*-, and *E. alpicola*-group, were defined (Syrovátka, 1980). Second, a more natural division was proposed and the monophyly of 3 groups, namely *E. pennipes*-, *E. nigripes*- and *E. chioptera*-complex, was assessed. In this classification, the *E. pennipes*-complex includes *E. pennipes*- and *E. pilosa*-groups of the previous classification, the other groups being identical with the previous groups (with the common name *E. nigripes* replacing *E. alpicola*) (Syrovátka, 1991). Chvála (1994) follows the classification given by Syrovátka in his review of the *Empis* of Fennoscandia and Denmark, emphasizing that the *E. nigripes*-complex is probably unnatural.

Materials and Methods

One hundred sixty-five specimens were studied (137 males, 28 females) from various habitats and altitudes of different parts of Turkey. They were collected between 1992 and 2006. All specimens are deposited in the Zoological Museum of Gazi University (ZMGU).

This study is composed of a part of the master's thesis entitled "Empididae (Diptera) of Bolkar Mountains" submitted by Mustafa Cemal Çiftçi.

Species were identified according to the keys and descriptions from the following papers: Chvála, 1994; Collin, 1960, 1961; Engel and Frey, 1938-1956, and Syrovátka, 1991, 1995. Distributional data are from Chvála, 1994, 2004; Chvála and Wagner, 1989; Collin, 1960, 1961; Engel and Frey, 1938-1956.

Results

List of Species

Empis (*Empis*) *acinerea* Chvála, 1985

Material examined: Kocaeli, Beşkayalar, around Servetiye mosque, Beşkayalar, 450 m, 40°38' N, 29°55' E, 1 male, 23.04.2004, leg. Hasbenli.

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Distribution: Czech Republic, Denmark, Finland, Germany, Netherlands, Slovakia, Sweden, Switzerland, former U.S.S.R. (Chvála and Wagner, 1989; Chvála, 1994, 2004), new record for Turkish Fauna.

***Empis (Empis) caudatula* Loew, 1867**

Material examined: Isparta, Yalvaç, Başkonak (Sultan Mountains), 1250 m, 38°13' N, 31°17' E, 2 males, 24.04.2001; Adana, Saimbeyli, between Saimbeyli Tufanbeyli, Obrukbaşı Plateau, 1496 m, 38°02' N, 36°06' E, 1 male, 20.04.2002; Nevşehir, Ürgüp, Başdere village, 1420 m, 38°34' N, 35°04' E, 1 male, 20.05.2002; İzmir, Menderes, Efemçukuru village, 677 m, 38°18' N, 26°58' E, 1 male, 17.04.2004, leg. Hasbenli.

Distribution: Austria, Czech Republic, Denmark, France, Germany, Great Britain, Hungary, Lithuania, Netherlands, Norway, Poland, Slovakia, Slovenia, Sweden, Switzerland (Chvála and Wagner, 1989; Chvála, 1994, 2004), new record for Turkish Fauna.

***Empis (Empis) curticornis* Collin, 1960**

Material examined: İçel, Mersin-Gözne road, 10 km, 273 m, 36°52' N, 34°33' E, 2 males, 19.05.2005; İçel, Tarsus, Böğrüeğri village, 902 m, 37°4' N, 34°35' E, 1 female, 19.05.2005; İçel, Çamlıyayla, Kişecik village, 561 m, 37°6' N, 34°37' E, 7 males, 4 females, 19.05.2005; İçel, Mersin-Aslanköy road, Kerimler village, 663 m, 36°54' N, 34°32' E, 1 male, 20.05.2005, leg. Çiftçi; İçel, Erdemli, Karakoyak village, 1390 m, 36°45' N, 34°8' E, 1 male, 15.06.2005, leg. Hasbenli; İçel, Güzelyayla, Atlılar village, 1452 m, 37°06' N, 34°25' E, 55 males, 4 females, 08.07.2005; İçel, Aslanköy, Yavca, 1117 m, 37°01' N, 34°24' E, 6 males, 3 females, 08.07.2005, leg. Çiftçi.

Distribution: Israel, Palestine (Collin, 1960; Chvála and Wagner, 1989), new record for Turkish Fauna.

***Empis (Empis) discrepans* Collin, 1960**

Material examined: İçel, Güzelyayla, Atlılar village, 1452 m, 37°06' N, 34°25' E, 1 male, 08.07.2005, leg. Çiftçi; İçel, Mersin-Gözne road, Çukurkeşli village, 277 m, 36°52' N, 34°33' E, 1 female, 19.05.2006; İçel, Güzelyayla, 770 m, 37°03' N, 34°30' E, 1 male, 19.05.2006; İçel, Silifke, between Uzuncaburç and Ura, 1090 m, 36°34' N, 33°56' E, 4 males, 2 females, 10.06.2006; İçel, Erdemli, Güzeloluk, Yağda village, 1355 m, 36°45' N, 34°2' E, 2 males, 1 female, 03.07.2006, leg. Hasbenli.

Distribution: Israel (Collin, 1960; Chvála and Wagner, 1989), new record for Turkish Fauna.

***Empis (Empis) inopinata* Collin, 1960**

Material examined: Konya, Taskent, Beyreli village, Gevne Valley, 1585 m, 36°51' N, 32°21' E, 1 male, 10.07.2000; Antalya, Alanya, Gökbel Plateau, 1730 m, 36°40' N, 32°21' E, 1 male, 10.07.2000; Denizli, Serinhisar, Yatağan, Kefe Plateau, 1365 m, 37°37' N, 29°22' E, 1 male, 18.07.2000; Isparta, Keçiborlu, Kozluca, 1160 m, 37°55' N, 30°15' E, 1 male, 19.07.2000; Antalya, Alanya, Mahmutlar, 502 m, 36°29' N, 32°09' E, 1 male, 26.05.2001; Konya, Taşkent, İshaklı village, Gevne Valley, 1525 m, 36°49' N, 32°23' E, 5 males, 2 females, 30.06.2001, leg. Hasbenli; İçel, Güzelyayla, Atlılar village, 1452 m, 37°06' N, 34°25' E, 2 males, 08.07.2005; İçel, Güzeloluk, Hacıalanı, 1632 m, 36°49' N, 34°14' E, 4 males, 3 females, 09.07.2005, leg. Çiftçi.

Distribution: Israel (Collin, 1960; Chvála and Wagner, 1989), new record for Turkish Fauna.

***Empis (Empis) insulata* Collin, 1960**

Material examined: İçel, Çamlıyayla, Alanyalı village, 1225 m, 37°6' N, 34°30' E, 1 male, 07.07.2005; İçel, Güzelyayla, Atlılar village, 1450 m, 37°5' N, 34°25' E, 7 males, 08.07.2005, leg. Çiftçi.

Distribution: Israel (Collin, 1960; Chvála and Wagner, 1989), new record for Turkish Fauna.

***Empis (Empis) lepidopus* Meigen, 1822**

Material examined: Isparta, Eğirdir, Kovada I lake service area, 1 female, 10.05.1992; Ankara, Altındağ, Karacaören, 1000 m, 1 male, 29.04.1993; Konya, Taşkent, Alanya road 20 km, 1740 m, 36°51' N, 32°31' E, 3 males, 1 female, 20.04.2001; Konya, Taşkent, Alanya road 26 km, 1844 m, 36°50' N, 32°29' E, 4 males, 20.04.2001; Konya, Taşkent, Gevne Valley, 1585 m, 36°50' N, 32°21' E, 4 males, 20.04.2001; Adana, Saimbeyli, between Saimbeyli Tufanbeyli, Obrukbaşı Plateau, 1496 m, 38°20' N, 36°06' E, 4 males, 20.04.2002, leg. Hasbenli; Karaman, Ermenek-Karaman road, Karaman bey mountain pass, 1863 m, 36°50' N, 32°55' E, 1 male, 22.05.2005, leg. Çiftçi.

Distribution: Germany, Hungary, Italy, Netherlands, Spain, Switzerland (Chvála and Wagner, 1989; Chvála, 1994, 2004), new record for Turkish Fauna.

Empis (Empis) nigripes Fabricius, 1794

Material examined: Antalya, Alanya, Çayarası, 1205 m, 36°40' N, 32°28' E, 1 male, 20.04.2001; Kocaeli, Gebze, Demirciler village, Ballıkayalar Natural Park, 277 m, 40°53' N, 29°33' E, 1 male, 24.04.2004; Kocaeli, Gebze, Denizli village, Düzmeşe picnic area, 210 m, 40°54' N, 29°30' E, 1 male, 24.04.2004, leg. Hasbenli.

Distribution: Austria, Belgium, Bosnia Herzegovina, Bulgaria, Czech Republic, Denmark, France, Finland, Germany, Great Britain, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, former U.S.S.R. (Chvála and Wagner, 1989; Chvála 2004), new record for Turkish Fauna.

Empis (Empis) pexata Collin, 1960

Material examined: İçel, Fatih-Değirmendere road, exit of Fatih, 993 m, 37°2' N, 34°33' E, 1 male, 19.05.2005; İçel, Mersin-Aslanköy road, Kerimler village, 663 m, 36°54' N, 34°32' E, 1 male, 20.05.2005; İçel, Mersin-Aslanköy road, Kavaklıpınar village, 1203 m, 37°0' N, 34°20' E, 2 females, 20.05.2005, leg. Çiftçi; İçel, Fındıkpınarı, Soğukpınar village, 1267 m, 36°57' N, 34°23' E, 1 male, 17.06.2005, leg. Hasbenli; İçel, Aslanköy, Yavca, 1117 m, 37°1' N, 34°34' E, 1 male, 2 females, 08.07.2005, leg. Çiftçi; İçel, between Gözne and Aslanköy, Kerimler road section, 648 m, 36°54' N, 34°32' E, 1 male, 1 female, 23.04.2006; İçel, Gözne, Fatih, 1131 m, 37°01' N, 34°34' E, 1 male, 19.05.2006, leg. Hasbenli.

Distribution: Jordan (Collin, 1960; Chvála and Wagner, 1989), new record for Turkish Fauna.

Empis (Empis) tristis Loew, 1867

Material examined: Kocaeli, Gebze, Denizli village, Düzmeşe picnic area, 210 m, 40°54' N, 29°30' E, 1 male, 24.04.2004, leg. Hasbenli.

Distribution: Austria (doubtful), Bulgaria (doubtful), Greece, Turkey (Chvála and Wagner, 1989; Chvála, 2004). This species is only known from Bursa (Engel and Frey, 1938-1956).

Discussion and Conclusion

The subgenus *Empis* is little known from Turkey; previously only *Empis tristis* was recorded. In this study 9 species were recorded from the Anatolian part of Turkey. These species are as follows: *Empis acinerea*, *Empis caudatula*, *Empis curticornis*, *Empis discrepans*, *Empis inopinata*, *Empis insulata*, *Empis lepidopus*, *Empis nigripes*, and *Empis pexata*. Among these species, *Empis caudatula*, *Empis lepidopus*, and *Empis nigripes* originated from the European province and Mediterranean subregion, *Empis curticornis*, *Empis discrepans*, *Empis inopinata*, *Empis insulata*, and *Empis pexata* originated from the East-Mediterranean province, and *Empis acinerea* originated from the European province.

As a result of the present study, 9 species are recorded from Turkey for the first time. The species of the subgenus *Empis* found in Turkey increase to 10 with these new records.

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