

Orijinal araştırma (Original article)

New records for Turkish Tabanidae (Insecta: Diptera) fauna

Türkiye Tabanidae (Insecta: Diptera) faunası için yeni kayıtlar

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Summary

New records are presented for a number of species collected from central and north-eastern parts of Turkey. Four species and one subspecies represent new records for Turkey: *Tabanus hauseri* Olsufjev, 1967, *Tabanus hissaricus* Baratov, 1962, *Tabanus holtzianus* Enderlein, 1927, *Tabanus tenuicornis* (Enderlein, 1932) and *Tabanus laetitinctus sordes* Bogatchev & Samedov, 1949. Notes on distribution of the species are provided and briefly discussed.

Key words: *Tabanus hauseri*, *Tabanus hissaricus*, *Tabanus holtzianus*, *Tabanus tenuicornis*, *Tabanus laetitinctus sordes*

Özet

Türkiye'nin Kuzeydoğu ve İç Anadolu Bölgeleri'nden toplanan yeni kayıtlar sunulmuştur. Dört tür ve bir alttür Türkiye için yeni kayıttır. *Tabanus hauseri* Olsufjev, 1967, *Tabanus hissaricus* Baratov, 1962, *Tabanus holtzianus* Enderlein, 1927, *Tabanus tenuicornis* (Enderlein, 1932) ve *Tabanus laetitinctus sordes* Bogatchev & Samedov, 1949. Türlerin dağılımları hakkında kısa bilgiler verilmiş ve tartışılmıştır.

Anahtar sözcükler: *Tabanus hauseri*, *Tabanus hissaricus*, *Tabanus holtzianus*, *Tabanus tenuicornis*, *Tabanus laetitinctus sordes*

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Introduction

The female tabanids are known as mechanical vectors of viruses, bacteria, protozoans and helminths that cause various diseases in wild and on domestic animals (Foil 1989, Desquesnes & Dia 2004). Numerous studies about distribution, systematics and sampling methods of horse flies species have been carried out around the world during the last thirty years (French & Kline, 1989; Phelps & Holloway 1992; Hribar et al., 1992; Hayes et al., 1993; Leprince et al., 1994; Krčmar et al., 2005b; 2006; Krčmar, 2005a, 2007; Mihok et al., 2007; Cilek & Olson, 2008; Andreeva et al., 2009; Mihok & Mulye, 2010; Kılıç, 2001a, 2001b, 2001c, 2002, 2003, 2005; Altunsoy et al., 2010; Altunsoy & Kılıç, 2011a, 2011b, 2011c).

Tabanidae family is represented by 4500 species on the worldwide. Chvala et al. (1972) 490, Olsufjev (1977) 501, Leclercq & Olsufjev (1981) 534, Leclercq (1985) 554 and Chvala (1988) reported 541 valid species from Palearctic region.

Studies about horsefly fauna of Turkey have been researching since middle of the 1900s and most of these studies were carried out by foreign researchers. Also these studies have focused on very small parts of Turkey (Walker, 1854; Loew, 1856, 1858a, b, c, 1859). The first check list for Turkey that includes 156 species and 12 subspecies was published by Kılıç (1999). Hayat & Schacht (2000) added 3 species for horsefly fauna of Turkey. Kılıç (2004) added 2 species for horsefly fauna of Turkey. Kılıç (2001c) also added 1 species to horsefly fauna of Turkey. In the second revision of check list 164 species and 13 subspecies were reported (Kılıç 2006). Studies about distributions and faunal composition of Turkish horsefly species were continued after this revision. Andreeva et al. (2009) were described 1 new subspecies and added 1 species to Turkish Tabanidae fauna. Başar (2009) reported 1 new record for horsefly fauna of Turkey. Lastly Altunsoy & Kılıç (2010) reported 1 species to Turkish Tabanidae fauna. In this study 4 species and 1 subspecies were added to the horsefly fauna of Turkey. As a result, Tabanidae family is representing with 171 species and 15 subspecies in Turkey.

Materials and Methods

Materials of this study were collected different regions of Turkey with Malaise and Nzi Traps, which were baited with 1-octen-3-ol, and water traps 2009, 2010 and 2011.

Collection and preparation of samples were been done according to the principles of Chvala et al. (1972) and Olsufjev (1977). Tabanids were killed by ethyl-acetat jars. The specimens were brought to the laboratory in 70 degree alcohol solution and were pinned with insect pins.

Tabanidae specimens were secured to be define eyes of tape and blotted in boxes that has moist cotton in the base and specimens was held in for 5-6 hours. Later, for each fly; eye tape, frontal tape index, figure and bigness of frontal callus, appearance of antenna and palp, absence or presence figured of the wing, figure of over the abdomen was identified to profit by interested source.

Samples were identified according to Chvala et al. (1972), Olsufjev (1977), Peus (1980), Yücel (1987), Schacht (1987), Leclercq (1966a; b; 1967a; b) and Rubio (2002).

The taxonomic status of the species was checked according to the recent update of Fauna Europaea 1.1, Global Species and Chvala (1988).

Identificated samples preserved in the Zoological Museum of Anadolu University (AUZM).

Results and Discussion

Totally 19 specimens, belonging to the Tabaninae subfamily, were determined as new records; 4 species and 1 subspecies: *Tabanus hauseri* Olsufjev, 1967 *Tabanus hissaricus* Baratov, 1962, *Tabanus holtzianus* Enderlein, 1927 *Tabanus tenuicornis* (Enderlein 1932) and *Tabanus laetinctus sordes* Bogatchev & Samedov, 1949.

Ordo: Diptera

Family: Tabanidae

Subfamily: Tabaninae

Tribus: Tabanini

Genus: *Tabanus* Linne, 1758

Tabanus is a genus that has a large global distribution about 1500 species (Chvala et al., 1972; Olsufjev, 1977). In this genus, totally 61 species were reported from Turkey (Kılıç, 2006; Altunsoy & Kılıç, 2010).

Tabanus hauseri Olsufjev, 1967

Material examined: 30.07.2011, Ardahan (Pasof), 1360 m, (41.29.52N 42.44.24E), 1 ♀; 28.07.2011, Artvin (Maçahel), 976m, (41.29.36N 41.56.57E), 2 ♀♀.

Distribution: Russia, Azerbaijan and Nakhichevan (Olsufjev, 1977; www.faunaeur.org; www.globalspecies.org).

Comments: General distribution of this species is Caucasus. This species is also distributing north of the Eastern Black Sea Mountains in Turkey. *T. hauseri* is close to *T. laetinctus*, but differs in large size, dark calluses and more elongated lower callus is usually brown. There are also differences in terminal segments of palps. The other specific taxonomical characters; lower frontal callus is brown colored, shiny, square, its height is usually longer than wide, lateral sides almost reaches the edge of the eye. Median frontal callus is black or dark brown, nearly connected with the lower frontal callus. Antennas are entirely orange-yellow, third segments have obtuse dorsal angle. Terminal segment of the palps are white or slightly yellowish, moderately thickened and covered with white and black hairs

Tabanus hissaricus Baratov, 1962

Material examined: 30.07.2011, Ardahan (Pasof), 1360 m, (41.29.52N 42.44.24E), 1 ♀; 28.07.2011, Artvin (Maçahel), 976m, (41.29.36N 41.56.57E), 1 ♀; 25.06.2010, Artvin (Karagöl), 1470 m, (41.23.32N 41.51.13E), 3 ♀♀.

Distribution: Russia, Armenia, Azerbaijan, Tajikistan and Nakhichevan (Olsufjev, 1977; www.globalspecies.org).

Comments: General distribution of this species is Caucasus and East Asia. This species is also distributing north of the Eastern Black Sea Mountains in Turkey. This species is easily distinguished from other species of *T. bromius* group with following taxonomical characters. Eyes are naked and with one broad stripe. Frons is moderately broad, its height exceeds the width of the base about 3,5-4 times. Lower callus is brilliant black colored and connected with eyes. Median callus is fusiform and connected with lower callus. First two segments of antennae are blackish-brown colored and covered with blackish hairs. Third segments are brown and blackish dusted, two times shorter than its length. Palps are light brown and covered mostly with light hairs.



Figure 1. Female *Tabanus hauseri*.



Figure 2. Female *Tabanus hissaricus*.

Tabanus holtzianus Enderlein, 1927

Material examined: 26.06.2011, Bolu (Gölcük), 1475 m, (40.38.25N 31.37.09E), 2 ♀♀; 04.08.2011, Eskişehir (Hekimdağ), 1160 m, (39.55.48N 30.35.37E), 1 ♀.

Distribution: Greece and Germany (Chvala et al., 1972; www.faunaeur.org).

Comments: These species firstly described by Enderlein (1927) from Greece on male samples. Peus, (1980) also collected these species from Germany and allotype description was given. *T. holtzianus* can be easily distinguished from other species with certain taxonomical characters which is given in allotype description. These characters are; Frons is nearly parallel sides and yellowish-grey

dusted. Median callus is fusiform, black colored and separated from the lower callus. Lower callus is brownish colored and almost square shaped. Eyes with 3 purple band and are covered with long pale hairs, the hairs as long as two facets wide. Antennas are reddish-brown colored and first two segments are covered with short black hairs. Third segments are reddish-orange colored and moderately broad. Palps are slender and long and covered with short white and black hairs.



Figure 3. Female *Tabanus holtzianus*.

Tabanus tenuicornis (Enderlein 1932)

Material examined: 30.07.2011, Ardahan (Pasof), 1360 m, (41.29.52N 42.44.24E), 2♀♀; 04.08.2011, Eskişehir (Hekimdağ), 1160 m, (39.55.48N 30.35.37E), 2♀♀; 07.08.2009, Eskişehir (Yarımca Village), 1170 m, (39.53.55N 30.37.46E), 1♀; 06.08.2010, Rize (Şenyuva), 380 m, (41.60.11N 40.59.53E), 1 ♀.

Distribution: Greece, Macedonia, Bulgaria, Romania, Slovakia, Hungary, Czech Republic and Austria (Chvala et al., 1972; www.faunaeur.org).

Comments: This species reported from South Europe eastwards to the Caucasus, and from southern regions of Central Europe. The species is undoubtedly more widely distributed but is often mistaken for *T. bifarius* Loew. The occurrence of this species in Turkey had been predicted by Olsufjev (1977) and Chvala et al. (1972) due to its presence in neighboring countries, such as Bulgaria and Greece. *T. tenuicornis* can be distinguished from *T. bifarius* with following taxonomical characters. Frons is rather broad, slightly diverging above, frontal index about 1:4. Lower callus is yellowish-brown, slightly shining, rectangular shaped and narrowly separated from the eye-margins. Median callus is dull black, long oval and widely separated from the lower callus. Antennas are reddish-brown, basal segments thinly silvery dusted and clothed with fine pale hairs. Third segments are rather narrower, dorsal tooth very small; terminal flagellar segments are usually darkened. Palps are whitish-yellow and clothed with only pale, short hairs; long and rather slender, very pointed at tip.



Figure 4. Female *Tabanus tenuicornis*.

Tabanus laetetinctus sordes Bogatchev & Samedov, 1949

Material examined: 30.07.2011, Ardahan (Pasof), 1360 m, (41.29.52N 42.44.24E), 1 ♀♀.

Distribution: Azerbaijan, Armenia, Georgia, Russia, Turkmenia, Tajikistan, Iran (Olsufjev, 1977).

Comments: This species is distributing north of the Eastern Black Sea Mountains in Turkey. *T. laetetinctus sordes* can be easily distinguished from nominative form with mostly black and gray coloration of the abdomen. Other specific characters; the yellow-brown spots on the lateral sides of abdomen are small, capture II-III (or I-IV) tergites, but sometimes only on tergite II. Accordingly, on a dark background of the abdomen, gray longitudinal rows of hairs and stains plaque appear more clearly. The bottom part of the abdomen is pinkish-yellowish, but rarely entirely gray, sternites on the posterior margin yellowish. *T. laetetinctus sordes* is generally small from nominative form, its length 10-13.5 mm.



Figure 5. Female *Tabanus laetetinctus sordes*.

Results and Discussion

The Anatolia has a significant position in terms of biological diversity due of geographic and climatic features. Because three major elements of Palearctic Region; Mediterranean, Asian and European parts can be found together in Anatolia. In addition, both species, which belong to ancient Mediterranean and species lately migrated from Northern sides are hosted by Black Sea Region. Furthermore the high mountains range from the region border to Samsun leads a jam formation in Amasya, Samsun and Çarsamba triangle for many species belonging Siberian and Boreal elements. On the other hand the Caucasus forms show a continuous spread towards to middle of Black Sea Region. Nevertheless in Turkey quantitative or qualitative data concerning the Tabanidae family are completely unknown.

Descriptions of two new species and 1 subspecies and 4 new records were reported from Turkey by recent studies (Timmer, 1984; Andreeva et al., 2009; Altunsoy & Kılıç, 2010). Nevertheless faunal complex and distributions of horsefly species in Turkey are not known completely. The comparative diversity of the Turkish Tabanidae to that of neighboring countries leads us to conclude that the actual diversity of this families in Turkey can be expected to be higher than that currently observed. Therefore, we expect that more new Turkish records will be found in the future for this family.

In this study, four species and one subspecies were added to Turkish horsefly fauna. With the results of this last report, Tabanidae is representing with 171 species and 15 subspecies in Turkey.

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