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New records of the Turkish Sunflies (Diptera: Trixoscelididae) with description of a new *Trixoscelis* species

Abstract. Trixoscelid flies collected in Asian Turkey have been studied. Among five recorded species, *Trixoscelis vikhrevi* is new to the science and *Trixoscelis approximata* (LOEW, 1865) is recorded in Turkey for the first time.

Key Words: Diptera, Trixoscelididae, taxonomy, *Trixoscelis*, new species, new records, Turkey.

INTRODUCTION

The Trixoscelididae (Sunflies) are rather small or minute flies adapted to warm semi-arid, sand dunes, grasslands or shrubby areas, on some flowers and various plants (CAMPOBASSO et al., 1999), and widely distributed in the Palaearctic, especially in the Mediterranean Basin and Mongolian highlands. Thus far 39 species representing three genera (35 of *Trixoscelis* RONDANI, 1865; 3 of *Paratrixoscelis* Soós, 1979 and the monotypic genus *Psiloplagia* CZERNY, 1928) have been recorded in Palaearctic Region. Regarding the Turkish fauna, the sunflies and its distribution are very poor known. Thus far only three species: *T. frontalis* (FALLÉN) and *T. obscurella* (FALLÉN) and *Trixoscelis pedestris* (LOEW, 1865) has been mentioned from Turkey (Soós, 1984; CAMPOBASSO et al., 1999).

MATERIAL AND METHODS

The materials presented into the paper were collected by NIKITA VIKHREV (Moscow, Russia) during his trips in Asian Turkey, in the Antalya Province. Type has been housed in the Museum of Natural History, Zoological Institute, University of Wrocław (Wrocław, Poland), other examined material in the author's collection of Department of Zoology & Ecology, Wrocław University of Environmental & Life Sciences (Wrocław, Poland). Details of male terminalia were drawn in the lateral view using light microscope and computer techniques. The genitalia are preserved in glycerin vials. Abbreviations of measurements follow WOŹNICA (2003).

RESULTS

Trioscelididae HENDEL, 1916 ***Trioscelis approximata* (LOEW, 1865)**

MATERIAL EXAMINED:

1♂, S. Turk, Side, sand dunes, 31 Mar 2007; 1♂, S. Turk, Side, sand dunes, 30 Sept 2006; 1♀, S. Turk, Side, sand dunes, 27 Sept 2006; 1♀, Turkey, Side, seashore, 27 Sept 2006.

DISTRIBUTION:

Mediterranean species known from Italy, Hungary, Macedonia, France, Sicily, Spain, Tunisia. New species in the fauna of Turkey.

TAXONOMIC REMARKS:

First flagellomere is dark brown and slightly greyish dusted externally. Prosternum greyish and bare. Thorax with greyish mesonotum and silvery dusted pleural part. In both sexes, fore femur is dark grey externally in opposite to the more yellowish in *T. obscurella*. Male with grey and silver shiny tergite 6 and epandrium. HACKMAN (1970) noted that in *T. approximata* the posterior cross-vein is narrower clouded than in *T. obscurella*, but the character is tricky to recognize when specimens lacking for comparison.

***Trioscelis frontalis* (FALLÉN, 1830)**

MATERIAL EXAMINED:

1♂, S. Turk, Side, sand dunes, 30 Sept 2006; 1♀, Turk near Akseki, 950m, 28 Sept 2006.

DISTRIBUTION:

A common and widely distributed Palearctic species, previously recorded from Turkey (Soós, 1984; CAMPOBASSO et al., 1999).

***Trioscelis obscurella* (MEIGEN, 1830)**

MATERIAL EXAMINED:

2♂♂, S. Turk, Side, sand dunes, 04 Oct 2006; 1♂1♀, S. Turk, Side, sand dunes, 27 Sept 2006.

DISTRIBUTION:

Common European species, reported also from Turkey (Soós, 1984; CAMPOBASSO et al., 1999).

TAXONOMIC REMARKS:

Species with ochereous mesonotum, paler and more yellowish dusted than in related *T. approximata*. Abdomen bicoloured, with segments I-III distinctly paler (yellowish-orange), than the brownish-grey segments IV-VI.

***Trioscelis pedestris* (LOEW, 1865)**

MATERIAL EXAMINED:

1♂, S. Turk, Side, sand dunes, 26 Mar 07; 3♂♂, S. Turk, Side, sand dunes, 31 Mar 07.

DISTRIBUTION:

Mediterranean species known from many European countries, Canary Islands, North Africa and Asiatic part of Turkey (Soós, 1984).

Trixoscelis vikhrevi WOŽNICA, sp. nov.

(Figs 1-4)

ETYMOLOGY:

The name of the species is dedicated to Mr. NIKITA VIKHREV from Moscow (Russia), an excellent insects photographer and entomologist, the collector of the species.

DIAGNOSIS:

T. vikhrevi (Fig. 1) is similar to *Trixoscelis yugoslavensis* BAEQUAERT, with shiny, brownish-black body, but differs from the latter by combination of following characters: first flagellomere blackish in 2/3 apical parts and the whitish arista (antennae totally yellow with brown arista in *T. yugoslavensis*). In male, fore femur with a thin dark brownish stripe in the apical anterodorsal part, fore tibia totally brown, first and second tarsomere of fore tarsus dark brown except posterior margin, remaining three tarsomeres totally yellow.

Male genitalia are unique, with long setulose, reversed bottle-like gonostylus, strongly setulose banana-like postgonite and aedeagus with complicated distal part (Fig. 4).

According to HACKMAN'S (1970) key *Trixoscelis vikhrevi* runs out to *Trixoscelis yugoslavensis* and clearly differs from the latter in the antennae and fore leg colouration.

DESCRIPTION (♂):

Relatively small *Trixoscelis* species with body length (without antennae) ca 1.85 mm.

Head: one strong vibrissa with one row of small genal setulae. One stronger additional small seta (pseudo-vibrissa) present (ca 1/2 of the length of vibrissa). Central cheek bristle small, about 1/3 of the length of the vibrissa. Anterior orbital bristle slightly shorter than the second orbitals (ca 0.85). Cheek-eye ratio: less than 0.15 (ca 0.14), first flagellomere-cheek ratio ca 3.0, flag ratio ca 1.2. Face under antennae dirty yellowish-brown, frontal plates in the one-half part yellowish-orange, in the second half part dark grey dusted reaching the postocellar triangle. Vertical plates shiny blackish. Palpus and hypostom yellowish. Gena whitish dusted like a thin stripe along eye margins. Orbital and ocellar bristles arising from small dark brown dots. Two vertical bristles and one paravertical bristle in the line of well cruciate postocellars on each side present. Basic colour of all antennal segments pale orange. First flagellomere slightly oblique, in the 2/3rd apical external part blackish-brown. Arista whitish and clearly pubescent.

Thorax: chaetotaxy typical for the genus. Prosternum pale orange with two pairs of small brown setulae. Mesonotum dark brown and shiny, except the area reaching to first dorso-centrals, and with wide median whitish-grey stripe inside the dorsocentrals (as wide as the distance between the median pair of acrostichals), not reaching onto scutellum. A grey and rather unequal stripe along the intralars and and pleural margins also present. The dorsocentral bristles (2+3) not arising from spots. Acrostichal setulae small, in four irregular rows, prescutellar bristles present and distinctly longer in size. Scutellum shiny, blackish-brown, with two pairs of well developed scutellar bristles. Postscutellum shiny blackish. Pleurae brownish-orange (Fig. 1). Notopleural areas slightly paler with yellowish stripe reaching wing margin. One small proepimeral bristle present, with one additional (stigmatal) seta in

anterior corner of anepisternum. Posterior corner of anepisternum with one black and long bristle and additional few (6-7) setulae. Katepisternum with two black katepisternal bristles and few thin additional setulae. Remaining part of pleurae bare.

Wings: black and distinct costal spines present. Veins pale yellow, membrane slightly greyish dusted, posterior cross-veins slightly darkened. Wing length ca 2.0 mm, wing width ca 0.75 mm, medial vein ratio: 2.00. Halter with yellowish-orange stem and with white and egg-shaped knob.

Legs: all coxae dirty yellow. Fore femur dirty yellowish-orange with a thin greyish-brown stripe in the apical anterodorsal part. Fore tibia totally brown. First and second tarsomeres of fore leg dark brown except posterior margin. Remaining segments yellowish. Mid and hind leg yellowish. Hind femur slightly swollen without distinct posterodorsal bristles. First tarsomere of hind leg normally developed and not dilated.

Abdomen: entirely black and shiny, covered by thin but distinct marginal bristles. Relatively big epandrium and small symmetrical gonostyli are black and shiny.

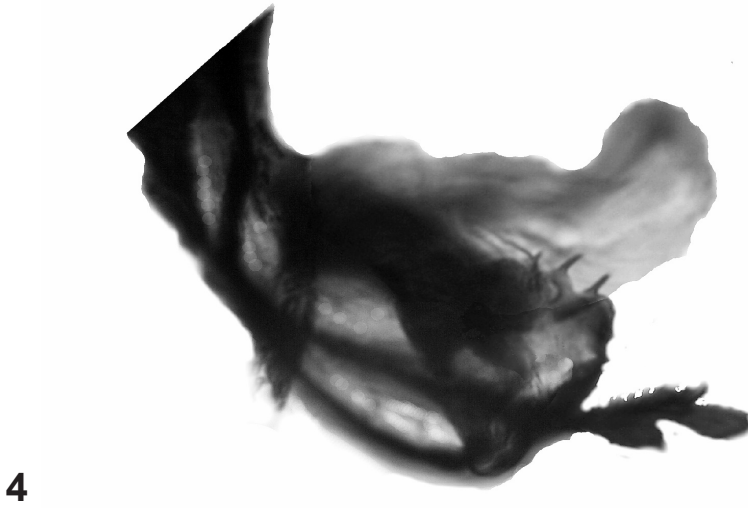
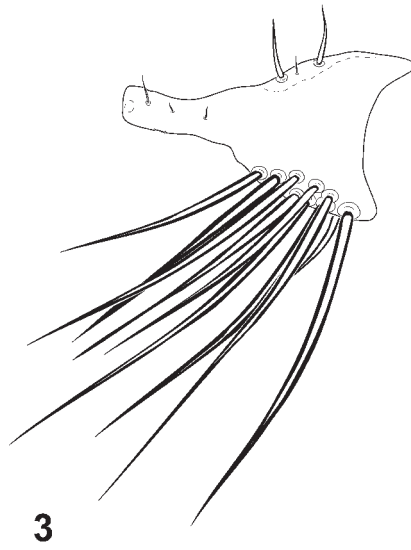
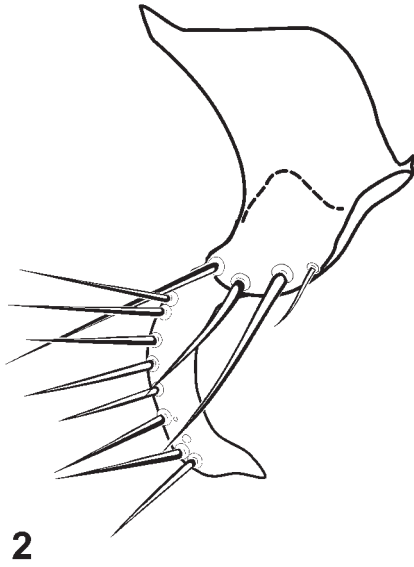
Male terminalia: epandrium rounded and strongly setulose. Gonostylus small, reversed bottle-like with concave basal part (Fig. 3) and long haired. Gonites distinctive, with lower part C-shaped, regularly curved and sharpened apically, strong setulose anteriorly (Fig. 2). Aedeagal apodeme typical as for most *Trixoscelis* species, long with spoon-like apical part. Aedeagus with a complicated distal part (Fig. 4).



Fig. 1. *Trixoscelis vikhrevi* WOZNICA **sp. nov.**, habitus in lateral view.

TYPE MATERIAL:

Holotype: male labelled "Turk, Side, sand dunes, 31 mar[ch] [20]07, N. Vikhrev".



Figs 2-4. Male terminalia of *Trixoscelis vikhrevi* **sp. nov.**, 2 - gonite complex in lateral view; 3 - gonostylus in external view; 4 - distiphallus in lateral view.

REMARKS:

The male abdomen was dissected and the terminalia were prepared and kept in a glycerines plastic vial.

DISTRIBUTION:

Known from Antalya Province of Turkey only. The specimen was collected about 1 km from seashore. The dunes were covered with more vegetation either grass and some old pines (NIKITA VIKHREV, pers. comm.).

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