

A New Record for Turkish Blackfly Fauna: *Simulium (Eusimulium) petricolum* (Rivosecchi, 1963) (Diptera, Simuliidae)

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ABSTRACT

A blackfly species, *Simulium (Eusimulium) petricolum* (Rivosecchi, 1963), was recorded for the first time in Turkey. Distributional data of the species and brief description of its pupae are given.

Key words: Simuliidae, Blackfly, Fauna, Turkey, new record.

INTRODUCTION

Blackflies constitute a large and important family (Simuliidae) of Diptera, with more than 2000 species described in the world. The significance of these insects is manifested in both aquatic and terrestrial ecosystems and as economically important pests and vectors of disease agents to birds and mammals, including domestic animals and humans (Crosskey, 1990).

Although the blackfly fauna of Palaearctic region is fairly well known, the knowledge of Turkish Simuliidae fauna is not sufficient. According to Crosskey & Zwick (2007), the first paper on Turkish Simuliidae fauna was published by Austen (1925), including description of only one species, *Simulium pulchripes*, from Çanakkale Province. After 50 years, Jedlicka (1975) reported another species, *Simulium caucasicum* (as *Odagmia ornata caucasica*), from two different provinces, Afyon and Çanakkale. The first more detailed study on the blackflies of Turkey identified 21 species from various parts of Anatolia (Kazancı & Clergue-Gazeau, 1990). These authors gave ecological information and habitat preferences of their species with some additional species records in another paper (Clergue-Gazeau & Kazancı, 1992). Balık *et al.* (2002) recorded *Simulium angustitarse* from Dikili for the first time. Şirin & Şahin (2005) published the results of prospections at 30 sites in the Sakarya River basin and added eight new records for Turkey. Crosskey & Zwick (2007) published nine new records with a brief review of previous works on blackflies in Turkey and a checklist including 40 identified species recorded from the country at that time. Kazancı & Ertunç (2008) also published a checklist of Simuliidae species in Turkey, including all records in previous publications and added six new ones. They stated that 63 blackfly species

have been found in Turkey. On the other hand, Çağlar & İpekdağ (2009) emphasized that 45 species of Simuliidae were known from Turkey. However, there were 50 species records from Turkey in the latest version of "Inventory of World Blackflies" published by Adler & Crosskey (2010). So, there is an uncertainty in the number of the species living in Turkey.

The aim of the present study is to contribute to the knowledge of the fauna of blackflies in Turkey.

MATERIAL AND METHODS

Five blackfly pupae, including two mature ones, were examined. The specimens were collected from two streams in Afyon province.

The number of specimens obtained at a sampling site on which date is given in "*material examined part*" below.

Pupae were collected and preserved in 80 % ethanol. All specimens have been deposited in the entomology collection of Eskişehir Osmangazi University Biology Department in Eskişehir. The methods for examination described by Bass (1998) were used. All examinations and drawing were made with the aid of a dissection microscope (Leica MZ 16)

Knoz (1965), Jensen (1997), Rubtsov (1990), Crosskey, (1991, 1998), Jedlicka & Stloukalova (1997), Bass (1998), Crosskey & Crosskey (2000), Crosskey & Malicky (2001) and Yankovsky (2001) were consulted for the identifications. The nomenclature used in this text follows Adler & Crosskey (2010), from which distribution data of the species is taken.

RESULTS

Simulium (Eusimulium) petricolum (Rivosecchi, 1963)

Description of pupae: Body about 3,5-4 mm in length. Cocoon simple and finely woven; anterior rim slightly thickened without anterodorsal projection. Gill filaments 4 branching (2+2). Upper 2 filaments with short common stalk; dorsalmost filament sharply bent at short distance from common stalk. All filaments held together (Fig. 1c). Ventral plate of pharate male blade-like (Fig. 1a); style with blunt tooth-like projection on apico-external margin (Fig. 1b).

Distribution: Italy, Austria, Bosnia, Britain, Cyprus, Czech Republic, France, Greece, Ireland, Libya, Madeira, Morocco, Portugal, Serbia, Spain, Russia (Adler & Crosskey, 2010).

Material Examined: Afyon, Savran Town, Balözü Stream, 38° 39' N, 30° 19' E, 1180 m, 15.IV.2007, 2 pupae, 1 pharate ♂ pupae ; Afyon, Gecek Town, Gecek Stream, 38° 51' N, 30° 24' E, 970 m, 15.IV.2007, 1 pupae, 1 pharate ♂ pupae.

CONCLUSION AND DISCUSSION

The species, *Simulium petricolum* recorded in the study, belongs to the *aureum* species group of subgenus *Eusimulium*. Three species of this group, *S. angustipes*

Edwards, 1915, an unidentified member of the *S. aureum* group Fries, 1824 and *S. velutinum* Santos Abreu, 1922, are known from Turkey (Kazancı & Ertunç, 2008). Crosskey & Malicky (2001) stated that *S. petricolum* is a southern European species occurring mainly in Mediterranean countries and it is not reliably separable from *S. velutinum* in the early stages, emerged or pharate adults being required for positive identification. They emphasized that *petricolum* can be separated from *velutinum* by having the male ventral plate blade-like and the style with a blunt tooth-like projection on the apico-external margin and the female spermatheca with a nipple-like extension at the base of the duct. In our pupae, there were two pharate males from different sites and their ventral plates and styles conform to the descriptions by Crosskey & Malicky (2001) for *S. petricolum*.

Knowledge of the Turkish Simuliidae fauna remains insufficient. However, we anticipate that the distributional features of this species in Anatolia will be better elucidated when further studies have been conducted in other parts of the country.

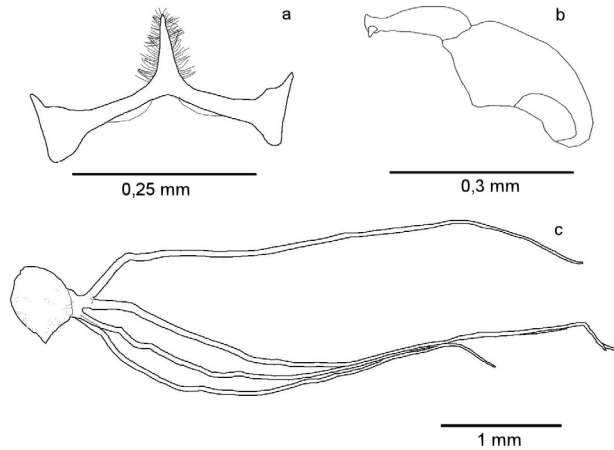


Fig. 1. *Simulium petricolum*; a) ventral plate, b) style, c) gill filament.

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