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First record of the genus *Blepharella* (Diptera: Tachinidae) from the western Palaearctic region

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A b s t r a c t : In the present study, both genus *Blepharella* MACQUART 1851 and species *Blepharella setigena* (CORTI 1895) are recorded for the first time from Iran. This is also the first report of the genus *Blepharella* from western Palearctic region. Additionally, distributional data as well as short taxonomic comments are given.

K e y w o r d s : Tachinidae, zoogeography, Palaearctic region.

Introduction

The family of Tachinidae is one of the most species-rich families of Diptera (ZIEGLER 2003, PAPE et al. 2011). Tachinid flies are well known for their biology. The larvae develop as parasitoids in insects (and in a few cases other arthropods), caterpillars of Lepidoptera being the most numerous (FERRAR 1987). Some Tachinidae are of economic importance, since their hosts are considered pests (O'HARA 2007). Tachinidae fauna of Iran is generally poorly studied. Recently, GHARALI et al. (2008), GHEIBI et al. (2010) and GILASIAN et al. (2013a, b) have contributed to the knowledge of Iranian Tachinidae.

In the material collected by the second author in northern Iran, we discovered a series of four males belonging to the genus *Blepharella*. This came as a surprise, since the genus *Blepharella* is predominantly found in the Afrotropical region (CROSSKEY 1980).

We investigate the occurrence of the genus *Blepharella* in the western part of the Palaearctic region.

Materials and Methods

Sampling was performed using Malaise trap in Kordan, Alborz province, which is located in the northern of Iran, from 2011-2012 (Fig. 1). Traps were installed at various habitats including forests and rosaceous fruit orchards (Fig. 2). The material collected is dried, pinned and labeled.

The photo of the habitus of fly has been taken with a Nikon 105 mm macro lens with macro flashes and the result was digitally enhanced. Photos of the head were made a separate phototube on the stereomicroscope. Focal depth has been enhanced by stacking several images using the software program CombineZ (HADLEY).

We follow HERTING (1984) and CROSSKEY (1980) for nomenclature of Tachinidae in Palaearctic and Afrotropical regions respectively.

Results

The material collected in Iran can be easily identified as *Blepharella setigena* (CORTI 1895) in the strict sense using the key by MESNIL (1952).

Blepharella setigena (CORTI 1895) (Figs 3-4)

M a t e r i a l : Iran: Karaj: Kordan, 35.932324°N 50.831037°E, 20.viii.2012, 4♂♂ (leg B. Majnon Jahromi leg ex Malaise trap) (3♂♂ col J. Flinck, Helsinki, SF; 1♂ col. Th. Zeegers, Soest, NL).

The genus *Blepharella* belongs to the subfamily Exoristinae and tribe Goniini (HERTING 1984). The genus can be recognized by the keys given by MESNIL (1949, 1950) and CROSSKEY (1984). The specimens collected also would run to *Blepharella* in the key provided by TSCHORSNIG & RICHTER (1998), except for the fact that the scutellum is partly reddish. This is of course only relevant at specific level. In several species of *Blepharella* the prosternum is bare, in contrast to the original state of this feature in the subfamily Exoristinae. This secondary loss of setulae on the prosternum is found in a few other genera of Exoristinae as well (for instance *Oswaldia* ROBINEAU-DESVOIDY 1863, *Hebia* ROBINEAU-DESVOIDY 1830 and *Masicera* MACQUART 1834). The known hosts for *Blepharella* are caterpillars of Lepidoptera, mostly Noctuidae (CROSSKEY 1984).

The genus *Blepharella* has been revised on a worldwide scale by MESNIL (1952). CROSSKEY (1980) transferred many species from related genera to *Blepharella*. The varieties of *B. setigera* mentioned by MESNIL (1952) were raised to species level by CROSSKEY (1980). MESNIL (1967) added *B. nigra* MESNIL, 1967 from Japan.

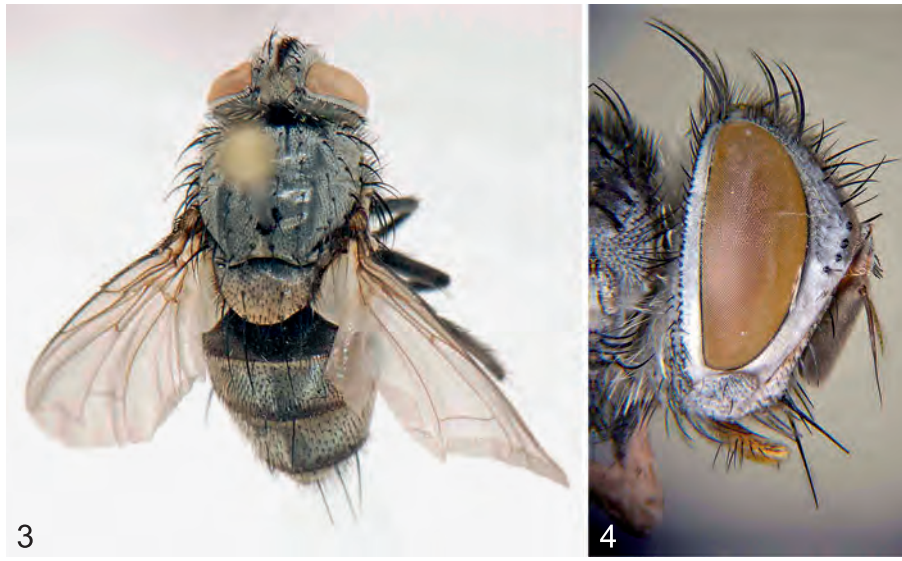
Adding all up, currently 43 species of *Blepharella* are considered valid. The vast majority of these, 41 species, occur in the Afrotropical region (CROSSKEY 1980). One species, *B. lateralis* Macquart, 1851, occurs in both the Oriental and the Australasian region (CROSSKEY 1973, 1976) and one species, the above mentioned *B. nigra*, in the eastern Palaearctic (MESNIL 1967).

Discussion

B. setigena is one of the two Afrotropical species which distribution reaches the northeastern border of the Afrotropical region. Moreover, it is closely related to the Oriental *B. lateralis* MACQUART, 1851. MESNIL (1952) hypothesizes that the genus *Blepharella* is of Oriental origin and that it entered the Afrotropical region as *B. setigena* via Ethiopia.

The discovery of *B. setigena* in Iran could be seen as support for MESNIL (1952) hypothesis. However, the locality where it was found is in the north of Iran and not exactly nearby the route India – Ethiopia. Two alternative hypotheses may explain the occurrence of *B. setigena* in northern Iran. It can be considered that the populations of the Oriental and Afrotropical regions have been more broadly connected in warmer periods of the past and that we are looking at a relict population from this period. Another hypothesis is the current presence of recent expansion, for instance due to (global) warming. At this moment, there are no data available to reject any of these hypotheses.

Figs 1-2: Location of malaise traps. (**1**) One of the malaise traps that collected the material; (**2**) general impression of the habitat.



Figs 3-4: *Blepharella setigena* (CORTI, 1895) male. (**3**) habitus, dorsal; (**4**) head, lateral.

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Zusammenfassung

Vorliegende Arbeit behandelt den Erstnachweis der Gattung *Blepharella* MACQUART, 1851 in der Art *Blepharella setigena* (CORTI, 1895) für den Iran und die Westpaläarktis. Kurze Verbreitungsangaben sowie taxonomische Anmerkungen ergänzen die Arbeit.

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