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Redescription of *Osmylus multiguttatus* McLachlan, 1870 (Neuroptera: Osmylidae) with distributional remarks

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Abstract

Osmylus multiguttatus McLachlan, 1870 has recently been rediscovered in the Middle Anatolia. Redescription of the male and female is presented. Faunistic data and habitat are provided. Photograph of wings, drawings of male and female external and internal genitalia are illustrated for the first time. The distribution map with new recording sites and recent data is also given. A preliminary key to species of *Osmylus* is presented.

Key words: Osmylidae, *Osmylus*, *Osmylus multiguttatus,* redescription, genitalia, Turkey

Introduction

Osmylidae is a small family of Neuroptera comprising about 160 species of 23 genera. The family is spread in Europe, Asia, Africa, Australia and from South America to Mexico. In Turkey and the Western Palaearctic only the genus *Osmylus* Latreille, 1802 is present, comprising 4 well differentiated species (Aspöck *et al* 2001). These species are *O. fulvicephalus* (Scopoli, 1763), *O. multiguttatus* McLachlan, 1870, *O. cilicicus* Krüger, 1913, *O. elegantissimus* Kozhanchikov, 1951. All of them are medium-sized insects with well-marked pattern and densely spotted wings. In many cases these features have led to the incorrect description of *Osmylus* species; unfortunately low attention has been paid to genital structure. Krüger (1913) based his classification almost entirely on venation and relied on rather minor venational characters. In some species, however, these characters were so variable that the same specimen had different pattern on the opposite sides. In spite of this, Krüger's work is very useful for the classification of Turkish *Osmylus* species. Nevertheless, the venation of Osmylidae is complicated thus internal and external genitalia should be used for determination.

Based on only a single specimen McLachlan (1870) described *O. multiguttatus* from Trabzon "Trebizond" province. Krüger (1913) described *O. cilicicus* from southern Turkey "Cilicischer Taurus", and it has been the only record of this species from Turkey till now. *O. fulvicephalus* is a well-known species with a large distribution area in the western Palaearctic region including Turkey (Aspöck *et al* 1980, Canbulat & Kıyak 2005). *O. elegantissimus* is a purely known species with a distribution area in the Northeastern Turkey and Caucasian region (Aspöck et al., 2001). The most recent data were reported by a Polish entomologist (Dobosz 2007). An annotated checklist of the Turkish neuropteran fauna was recently published by Canbulat (2007).

The main aims of this paper are to supplement the original description of *O. multiguttatus* and to publish a wing photograph and to illustrate the genitalia of male and female. A preliminary key to species of the genus *Osmylus* is presented.

Material and methods

This study was based on *O. multiguttatus* specimens collected in Kayseri city (Middle Anatolia, Turkey) by the author in 2008. Samples were taken under a bridge where deciduous trees with a dense overhanging vegetation

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2. Pronotum dull black entirely ..... *elegantissimus*
- Pronotum brown with yellow marks 3
3. Ocellar area completely black ..... *cilicicus*
- Ocellar area completely reddish yellow ..... *fulvicephalus*

Discussion

The classification of *Osmylus* is widely recognized as a genus with about 10 Palaearctic species. *O. fulvicephalus* is expansive Holomediterranean faunal element. This species is well known from Europe and Turkey (Anatolia) (Aspöck *et al* 2001, Canbulat & Kıyak 2005). *O. cilicicus* type locality is "Cilicischer Taurus" located in southern of Turkey by Krüger (1913) and monocentric Anatolo-Ponto-Mediterranean faunal element. Additionally, it was recently found in Bolu, Artvin province of Turkey (Dobosz 2007). *O. elegantissimus* is a purely known species spreading in the Northeastern Turkey, Crimea Peninsula, Ukraine (Zakharenko & Krivokhatsky 1993) and Caucasian region (Armenia, Azerbaijan, Checheno-Ingushetia and Georgia (Ábrahám 2000)) and monocentric Ponto-Caspian faunal element (Aspöck *et al* 2001).

O. multiguttatus was described from a single male collected in Trabzon and Taurus (Turkey) by McLachlan (1870). Since only Dobosz (2007) has reported on the species collected in Adana, Erzurum and Tunceli provinces in Turkey, not mention of the morphology and redescription. The external morphology of the new specimen coincides exactly with those described by McLachlan (1870). There is no variability in size and in pattern and in coloration (Fig. 2).

The main distinctive features of *O. multiguttatus* are: wholly black head instead of and black spots of the wings and genitalia (Figs 2, 3). At daytime, two male and three female specimens of *O. multiguttatus* were found under a bridge where deciduous trees with a dense overhanging vegetation covered the banks. It was collected between the altitudes of 930-1700 m from Adana, Erzurum and Tunceli provinces of Turkey, and it is probably distributed in the Middle, North and Eastern parts of Turkey (Dobosz 2007). Probably, *O. multiguttatus* is locally spreading above 1000 m asl. in Anatolia locally.

This pattern of distribution can be explained by the parallel distribution of the Anatolian Diagonal (Çıplak *et al* 1993, Mutun 2010). The Anatolian Diagonal is a line of mountain ranges that run from the south of Gümüşhane-Bayburt across Turkey to the Taurus Mountains (Davis 1971). The insufficient faunistical surveys may also affect the distribution of *O. multiguttatus.*

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