

NEW FINDINGS OF HOVERFLY FAUNA (DIPTERA: SYRPHIDAE) OF THE WESTERN PART OF SERBIA (ZLATIBOR AND RAŠKA DISTRICTS)

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Abstract

During a three year systematic sampling of the hoverfly fauna in highlands of western Serbia, 150 hoverfly species of 51 genera were recorded for this region. *Eumerus ovatus* Loew, 1848, new to the fauna of Serbia, was recorded on mountain Zlatibor. Additionally, 4 new hoverfly species from the genus *Merodon* Meigen, 1803 were found, awaiting species descriptions. The most species-rich areas in the investigated region are SW part of Mt. Golija and SE part of Mt. Zlatar. These mountains also have the highest number of protected and strictly protected species. In order to preserve this high local diversity of hoverflies, protection of these areas, as well as proper conservation management are of crucial importance.

KEY WORDS: fauna, new records, protected and strictly protected species, Syrphids, highlands of western Serbia

Introduction

Hoverflies are a species rich Dipteran family, with more than 6000 described species so far, out of which 1200 species occur in Europe (Rotheray, 1993). Beside being considered as second most significant insect pollinator group, after bees (Larson *et al.*, 2001), hoverflies have numerous significant environmental roles,

such as waste decomposition (Speight, 2008; Rotheray & Gilbert, 2011) and biocontrol of insect pests (White *et al.*, 1995; Rotheray & Gilbert, 2011). In recent years, different aspects of hoverfly ecology (Schweiger *et al.*, 2007; Klecka *et al.*, 2018), taxonomy (Veselić *et al.*, 2017; Vujić *et al.*, 2018; Nedeljković *et al.*, 2015), evolution (Ačanski *et al.*, 2016; Radenković *et al.*, 2018) and biogeography (Ståhls *et al.*, 2016; Vujić *et al.*, 2016) are intensively investigated. However, thorough faunistic investigations present necessary basis for all other types of scientific research.

Hoverfly fauna has been intensively investigated in Serbia in the last 60 years, which resulted in more than 400 recorded species so far (Vujić *et al.*, in prep.). Certain regions, such as Fruška gora Mt., Vršac Mts., Obodska bara marsh and other wetlands of Vojvodina Province, Stara planina Mt., and landscape of outstanding features "Vlasina" have been systematically sampled, and faunas of these regions have been published over the years (Vujić & Glumac, 1994; Vujić & Šimić, 1994; Šimić & Vujić, 1996; Vujić *et al.*, 1998; Vujić *et al.*, 2002; Radenković *et al.*, 2004; Šimić *et al.*, 2008, 2009; Nedeljković *et al.*, 2009; van Steenis *et al.*, 2015; Tot *et al.*, 2018). However, faunistic researches of hoverflies in the western part of Serbia are lacking.

Across Europe, hoverflies have been recognized as a threatened group (Biesmeijer *et al.*, 2006; Speight 1989, Speight 2000; Speight *et al.*, 2013). Nevertheless, they are completely absent from legal instruments such as Annexes of the EU Habitats Directive. However, Serbia, alongside with just a few other countries took the protection of hoverfly species on a higher level. A total of 77 species (33 strictly protected and 44 protected) were protected by a national legal act (Code on declaration and protection of strictly protected and protected wild species of plants, animals and fungi („Official Gazette of RS“, no. 5/2010)). In addition, three areas were protected solely based on hoverfly fauna (Pil and Vujić, 2004), which is the first example of site protection based exclusively on diversity of these Dipteran species in Europe.

Habitat heterogeneity enabled western Serbia region to be a biodiversity hotspot, with high number of registered plants, vertebrate and invertebrate species. Also, this region is characterised by certain endemic plant species, e.g. *Campanula secundiflora* Vis. et Panč., *Picea omorika* (Panč.) Purk. and *Potentilla mollis* Panč., characteristic only for western Serbia (Šavikin *et al.*, 2013). Karaman (2008) described a new species of harvestmen *Odiellus serbicus* Karaman, 2008 (Opiliones, Phalangidae) from Zlatibor. Recent faunistic study about western Serbian Orthoptera was published by Ivković (2017). With 68 registered species Jadovnik Mountain has the richest diversity of Orthoptera, while Golija Mt. and Zlatibor Mt. are poorer, with 27 and 19 species, respectively (Ivković, 2017). Čurčić & Decu (2008) registered 46 cave-dwelling invertebrates in western Serbia. The significance of these areas is confirmed through their legal protection: Zlatibor is designated as Nature Park, Golija-Studenica as Biosphere Reserve, while Kamena Gora is declared a landscape of exceptional qualities.

In order to supplement the knowledge about the fauna in this region, the aim of this study was to give the first comprehensive checklist of hoverflies recorded in highlands of western Serbia: Golija Mt., Zlatibor Mt., Zlatar Mt. and Kamena Gora Mt. Additionally, we provide a species richness map for the investigated region.

Material and methods

Sampling of hoverfly fauna in western Serbia (Zlatibor and Raška districts) was conducted on 18 localities for three years (2016-2018) (Table 1), in the period from April until September. Sites were surveyed by transect walks, length of approximately 1 km, during sunny days with little or no wind. Specimens were collected by sweeping net, and then appropriately prepared, pinned and labelled. Additionally, we included occasional records from previous years. In total, 946 specimens were reported. The entire material is deposited in the entomological collection of the Department of Biology and Ecology, University of Novi Sad, Serbia (FSUNS).

Identification of adults based on external morphological features and male terminalia was conducted using a Nikon SMZ 745T stereomicroscope. For diverse genera following identification keys and publications were used: Hippa *et al.* (2001), Dušek & Láska (1976), Goeldlin de Tiefenau (1997), Mengual *et al.* (2015), Nedeljković (2011), Nedeljković *et al.* (2015), Radenković (1999), Radenković *et al.* (1995), Reemer (2000), Speight & Shartou (2014), Van Steenis (2000), Van Steenis & Lucas (2011), van Veen (2004), Vujić (1990, 1992, 1999a, b), Vujić & Šimić (1995-1998), Vujić & Milankov (1999) and Vujić *et al.* (2013). The specimens of the genus *Merodon* Meigen, 1803 were identified by Ante Vujić and of other genera by Tamara Tot and Zorica Nedeljković. For creating species richness map, DIVA-GIS software, version 7.5 (Hijmans *et al.*, 2012a, b) was used.

Table I. List of investigated localities in western part of Serbia.

Nearest place	Locality	Latitude	Longitude	Elevation
Golija	Čeka	43.328934	20.239355	1562 m
Golija	Golijaska reka	43.353471	20.254308	1420 m
Golija	Karalići	43.367940	20.286115	1426 m
Golija	Odvračenica 1	43.301780	20.381290	1580 m
Golija	Odvračenica 2	43.303017	20.383731	1637 m
Golija	Potok	43.287899	20.313856	1537 m
Golija	Toranj	43.336254	20.274557	1793 m
Jadovnik	toward Tiče polje	43.208218	19.875806	1399 m
Prijepolje	Kamena Gora 1	43.297543	19.556782	1194 m
Prijepolje	Kamena Gora 2	43.290466	19.569890	1103 m
Zlatar	Drmanovići	43.400411	19.833248	1384 m
Zlatar	Karaula	43.329486	19.831683	1136 m
Zlatar	Nova Varoš	43.452763	19.807665	1162 m
Zlatar	Panorama	43.407132	19.840580	1338 m
Zlatar	Vodena poljana	43.405009	19.813191	1450 m
Zlatibor	Čigota	43.663888	19.751666	1371 m
Zlatibor	Zlatibor 1	43.661761	19.660129	1210 m
Zlatibor	Zlatibor 2	43.664921	19.671394	1105 m

Results

Species findings

Arctophila bombiformis (Fallén, 1810)

Zlatar: Karaula, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Jadovnik: towards Tiče polje, 11.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković.

Arctophila superbiens (Müller, 1776)

Zlatar: Drmanovići, 04.09.2016, 2 ♂♂, leg. A. Vujić.

Baccha obscuripennis Meigen, 1822

Prijepolje: Kamena Gora 1, 04.09.2016, 1 ♂, leg. Z. Markov.

Blera fallax (Linnaeus, 1758)

Golija: Odvrćenica 2, 27.06.2017, 1 ♀, leg. A. Vujić.

Brachypalpoidea lentus (Meigen, 1822)

Golija: Odvrćenica 2, 14.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatar: Drmanovići, 26.06.2017, 1 ♂, leg. A. Vujić.

Brachypalpus laphriformis (Fallén, 1817)

Zlatar: Panorama, 07.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Ceriana conopsoides (Linnaeus, 1758)

Golija: Odvrćenica 2, 14.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković.

Cheilosis albipila Meigen, 1838

Golija: Odvrćenica 2, 04.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Cheilosis albitarsis (Meigen, 1822)

Golija: Potok, 13.07.2016, 1 ♀, leg. Z. Nedeljković; Odvrćenica 2, 27.06.2017, 3 ♂♂, 1 ♀, leg. A. Vujić, 04.05.2018, 1 ♂, leg. A. Vujić; Odvrćenica 1, 04.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Karalići, 05.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatar: Karaula, 07.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatar: Karaula, 07.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 1, 3 ♀♀, leg. A. Vujić, 1 ♂, leg. M. Miličić, 08.08.2018, 1 ♀, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 2, 1 ♀, leg. A. Vujić.

Cheilosis antiqua (Meigen, 1822)

Zlatar: Karaula, 07.05.2018, 2 ♀♀, leg. A. Vujić, S. Popov.

Cheilosis barbata Loew, 1857

Golija: Odvrćenica 2, 14.07.2016, 2 ♀♀, leg. A. Vujić, Z. Nedeljković; Zlatar: Karaula, 11.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Prijepolje, Kamena Gora 2, 25.06.2017, 1 ♂, leg. A. Vujić; Prijepolje, Kamena Gora 1, 08.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov.

Cheilosis bracusi Vujić & Claussen, 1994

Zlatar: Karaula, 07.05.2018, 2 ♂♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Panorama: 07.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 2, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Cheilosis canicularis (Panzer, 1801)

Zlatar: Karaula, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Cheilosis carbonaria Egger, 1860

Golija: Odvrćenica 2, 27.06.2017, 1 ♀, 29.06.2017, 1 ♀, leg. A. Vujić.

Cheilosia flavipes (Panzer, 1798)

Zlatar: Karaula, 07.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Panorama, 07.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 2, 08.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Cheilosia frontalis Loew, 1857

Golija: Odvračenica 1, 04.05.2018, 2 ♀♀, leg. A. Vujić, S. Popov; Golija: Odvračenica 2, 04.05.2018, 3 ♂♂, 2 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković, 5 ♂♂, 8 ♀♀, leg. A. Vujić, S. Popov; Golija: Čeka, 05.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatar: Karaula, 07.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Panorama, 07.05.2018, 1 ♀, leg. A. Vujić, S. Popov, 7 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 2, 08.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Cheilosia gigantea (Zetterstedt, 1838)

Prijepolje: Kamena Gora 2, 08.05.2018, 2 ♂♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković, 1 ♀, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 1, 08.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov.

Cheilosia grisella Becker, 1894

Golija: Odvračenica 1, 04.05.2018, 5 ♂♂, 1 ♀, leg. A. Vujić, S. Popov; Golija: Odvračenica 2, 04.05.2018, 1 ♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković, 10 ♂♂, 6 ♀♀, leg. A. Vujić, S. Popov; Golija: Golijska reka, 05.05.2018, 2 ♂♂, 1 ♀, leg. A. Vujić, S. Popov; Golija: Čeka, 05.05.2018, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov; Golija: Karalići, 05.05.2018, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov; Zlatar: Karaula, 07.05.2018, 3 ♂♂, leg. A. Vujić, S. Popov; Zlatar: Vodena poljana, 07.05.2018, 7 ♀♀, leg. A. Vujić, S. Popov, 3 ♂♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Karaula, 07.05.2018, 1 ♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Panorama, 07.05.2018, 1 ♀, leg. A. Vujić, S. Popov, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 2, 08.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Cheilosia himantopa (Panzer, 1798)

Golija: Odvračenica 1: 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Cheilosia illustrata (Harris, 1776)

Zlatar: Karaula, 11.07.2016, 2 ♂♂, leg. A. Vujić, Z. Nedeljković.

Cheilosia impressa Loew, 1840

Golija: Odvračenica 2, 14.07.2016, 1 ♂, 2 ♀♀, leg. A. Vujić, Z. Nedeljković; Golija: Čeka, 12.07.2016, 6 ♀♀, leg. A. Vujić, Z. Nedeljković, 28.06.2017, 1 ♂, 3 ♀♀, leg. A. Vujić; Zlatar: Karaula, 07.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 1: 25.06.2017, 2 ♀♀, leg. A. Vujić; Prijepolje: Kamena Gora 2, 08.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov.

Cheilosia latifrons (Zetterstedt, 1843)

Zlatar: Panorama, 04.09.2016, 1 ♀, leg. A. Vujić.

Cheilosia lenis (Becker, 1894)

Golija: Golijska reka, 28.06.2017, 2 ♀♀, leg. A. Vujić, 05.05.2018, 2 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov; Golija: Odvračenica 1, 04.05.2018, 1 ♂, leg. M. Miličić,

B. Ivošević, M. Janković, 1 ♂, leg. A. Vujić, S. Popov; Golija: Odvračenica 2, 04.05.2018, 2 ♂♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković, 5 ♂♂, 2 ♀♀, leg. A. Vujić, S. Popov; Golija: Karalići, 05.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković; Zlatibor: Zlatibor 2, 09.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Cheilosia lenta (Becker, 1894)

Golija: Golijska reka, 28.06.2017, 2 ♀♀, leg. A. Vujić; Golija: Odvračenica 1, 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Golija: Odvračenica 2, 04.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Cheilosia melanura (Becker, 1889)

Golija: Čeka, 25.04.2011, 2 ♀♀, leg. A. Vujić; Golija: Odvračenica 1, 04.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Golija: Odvračenica 2, 04.05.2018, 4 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković, 4 ♂♂, 1 ♀, leg. A. Vujić, S. Popov; Golija: Golijska reka, 05.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Cheilosia melanura rubra Vujić, 1996

Golija: Golijska reka, 05.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković.

Cheilosia mutabilis (Fallén, 1817)

Golija: Odvračenica 2, 14.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljковиć; Zlatar: Panorama, 26.06.2017, 4 ♂♂, leg. A. Vujić; Zlatar: Vodena poljana, 16.07.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković, 1 ♂, leg. A. Vujić, S. Popov.

Cheilosia nebulosa (Verrall, 1871)

Zlatar: Karaula, 07.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Cheilosia nigripes (Meigen, 1822)

Zlatar: Karaula, 07.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov; Zlatar: Vodena poljana, 07.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Prijepolje: Kamena gora 2, 08.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatibor: Zlatibor 2, 09.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković, 1 ♀, leg. A. Vujić, S. Popov.

Cheilosia personata Loew, 1857

Zlatar: Karaula, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljковиć; Zlatar: Panorama, 10.07.2016, 2 ♀♀, leg. A. Vujić, Z. Nedeljковиć, 26.06.2017, 1 ♀, leg. A. Vujić; Jadovnik: toward Tičje polje, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljковиć; Zlatar: Vodena poljana, 16.07.2018, 1 ♂, leg. A. Vujić, S. Popov.

Cheilosia psilophthalma (Becker, 1894)

Golija: Odvračenica 1, 04.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov.

Cheilosia pubera (Zetterstedt, 1838)

Zlatibor: Zlatibor 2, 09.05.2018, 2 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković, 1 ♂, 2 ♀♀, leg. A. Vujić, S. Popov.

Cheilosia ranunculi Doczkal, 2000

Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Cheilosia rhynchops Egger, 1860

Golija: Odvrćenica 2, 04.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Golija: Golijaska reka, 05.05.2018, 1 ♂, 2 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković, 2 ♂♂, 8 ♀♀, leg. A. Vujić, S. Popov.

Cheilosia rufimana (Becker, 1894)

Golija: Odvrćenica 1, 04.05.2018, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov; Golija: Golijaska reka, 05.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatar: Karaula, 07.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Cheilosia scutellata (Fallén, 1817)

Zlatar: Drmanovići, 09.07.2016, 1 ♂, 2 ♀♀, leg. A. Vujić, Z. Nedeljković, 04.09.2016, 1 ♂, 2 ♀♀, leg. A. Vujić; Zlatar: Karaula, 11.07.2016, 1 ♂, 1 ♀, leg. A. Vujić, Z. Nedeljković; Prijepolje: Kamena gora 1, 04.09.2016, 1 ♀, leg. A. Vujić; Zlatar: Nova Varoš, 05.09.2016, 1 ♀, leg. A. Vujić; Zlatar: Panorama, 26.06.2017, 3 ♂♂, leg. A. Vujić.

Cheilosia soror (Zetterstedt, 1843)

Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Zlatar: Karaula, 11.07.2016., 1 ♂, 4 ♀♀, leg. A. Vujić, Z. Nedeljković; Golija: Karalići, 12.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Zlatar: Drmanovići, 04.09.2016, 2 ♀♀, leg. A. Vujić.

Cheilosia urbana (Meigen, 1822)

Golija: Čeka, 25.04.2011, 3 ♂♂, leg. A. Vujić, 05.05.2018, 2 ♀♀, leg. A. Vujić, S. Popov; Golija: Odvrćenica 1, 04.05.2018, 3 ♂♂, 5 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković, 2 ♂♂, leg. A. Vujić, S. Popov; Golija: Odvrćenica 2, 04.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković, 1 ♀, leg. A. Vujić, S. Popov; Zlatar: Panorama, 07.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena gora 2, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Cheilosia variabilis (Panzer, 1798)

Prijepolje: Kamena gora 2, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Cheilosia vernalis (Fallén, 1817)

Golija: Karalići, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatibor: Zlatibor 2, 03.09.2016, 1 ♂, leg. A. Vujić; Zlatar: Nova Varoš, 05.09.2016, 1 ♀, leg. A. Vujić; Golija: Odvrćenica 2, 08.09.2016, 5 ♀♀, leg. Z. Markov, 7 ♀♀, leg. A. Vujić, 04.05.2018, 7 ♂♂, 12 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković, 9 ♂♂, 10 ♀♀, leg. A. Vujić, S. Popov; Golija: Odvrćenica 1, 04.05.2018, 1 ♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković, 4 ♂♂, 2 ♀♀, leg. A. Vujić, S. Popov; Golija: Čeka, 05.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatar: Vodena poljana, 07.05.2018, 1 ♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Panorama, 07.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković, 1 ♂, leg. A. Vujić, S. Popov; Prijepolje: Kamena gora 2, 08.05.2018, 5 ♂♂, leg. A. Vujić, S. Popov.

Cheilosia vujici Claussen & Doczkal, 1998

Golija: Odvrćenica 1, 04.05.2018, 5 ♂♂, 3 ♀♀, leg. A. Vujić, S. Popov; Golija: Odvrćenica 2, 04.05.2018, 4 ♂♂, 3 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković, 2 ♂♂, 2 ♀♀, leg. A. Vujić, S. Popov.

Cheilosia vulpina (Meigen, 1822)

Zlatar: Drmanovići, 09.07.2016, 3 ♀♀, leg. A. Vujić, Z. Nedeljković; Golija: Karalići, 28.06.2017, 1 ♀, leg. A. Vujić; Zlatar: Panorama, 26.06.2017, 2 ♀♀, leg. A. Vujić; Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatibor: Zlatibor 1, 09.05.2018, 2 ♀♀, leg. A. Vujić, S. Popov.

Chrysogaster solstitialis (Fallén, 1817)

Golija: Potok, 13.07.2016, 2 ♀♀, leg. A. Vujić, Z. Nedeljković.

Chrysotoxum bicinctum (Linnaeus, 1758)

Zlatar: Drmanovići, 09.07.2016, 4 ♂♂, 1 ♀, leg. A. Vujić, Z. Nedeljković.

Chrysotoxum elegans Loew, 1841

Zlatar: Drmanovići, 09.07.2016, 5 ♂♂, leg. A. Vujić, Z. Nedeljković; Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Zlatar: Karaula, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Chrysotoxum fasciatum (Müller, 1764)

Golija: Čeka, 12.07.2016, 1 ♂, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Toranj, 13.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Odvraćenica 2, 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Zlatar: Vodena poljana, 16.07.2018, 1 ♂, leg. A. Vujić, S. Popov.

Chrysotoxum festivum (Linnaeus, 1758)

Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Jadovnik: toward Tičje polje, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatar: Karaula, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Chrysotoxum montanum Nedeljković & Vujić, 2015

Zlatar: Drmanovići, 09.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Čeka, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Chrysotoxum orthostylum Vujić, 2015

Zlatar: Drmanovići, 09.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatar: Karaula, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Chrysotoxum tomentosum Giglio-Tos, 1890

Zlatar: Drmanovići, 09.07.2016, 4 ♂♂, 1 ♀, leg. A. Vujić, Z. Nedeljković; Zlatar: Panorama, 10.07.2016, 2 ♀♀, leg. A. Vujić, Z. Nedeljković; Golija: Čeka, 12.07.2016, 2 ♂♂, 5 ♀♀, leg. A. Vujić, Z. Nedeljković.

Chrysotoxum vernale Loew, 1841

Golija: Odvraćenica 2, 04.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatar: Karaula, 07.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 2, 08.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Dasysyrphus albostratus (Fallén, 1817)

Golija: Odvraćenica 2, 08.09.2016, 2 ♀♀, leg. Z. Markov.

Dasysyrphus friuliensis (van der Goot, 1960)

Golija: Čeka, 12.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković.

Dasysyrphus laskai Doczkal & Ståhls in prep.

Golija: Odvračenica 2, 27.06.2017, 1 ♀, leg. A. Vujić; Golija: Golijska reka, 05.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković; Golija: Karalići, 05.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Zlatar: Panorama, 07.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje, Kamena Gora 1, 08.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatibor: Zlatibor 2, 09.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković, 1 ♀, leg. A. Vujić, S. Popov.

Dasysyrphus lenensis Bagatshanova, 1980

Golija: Odvračenica 2, 27.06.2017, 1 ♀, leg. A. Vujić.

Dasysyrphus pinastri (De Geer, 1776) sensu Doczkal, 1996

Zlatibor: Čigota, 15.05.1996, 1 ♂, leg. A. Vujić; Golija: Odvračenica 1, 27.06.2017, 1 ♀, leg. A. Vujić, Odvračenica 2, 4 ♀♀, leg. A. Vujić; Golija: Golijska reka, 05.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatar: Panorama, 07.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Zlatar: Vodena poljana, 07.05.2018, 3 ♂♂, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Dasysyrphus tricinctus (Fallén, 1817)

Golija: Odvračenica 1, 08.09.2016, 1 ♂, leg. Z. Markov; Golija: Odvračenica 2, 04.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Didea fasciata Macquart, 1834

Zlatar: Vodena poljana, 16.07.2018, 1 ♂, leg. A. Vujić, S. Popov.

Didea intermedia Loew, 1854

Zlatar, Drmanovići, 04.09.2016, 1 ♂, leg. A. Vujić.

Epistrophe flava Doczkal & Schmid, 1994

Zlatar: Panorama, 26.06.2017, 1 ♂, leg. A. Vujić.

Epistrophe eligans (Harris, 1780)

Golija: Čeka, 25.04.2011, 1 ♂, leg. A. Vujić.

Epistrophe grossulariae (Meigen, 1822)

Zlatar: Karaula, 11.07.2016, 2 ♀♀, leg. A. Vujić, Z. Nedeljković; Zlatar: Panorama, 04.09.2016, 1 ♀, leg. Z. Markov.

Epistrophe nitidicollis (Meigen, 1822)

Golija: Odvračenica 1, 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Eriozona erratica (Linnaeus, 1758)

Zlatar: Drmanovići, 04.09.2016, 1 ♀, leg. A. Vujić; Zlatar: Vodena poljana, 16.07.2018, 1 ♂, leg. M. Miličić, M. Janković.

Eristalis alpina (Panzer, 1798)

Zlatar: Karaula, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatar: Drmanovići, 26.06.2017, 1 ♂, leg. A. Vujić.

Eristalis interrupta (Poda, 1761)

Golija: Odvračenica 2, 27.06.2017, 1 ♂, leg. A. Vujić; Golija: Goljska reka, 28.06.2017, 1 ♂, leg. A. Vujić.

Eristalis jugorum Egger, 1858

Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Zlatar: Karaula, 11.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Goljska reka, 12.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Čeka, 12.07.2016, 1 ♀, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 1, 13.07.2016, 2 ♂♂, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 2, 14.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 1, 27.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvračenica 2, 27.06.2017, 2 ♀♀, 5 ♂♂, leg. A. Vujić; Golija: Karalići, 28.06.2017, 2 ♀♀, leg. A. Vujić; Golija: Čeka, 28.06.2017, 1 ♂, leg. A. Vujić; Golija: Odvračenica 2, 29.06.2017, 1 ♂, leg. A. Vujić; Zlatar: Karaula, 07.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Vodena poljana, 16.07.2018, 2 ♂, leg. A. Vujić, S. Popov.

Eristalis lineata (Harris, 1776)

Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković.

Eristalis similis (Fallén, 1817)

Prijepolje: Kamena Gora 1, 25.06.2017, 1 ♂, leg. A. Vujić; Zlatar: Vodena poljana, 16.07.2018, 1 ♂, leg. A. Vujić, S. Popov.

Eumerus ovatus Loew, 1848 (Fig. 1.)

Zlatibor: Zlatibor 1, 09.05.2018, 2 ♂♂, 1 ♀, leg. A. Vujić, S. Popov.

Eupeodes corollae (Fabricius, 1794)

Golija: Odvračenica 1, 27.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvračenica 2, 27.06.2017, 1 ♂, leg. A. Vujić; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Zlatar: Vodena poljana, 16.07.2018, 2 ♀♀, leg. M. Miličić, M. Janković.

Eupeodes flaviceps (Rondani, 1857)

Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković.

Eupeodes latifasciatus (Macquart, 1829)

Zlatibor: Zlatibor 1, 24.06.2017, 1 ♂, leg. A. Vujić; Prijepolje: Kamena Gora 1, 25.06.2017, 1 ♀, leg. A. Vujić; Prijepolje: Kamena Gora 2, 25.06.2017, 1 ♀, leg. A. Vujić; Zlatar: Karaula, 07.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković.

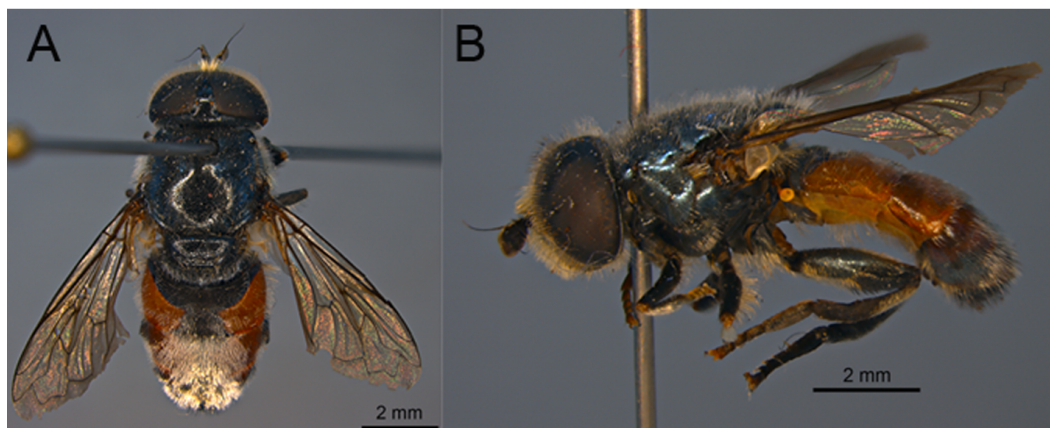


Figure 1. Male of *Eumerus ovatus* Loew, 1848 dorsal wiew (A), lateral wiew (B).

Eupeodes luniger (Meigen, 1822)

Zlatar: Panorama, 10.07.2016, 1 ♀, leg. Z. Nedeljković; Zlatar: Karaula, 11.07.2016, 1 ♂, leg. Z. Nedeljković; Golija: Odvračenica 1, 27.06.2017, 1 ♀, leg. A. Vujić.

Eupeodes nielseni (Dušek & Láska, 1976)

Golija: Odvračenica 1, 13.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Ferdinandea cuprea (Scopoli, 1763)

Golija: Golijska reka, 28.06.2017, 1 ♀, leg. A. Vujić, 05.06.2018, 1 ♀, leg. A. Vujić, S. Popov.

Helophilus pendulus (Linnaeus, 1758)

Golija: Čeka, 12.07.2016, 2 ♀♀, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 1, 13.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Potok, 13.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Zlatibor: Zlatibor 2, 03.09.2016, 1 ♀, leg. A. Vujić.

Lapposyrphus lapponicus (Zetterstedt, 1838)

Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Jadovnik: towards Tičje polje, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatar: Vodena poljana, 16.07.2018, 1 ♀, leg. A. Vujić, S. Popov.

Lejota ruficornis (Wahlberg, 1843)

Golija: Golijska reka, 05.05.2018, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov.

Leucozona lucorum (Linnaeus, 1758)

Zlatar: Karaula, 07.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Melangyna lasiophthalma (Zetterstedt, 1843)

Golija: Odvrtačenica 1, 04.05.2018, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov; Golija: Odvrtačenica 2, 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Golija: Čeka, 05.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Melanogaster nuda (Macquart, 1829)

Prijepolje: Kamena Gora 2, 08.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov; Zlatibor: Zlatibor 2, 09.05.2018, 2 ♂♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Melanostoma mellinum (Linnaeus, 1758)

Golija: Toranj, 13.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Čeka, 08.09.2016, 1 ♂, leg. Z. Markov; Zlatibor: Zlatibor 1, 24.06.2017, 1 ♂, leg. A. Vujić; Prijepolje: Kamena Gora 2, 25.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvrtačenica 2, 27.06.2017, 1 ♀, leg. A. Vujić; Golija: Karalići, 05.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Zlatar: Vodena poljana, 16.07.2018, 1 ♀, leg. A. Vujić, S. Popov.

Melanostoma scalare (Fabricius, 1794)

Zlatibor: Zlatibor 1, 03.09.2016, 1 ♀, leg. A. Vujić; Prijepolje: Kamena Gora 1, 04.09.2016, 1 ♂, Z. Markov; Zlatar: Panorama, 04.09.2016, 2 ♂♂, leg. A. Vujić, Z. Markov; Golija: Odvrtačenica 2, 08.09.2016, 1 ♂, leg. Z. Markov.

Meliscaeva auricollis (Meigen, 1822)

Zlatar: Nova Varoš, 05.09.2016, 1 ♂, leg. Z. Markov; Golija: Odvrtačenica 2, 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Vodena poljana, 16.07.2018, 1 ♀, leg. A. Vujić, S. Popov.

Meliscaeva cinctella (Zetterstedt, 1843)

Prijepolje: Kamena Gora 1, 04.09.2016, 1 ♂, leg. Z. Markov; Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Golija: Odvrtačenica 1, 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Golija: Odvrtačenica 2, 04.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Vodena poljana, 16.07.2018, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov.

Merodon aberrans (Egger, 1860)

Golija: Odvrtačenica 2, 14.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković.

Merodon aerarius Rondani, 1857

Golija: Odvrtačenica 1, 13.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Prijepolje: Kamena Gora 1, 04.09.2016, 4 ♂♂, 1 ♀, leg. A. Vujić, Z. Markov; Zlatar: Drmanovići, 04.09.2016, 5 ♂♂, 7 ♀♀, leg. A. Vujić, Z. Markov; Zlatar: Panorama, 04.09.2016, 6 ♀♀, leg. A. Vujić, Z. Markov; Zlatar: Nova Varoš, 05.09.2016, 4 ♀♀, leg. A. Vujić, Z. Markov; Golija: Čeka, 08.09.2016, 4 ♂♂, 2 ♀♀, leg. A. Vujić; Golija: Odvrtačenica 1, 08.09.2016, 4 ♀♀, leg. A. Vujić, Z. Markov; Golija: Odvrtačenica 2, 08.09.2016, 1 ♂, 3 ♀♀, leg. A. Vujić, Z. Markov; Zlatar: Vodena poljana, 16.07.2018, 10 ♂♂, leg. A. Vujić, S. Popov, M. Miličić, M. Janković.

Merodon analis Meigen, 1822

Golija: Čeka, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatar: Panorama, 04.09.2016, 1 ♀, leg. Z. Markov.

Merodon armipes Rondani, 1843

Golija: Čeka, 12.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 1, 13.07.2016, 3 ♀♀, leg. A. Vujić, Z. Nedeljković; Zlatibor: Zlatibor 2, 24.06.2017, 3 ♂♂, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 1, 25.06.2017, 1 ♂, leg. A. Vujić; Zlatibor: Zlatibor 2, 09.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Published data: Vujić *et al.*, 2012. (Zlatibor: 22.06.1995, 3 ♂♂, leg. A. Vujić)

Merodon aureus Fabricius, 1805

Prijepolje: Kamena Gora 1, 25.06.2017, 1 ♀, leg. A. Vujić; Zlatar: Drmanovići, 26.06.2017, 2 ♂♂, 1 ♀, leg. A. Vujić; Zlatar: Panorama, 26.06.2017, 6 ♂♂, 6 ♀♀, leg. A. Vujić; Golija: Odvračenica 1, 27.06.2017, 1 ♂, leg. A. Vujić; Prijepolje: Kamena Gora 2, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Merodon aff. aureus

Prijepolje: Kamena Gora 2, 08.05.2018, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov.

Merodon aff. cinereus 1

Zlatar: Drmanovići, 09.07.2016, 4 ♂♂, 1 ♀, leg. A. Vujić, Z. Nedeljković; Zlatar: Panorama, 10.07.2016, 1 ♂, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Čeka, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Merodon aff. cinereus 2

Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Golijska reka, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Karalići, 12.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Čeka, 12.07.2016, 2 ♂♂, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 1, 13.07.2016, 10 ♂♂, 5 ♀♀, leg. A. Vujić, Z. Nedeljković; Golija: Toranj, 13.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 2, 14.07.2016, 1 ♂, 1 ♀, leg. A. Vujić, Z. Nedeljković.

Merodon aff. cinereus 3

Zlatar: Vodena poljana, 16.07.2018, 8 ♂♂, 14 ♀♀, leg. A. Vujić, S. Popov, M. Miličić, M. Janković.

Merodon desuturinus Vujić, Šimić & Radenković, 1995

Prijepolje: Kamena Gora 1, 08.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov.

Merodon equestris (Fabricius, 1794)

Zlatibor: Zlatibor 1, 24.06.2017, 1 ♂, 2 ♀♀, leg. A. Vujić; Zlatibor: Zlatibor 2, 24.06.2017, 1 ♂, leg. A. Vujić; Prijepolje: Kamena Gora 2, 25.06.2017, 1 ♂, leg. A. Vujić; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Zlatibor: Zlatibor 2, 09.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković.

Merodon moenium Wiedemann, 1822

Zlatibor, 22.06.1995, 1 ♂, leg. A. Vujić; Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Golijska reka, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Potok, 13.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 2, 27.06.2017, 1 ♂, leg. A. Vujić; Zlatibor: Zlatibor 1,

24.06.2017, 2 ♂♂, 1 ♀, leg. A. Vujić; Prijepolje: Kamena Gora 1, 25.06.2017, 1 ♂, 1 ♀, leg. A. Vujić; Prijepolje: Kamena Gora 2, 25.06.2017, 1 ♂, leg. A. Vujić.

Microdon devius (Linnaeus, 1761)

Prijepolje: Kamena Gora 1, 25.06.2017, 6 ♀♀, leg. A. Vujić.

Microdon miki Doczkal & Schmid, 1999

Zlatar: Drmanovići, 26.06.2017, 1 ♀, leg. A. Vujić; Zlatibor: Zlatibor 2, 09.05.2018, 1 ♀, leg. A. Vujić.

Microdon mutabilis (Linnaeus, 1758)

Zlatar: Drmanovići, 26.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvračenica 1, 27.06.2017, 2 ♀♀, leg. A. Vujić; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Neoascia annexa (Müller, 1776)

Golija: Odvračenica 2, 29.06.2017, 3 ♀♀, leg. A. Vujić.

Neoascia obliqua Coe, 1940

Zlatar: Karaula, 05.09.2016, 1 ♂, leg. Z. Markov.

Neoascia podagrica (Fabricius, 1775)

Prijepolje: Kamena Gora 1, 04.09.2016, 2 ♂♂, 1 ♀, leg. A. Vujić, Z. Markov; Golija: Odvračenica 2, 08.09.2016, 1 ♀, leg. Z. Markov, 29.06.2017, 2 ♀♀, leg. A. Vujić; Golija: Odvračenica 1, 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Neoascia tenur (Harris, 1780)

Golija: Odvračenica 1, 04.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Neocnemodon larusi Vujić, 1999

Golija: Odvračenica 2, 29.06.2017, 1 ♂, leg. A. Vujić.

Neocnemodon pubescens (Delucchi & Pschorn-Walcher, 1955)

Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Golijska reka, 12.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 1, 04.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Golija: Odvračenica 2, 04.05.2018, 6 ♂♂, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković; Golija: Golijska reka, 05.05.2018, 3 ♂♂, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković; Zlatar: Karaula, 07.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Panorama, 07.05.2018, 2 ♀♀, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković; Zlatar: Vodena poljana, 07.05.2018, 1 ♂, 2 ♀♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 2, 08.05.2018, 2 ♀♀, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković.

Orthonevra montana Vujić, 1999

Golija: Odvračenica 2, 29.06.2017, 2 ♂♂, leg. A. Vujić; Golija: Odvračenica 1, 04.05.2018, 1 ♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Golija: Golijska reka, 05.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Paragus finitimus Goeldlin, 1971

Zlatar: Panorama, 26.06.2017, 1 ♂, leg. A. Vujić.

Paragus haemorrhous Meigen, 1822

Zlatar: Drmanovići, 09.07.2016, 1 ♂, 1 ♀, leg. A. Vujić, Z. Nedeljković; Zlatibor: Zlatibor 1, 1 ♀, leg. A. Vujić.

Parasyrphus annulatus (Zetterstedt, 1838)

Golija: Golijska reka, 05.07.2018, 1 ♂, leg. A. Vujić; Zlatar: Panorama, 07.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Parasyrphus lineolus (Zetterstedt, 1834)

Zlatar: Panorama, 10.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Čeka, 12.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 1, 27.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvračenica 2, 27.06.2017, 1 ♀, leg. A. Vujić; Golija: Čeka, 28.06.2017, 1 ♂, leg. A. Vujić; Zlatar: Panorama, 07.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 2, 08.05.2018, 2 ♀♀, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković.

Parasyrphus punctulatus (Verrall, 1873)

Golija: Golijska reka, 28.06.2017, 1 ♀, leg. A. Vujić.

Parasyrphus vittiger (Zetterstedt, 1843)

Kamena Gora 1, 04.09.2016, 1 ♀, leg. A. Vujić; Golija: Odvračenica 2, 08.09.2016, 1 ♂, leg. A. Vujić; Golija: Čeka, 28.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvračenica 2, 04.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Panorama, 07.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Parhelophilus versicolor (Fabricius, 1794)

Zlatar: Vodena poljana, 16.07.2018, 1 ♀, leg. A. Vujić, S. Popov.

Pelecocera scaevoides (Fallén, 1817)

Zlatibor: Zlatibor 2, 09.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Pelecocera tricincta Meigen, 1822

Jadovnik: towards Tičje polje, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatibor: Zlatibor 1, 03.09.2016, 3 ♀♀, leg. A. Vujić; Zlatibor: Zlatibor 2, 03.09.2016, 6 ♂♂, 3 ♀♀, leg. A. Vujić, Z. Markov; Zlatar: Karaula, 05.09.2016, 1 ♀, leg. A. Vujić; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Pipiza noctiluca (Linnaeus, 1758)

Golija: Odvračenica 1, 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Pipiza quadrimaculata (Panzer, 1804)

Golija: Čeka, 12.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Potok, 13.07.2016, 2 ♀♀, leg. A. Vujić, Z. Nedeljković; Prijepolje: Kamena Gora 1, 25.06.2017, 2 ♀♀, leg. A. Vujić; Zlatar: Panorama, 26.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvrćenica 1, 27.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvrćenica 2, 27.06.2017, 1 ♀, leg. A. Vujić.

Pipizella annulata (Macquart, 1829)

Jadovnik: towards Tičije polje, 11.07.2016, 2 ♂♂, leg. A. Vujić, Z. Nedeljković; Golija: Odvrćenica 2, 14.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Pipizella bispina Šimić, 1987

Zlatar: Panorama, 26.06.2017, 1 ♂, leg. A. Vujić.

Pipizella divicoi (Goeldlin, 1974)

Golija: Čeka, 05.05.2018, 1 ♂, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković; Zlatar: Panorama, 07.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković; Zlatibor: Zlatibor 2, 09.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković.

Pipizella viduata (Linnaeus, 1758)

Prijepolje: Kamena Gora 1, 25.06.2017, 1 ♂, 1 ♀, leg. A. Vujić, M. Miličić; Golija: Odvrćenica, 27.06.2017, 2 ♂♂, leg. A. Vujić; Golija: Golijska reka, 28.06.2017, 1 ♀, leg. A. Vujić; Zlatar: Panorama, 07.05.2018, 3 ♂♂, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković.

Pipizella virens (Fabricius, 1805)

Zlatar: Panorama, 26.06.2017, 1 ♂, leg. A. Vujić.

Platycheirus albimanus (Fabricius, 1781)

Golija: Karalići, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Potok, 13.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Odvrćenica 2, 08.09.2016, 3 ♂♂, leg. A. Vujić, Z. Markov, 27.06.2017, 1 ♀, leg. A. Vujić, 04.05.2018, 1 ♂, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković; Prijepolje: Kamena Gora 1, 25.06.2017, 1 ♂, leg. A. Vujić; Zlatar: Panorama, 26.06.2017, 1 ♂, leg. A. Vujić; Golija: Čeka, 28.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvrćenica 1, 04.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov; Golija: Golijska reka, 05.05.2018, 2 ♀♀, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 2, 08.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Zlatar: Vodena poljana, 16.07.2018, 1 ♂, 1 ♀, leg. M. Miličić, M. Janković.

Platycheirus melanopsis Loew, 1856

Golija: Karalići, 05.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Platycheirus peltatus (Meigen, 1822)

Golija: Odvrćenica 1, 04.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Pyrophaena rosarum Fluke, 1922

Zlatar: Karaula, 11.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković.

Rhingia campestris Meigen, 1822

Zlatar: Karaula, 07.05.2018, 4 ♂♂, 3 ♀♀, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković.

Rhingia rostrata (Linnaeus, 1758)

Golija: Toranj, 13.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Scaeva dignota (Rondani, 1857)

Golija: Karalići, 05.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković.

Sericomyia lappona (Linnaeus, 1758)

Golija: Čeka, 28.06.1911, 1 ♀, leg. D. Stojičević; Golija: Potok, 13.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 1, 27.06.2017, 2 ♀♀, leg. A. Vujić.

Sericomyia silentis (Harris, 1776)

Golija: Čeka, 28.06.1911, 1 ♀, leg. D. Stojičević; Golija: Goljska reka, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Spazigaster ambulans (Fabricius, 1798)

Zlatar: Karaula, 11.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 2, 14.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Sphaerophoria taeniata (Meigen, 1822)

Prijepolje: Kamena Gora 1, 08.05.2018, 1 ♂, leg. A. Vujić, S. Popov.

Sphegina latifrons Egger, 1865

Golija: Potok, 13.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Odvračenica 1, 04.05.2018, 6 ♂♂, leg. A. Vujić, S. Popov; Zlatar: Karaula, 07.05.2018, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov; Prijepolje: Kamena Gora 2, 08.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Spilomyia manicata (Rondani, 1865)

Golija: Odvračenica 2, 14.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Syrphus ribesii (Linnaeus, 1758)

Zlatar: Drmanovići, 09.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Zlatar: Karaula 1, 10.7.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković, 07.05.2018, 1 ♂, leg. M. Miličić, B. Ivošević, M. Janković; Zlatar: Panorama, 10.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković, 26.06.2017, 1 ♂, leg. A. Vujić; Golija: Čeka, 12.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Potok, 13.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Golija: Toranj, 13.07.2016, 2 ♀♀, leg. A. Vujić, Z. Nedeljković; Prijepolje: Kamena Gora 1, 25.06.2017, 1 ♀, leg. A. Vujić; Golija: Odvračenica 1, 27.06.2017, 1 ♀, leg. A. Vujić, 04.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Golija: Odvračenica 2, 04.05.2018, 2 ♀♀, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković.

Syrphus torvus Osten Sacken, 1875

Zlatar: Panorama, 10.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Toranj, 13.07.2016, 1 ♀, leg. A. Vujić, Z. Nedeljković; Prijepolje: Kamena Gora 1, 25.06.2017, 2 ♂♂, leg. A. Vujić; Golija: Karalići, 05.05.2018, 1 ♀, leg. A. Vujić, S. Popov.

Syrphus vitripennis Meigen, 1822

Zlatibor, Zlatibor 1, 09.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Temnostoma bombylans (Fabricius, 1805)

Golija: Golijska reka, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Temnostoma vespiforme (Linnaeus, 1758)

Golija: Čeka, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković.

Trichopsomyia flavitarsis (Meigen, 1822)

Prijepolje: Kamena Gora 1, 25.06.2017, 1 ♀, leg. A. Vujić.

Xanthandrus comtus (Harris, 1780)

Zlatar, Vodena poljana, 16.07.2018, 1 ♂, leg. A. Vujić, S. Popov.

Xanthogramma citrofasciatum (de Geer, 1776)

Golija: Čeka, 25.04.2011, 1 ♂, leg. A. Vujić; 05.05.2018, 1 ♂, leg. A. Vujić, S. Popov; Golija: Karalići, 05.05.2018, 1 ♂, 1 ♀, leg. A. Vujić, S. Popov; Zlatar: Panorama, 07.05.2018, 2 ♂♂, leg. A. Vujić, S. Popov, M. Miličić, B. Ivošević, M. Janković; Zlatibor: Zlatibor 1, 09.05.2018, 1 ♀, leg. A. Vujić, S. Popov; Zlatibor: Zlatibor 2, 09.05.2018, 1 ♀, leg. M. Miličić, B. Ivošević, M. Janković.

Xylota florum (Fabricius, 1805)

Golija: Odvrćenica 2, 27.06.2017, 1 ♀, leg. A. Vujić.

Xylota jakutorum Bagatshanova, 1980

Golija: Odvrćenica 2, 29.06.2017, 1 ♀, leg. A. Vujić.

Xylota segnis (Linnaeus, 1758)

Zlatar: Panorama, 10.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatibor: Zlatibor 1, 03.09.2016, 1 ♀, Z. Markov, 24.06.2017, 1 ♂, 1 ♀, leg. A. Vujić; Prijepolje: Kamena Gora 2, 04.09.2016, 3 ♂♂, leg. A. Vujić; Zlatar: Karaula, 05.09.2016, 1 ♂, leg. A. Vujić.

Xylota sylvarum (Linnaeus, 1758)

Zlatar, Panorama, 10.07.2016, 4 ♂♂, leg. A. Vujić, Z. Nedeljković; Golija: Karalići, 12.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Golija: Odvrćenica 2, 14.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković, 29.06.2017, 1 ♀, leg. A. Vujić.

Xylota xanthocnema Collin, 1939

Zlatar: Panorama, 10.07.2016, 1 ♂, leg. A. Vujić, Z. Nedeljković; Zlatar: Vodena poljana, 16.07.2018, 2 ♂♂, leg. A. Vujić, S. Popov.

Species richness

As shown on the map (Fig. 2.), it can be noted that the most species-rich areas in the investigated region are SW part of Mt. Golija and SE part of Zlatar Mt., with 59-72 recorded species, while on Kamena Gora there were 44-58 species.

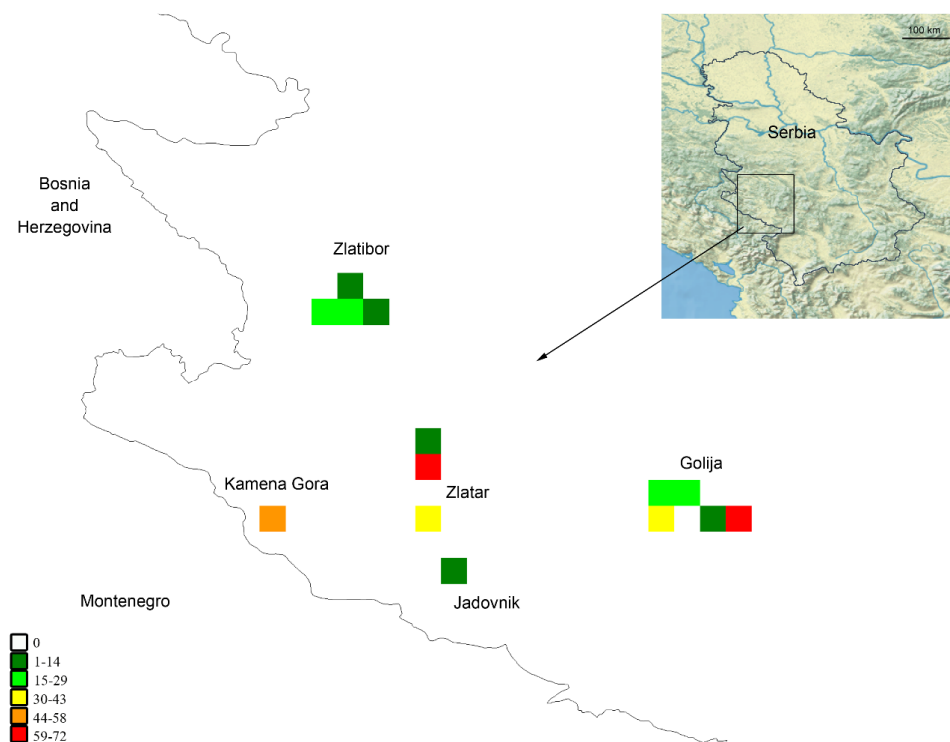


Figure 2. Species richness map of investigated localities in western part of Serbia. Color of the square corresponds with the number of recorded species.

Discussion

Based on sporadic old records and new data for the period of the last three years (2016-2018), 150 hoverfly species of 51 genera were confirmed for the western part of Serbia.

The most significant finding is a record of a species which is new for the fauna of Serbia- *Eumerus ovatus*. Also, very remarkable findings are 4 new hoverfly species from the genus *Merodon*, whose descriptions are in preparation (Vujić *et al.*, in prep.).

Highest number of species was recorded on Golija Mt. (93 species), followed by Zlatar and Zlatibor, with 90 and 28 species, respectively, while on Jadovnik only 6 species were noted. Especially rich parts were SW part of Golija Mt. and SE part of Zlatar Mt. Possible reason for this lies in the specific combination of microclimatic conditions and vegetation heterogeneity in these regions, which makes them particularly suitable for sustaining a high hoverfly diversity.

When it comes to protected and strictly protected species, Golija Mt. stood out once again, harbouring 9 protected species (*Cheilosia grisella*, *Temnostoma vespiforme*, *Cheilosia rufimana*, *Lejota ruficornis*, *Cheilosia vujici*, *Blera fallax*, *Dasysyrphus lenensis*, *Spilomyia manicata*, *Xylota florum*) and 3 strictly protected species (*Cheilosia melanura rubra*, *Orthonевра montana*, *Neocnemodon larusi*). On Zlatar mountain 5 protected (*Cheilosia grisella*, *Cheilosia personata*, *Cheilosia rufimana*, *Pelecocera tricincta*, *Pipizella bispina*), and 1 strictly protected (*Arctophila superbiens*) species were recorded. Furthermore, two protected (*Cheilosia grisella*, *Trichopsomyia flavitarsis*), and one strictly protected species (*Merodon desuturinus*) were noted on Kamena Gora Mt., while Zlatibor Mt. and Jadovnik Mt. have two protected species each, with *Pelecocera tricincta* recorded on both mountains, *Cheilosia pubera* recorded on Zlatibor Mt. and *Cheilosia personata* recorded on Jadovnik Mt. Several other species that are not listed as protected but are recorded only on a few localities in Serbia so far, were found in investigated area (*Merodon equestris*, *Pelecocera scaevoides*, *Pipizella annulata* and *Xylota jakutorum*). These records additionally confirm the significance of western Serbia as a hotspot of hoverfly diversity.

Genera with the highest number of recorded species were *Cheilosia* Meigen, 1822 (35 species) and *Merodon* (13 species). Most common species such as *Eristalis tenax* (Linnaeus, 1758), *Eristalis arbustorum* (Linnaeus, 1758), *Episyrphus balteatus* (De Geer, 1776) and *Sphaerophoria scripta* (Linnaeus, 1758) were recorded across all localities with high abundance.

Our findings confirm that this part of western Serbia is very rich in hoverfly species. Thus, in order to preserve high diversity of hoverflies, protection of these areas, as well as proper conservation management are of crucial importance.

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НОВИ НАЛАЗИ ЗА ФАУНУ ОСОЛИКИХ МУВА (DIPTERA: SYRPHIDAE) ЗАПАДНОГ ДЕЛА СРБИЈЕ (РЕГИОНИ ЗЛАТИБОР И РАШКА)

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ПОПОВ, БОЈАНА ИВОШЕВИЋ, СНЕЖАНА РАДЕНКОВИЋ И АНТЕ ВУЈИЋ

Извод

Током трогодишњег систематског сакупљања фауне осоликих мува у западној Србији, 150 врста из 51 рода су забележене за овај регион. *Eumerus ovatus* Loew, 1848, нова врста за фауну Србије, забележена је на планини Златибор. Додатно, пронађене су четири нове врсте рода *Merodon* Meigen, 1803, чији су описи у припреми. Врстама најбогатија подручја у истраживаном региону су југозападни део планине Голија и југоисточни део планине Златар. Ове планине су уједно имале и највећи број заштићених и строго заштићених врста осоликих мува. Да би се очувао висок диверзитет осоликих мува, заштита ових подручја, као и одговарајући конзервациони менаџмент су од кључног значаја.

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