

SIX NEW HOVERFLY SPECIES (DIPTERA: SYRPHIDAE) IN THE FAUNA OF SERBIA

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ABSTRACT. During a survey conducted from 2018 to 2021, six hoverfly species were registered on the territory of Serbia for the first time: *Chalcosyrphus pannonicus* (Oldenberg, 1916), *Chrysogaster coemeteriorum* (Linnaeus, 1758), *Eristalinus taeniops* (Wiedemann, 1818), *Melanogaster parumplicata* (Loew, 1840), *Merodon testaceus* Sack, 1913 and *Psilota atra* (Fallén, 1817). Data about new records are presented.

Keywords: biodiversity, *Chalcosyrphus*, *Chrysogaster*, *Eristalinus*, *Melanogaster*, *Merodon*, *Psilota*.

INTRODUCTION

Hoverflies (Syrphidae) are a large family of Diptera, and European fauna comprises more than 950 species (SPEIGHT, 2020). Hoverfly fauna in Serbia is well-studied, with more than 400 registered species (VUJIĆ *et al.*, 2018; VAN STEENIS *et al.*, 2019; VUJIĆ, 2020a,b; VUJIĆ and TOT, 2020). They are ecologically very important group of flies that perform ecosystem services, such as pollination of flowering plants, nutrient recycling and predation on plant pests (ROTHERAY and GILBERT, 2011).

MATERIAL AND METHODS

A survey was conducted from 2018 to 2021, at many localities on the territory of Serbia (Tab. 1). Specimens were collected on the flowers, or during the resting on the stones, using entomological net. Collected specimens were prepared by standard procedure, after which they were identified using the keys, figures and descriptions provided in VAN VEEN (2004), VUJIĆ *et al.* (2013) and SPEIGHT and SARTHOU (2017). All records are stored into Alciphron database of Serbian insects (VUJIĆ, 2020a).

Table 1. Localities where new hoverfly species for the fauna of Serbia were found.

Locality	District	Coordinates
Deliblato Sands	South Banat	N44 52 21 E21 01 23
Vrčin, Donja Mala	City of Belgrade	N44 40 36 E20 36 28
Vrčin, Lovački dom	City of Belgrade	N44 40 25 E20 37 22
Vlasina, Dejanova Reka	Pčinja	N42 40 29 E22 23 11
Vlasina, Srednja Reka	Pčinja	N42 45 11 E22 17 30
Vlasina, Vlasina River	Pčinja	N42 45 50 E22 19 07
Vlasina, Teskovo - Čuka	Pčinja	N42 46 42 E22 18 49
Preševo, Miratovac	Pčinja	N42 16 16 E21 38 35
Pčinja Valley	Pčinja	N42 19 33 E21 52 40
Rujen Mt., Sebrat	Pčinja	N42 21 39 E21 49 37

RESULTS

In total, six species from subfamily Eristalinae were registered as new for the fauna of Serbia.

***Chalcosyrphus pannonicus* Oldenberg, 1916** (Fig. 1A)

Material examined: Vlasina, Teskovo - Čuka, N42 46 42 E22 18 49, UTM: FN03, 30.07.2020. leg. M. Vujić.

Notes: Just a single female specimen was collected on *Pastinaca sativa* flowers.

***Chrysogaster coemiteriorum* (Linnaeus, 1758)** (Fig. 1B)

Material examined: Deliblato Sands, N44 52 21 E21 01 23, UTM: EQ06, 01.09.2020. leg. M. Vujić.

Notes: Three female specimens were collected on flowers of *Daucus carota* and an unidentified white flowering umbellifer.

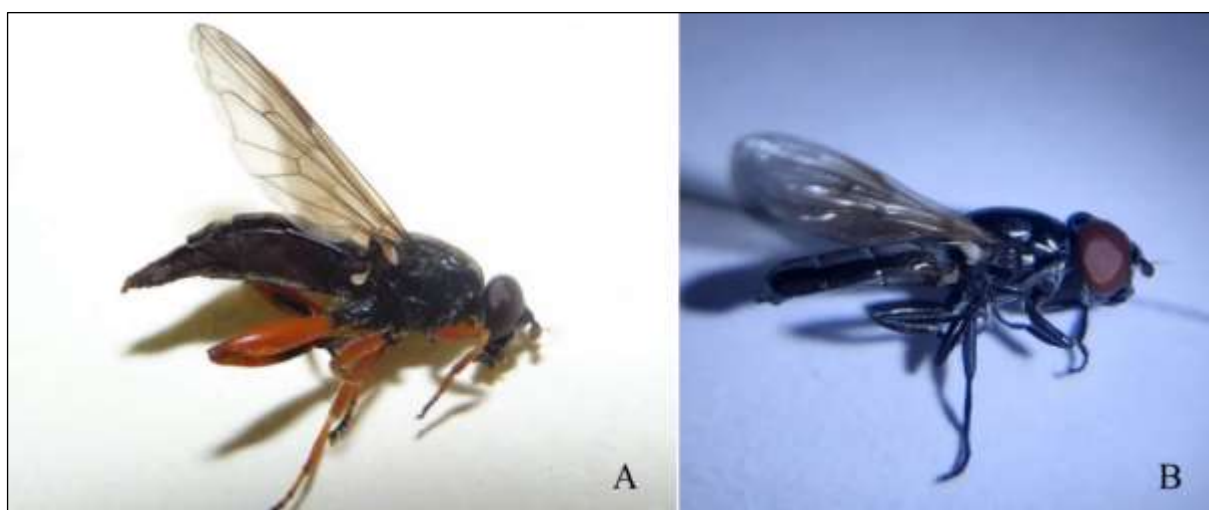


Figure 1. A – *Chalcosyrphus pannonicus* Oldenberg, 1916: habitus of female, lateral view;
 B – *Chrysogaster coemiteriorum* (Linnaeus, 1758): habitus of female, lateral view.
 (Photos: M. Vujić, 2020)

***Eristalinus taeniops* (Wiedemann, 1818)** (Fig. 2)

Material examined: Belgrade, Vrčin, Donja Mala, N44 40 36 E20 36 28, UTM: DQ64, 10.11.2018. leg. M. Vujić.

Notes: One female specimen was collected on flower of cultivated purple *Chrysanthemum*, in a private garden. Recording of this Mediterranean and thermophilous species is very unexpected, so specimen probably migrated due to unusually warm autumn in Serbia in 2018. In the same period, Mediterranean true bug *Caenocoris nerii* (Germar, 1847) was recorded in the same garden, also on *Chrysanthemum* flowers (ŠEAT *et al.*, 2019).



Figure 2. *Eristalinus taeniops* (Wiedemann, 1818): A – habitus of female, lateral view; B – head of female. (Photo: M. Vujić, 2021)

***Melanogaster parumplicata* (Loew, 1840)** (Fig. 3)

Material examined: Vlasina, Dejanova Reka, N42 40 29 E22 23 11, UTM: FN12, 26.05.2019. leg. M. Vujić & T. Tot, 31.05.2021. leg. M. Vujić; Vlasina, Srednja Reka, N42 45 11 E22 17 30, UTM: FN03, 28.05.2019. leg. M. Vujić & T. Tot; Vlasina, Vlasina River, N42 45 50 E22 19 07, UTM: FN03, 27.09.2020. leg. M. Vujić.

Notes: Several specimens were collected at three localities at Vlasina plateau, on flowers of *Achillea millefolium*, *Ranunculus* sp. and unidentified white flowering umbellifers. All the specimens were caught in wet meadow near rivers or streams, in wet meadows. Fauna of some groups of insects, such as butterflies, orthopterans, true bugs, dragonflies and damselflies, at Vlasina plateau is well-studied (SKEJO and IVKOVIĆ, 2015; TOT *et al.*, 2015; VUJIĆ *et al.*, 2016; TOT *et al.*, 2017; ŠEAT, 2018; TOT *et al.*, 2018; ŽIKIĆ *et al.*, 2018; ĐUKIĆ *et al.*, 2019; PROTIĆ and NADAŽDIN, 2020; VUJIĆ *et al.*, 2020). Recording of these species, together with *Ch. pannonicus* and already published records of *Arctophila bequaerti* Hervé-Bazin, 1913 strongly indicates importance and faunistical potential of these habitats for further research.

***Merodon testaceus* Sack, 1913** (Fig. 4)

Material examined: Preševo, Miratovac, N42 16 16 E21 38 35, UTM: EM58, 09.05.2020. leg. M. Vujić; Pčinja Valley, N42 19 33 E21 52 40, UTM: EM78, 17.05.2021. leg. M. Vujić; Rujen Mt., Sebrat, N42 21 39 E21 49 37, UTM: EM69, 19.05.2021. leg. M. Đurić.

Notes: Five male specimens were collected on the rocks, in dry meadows or on rocky slopes, at three localities in southern part of country. The localities where this species was recorded are xerothermic and Mediterranean-influenced, such as Miratovac (Fig. 5), many thermophilous and Mediterranean insects have been found there: butterflies *Anthocharis gruneri* Herrich-

Schäffer, 1851 and *Pyrgus cinarae* (Rambur, 1839), bush-cricket *Bradyporus dasypus* (Illiger, 1800), longhorn beetle *Blepisanis vittipennis* (Reiche, 1877), weevil *Brachycerus sinuatus* Olivier, 1807 etc. (ĐURĐEVIĆ and ĐURIĆ, 2011; POPOVIĆ and MILENKOVIĆ, 2012; POPOVIĆ *et al.*, 2014; IVKOVIĆ *et al.*, 2016; PEŠIĆ *et al.*, 2020).



Figure 3. *Melanogaster parumplicata* (Loew, 1840), habitus of male, lateral view. (Photo: I. Parenta, 2021)



Figure 4. *Merodon testaceus* Sack, 1913; A, C – habitus of male (A – dorsal view; C – lateral view); B – terminalia of male. (Photo: M. Vujić, 2020)



Figure 5. Miratovac, locality where *Merodon testaceus* Sack, 1913 was collected. (Photo: M. Vujić)

***Psilota atra* (Fallén, 1817) (Fig. 6)**

Material examined: Belgrade, Vrčin, Lovački dom, N44 40 25 E20 37 22, UTM: DQ74, 2.5.2021. leg. M. Vujić.

Notes: One female specimen was caught on a mud, under the white willow (*Salix alba*) tree.



Figure 6. *Psilota atra* (Fallén, 1817); A – habitus of female, lateral view; B – hind femur of female. (Photo: M. Vujić, 2021)

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