

THE FAUNA OF HOVERFLIES (DIPTERA: SYRPHIDAE) OF VOJVODINA PROVINCE, SERBIA

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Abstract — Many hoverfly species of faunal and zoogeographical interest are found in Serbia's northern province of Vojvodina due to the diversity of its biotopes. In this paper, the presence of 252 species of hoverflies (Diptera: Syrphidae) from 69 genera is documented. Five species are here recorded for the first time in Serbia: *Anasimyia contracta* Claussen & Torp Pedersen, 1980; *Anasimyia transfuga* (Linnaeus, 1758); *Eristalinus megacephalus* (Rossi, 1794); *Helophilus hybridus* Loew, 1846; and *Mallota fuciformis* (Fabricius, 1794). One species is recorded for the first time in Vojvodina: *Cheilosia brunnipennis* (Becker, 1894). The records of 12 species from Vojvodina Province are the only ones on the Balkan Peninsula, while the records of 15 species are the only ones in Serbia.

Key words: Syrphidae, Vojvodina, Serbia, hoverflies, faunistic review

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INTRODUCTION

The family Syrphidae is widespread and distributed in different types of habitats. Members of the family are characterized by a high level of adaptive radiation, different larval development strategies, and varying biology of adults.

The phenomenon of mimicry is frequently present among members of this family as a means of protection from their avian predators (Glumac, 1962).

The province of Vojvodina is located in the northern part of Serbia. This relatively small territory (21.506 km²) includes many different types of biotopes, among which agrobiocenoses predominate. The presence of mountains (two), rivers, steppes, lakes, marshes, sand pits, fresh marshes, and salt marshes makes possible the existence of large numbers of hoverflies.

Some of these areas (Fruška Gora National Park, the Vršac Mountains, the Palić Nature Park, and the Deliblatski Pesak (sand), Ludaško Jezero (lake), Stari Begej-Carska Bara (marsh), Upper Danube Basin, Obedska Bara (marsh), Zasavica, Selevenske Pustare (wilderness), and Slano Kopovo (salt marsh) Special

Nature Reserves are protected because of their great importance for the preservation of biodiversity (Tomić et al., 2004).

Some parts of Vojvodina have been thoroughly investigated. This applies to the mountain Fruška Gora, the Vršac Mountains, Obedska Bara, the valley of the Tisa and the Banat region.

Fruška Gora is a low island mountain. Its highest parts are wooded with dense deciduous forests, while its valleys are covered with meadows, vineyards, and orchards. The hoverfly fauna of Fruška Gora is well documented and consists of 210 species (Vujić et al., 2002).

The Vršac Mountains are also low mountains, with numerous types of habitats where 151 hoverfly species have been recorded (Vujić and Šimić, 1994).

The marsh Obedska Bara is designated a Special Nature Reserve and Wetland of International Importance according to the Ramsar Convention. In this marsh, 93 hoverfly species have been recorded (Radenković et al., 2004).

Along the Tisa River in Serbia, 91 species of hoverflies have been recorded (Šimić and Vujić, 1987).

In the Banat region, 186 hoverfly species have been recorded (Vujić et al., 1998b).

The aim of this paper was to present the fauna of hoverflies in the Vojvodina Province on the basis of previously published and new data.

MATERIAL AND METHODS

The material analyzed in this study was collected over the course of more than 50 years of investigations (1955-2007). It is deposited in the collection of the Department of Biology and Ecology, Faculty of Natural Sciences, University of Novi Sad (Serbia). A part of the material analyzed in this study is deposited in the collection of the Natural History Museum in Belgrade (Serbia).

Standard methods for collecting and preparation of hoverflies were used.

RESULTS AND DISCUSSION

In this paper, the presence of 252 species from 69 genera is documented in Vojvodina (Table 1).

The genus with most species is *Cheilosia* Meigen, 1822 with 43, followed by *Platycheirus* Lapeletier & Serville, 1828 with 10; *Chrysotoxum* Meigen, 1803 and *Eumerus* Meigen, 1822 with nine; and *Eristalis* Latreille, 1804, *Merodon* Meigen, 1803, *Eupeodes* Osten Sacken, 1807, and *Pipiza* Fallen, 1810 with eight species. Other genera have fewer species.

Five species are here recorded for the first time in Serbia: *Anasimyia contracta* Claussen & Torp Pedersen, 1980; *Anasimyia transfuga* (Linnaeus, 1758); *Eristalinus megacephalus* (Rossi, 1794); *Helophilus hybridus* Loew, 1846; and *Mallota fuciformis* (Fabricius, 1794).

Anasimyia contracta Claussen & Torp Pedersen, 1980

New records: Vojvodina, Begej, 23.05.1990, 4♂♂, leg. A. Vujić.

Balkan Peninsula: Romania: Dirickx (1994).

Remarks: This is the first record of this species

for Serbia. Outside Serbia on the Balkan Peninsula, the given species has been recorded in Romania (Dirickx, 1994) and Montenegro (Vujić, pers. comm.).

Anasimyia transfuga (Linnaeus, 1758)

New records: Vojvodina, Bezdan, 16.09.1994, 1♂, leg. D. Radnović; Žabalj, 1♀, leg. J. Prodana.

Balkan Peninsula: Croatia: Strobl (1898, 1900) (as *Helophilus transfugus*). **Romania:** (Dirickx, 1994). **Bulgaria:** (Dirickx, 1994).

Remarks: This is the first record of the species *A. transfuga* for Serbia. Based on redetermination of material deposited in the Natural History Museum in Belgrade (Republic of Serbia), it is concluded that the previous record of this species by Glumac (1959) belongs to the species *A. interpuncta* (Harris, 1776).

Helophilus hybridus Loew, 1846

New records: Potisje, Žabalj, 27.04.1979, 1♂, leg. S. Šimić.

Balkan Peninsula: Bulgaria: Drensky (1934) (as *Tubifera hibrida*).

Remarks: The first record for Serbia. This species was previously known only from Bulgaria (Drensky, 1934) on the Balkan Peninsula.

Mallota fuciformis (Fabricius, 1794) (Fig. 1)

New records: Sremski Karlovci, 02.04.2006, 1♀, leg. Z. Nedeljković.

Balkan Peninsula: Bosnia and Herzegovina: Strobl (1898); Glumac (1972).

Remarks: This is the first record in Serbia of *M. fuciformis*, which is a very rare and probably threatened species in Europe. The only known data from the Balkan Peninsula is very old (Strobl, 1898), from Bosnia and Herzegovina (Jablanica Mountain).

Species with nomenclatural changes:

Eristalinus megacephalus (Rossi, 1794)

New records: Ludaško Jezero, 15.10.1983, 1♂,



Fig. 1. *Mallota fuciformis* (Fabricius, 1794) (Photo: Zorica Nedeljković).

leg. S. Šimić.

Serbia: Šimić and Vujić (1987) (as *Lathyrrophthalmus quinquelineatus*).

Balkan Peninsula: Montenegro: Šimić (1987) (as *Lathyrrophthalmus quinquelineatus*); **Bulgaria:** Drensky (1934) (as *Lathyrrophthalmus quinquelineatus*).

Remarks: This species appears in the most recent literature under the name *E. quiquelineatus* (Fabricius, 1781) or *Lathyrrophthalmus quinquelineatus* (Fabricius, 1781), but Dirickx (1998) found that *E. quiquelineatus* is an Afrotropical species unknown from Europe and North Africa (Speight, 2006). Also, it was previously known in Serbia under the name *Lathyrrophthalmus quinquelineatus* (Šimić and Vujić, 1987). This Mediterranean species is very rare on the Balkan Peninsula. Besides the specimen from Vojvodina, it has been recorded only from one more locality (Lake Skadar in Montenegro).

One species is recorded for the first time in Vojvodina Province (Serbia):

***Cheilosia brunnipennis* (Becker, 1894)**

New records: Petrovaradinski Rit, 1♂; Glavica, 05.1997, 2♀♀, leg. A. Vujić.

Serbia: Vujić (1996).

Balkan Peninsula: Croatia: Strobl (1902) (as *Cheilosia sareptana*); Langhoffer (1918) (as *Chilosia langhofferi*); **Montenegro:** Vujić (1996); **Macedonia:** Glumac (1955) (as *Cheilosia sareptana*); Vujić (1996); **Bulgaria:** Drensky (1934) (as *Chilosia barbata*).

***Orthonevra gemmula* Violovitsh, 1979**

Published records: Vujić and Šimić (1994): Mesić, 07.06.1983, 1♂, leg. A. Vujić.

Remarks: This is the only record of the given species in Europe. It was previously known only from Novosibirsk.

The records of the following 12 species from Vojvodina are the only published data for the Balkan Peninsula: *Chalcosyrphus rufipes* (Loew, 1873) (Vujić and Glumac, 1994); *Eristalis picea* (Fallen, 1817) (Vujić and Glumac, 1994; Vujić et al., 1998a); *Eumerus sinuatus* Loew, 1855 (Vujić and Glumac, 1994; Vujić and Šimić, 1994); *Eupeodes lucasi* (Marcos-Garcia & Láska, 1983) (Vujić et al., 2002); *Eupeodes goeldlini* Mazanek, Láska & Bičik, 1999 (Radenković et al., 2004); *Meligramma guttata* (Fallen, 1817) (Vujić et al., 2002); *Myolepta potens* (Harris, 1780) (Vujić and Glumac, 1994); *Platycheirus europeus* Goeldlin, Maibach & Speight, 1990 (Vujić et al., 2002); *Platycheirus occultus* Goeldlin, Maibach & Speight, 1990 (Vujić et al., 2002); *Psilota innupta* Rondani, 1857 (Smit and Vujić, in press); *Spazigaster ambulans* (Fabricius, 1798) (Vujić and Glumac, 1994); and *Trichopsomyia lucida* (Meigen, 1822) (Vujić et al., 1998b).

The records of 15 species from Vojvodina are the only ones in Serbia: *Cheilosia alba* Vujić & Claussen, 2000 (Vujić and Claussen, 2000); *Cheilosia flavipes* (Panzer, 1798) (Vujić and Glumac, 1994; Vujić, 1996); *Chrysotoxum lineare* (Zetterstedt, 1819) (Vujić et al., 1998b); *Chrysotoxum verralli* Collin, 1940 (Vujić et al., 1998b); *Eristalis intricaria* (Linnaeus, 1758) (Glumac, 1959); *Eumerus argyropus* Loew, 1848 (Vujić and Šimić, 1995-1998); *Eumerus basalis* Loew, 1848 (Vujić and Glumac, 1994; Vujić et al., 1998a); *Lejops vittata* (Meigen, 1822) (Glumac, 1955 as *Liops*); *Heringia heringi* (Zetterstedt, 1843) (Vujić and Glumac, 1994; Vujić et al., 1998a); *Riponnensia splendens* (Meigen, 1822) (Vujić and Glumac, 1994);

Sphiximorpha binominata (Verrall, 1901) (Glumac, 1959 as *Cerioides*); *Temnostoma meridionale* Krivosheina and Mamayev, 1962 (Vujić et al., 1998a, 2002); *Trichopsomyia flavitarsis* (Meigen, 1822) (Glumac, 1959 as *Heringia*; Vujić et al., 1998b); *Tropidia scita* (Harris, 1780) (Glumac, 1955; Šimić and Vujić, 1987); and *Xylota abiens* (Meigen, 1822) (Vujić and Šimić, 1994; Vujić and Milankov, 1999).

Four endemic species have been recorded to date in Vojvodina: *Cheilosia griseifacies* Vujić, 1994 is a Pannonian and Peripannonian form. Its records are from the Pannonian Plain, its margins, and low

mountains in Central Europe (Thuringen in Germany and Javor in Bosnia and Herzegovina) (Vujić, 1994, 1996). *Cheilosia schnabli* (Becker, 1894) is a Balkan-Caucasian endemic (Vujić, 1996). *Merodon ruficornis* Meigen, 1838 is a species endemic to the Balkan and Carpathian Mountains, while *Pipiza luteibarba* sp. n. (Vujić et al., in press) is endemic to low parts of Serbia.

One species – *Eupeodes nuba* (Wiedemann, 1830), published by Vujić and Glumac (1994) – has been deleted from the faunistic list of Vojvodina because it was misidentified.

Table 1. List of hoverfly species (Diptera: Syrphidae) in Vojvodina.

<i>Anasimyia contracta</i> Claussen & Torp Pedersen, 1980	<i>Cheilosia grossa</i> (Fallen, 1817)
<i>Anasimyia lineata</i> (Fabricius, 1787)	<i>Cheilosia himantopus</i> (Panzer, 1798)
<i>Anasimyia interpuncta</i> (Harris, 1776)	<i>Cheilosia hypena</i> (Becker, 1894)
<i>Anasimyia transfuga</i> (Linnaeus, 1758)	<i>Cheilosia illustrata</i> (Harris, 1780)
<i>Baccha elongata</i> Fabricius, 1775	<i>Cheilosia impressa</i> Loew, 1840
<i>Brachyopa bicolor</i> (Fallen, 1817)	<i>Cheilosia latifrons</i> Zetterstedt, 1843
<i>Brachyopa dorsata</i> Zetterstedt, 1837	<i>Cheilosia lenta</i> (Becker, 1894)
<i>Brachyopa insenilis</i> Collin, 1939	<i>Cheilosia mutabilis</i> (Fallen, 1817)
<i>Brachyopa maculipennis</i> Thompson, 1980	<i>Cheilosia nigripes</i> (Meigen, 1822)
<i>Brachyopa pilosa</i> Collin, 1939	<i>Cheilosia nebulosa</i> (Verrall, 1871)
<i>Brachypalpoidea lentus</i> (Meigen, 1822)	<i>Cheilosia ortotricha</i> Vujić & Claussen, 1994
<i>Brachypalpus laphriformis</i> (Fallen, 1816)	<i>Cheilosia pagana</i> (Meigen, 1822)
<i>Brachypalpus valgus</i> (Panzer, 1798)	<i>Cheilosia pascuorum</i> Becker, 1894
<i>Caliprobola speciosa</i> (Rossi, 1790)	<i>Cheilosia proxima</i> (Zetterstedt, 1843)
<i>Ceriana conopsoides</i> (Linnaeus, 1758)	<i>Cheilosia psilophthalma</i> (Becker, 1894)
<i>Chalcosyrphus eunotus</i> Loew, 1863	<i>Cheilosia ranunculi</i> Doczkal, 2000
<i>Chalcosyrphus nemorum</i> (Fabricius, 1805)	<i>Cheilosia melanopa redi</i> Vujić, 1996
<i>Chalcosyrphus rufipes</i> (Loew, 1873)	<i>Cheilosia schnabli</i> (Becker, 1894)
<i>Cheilosia aerea</i> Dufour, 1848	<i>Cheilosia scutellata</i> (Fallen, 1817)
<i>Cheilosia alba</i> Vujić & Claussen, 2000	<i>Cheilosia semifasciata</i> (Becker, 1894)
<i>Cheilosia albipila</i> Meigen, 1838	<i>Cheilosia soror</i> (Zetterstedt, 1843)
<i>Cheilosia albitarsis</i> (Meigen, 1822)	<i>Cheilosia urbana</i> (Meigen, 1822)
<i>Cheilosia barbata</i> Loew, 1857	<i>Cheilosia uviformis</i> (Becker, 1894)
<i>Cheilosia brunnipennis</i> (Beck, 1894)	<i>Cheilosia variabilis</i> (Panzer, 1798)
<i>Cheilosia canicularis</i> (Panzer, 1801)	<i>Cheilosia vernalis</i> (Fallen, 1817)
<i>Cheilosia chrysocoma</i> (Meigen, 1822)	<i>Cheilosia vicina</i> (Zetterstedt, 1849)
<i>Cheilosia cumanica</i> (Szilady, 1938)	<i>Cheilosia vulpina</i> (Meigen, 1822)
<i>Cheilosia cynocephala</i> Loew, 1840	<i>Chrysogaster solstitialis</i> (Fallen, 1817)
<i>Cheilosia fasciata</i> Schiner & Egger, 1853	<i>Chrysotoxum bicinctum</i> (Linnaeus, 1758)
<i>Cheilosia flavipes</i> (Panzer, 1798)	<i>Chrysotoxum cautum</i> (Harris, 1776)
<i>Cheilosia laticornis</i> Rondani, 1857	<i>Chrysotoxum elegans</i> Loew, 1841
<i>Cheilosia gigantea</i> (Zetterstedt, 1838)	<i>Chrysotoxum festivum</i> (Linnaeus, 1758)
<i>Cheilosia griseifacies</i> Vujić, 1994	<i>Chrysotoxum intermedium</i> Meigen, 1822

Table 1. Continued.

<i>Chrysotoxum lineare</i> (Zetterstedt, 1819)	<i>Eupeodes lucasi</i> (Marcos-Garcia & Láska, 1983)
<i>Chrysotoxum octomaculatum</i> Curtis, 1837	<i>Eupeodes luniger</i> (Meigen, 1822)
<i>Chrysotoxum vernale</i> Loew, 1841	<i>Eupeodes goeldlini</i> Mazanek, Láska & Bičík, 1999
<i>Chrysotoxum verralli</i> Collin, 1940	<i>Ferdinandea cuprea</i> (Scopoli, 1763)
<i>Criorhina asilica</i> (Fallen, 1816)	<i>Ferdinandea ruficornis</i> (Fabricius, 1775)
<i>Criorhina berberina</i> (Fabricius, 1805)	<i>Helophilus hybridus</i> Loew, 1846
<i>Criorhina floccosa</i> (Meigen, 1822)	<i>Helophilus pendulus</i> (Linnaeus, 1758)
<i>Dasysyrphus albostrigatus</i> Fallen, 1817	<i>Helophilus trivittatus</i> (Fabricius, 1805)
<i>Dasysyrphus tricinctus</i> (Fallen, 1817)	<i>Heringia (Neocnemodon) brevidens</i> (Egger, 1865)
<i>Dasysyrphus venustus</i> (Meigen, 1822)	<i>Heringia heringi</i> (Zetterstedt, 1843)
<i>Didea fasciata</i> Macquart, 1834	<i>Heringia (Neocnemodon) latitarsis</i> (Egger, 1865)
<i>Doros profuges</i> (Harris, 1780)	<i>Heringia (Neocnemodon) vitripennis</i> Meigen, 1822
<i>Epistrophe diaphana</i> (Zetterstedt, 1843)	<i>Lejogaster metallina</i> (Fabricius, 1781)
<i>Epistrophe eligans</i> (Harris, 1780)	<i>Lejogaster tarsata</i> (Meigen, 1822)
<i>Epistrophe flava</i> Doczkal & Schmid, 1994	<i>Lejops vittata</i> (Meigen, 1822)
<i>Epistrophe grossulariae</i> (Meigen, 1822)	<i>Leucozona lucorum</i> (Linnaeus, 1758)
<i>Epistrophe melanostoma</i> (Zetterstedt, 1843)	<i>Mallota fuciformis</i> (Fabricius, 1794)
<i>Epistrophe nitidicollis</i> (Meigen, 1822)	<i>Mallota cimbiciformis</i> (Fallen, 1817)
<i>Epistrophe ochrostoma</i> (Zetterstedt, 1849)	<i>Melangyna lasiophthalma</i> (Zetterstedt, 1843)
<i>Epistrophella euchroma</i> (Kowarz, 1885)	<i>Melangyna umbellatarum</i> (Fabricius, 1794)
<i>Episyrphus balteatus</i> (De Geer, 1776)	<i>Melanogaster nuda</i> (Macquart, 1829)
<i>Eristalinus aeneus</i> (Scopoli, 1763)	<i>Melanostoma mellinum</i> (Linnaeus, 1758)
<i>Eristalinus megacephalus</i> (Rossi, 1794)	<i>Melanostoma scalare</i> (Fabricius, 1794)
<i>Eristalinus sepulchralis</i> (Linnaeus, 1758)	<i>Meligramma cincta</i> (Fallen, 1817)
<i>Eristalis alpina</i> (Panzer, 1798)	<i>Meligramma guttata</i> (Fallen, 1817)
<i>Eristalis arbustorum</i> Linnaeus, 1758	<i>Meligramma triangulifera</i> (Zetterstedt, 1843)
<i>Eristalis interrupta</i> (Poda, 1761)	<i>Meliscaeva auricollis</i> (Meigen, 1822)
<i>Eristalis intricaria</i> (Linnaeus, 1758)	<i>Meliscaeva cinctella</i> (Zetterstedt, 1843)
<i>Eristalis lineata</i> (Harris, 1776)	<i>Merodon abberans</i> Egger, 1860
<i>Eristalis pertinax</i> (Scopoli, 1763)	<i>Merodon auripes</i> Sack, 1913
<i>Eristalis picea</i> (Fallen, 1817)	<i>Merodon avidus</i> Rossi, 1790
<i>Eristalis similis</i> Fallen, 1817	<i>Merodon armipes</i> Rondani, 1843
<i>Eristalis tenax</i> (Linnaeus, 1758)	<i>Merodon clavipes</i> (Fabricius, 1781)
<i>Eumerus amoenus</i> Loew, 1848	<i>Merodon constans</i> Rossi, 1794
<i>Eumerus argyropus</i> Loew, 1848	<i>Merodon ruficornis</i> Meigen, 1838
<i>Eumerus basalis</i> Loew, 1848	<i>Merodon trebevicensis</i> Strobl, 1900
<i>Eumerus flavitarsis</i> Zetterstedt, 1843	<i>Mesembrius peregrinus</i> (Loew, 1846)
<i>Eumerus funeralis</i> Meigen, 1822	<i>Microdon analis</i> (Macquart, 1842)
<i>Eumerus ornatus</i> Meigen, 1822	<i>Microdon devius</i> (Linnaeus, 1758)
<i>Eumerus sinuatus</i> Loew, 1855	<i>Microdon mutabilis</i> (Linnaeus, 1758)
<i>Eumerus sogdianus</i> Stackelberg, 1952	<i>Myathropa florea</i> Linnaeus, 1758
<i>Eumerus strigatus</i> (Fallen, 1817)	<i>Myolepta dubia</i> (Fabricius, 1805)
<i>Eumerus tricolor</i> (Fabricius, 1798)	<i>Myolepta obscura</i> (Becher, 1882)
<i>Eupeodes bucculatus</i> (Rondani, 1857)	<i>Myolepta potens</i> (Harris, 1780)
<i>Eupeodes corollae</i> (Fabricius, 1794)	<i>Myolepta vara</i> (Panzer, 1798)
<i>Eupeodes flaviceps</i> Rondani, 1857	<i>Neoascia annexa</i> Müller, 1776
<i>Eupeodes lapponicus</i> (Zetterstedt, 1838)	<i>Neoascia interrupta</i> (Meigen, 1822)
<i>Eupeodes latifasciatus</i> (Macquart, 1829)	<i>Neoascia meticulosa</i> (Scopoli, 1763)

Table 1. Continued.

<i>Neoascia obliqua</i> Coe, 1940	<i>Rhingia campestris</i> Meigen, 1822
<i>Neoascia podagrica</i> (Fabricius, 1775)	<i>Rhingia rostrata</i> (Linnaeus, 1758)
<i>Neoascia tenur</i> (Harris, 1780)	<i>Riponnensia splendens</i> (Meigen, 1822)
<i>Neoascia unifasciata</i> (Strobl, 1898)	<i>Scaeva dignota</i> (Rondani, 1857)
<i>Orthonevra frontalis</i> (Loew, 1843)	<i>Scaeva pyrastris</i> (Linnaeus, 1758)
<i>Orthonevra gemmula</i> Violovitsh, 1979	<i>Scaeva selenitica</i> (Meigen, 1822)
<i>Orthonevra nobilis</i> (Fallen, 1817)	<i>Spazigaster ambulans</i> (Fabricius, 1798)
<i>Orthonevra splendens</i> (Meigen, 1822)	<i>Sphaerophoria interrupta</i> (Fabricius), 1805
<i>Paragus (Paragus) albifrons</i> (Fallen, 1817)	<i>Sphaerophoria rueppelli</i> (Wiedeman, 1830)
<i>Paragus (Paragus) bicolor</i> (Fabricius, 1794)	<i>Sphaerophoria scripta</i> (Linnaeus, 1758)
<i>Paragus (Pandasyophthalmus) constrictus</i> Šimić, 1986	<i>Sphaerophoria taeniata</i> (Meigen, 1822)
<i>Paragus (Pandasyophthalmus) haemorrhous</i> Meigen, 1822	<i>Sphegina clavata</i> (Scopoli, 1763)
<i>Paragus (Paragus) majoranae</i> Rondani, 1857	<i>Sphegina clunipes</i> (Fallen, 1816)
<i>Paragus (Paragus) quadrifasciatus</i> Meigen, 1822	<i>Sphegina elegans</i> Schummel, 1843
<i>Paragus (Paragus) romanicus</i> Stanescu, 1992	<i>Sphiximorpha binominata</i> (Verrall, 1901)
<i>Paragus (Pandasyophthalmus) tibialis</i> (Fallen, 1817)	<i>Spilomyia manicata</i> (Rondani, 1865)
<i>Parasyrphus annulatus</i> (Zetterstedt, 1838)	<i>Spilomyia saltuum</i> (Fabricius, 1794)
<i>Parasyrphus macularis</i> (Zetterstedt, 1843)	<i>Syritta pipiens</i> (Linnaeus, 1758)
<i>Parasyrphus punctulatus</i> (Verrall, 1873)	<i>Syrphus ribesii</i> (Linnaeus, 1758)
<i>Parasyrphus vittiger</i> (Zetterstedt, 1843)	<i>Syrphus torvus</i> Osten Sacken, 1875
<i>Parhelophilus frutetorum</i> (Fabricius, 1775)	<i>Syrphus vitripennis</i> Meigen, 1822
<i>Parhelophilus versicolor</i> (Fabricius, 1794)	<i>Temnostoma bombylans</i> (Fabricius, 1805)
<i>Pelecocera latifrons</i> Loew, 1856	<i>Temnostoma meridionale</i> Krivosheina & Mamayev, 1962
<i>Pipiza austiaca</i> Meigen, 1822	<i>Temnostoma vespiforme</i> (Linnaeus, 1758)
<i>Pipiza festiva</i> Meigen, 1822	<i>Trichopsomyia flavitarsis</i> (Meigen, 1822)
<i>Pipiza lugubris</i> (Fabricius, 1775)	<i>Trichopsomyia lucida</i> (Meigen, 1822)
<i>Pipiza luteibarba</i> sp. nova (Vujić, in prep.)	<i>Triglyphus primus</i> Loew, 1840
<i>Pipiza luteitarsis</i> Zetterstedt, 1843	<i>Tropidia scita</i> (Harris, 1780)
<i>Pipiza</i> sp. 1 (<i>Pipiza fenestrata</i> of the present authors)	<i>Volucella bombylans</i> (Linnaeus, 1758)
<i>Pipiza aff. noctiluca</i> (Linnaeus, 1758)	<i>Volucella inanis</i> (Linnaeus, 1758)
<i>Pipiza signata</i> Meigen, 1822	<i>Volucella inflata</i> (Fabricius, 1794)
<i>Pipizella divicoi</i> Goeldlin, 1974	<i>Volucella pellucens</i> (Linnaeus, 1758)
<i>Pipizella maculipennis</i> (Meigen, 1822)	<i>Volucella zonaria</i> (Poda, 1761)
<i>Pipizella viduata</i> (Linnaeus, 1758)	<i>Xanthandrus comtus</i> (Harris, 1780)
<i>Pipizella virens</i> (Fabricius, 1805)	<i>Xanthogramma citrofasciatum</i> (De Geer, 1776)
<i>Platycheirus albimanus</i> (Fabricius, 1781)	<i>Xanthogramma laetum</i> (Fabricius, 1794)
<i>Platycheirus ambiguus</i> (Fallen, 1817)	<i>Xanthogramma pedissequum</i> (Harris, 1776)
<i>Platycheirus angustatus</i> (Zetterstedt, 1843)	<i>Xylota abiens</i> (Meigen, 1822)
<i>Platycheirus clypeatus</i> (Meigen, 1822)	<i>Xylota florum</i> (Fabricius, 1805)
<i>Platycheirus europeus</i> Goeldlin, Maibach & Speight, 1990	<i>Xylota segnis</i> (Linnaeus, 1758)
<i>Platycheirus fulviventris</i> (Macquart, 1829)	<i>Xylota sylvarum</i> (Linnaeus, 1758)
<i>Platycheirus manicatus</i> (Meigen, 1822)	<i>Xylota xanthocnema</i> Collin, 1939
<i>Platycheirus occultus</i> Goeldlin, Maibach & Speight, 1990	
<i>Platycheirus scutatus</i> (Meigen, 1822)	
<i>Platycheirus tarsalis</i> (Schummel, 1837)	
<i>Pocota personata</i> (Harris, 1780)	
<i>Psilota innupta</i> Rondani, 1857	
<i>Pyrophaena rosarum</i> (Fabricius, 1787)	

CONCLUSION

The following results were obtained on the basis of new investigations of hoverfly diversity in Vojvodina and redetermination of recently published data:

Five species are here recorded for the first time for Serbia: *Anasimyia contracta* Claussen & Torp Pedersen, 1980; *Anasimyia transfuga* (Linnaeus, 1758); *Eristalinus megacephalus* (Rossi, 1794); *Helophilus hybridus* Loew, 1846; and *Mallota fuciformis* (Fabricius, 1794).

One species is recorded for the first time for Vojvodina Province: *Cheilosia brunnipennis* (Becker, 1894).

One species – *Eupeodes nuba* (Wiedemann, 1830) – is deleted from the list of hoverflies present in Vojvodina.

Four endemic species are recorded in Vojvodina: *Cheilosia griseifacies* Vujić, 1994; *Cheilosia schnabli* (Becker, 1894); *Merodon ruficornis* Meigen, 1838; and *Mallota fuciformis* (Fabricius, 1794).

The records of 12 species from Vojvodina are the only ones on the Balkan Peninsula: *Chalcosyrphus rufipes* (Loew, 1873); *Eristalis picea* (Fallen, 1817); *Eumerus sinuatus* Loew, 1855; *Eupeodes lucasi* (Marcos-Garcia & Láska, 1983); *Eupeodes goeldlini* Mazanek, Láska & Bičik, 1999; *Meligramma guttata* (Fallen, 1817); *Myolepta potens* (Harris, 1780); *Platycheirus europeus* Goeldlin, Maibach & Speight, 1990; *Platycheirus occultus* Goeldlin, Maibach & Speight, 1990; *Psilota innupta* Rondani, 1857; *Spazigaster ambulans* (Fabricius, 1798); and *Trichopsomyia lucida* (Meigen, 1822).

The records of 15 species from Vojvodina are the only ones in Serbia: *Cheilosia alba* Vujić & Claussen, 2000; *Cheilosia flavipes* (Panzer, 1798); *Chrysotoxum lineare* (Zetterstedt, 1819); *Chrysotoxum verralli* Collin, 1940; *Eristalis intricaria* (Linnaeus, 1758); *Eumerus argyropus* Loew, 1848; *Eumerus basalis* Loew, 1848; *Lejops vittata* (Meigen, 1822); *Heringia heringi* (Zetterstedt, 1843); *Riponnensia splendens* (Meigen, 1822); *Sphiximorpha binominata* (Verrall, 1901); *Temnostoma meridionale* Krivosheina &

Mamayev, 1962; *Trichopsomyia flavitarsis* (Meigen, 1822); *Tropidia scita* (Harris, 1780); and *Xylota abiens* (Meigen, 1822).

The presence of 252 species from 69 genera in Vojvodina is here documented.

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ФАУНА ОСОЛИКИХ МУВА (DIPTERA: SYRPHIDAE) У ПОКРАЈИНИ ВОЈВОДИНА, СРБИЈА

ЗОРИЦА НЕДЕЉКОВИЋ, А. ВУЈИЋ, СМИЉКА ШИМИЋ и СНЕЖАНА РАДЕНКОВИЋ

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Постојање веома разноврсних типова биотопа на подручју Војводине омогућило је присуство знатног броја врста осоликних мува. Утврђене су укупно 252 врсте из 69 родова, од којих су многе од фаунистичког и зоогеографског значаја. Пет врста је први пут забележено у Србији: *Anasimyia contracta* Claussen & Torp Pedersen, 1980,

Anasimyia transfuga (Linnaeus, 1758), *Eristalinus megacephalus* (Rossi, 1794), *Helophilus hybridus* Loew, 1846 и *Mallota fuciformis* (Fabricius, 1794). Једна врста је први пут регистрована у Војводини: *Cheilosia brunnipennis* (Becker, 1894). Налази дванаест врста из Војводине су једини за Балканско полуострво, а петнаест су једини за Србију.