

## First records of the genus *Mydaea* and of some other Muscidae species from Croatia (Diptera)

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ZIELKE E. & BAŇAŘ P. 2017: First records of the genus *Mydaea* and of some other Muscidae species from Croatia (Diptera). *Acta Musei Moraviae, Scientiae biologicae* (Brno) **101(1)**: 43–48. – Species of the genus *Mydaea* Robineau-Desvoidy, 1830 are recorded for the first time from Croatia. In total three species each of *Mydaea* and *Phaonia* Robineau-Desvoidy, 1830 and one species each of *Coenosia* Meigen, 1826 and *Muscina* Robineau-Desvoidy, 1830 are newly recorded. A table is provided listing the 97 muscid species currently known from Croatia.

**Key words:** Diptera, Muscidae, new records, list of species, Croatia

### Introduction

Only very few publications address the muscid fauna of Croatia. PONT & IVKOVIC (2013), for example, studied the hunter-flies of Croatia and gave an account of a total of eight species of the genus *Limnophora* Robineau-Desvoidy, 1830, for the country. These species had either been recorded in earlier literature or collected by the authors. The Muscidae of Croatia were also recorded more recently by IVKOVIC & PONT (2015), who collected muscid species in the eastern Mediterranean countries at various localities. Based on the number of species collected and available information from the *Fauna Europaea* website for the family Muscidae (PONT 2005) the authors counted a total of 91 species known from Croatia.

Studies of Muscidae specimens collected in 2016 in Istria, Croatia by one of the authors, revealed twelve species belonging to seven different genera. Eight of the species are new records for the country. The genus *Mydaea* Robineau-Desvoidy, 1830, which was hitherto unknown from Croatia, is now represented by three species. Details of the records are listed below.

### Material and Methods

The Muscidae studied for this investigation were collected in July 2016 by the second author, primarily by using yellow pan-traps (YPT) at three localities, which are briefly characterized as follows:

Western Istria, 0.5 km south-east of Kloštar village (N45°03'27"E13°42'20"), 110 m a.s.l., above the northern slope of Linski kanal close to the D75 road, a dry meadow (c. 3

hectares) with interspersed shrubs, located between two forest stands. Muscids were collected from a row of 35 yellow pan-traps.

Central Istria, 0.5 km west of Šeraje village (N45°11'41"E13°43'00"), c. 150 m a.s.l., close to the village, a narrow (10 m) forest road in Mediterranean low-canopy oak forest with shrubs and small trees. Disturbed area with large stones and remnants of branches of chopped-up trees. Muscids were collected from a row of 30 yellow pan-traps.

Central Istria, 1.5 km east of Kringa village, valley of the Draga stream (N45°10' E13°51'), 160 m a.s.l. Agricultural landscape close to the stream, after harvest season. Muscids were collected from two rows of 40 yellow pan-traps each, one row located in a field after harvest and the other placed in high grassland close to a forest.

The keys to the Muscidae of the Palaearctic Region (HENNIG 1964) and the keys to the Muscidae of Central Europe (GREGOR *et al.* 2002, 2016) were used for identification. The majority of the determined material listed below is deposited in the collection of the Entomological Department of the Moravian Museum, Brno. Some specimens have been housed in the Entomological Collection of the Institute of Biodiversity and Ecosystem Research, Sofia, Bulgaria. Those are recorded below as "at IBER".

## Results

Species of five subfamilies of Muscidae were identified and are listed below.

### Subfamily Azeliinae

#### *Muscina levida* (Harris, 1780)

**Material examined.** 1♂ 2♀ Central Istria, 0.5 km W Šeraje, 15.–26.07.2016; 2♂ 3♀ Central Istria, stream valley, 1.5 km E Kringa, YPT, 15.–24.07.2016; 2♂ 4♀ (+ 1♀ at IBER) Central Istria, stream valley, 1.5 km E Kringa, YPT, in forest, 15.–24.7.2016. (newly recorded for Croatia)

### Subfamily Muscinae

#### *Musca domestica* Linnaeus, 1758

**Material examined.** 1♂ Western Istria, 0.5 km SE Kloštar, YPT, 15.–26.07.2016.

#### *Stomoxys calcitrans* (Linnaeus, 1758)

**Material examined.** 1♂ Western Istria, 0.5 km SE Kloštar, YPT, 15.–26.07.2016; 1♂ (+ 1♂ at IBER) Central Istria, stream valley, 1.5 km E Kringa, YPT, 15.–24.07.2016; 1♂ Central Istria, stream valley, 1.5 km E Kringa, in forest, YPT, 15.–24.07.2016

### Subfamily Phaoniinae

#### *Helina evecta* (Harris, 1780)

**Material examined.** 1♀ (+ 1♀ at IBER) Western Istria, 0.5 km SE Kloštar, YPT, 15.–26.07.2016; 2♀ Central Istria, stream valley, 1.5 km E Kringa, in forest, YPT, 15.–24.07.2016.

***Phaonia fuscata* (Fallén, 1825)**

**Material examined.** 2♂ (+ 2♂ at IBER) Central Istria, stream valley, 1.5 km E Kringa, YPT, 15.–24.07.2016; 1♂ Central Istria, stream valley, 1.5 km E Kringa, in forest, YPT, 15.–24.07.2016. **(newly recorded from Croatia)**

***Phaonia palpata* (Stein, 1897)**

**Material examined.** 1♂ Central Istria, stream valley, 1.5 km E Kringa, YPT, 15.–24.07.2016. **(newly recorded for Croatia)**

***Phaonia trimaculata* (Bouché, 1834)**

**Material examined.** 1♂ Western Istria, 0.5 km SE Kloštar, YPT, 15.–26.07.2016; 1♂ 1♀ (+ 1♂ at IBER) Central Istria, stream valley, 1.5 km E Kringa, YPT, 15.–24.07.2016; 7♂ 4♀ (+ 2♂ at IBER) Central Istria, stream valley, 1.5 km E Kringa, in forest, YPT, 15.–24.07.2016. **(newly recorded for Croatia)**

***Phaonia valida* (Harris, 1780)**

**Material examined.** 5♂ 29♀ (+ 4♂ 2♀ at IBER) Central Istria, stream valley, 1.5 km E Kringa, in forest, YPT, 15.–24.07.2016.

**Subfamily Mydaeinae**

***Mydaea ancilla* (Meigen, 1826)**

**Material examined.** 1♂ Central Istria, stream valley, 1.5 km E Kringa, in forest, YPT, 15.–24.07.2016. **(newly recorded for Croatia)**

***Mydaea detrita* (Zetterstedt, 1845)**

(= *M. electa* Zetterstedt, 1860)

**Material examined.** 2♂1♀ (+ 1♂ at IBER) Central Istria, stream valley, 1.5 km E Kringa, YPT, 15.–24.07.2016. **(newly recorded for Croatia)**

***Mydaea nebulosa* (Stein, 1893)**

**Material examined.** 1♂ Central Istria, stream valley, 1.5 km E Kringa, in forest, YPT, 15.–24.07.2016. **(newly recorded for Croatia)**

**Subfamily Coenosiinae**

***Coenosia atra* (Meigen, 1830)**

**Material examined.** 1♀ Central Istria, stream valley, 1.5 km E Kringa, in forest, YPT, 15.–24.07.2016. **(newly recorded for Croatia)**

**Discussion**

All eight species recorded as new for Croatia are widely distributed in Europe and most of them are also known from North African and/or Asian parts of the Palearctic Region. Some of them even inhabit adjacent biogeographical regions. With the exception

of *Phaonia palpata*, *Mydaea detrita* and *Mydaea nebulosa*, the other newly-recorded species had already been reported by Pont in 1986 from Yugoslavia. However, they were not recorded from the region of Croatia, which at that time was still part of Yugoslavia.

The number of known Muscidae species from Croatia calculated by IVKOVIC & PONT (2015) “Croatia: 91 (79 in *Fauna Europaea*)” is slightly different from the calculation presented here, although the same sources have been used for counting. Only 78, rather than the 79 species mentioned could be retrieved for Croatia from the currently-available *Fauna Europaea* website, version 2.6.2 (PONT 2013) which, however, according to Pont (2017, pers. com.) is identical with all earlier versions. The number of 78 species contains three species that are listed twice, for example *Musca domestica* and *Musca domestica domestica*. Similar double-counting is also found for *Coenosina testacea* (Robineau-Desvoidy, 1830) and *Schoenomyza litorella* (Fallén, 1823). Therefore the number of Muscidae species listed by *Fauna Europaea* had to be reduced from 78 to 75 species. PONT & IVKOVIC (2013) identified a total of five *Limnophora* species which were new for Croatia and another eight newly-recorded species are listed by IVKOVIC & PONT (2015). These 13 species and the 75 muscid-species listed by *Fauna Europaea* result in a total of 88. PONT & IVKOVIC (2013) also stated that *Limnophora pulchriceps* should be added to the number of known species from Croatia as it had been described by LOEW (1860) very probably from Dalmatia, an area which is part of Croatia. The species is not listed in *Fauna Europaea* for Croatia but it is named by PONT (1986) for Yugoslavia, with the comment “Type-locality: not given (from title: Dalmatia, YU)”. Thus instead of 91 only 89 Muscidae species may be identified as recorded from Croatia. Another eight species are now reported as new by the investigation in hand, increasing the total number of known species to 97. As there is no summarizing overview of the Muscidae species recorded from Croatia, the currently-known species are listed in Table 1.

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**Table 1:** Muscidae subfamilies and their species recorded from Croatia. (Species are listed alphabetically. No. = running number; Ref. = recorded from Croatia by 1= Pont (2013); 2 = PONT & IVKOVIC (2013); 3 = IVKOVIC & PONT (2015); 4 = current investigation.) →

Records of Muscidae from Croatia

No	Subfamilies and Species	Ref.	No	Subfamilies and Species	Ref.
	<b>Subfamily Azeliinae</b>		49	<i>Phaonia rufiventris</i> (Scopoli, 1763)	3
01	<i>Drymeia hamata</i> (Fallén, 1817)	1	50	<i>Phaonia scutellata</i> (Zett., 1845)	1
02	<i>Hydrotaea albipuncta</i> (Zett., 1845)	1	51	<i>Phaonia subventa</i> (Harris, 1780)	1
03	<i>Hydrotaea armipes</i> (Fallén, 1825)	1	52	<i>Phaonia trimaculata</i> (Bouché, 1834)	4
04	<i>Hydrotaea capensis</i> (Wiedem., 1818)	1	53	<i>Phaonia tuguriorum</i> (Scopoli, 1763)	1
05	<i>Hydrotaea cinerea</i> Rob.-Desv., 1830	1	54	<i>Phaonia valida</i> (Harris, 1780)	1;4
06	<i>Hydrotaea cyrtoneurina</i> (Zett., 1845)	1		<b>Subfamily Mydaeinae</b>	
07	<i>Hydrotaea dentipes</i> (Fabricius, 1805)	1	55	<i>Hebecnema fumosa</i> (Meigen, 1826)	1
08	<i>Hydrotaea hirticeps</i> (Fallén, 1824)	1	56	<i>Hebecnema vespertina</i> (Fallén, 1823)	3
09	<i>Hydrotaea ignava</i> (Harris, 1780)	1	57	<i>Mydaea ancilla</i> (Meigen, 1826)	4
10	<i>Hydrotaea irritans</i> (Fallén, 1823)	1	58	<i>Mydaea detrita</i> (Zett., 1845)	4
11	<i>Hydrotaea parva</i> Meade, 1889	1	59	<i>Mydaea nebulosa</i> (Stein, 1893)	4
12	<i>Hydrotaea similis</i> Meade, 1887	1	60	<i>Myospila meditabunda</i> (Fabr., 1781)	1
13	<i>Muscina levida</i> (Harris, 1780)	4		<b>Subfamily Coenosinae</b>	
14	<i>Muscina pascuorum</i> (Meigen, 1826)	1	61	<i>Coenosia agromyzina</i> (Fallén, 1825)	1
15	<i>Muscina stabulans</i> (Fallén, 1817)	1	62	<i>Coenosia albicornis</i> Meigen, 1826	3
16	<i>Thricops furcatus</i> (Stein, 1916)	1	63	<i>Coenosia atra</i> Meigen, 1830	4
17	<i>Thricops longipes</i> (Zetterstedt, 1845)	1	64	<i>Coenosia humilis</i> Meigen, 1826	1
18	<i>Thricops nigrifrons</i> (Rob.-Desv., 1830)	3	65	<i>Coenosia intermedia</i> (Fallén, 1825)	1
	<b>Subfamily Muscinae</b>		66	<i>Coenosia mixta</i> Schnabl, 1911	1
19	<i>Dasyphora albofasciata</i> (Macquart, 1839)	1	67	<i>Coenosia mollicula</i> (Fallén, 1825)	1
20	<i>Dasyphora penicillata</i> (Egger, 1865)	1	68	<i>Coenosia nigridigita</i> Rondani, 1866	3
21	<i>Eudasyphora cyanella</i> (Meigen, 1826)	1	69	<i>Coenosia octosignata</i> Rondani, 1866	1
22	<i>Eudasyphora cyanicolor</i> (Zett., 1845)	1	70	<i>Coenosia ruficornis</i> Macquart, 1835	1
23	<i>Eudasyphora zimini</i> (Hennig, 1963)	1	71	<i>Coenosia testacea</i> (Rob.-Desv., 1830)	1;3
24	<i>Haematobosca stimulans</i> (Meigen, 1824)	1	72	<i>Coenosia tigrina</i> (Fabricius, 1775)	1;3
25	<i>Mesembrina mystacea</i> (Linnaeus, 1758)	1	73	<i>Coenosia villipes</i> Rondani, 1866	1
26	<i>Morellia simplex</i> (Loew, 1857)	1	74	<i>Limnophora croatica</i> Pont & Ivk., 2013	2;3
27	<i>Musca domestica</i> Linnaeus, 1758	1;4	75	<i>Limnophora obsignata</i> (Rondani, 1866)	1
28	<i>Musca larvipara</i> Porchinsky, 1910	1	76	<i>Limnophora olympiae</i> Lyneborg, 1965	2;3
29	<i>Musca osiris</i> Wiedem., 1830	1	77	<i>Limnophora pulchriceps</i> (Loew, 1860)	2;3
30	<i>Musca tempestiva</i> Fallén, 1817	1	78	<i>Limnophora riparia</i> (Fallén, 1824)	2;3
31	<i>Neomyia cornicina</i> (Fabricius, 1781)	1	79	<i>Limnophora setinerva</i> Schnabl, 1911	2;3
32	<i>Polietes meridionalis</i> Peris & Llor., 1963	1	80	<i>Limnophora tigrina</i> (Am Stein, 1860)	2
33	<i>Stomoxys calcitrans</i> (Linnaeus, 1758)	1;4	81	<i>Limnophora triangula</i> (Fallén, 1825)	1;2;3
	<b>Subfamily Phaoniinae</b>		82	<i>Lispe caesia</i> Meigen, 1826	1
34	<i>Atherigona varia</i> (Meigen, 1824)	1	83	<i>Lispe candicans</i> Kowarz, 1892	1
35	<i>Helina almeriensis</i> (Strobl, 1906)	1	84	<i>Lispe loewi</i> Ringdahl, 1922	1
36	<i>Helina czernyi</i> Lyneborg, 1970	1	85	<i>Lispe longicollis</i> Meigen, 1826	1
37	<i>Helina deleta</i> (Stein, 1914)	1	86	<i>Lispe melaleuca</i> Loew, 1847	1
38	<i>Helina evecta</i> (Harris, 1780)	1;4	87	<i>Lispe nana</i> Macquart, 1835	1
39	<i>Helina lasiophthalma</i> (Macquart, 1835)	1	88	<i>Lispe pygmaea</i> Fallén, 1825	1
40	<i>Helina pollinosa</i> (Stein, 1900)	1	89	<i>Lispe quaerens</i> Villeneuve, 1936	1
41	<i>Helina reversio</i> (Harris, 1780)	1;3	90	<i>Lispe tentaculata</i> (De Geer, 1776)	1;2
42	<i>Helina straminea</i> Hennig, 1963	1	91	<i>Lispocephala brachialis</i> (Rond., 1877)	1;3
43	<i>Helina tetrastigma</i> (Meigen, 1826)	1	92	<i>Lispocephala mikii</i> (Strobl, 1893)	1;3
44	<i>Helina trivittata</i> (Zett., 1860)	1	93	<i>Lispocephala spuria</i> (Zett., 1838)	3
45	<i>Phaonia cincta</i> (Zett., 1846)	3	94	<i>Orchisia costata</i> (Meigen, 1826)	1
46	<i>Phaonia fuscata</i> (Fallén, 1825)	4	95	<i>Schoenomyza litorella</i> (Fallén, 1823)	1
47	<i>Phaonia pallida</i> (Fabricius, 1787)	1	96	<i>Spanochaeta dorsalis</i> (von Roser, 1840)	3
48	<i>Phaonia palpata</i> (Stein, 1897)	4	97	<i>Spilogona dispar</i> (Fallén, 1823)	1

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