

## A preliminary list of the shore flies (Diptera: Ephydriidae) of Serbia

## Предварительный список мух-береговушек (Diptera: Ephydriidae) Сербии

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КЛЮЧЕВЫЕ СЛОВА: Diptera, Ephydriidae, Serbia, фауна.

ABSTRACT. A preliminary list of the shore flies (Diptera: Ephydriidae) of Serbia, consisting of 32 species from 5 subfamilies and 19 genera, is provided. One species only was previously known from Serbia — *Hydrellia fusca* (Stenhammar, 1844).

РЕЗЮМЕ. Представлен предварительный список мух-береговушек (Diptera: Ephydriidae) Сербии, состоящий из 32 видов из 5 подсемейств и 19 родов. Для Сербии до настоящего времени был известен только 1 вид — *Hydrellia fusca* (Stenhammar, 1844).

## Introduction

Shore flies or Ephydriidae is a large family uniting about 1950 species worldwide, about 340 species are recorded in Europe [Zatwarnicki, 2013]. The representatives of the family are very diverse in habits. Immatures of the most species are aquatic or semi-aquatic, feeding on detritus, microorganisms, algae and cyanobacteria; several species are predators of small invertebrates. The larvae of others are terrestrial, feeding as leaf miners, parasitoids in spider eggs, predators in clusters of frog eggs, being saprophagous on feces, decaying dead snails and carrion. Some species are specialized to live in environments in which competition is minimal, for example in algae in hot springs (larvae can survive temperatures over 50°C) the water of which may be sulphurous, acid or alkaline. Other live in salt pools with exceptionally high salt concentration. Larvae of so-called petroleum fly scavenge on insects trapped in the surface film of crude petroleum [Ferrari, 1987]. Such an unusual life habits attracted

scientists to the study of this family of flies in Europe as well as in other territories. The World catalog of shore flies [Mathis, Zatwarnicki, 1995] reports about 55 species of Ephydriidae registered in former Yugoslavia and only one of them, *Hydrellia fusca* (Stenhammar, 1844), is mentioned from Serbia.

## Material and methods

Nomenclature follows the current version of the Ephydriidae section of Fauna Europaea [Zatwarnicki, 2013] with the exception of the genus *Diasemocera* Bezzi, 1895, the data on which appeared later [Zatwarnicki, 2018]. The subfamilies and the tribes are ordered systematically; genera within tribes and species within genera are listed alphabetically.

This list is based on the materials collected during field trips to Serbia in April–July 2015. Collecting of Ephydriidae was carried out mostly near springs and rivers in mountainous territories near Nature Park Stara Planina (Fig. 1) as well as in the valley of the River Timok (Fig. 2). Fly trapping was carried out using an entomological net and an exhaustor. Flies were pinned and labelled. The specimens examined are deposited in the Zoological Museum of Moscow University, Russia (ZMUM).

## A list of the Ephydriidae (Diptera) of Serbia

Subfamily DISCOMYZINAE Acloque, 1897

Tribe Psilopini Cresson, 1925

1. *Diasemocera marginella* (Fallén, 1823)

MATERIAL. 1 ♀, Stara Planina, Mt. Babin Zub (43.374°N 22.621°E), 1547 m, 3.VII.2015, A. Ozerov &amp; M. Krivosheina.



Fig. 1. One of the collection points of Ephydriidae in Nature Park Stara Planina.

Рис. 1. Одна из точек сбора Ephydriidae в природном парке Stara Planina.

## 2. *Psilopa polita* (Macquart, 1835)

MATERIAL. 1 ♀, Stara Planina (43.368°N 22.594°E), 1496 m, 29.VI.2015, A. Ozerov & M. Krivosheina; 1 ♀, Crni Vrh (43.408°N 22.575°E), 708 m, 3.VII.2015, A. Ozerov & M. Krivosheina.

Subfamily HYDRELLIINAE Robineau-Desvoidy, 1830

Tribe Hydrelliini Robineau-Desvoidy, 1830

## 3. *Hydrellia albilabris* (Meigen, 1830)

MATERIAL. 1 ♀, Kalna env., River Timok (43.424°N 22.420°E), 5.VII.2015, A. Ozerov & M. Krivosheina.

## 4. *Hydrellia griseola* (Fallén, 1813)

MATERIAL. 1 ♂, Stara Planina, Mt. Babin Zub (43.374°N 22.621°E), 1547 m, 2.VII.2015; 1 ♂, Crni Vrh env. (43.395°N 22.605°E), 988 m, 4.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, the same label, 1.VII.2015, A. Ozerov & M. Krivosheina.

## 5. *Hydrellia mutata* (Zetterstedt, 1846)

MATERIAL. 1 ♀, Stara Planina (43.361°N 22.579°E), 1459 m, 4.VII.2015, A. Ozerov & M. Krivosheina.

Tribe Notiphilini Bigot, 1853

## 6. *Notiphila graecula* Becker, 1926

MATERIAL. 4 ♂♂, 3 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI.2015, A. Ozerov & M. Krivosheina; 1 ♀, Stara Planina (43.361°N 22.579°E), 1459 m, 4.VII.2015, A. Ozerov & M. Krivosheina.

Subfamily GYMNOMYZINAE Latreille, 1829

Tribe Gymnomyzini Latreille, 1829

## 7. *Athyroglossa glabra* (Meigen, 1830)

MATERIAL. 3 ♂♂, 1 ♀, Crni Vrh (43.408°N 22.575°E), 708 m, 29.VI.2015 and 3.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, Kalna env., River Timok (43.424°N 22.420°E), 5.VII.2015, A. Ozerov & M. Krivosheina; 1 ♂, Knjazhevats (43.55°N 22.24°E), 27–30.IV.2015, N. Vikhrev.

## 8. *Athyroglossa nudiuscula* Loew, 1874

MATERIAL. 1 ♂, 5 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 5.VII.2015, A. Ozerov & M. Krivosheina.

Tribe Hecamedini Mathis, 1991

## 9. *Allotrichoma filiforme* Becker, 1896

MATERIAL. 1 ♂, 1 ♀, Kalna, River Timok (43.42°N 22.42°E), 1–7.VII.2015 (N. Vikhrev).



Fig. 2. Collection point of Ephydriidae on the River Timok.  
Рис. 2. Место сбора Ephydriidae на реке Timok.

10. *Allotrichoma laterale* (Loew, 1860)

MATERIAL. 1 ♂, Kalna env., River Timok (43.424°N 22.420°E), 30.VI.2015, A. Ozerov & M. Krivosheina.

Tribe Ochtherini Dahl, 1959

11. *Ochthera mantis* (De Geer, 1776)

MATERIAL. 1 ♂, Crni Vrh env. (43.395°N 22.605°E), 988 m, 4.VII.2015, A. Ozerov & M. Krivosheina; 1 ♂, Stara Planina, Mt. Babin Zub (43.374°N 22.621°E), 1547 m, 2.VII.2015, A. Ozerov & M. Krivosheina; 1 ♂, 2 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI.2015, A. Ozerov & M. Krivosheina.

12. *Ochthera schembrii* Rondani, 1847

MATERIAL. 1 ♂, 2 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI.2015, A. Ozerov & M. Krivosheina.

Tribe Discocerini Cresson, 1925

13. *Diclasioipa lacteipennis* (Loew, 1862)

MATERIAL. 1 ♂, 2 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI.2015 and 5.VII.2015, A. Ozerov & M. Krivosheina.

14. *Discocerina obscurella* (Fallén, 1813)

MATERIAL. 1 ♀, Nature Park Stara Planina (43.361°N 22.579°E), 1459 m, 4.VII.2015, A. Ozerov & M. Krivosheina.

15. *Ditrichophora calceata* (Meigen, 1830)

MATERIAL. 1 ♀, Nature Park Stara Planina (43.361°N 22.579°E), 1459 m, 4.VII.2015, A. Ozerov & M. Krivosheina.

16. *Ditrichophora fuscella* (Stenhammar, 1844)

MATERIAL. 1 ♂, 3 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI.2015 and 5.VII.2015, A. Ozerov & M. Krivosheina; Crni Vrh (43.408°N 22.575°E), 708 m, 8.VII.2015, A. Ozerov & M. Krivosheina.

17. *Gymnoclasiopa nigerrima* (Strobl, 1893)

MATERIAL. 2 ♂♂, 3 ♀♀, Crni Vrh env. (43.395°N 22.605°E), 988 m, 1 and 4.VII.2015, A. Ozerov & M. Krivosheina; 2 ♀♀, Stara Planina, Mt. Babin Zub (43.374°N 22.621°E), 1547 m, 7.VII, 8.VII.2015, A. Ozerov & M. Krivosheina.

18. *Hecamedoides glaucellus* (Stenhammar, 1844)

MATERIAL. 1 ♀, Kalna env., River Timok (43.424°N 22.420°E), 5.VII.2015, A. Ozerov & M. Krivosheina.

Subfamily ILYTHEINAE Cresson, 1943

Tribe Hyadinini Philips *et al.* in Cresson, 1949

19. *Hyadina guttata* (Fallén, 1813)

MATERIAL. 1 ♀, Crni Vrh (43.407°N 22.587°E), 800 m, 1–8.V.2015, N. Vikhrev.

20. *Pelina subpunctata* Becker, 1896

MATERIAL. 1 ♂, Stara Planina (43.37°N 22.60°E), 1500 m, 1–8.V.2015, N. Vikhrev.

Subfamily EPHYDRINAE Zetterstedt, 1837

Tribe Parydrini Wirth et Stone, 1956

21. *Parydra aquila* (Fallén, 1813)

MATERIAL. 1 ♂, Kalna env., River Timok (43.424°N 22.420°E), 30.VI.2015, A. Ozerov & M. Krivosheina; 1 ♂, Crni Vrh (43.408°N 22.575°E), 708 m, 3.VII.2015, A. Ozerov & M. Krivosheina.

22. *Parydra coarctata* (Fallén, 1813)

MATERIAL. 3 ♂♂, Crni Vrh (43.408°N 22.575°E), 708 m, 29.VI., 3.VII. and 8.VII.2015, A. Ozerov & M. Krivosheina; 2 ♂♂, Crni Vrh env. (43.395°N 22.605°E), 988 m, 1.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, Stara Planina (43.368°N 22.594°E), 1496 m, 29.VI.2015; 1 ♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI.2015, A. Ozerov & M. Krivosheina.

23. *Parydra hecate* (Haliday, 1833)

MATERIAL. 2 ♂♂, 5 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI. and 5.VII.2015; 1 ♂, 1 ♀, Stara Planina (43.361°N 22.579°E), 1459 m, 4.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, Crni Vrh (43.408°N 22.575°E), 708 m, 8.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, Crni Vrh (43.407°N 22.587°E), 800 m, 1–8.V.2015, N. Vikhrev.

24. *Parydra littoralis* (Meigen, 1830)

MATERIAL. 2 ♂♂, 1 ♀, Stara Planina, Mt. Babin Zub (43.375°N 22.625°E), 1550 m, 1–7.VII.2015, N. Vikhrev; 1 ♂, 1 ♀, Stara Planina, Mt. Babin Zub (43.374°N 22.621°E), 1547 m, 2.VII. and 8.VII.2015, A. Ozerov & M. Krivosheina; 2 ♂♂, 1 ♀, Crni Vrh (43.408°N 22.575°E), 708 m, 3.VII. and 8.VII.2015, A. Ozerov & M. Krivosheina; 3 ♂♂, Crni Vrh env. (43.395°N 22.605°E), 988 m, 1.VII. and 4.VII.2015, A. Ozerov & M. Krivosheina; 1 ♂, Stara Planina (43.368°N 22.594°E), 1496 m, 3.VII.2015, A. Ozerov & M. Krivosheina.

25. *Parydra quinque maculata* Becker, 1896

MATERIAL. 2 ♂♂, Stara Planina, Mt. Babin Zub (43.374°N 22.621°E), 1547 m, 6.VII. and 7.VII.2015, A. Ozerov & M. Krivosheina; 4 ♀♀, Crni Vrh (43.408°N 22.575°E), 708 m, 8.VII.2015, A. Ozerov & M. Krivosheina.

Tribe Ephydrini Zetterstedt, 1837

26. *Setacera breviventris* (Loew, 1860)

MATERIAL. 3 ♂♂, 2 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI. and 5.VII.2015, A. Ozerov & M. Krivosheina; 1 ♂, 2 ♀♀, Kalna, River Timok River (43.42°N 22.42°E), 1–7.VII.2015, N. Vikhrev.

27. *Setacera trina* Collin, 1963

MATERIAL. 1 ♂, Kalna env., River Timok (43.424°N 22.420°E), 5.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, Kalna, River Timok (43.42°N 22.42°E), 1–7.VII.2015, N. Vikhrev.

Tribe Scatellini Wirth et Stone, 1956

28. *Limnella quadrata* (Fallén, 1813)

MATERIAL. 1 ♀, Stara Planina, Mt. Babin Zub (43.374°N 22.621°E), 1547 m, 6.VII.2015, A. Ozerov & M. Krivosheina.

29. *Scatella paludum* (Meigen, 1830)

MATERIAL. 4 ♂♂, 2 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI. and 5.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, Stara Planina (43.361°N 22.579°E), 1459 m, 4.VII.2015, A. Ozerov & M. Krivosheina.

30. *Scatella stagnalis* (Fallén, 1813)

MATERIAL. 1 ♂, Crni Vrh env. (43.395°N 22.605°E), 988 m, 4.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, Knjazhevats (43.55°N 22.24°E), 27–30.IV.2015, N. Vikhrev.

31. *Scatella tenuicosta* Collin, 1930

MATERIAL. 3 ♂♂, 7 ♀♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI. and 5.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, Stara Planina (43.368°N 22.594°E), 1496 m, 29.VI.2015, A. Ozerov & M. Krivosheina; 1 ♀, Crni Vrh env. (43.395°N 22.605°E), 988 m, 1.VII.2015, A. Ozerov & M. Krivosheina; 1 ♀, Knjazhevats (43.55°N 22.24°E), 27–30.IV.2015, N. Vikhrev.

32. *Scatophila farinae* Becker, 1903

MATERIAL. 1 ♀, Kalna env., River Timok (43.424°N 22.420°E), 30.VI.2015, A. Ozerov & M. Krivosheina.

## Discussion

The World catalog of shore flies [Mathis, Zatwarnicki, 1995] reports about 55 species of Ephydriidae registered in former Yugoslavia, among them 18 species are reported from Macedonia, 4 species — from Bosnia, 23 species — from Croatia, 13 species — from Slovenia, 4 species — from Montenegro and 1 species — from Serbia. Fauna Europaea [Zatwarnicki, 2013] basically repeats these data with the exclusion of the only known species from Serbia. All these species are listed as “no data” for Serbia. Our study summarizes currently confirmed 32 species for Serbia.

Since Ephydriidae were collected this time in freshwater habitats, the list may subsequently be expanded to include halobiont species.

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