

## Some Diptera newly recorded from Ukraine

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**Abstract:** Results of faunistic research of eight selected dipteran families (Bibionidae, Blephariceridae, Dixidae, Limoniidae, Pediciidae, Platypezidae, Ptychopteridae, and Rhagionidae) in the Uzh River Basin (Ukraine) are presented thanks to the support by the FAN (B) - Förderkreis für allgemeine Naturkunde (Biologie) in the framework of the project "Ephemeroptera, Plecoptera, Diptera biodiversity trip along the Uzh river, Ukraine". Altogether 16 species are recorded as new to the fauna of Ukraine in the present paper. One species is newly recorded of the families Blephariceridae, Pediciidae, and Ptychopteridae, and two species each of the families Limoniidae and Bibionidae. Three species each belong to the families Dixidae, Platypezidae, and Rhagionidae.

**Key words:** Diptera, Bibionidae, Blephariceridae, Dixidae, Limoniidae, Pediciidae, Platypezidae, Ptychopteridae, Rhagionidae, first records, species richness, Ukraine

### Introduction

The fauna of two-winged or true flies (Diptera) of Ukraine is unequally known. Some dipteran families are comparatively well-studied, especially the commonest epidemiologically significant families (e.g. Culicidae, Simuliidae, and Tabanidae), or those with important economic pests (e.g. Cecidomyiidae, Piophilidae, Tephritidae, Ulidiidae). Undoubtedly, much less attention has been devoted to epidemiologically insignificant aquatic Diptera (e.g. Psychodidae, Ptychopteridae, Dixidae, etc). Data on still other families are rather poor. On the other hand, the tipulomorph families Limoniidae, Pediciidae, and Tipulidae are well-investigated in Ukraine although insignificant, or little so, from both epidemiologic and economic points of view.

Ukraine is a highly diversified country with huge potential for various, not only faunistic activities. Especially interesting are natural old forests in the upper part of the Uzh River Basin that may constitute refuges for native species, very rare or missing in many other European countries due to intensive forestry.

### Material and methods

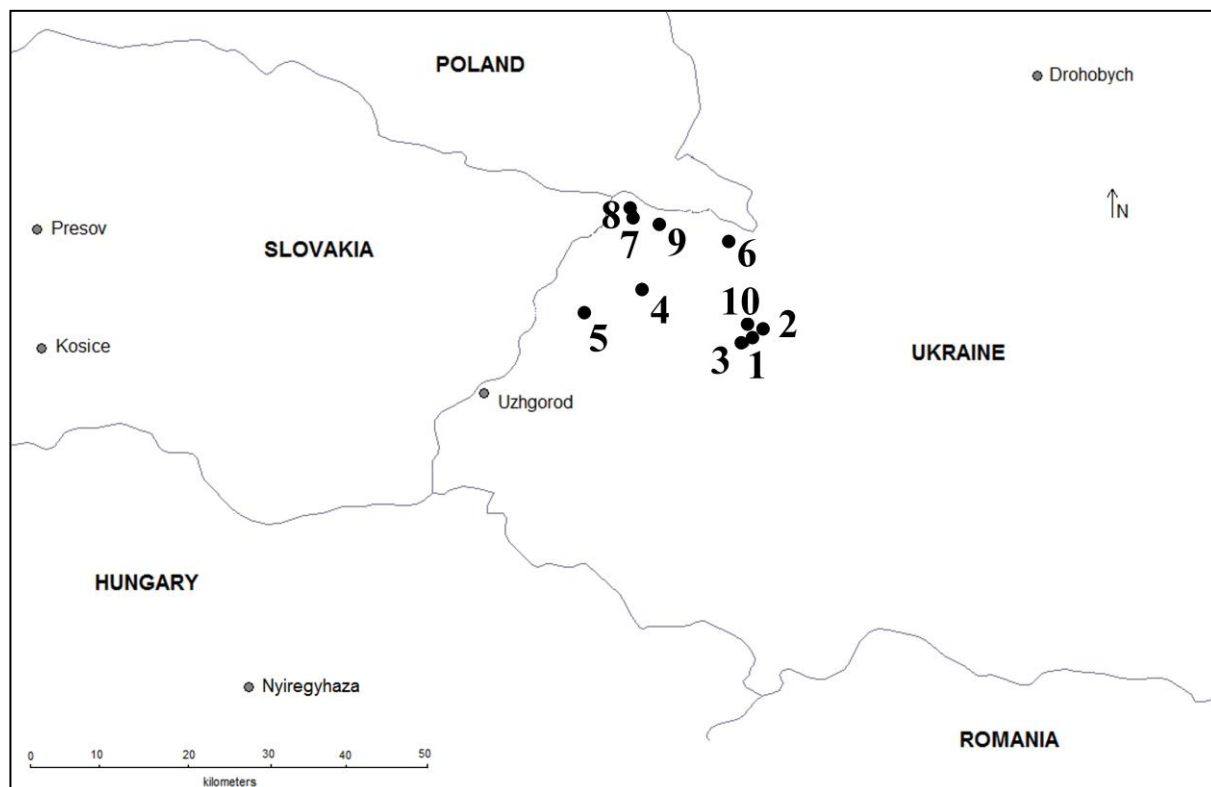
The material presented in this paper was collected along the Uzh River, Ukraine, by J. Oboňa, P. Manko, and R. Mariychuk (viii.2015 and v.2016). Samples were collected by sweep-netting from vegetation along streams and lakes (Tab. 1, Figs 1-3).

Some specimens were dried from ethanol, pinned, or glued onto points, the rest is preserved in 75% ethanol, all identified and deposited in the collections of the authors or institutional collections under their care.

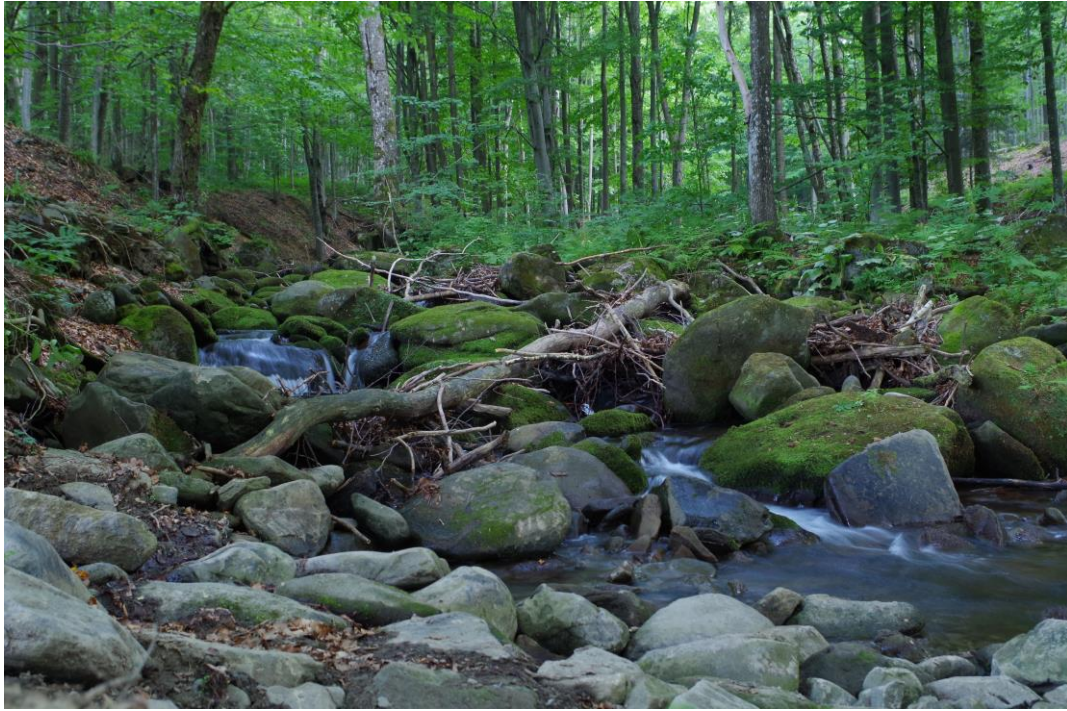
Blephariceridae, Limoniidae, and Pediciidae were identified by J. Starý using Oosterbroek (2016) and Tuša (1992 a,b); material is deposited in the collection of J. Starý (Olomouc, Czech Republic). Rhagionidae and Bibionidae were identified by L. Dvořák using Haarto (2012), Krivosheina (1969) and Rozkošný & Spitzer (1965); material is deposited in the collection of L. Dvořák (Tři Sekery nr. Mariánské Lázně, Czech Republic). Dixidae and Ptychopteridae were identified by J. Oboňa based on Disney (1999) and Zitek-Zwyrtek (1971); material is deposited in the Laboratory and Museum of Evolutionary Ecology, Department of Ecology, University of Prešov, Slovakia. Platypezidae were identified by M. Tkoč using the key in Chandler (2001) and are deposited in the National Museum in Prague, Czech Republic.

**Tab 1:** List of sampling sites.

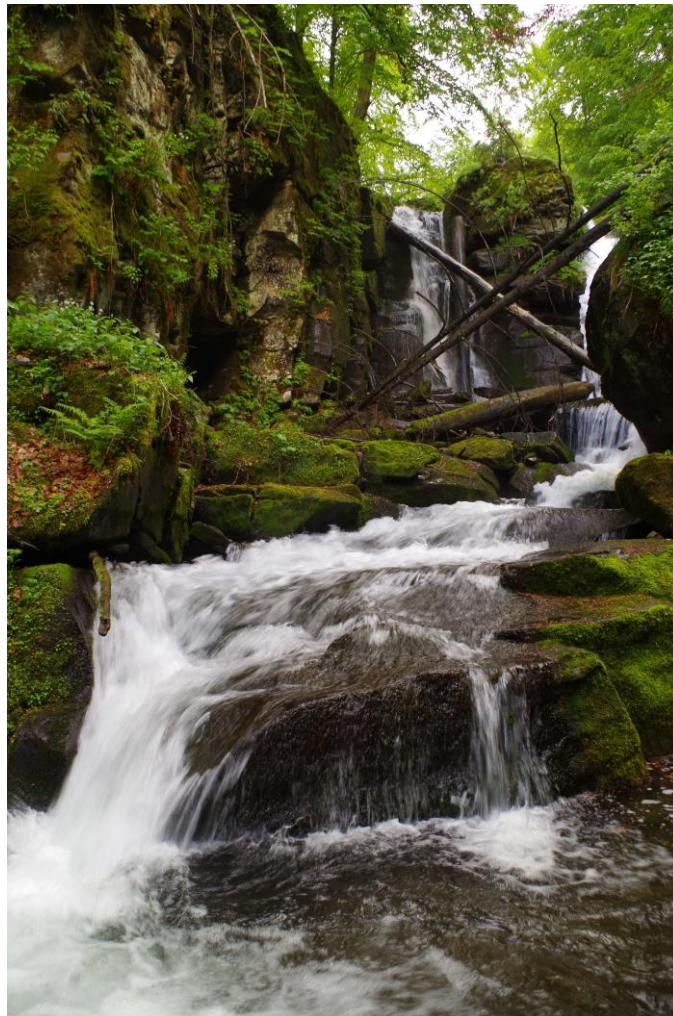
Site No.	Site name (short description of locality)	Latitude/ N	Longitude/ E	Altitude/ m a.s.l.
1	Shypot River, between hydroelectric power plants	48°45'13.9"	22°51'07.0"	380
2	Vojevodyn Stream	48°46'22.3"	22°52'30.8"	500
3	Shypotyky Stream	48°44'23.4"	22°50'17.1"	400
4	Lyuta River above Chornoholova	48°51'43.0"	22°36'21.8"	405
5	Kamenychky Stream	48°48'37.4"	22°28'33.3"	255
6	tributary of the River Uzh, near Sukhyi	48°58'12.2"	22°48'15.1"	650
7	Paprotnyi Stream	49°01'41.3"	22°35'16.0"	580
8	Uzh River, above Stuzhytsya	49°02'26.0"	22°34'53.0"	590
9	tributary of the Uzh River, near Zahorb	49°00'42.3"	22°38'38.9"	1000
10	Vojvodina Waterfalls - Tur'ya Polyana	48°47'7.82"	22°50'42.45"	600



**Fig 1:** Map showing all sampling sites in Ukraine.



**Fig 2:** Sampling site No. 1: Shypot River, between hydroelectric power plants.



**Fig 3:** Sampling site No. 10: Vojvodina Waterfalls - Tur'ya Polyana.



## Results

### FAMILY BIBIONIDAE

#### *Bibio leucopterus* (Meigen, 1804)

**Material examined:** Site No. 2, 27.v.2016, 1 ♀.

**Distribution and remarks:** Europe: Austria, Belgium, Czech Republic, Denmark, France, Germany, Great Britain, Hungary, Ireland, Italy, Netherlands, Northern Ireland, Poland, Slovakia, Sweden, Switzerland (Skartveit 2013). **First record for Ukraine.**

#### *Bibio varipes* Meigen, 1830

**Material examined:** Site No. 2, 27.v.2016, 1 ♂, 3 ♀♀.

**Distribution and remarks:** Europe: Austria, Belgium, Czech Republic, Denmark, Finland, France (incl. Corsica), Germany, Great Britain, Ireland, Italy, Norway, Poland, Slovakia, Sweden, Switzerland (Skartveit 2013). **First record for Ukraine.**

### FAMILY BLEPHARICERIDAE

#### *Liponeura cinerascens minor* Bischoff, 1922

**Material examined:** Site No. 10, 27.v.2016, 2 ♂♂.

**Distribution and remarks:** Europe: Austria, Czech Republic, France, Germany, Italy, Liechtenstein, Poland, Romania, Slovakia, Slovenia, Switzerland (Zwick 2013a). **First record for Ukraine.**

### FAMILY DIXIDAE

#### *Dixa submaculata* Edwards, 1920

**Material examined:** Site No. 7, 12.viii.2015, 4 ♂♂; Site No. 9, 12.viii.2015, 3 ♂♂.

**Distribution and remarks:** Europe: Belgium, Denmark, France (incl. Corsica), Germany, Great Britain, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Poland, Romania, Spain, Switzerland; Turkey, Armenia (Wagner 2013; Koç *et al.* 2006; Oboňa *et al.* 2017). Although no Dixidae are recorded for Ukraine in the Fauna Europea (Wagner 2013), in Koç *et al.* (2006) *D. submaculata* is mentioned from there. Questionable **first record for Ukraine.**

#### *Dixa puberula* Loew, 1849

**Material examined:** Site No. 1, 10.viii.2015, 9 ♂♂; Site No. 2, 11.viii.2015, 12 ♂♂; Site No. 3, 11.viii.2015, 4 ♂♂; Site No. 7, 12.viii.2015, 6 ♂♂; Site No. 8, 12.viii.2015, 1 ♂; Site No. 10, 27.v.2016, 6 ♂♂.

**Distribution and remarks:** Europe: Andorra, Austria, Belgium, Denmark, France (incl. Corsica), Germany, Great Britain, Greece, Hungary, Netherlands, Ireland, Italy (incl. Sicily), Poland, Romania, Switzerland; Armenia (Wagner 2013; Oboňa *et al.* 2017). **First records for Ukraine.**

#### *Dixa nebulosa* Meigen, 1830

**Material examined:** Site No. 6, 12.viii.2015, 2 ♂♂; Site No. 8, 12.viii.2015, 2 ♂♂.

**Distribution and remarks:** Europe: Austria, Belgium, Denmark, Finland, France (incl. Corsica), Germany, Great Britain, Greece, Hungary, Ireland, Italy (incl. Sardinia, Sicily), Lithuania, Malta, Norway, Poland, Sweden, Switzerland, former Yugoslavia; Russia: North; Turkey; Tajikistan; Morocco (Wagner 2013; Koç *et al.* 2006; Ebejer 2000). **First records for Ukraine.**

## FAMILY LIMONIIDAE

### *Molophilus (Molophilus) terrayi* Starý, 1992

**Material examined:** Site No. 10, 27.v.2016, 1 ♂.

**Distribution and remarks:** Known only from the type locality in Slovakia (Starý 1992). **First record since original description, first record for Ukraine.**

### *Elephantomyia (Elephantomyia) krivosheinae* Savchenko, 1976

**Material examined:** Site No. 10, 27.v.2016, 1 ♀.

**Distribution and remarks:** Europe: Czech Republic, Finland, Hungary, Lithuania, Poland, Slovakia, Sweden, Switzerland; Russia: North, Central, East, West Siberia, Far East (Oosterbroek 2016). **First record for Ukraine.**

## FAMILY PEDICIIDAE

### *Tricyphona (Tricyphona) contraria* Bergroth, 1888

**Material examined:** Site No. 10, 27.v.2016, 1 ♂.

**Distribution and remarks:** Europe: Austria, Czech Republic, Germany, ?Italy, Slovakia, Switzerland; Russia: West (Oosterbroek 2016). **First record for Ukraine.**

## FAMILY PLATYPEZIDAE

### *Agathomyia elegantula* (Fallén, 1815)

**Material examined:** Site No. 6, 12.viii.2015, 1 ♀.

**Distribution and remarks:** Europe: Belgium, Czech Republic, Denmark, Finland, Germany, Great Britain, Hungary, Italy, Netherlands, Norway, Slovakia, Sweden, Switzerland; Russia: Central, East Palaearctic (Chandler 2013). **First record for Ukraine.**

### *Callomyia amoena* Meigen, 1824

**Material examined:** Site No. 2, 10.viii.2015, 1 ♀.

**Distribution and remarks:** Europe: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Romania, Slovakia, Spain, Sweden, Switzerland; Russia: Central, East, North (Chandler 2013; Tkoč & Roháček 2014). **First record for Ukraine.**

### *Callomyia speciosa* Meigen, 1824

**Material examined:** Site No. 2, 10.viii.2015, 1 ♀.

**Distribution and remarks:** Europe: Andorra, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland; Israel; Turkey; Russia: Central, North, Caucasus (Chandler 2013; Tkoč & Roháček 2014). **First record for Ukraine.**

## FAMILY PTYCHOPTERIDAE

### *Ptychoptera (Parapteroptera) longicauda* (Tonnoir, 1919)

**Material examined:** Site No. 4, 11.viii.2015, 1 ♂.

**Distribution and remarks:** Europe: Austria, Belgium, Czech Republic, Denmark, Germany, Great Britain, Hungary, Netherlands, Poland, Slovakia, Slovenia, Sweden, Switzerland (Zwick 2013b). **First record for Ukraine.**

## FAMILY RHAGIONIDAE

### *Chrysopilus cristatus* (Fabricius, 1775)

**Material examined:** Site No. 4, 11.viii.2015, 2 ♂♂, 1 ♀.

**Distribution and remarks:** Europe: Albania, Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, Lithuania, Luxembourg, Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, former Yugoslavia; Russia: Central, North, Northwest, South (Majer 2013). **First record for Ukraine.**

### *Rhagio tringarius* (Linnaeus, 1758)

**Material examined:** Site No. 5, 12.viii.2015, 1 ♂.

**Distribution and remarks:** Europe: Albania, Andorra, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, Lithuania, Luxembourg, Netherlands, Norway, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, former Yugoslavia; Russia: East, North, Northwest (Majer 2013). **First record for Ukraine.**

### *Symphoromyia melaena* (Meigen, 1820)

**Material examined:** Site No. 4, 27.v.2016, 1 ♂.

**Distribution and remarks:** Europe: Austria, Czech Republic, France, Germany, Great Britain, Hungary, Italy, Romania, Slovakia; Russia: Northwest (Majer 2013). **First record for Ukraine.**

## Discussion

Altogether 16 species of the dipteran families Bibionidae, Blephariceridae, Dixidae, Limoniidae, Pediciidae, Platypezidae, Ptychopteridae, and Rhagionidae collected in the Uzh River Basin from random and extensive sampling, are recorded as new to the fauna of Ukraine. Four species of the family Bibionidae were known to occur in Ukraine previous to this paper, viz. *Bibio ferruginatus* (Linnaeus, 1767), *B. marci* (Linnaeus, 1758), *Dilophus febrilis* (Linnaeus, 1758), and *D. humeralis* Zetterstedt 1850 (Skartveit 2013). The present records of *Bibio leucopterus* and *B. varipes* increase species richness of the family in Ukraine to six species. No records of the family Blephariceridae have so far been published from Ukraine (Zwick 2013a). Now *Liponeura cinerascens minor* is added to the fauna. The family Dixidae was represented in Ukraine by a questionable record of *Dixa submaculata* (Koç *et al.* 2006). The present paper reports three species from Ukraine, *Dixa submaculata*, *D. puberula*, and *D. nebulosa*. A total of 241 species of the family Limoniidae were previously known to occur in Ukraine (Oosterbroek 2016). The present records of *Molophilus (M.) terrayi* and *Elephantomyia (E.) krivosheinae* increase species richness of the family in Ukraine to 243 species. Moreover, the former species is here recorded for the first time since its original

description. Altogether 29 species of the family Pediciidae were previously known to occur in Ukraine (Oosterbroek 2016). *Tricyphona* (*T.*) *contraria* increases the number to 30 species. Only two species of the family Platypezidae, *Platypeza fasciata* Meigen, 1804 and *Protoclythia rufa* Meigen, 1830, were previously known to occur in Ukraine (Chandler 2013). The present records of *Agathomyia elegantula*, *Callomyia amoena*, and *C. speciosa* increase species richness to five species. Four species of the family Ptychopteridae have so far been known from Ukraine, viz. *Ptychoptera* (*Parapteroptera*) *lacustris* Meigen, 1830, *P. (Ptychoptera) albimana* (Fabricius, 1787), *P. (P.) contaminata* (Linnaeus, 1758), and *P. (P.) scutellaris* Meigen, 1818 (Zwick 2013b). *P. (Parapteroptera) longicauda* increases the number to five species. Only three species of the family Rhagionidae were previously known to occur in Ukraine, viz. *Chrysopilus nubecula* (Fallen, 1814), *C. splendidus* (Meigen 1820), and *Rhagio latipennis* (Loew 1856) (Majer 2013). The present records of *Chrysopilus cristatus*, *Rhagio tringarius*, and *Symphoromyia melaena* increase species richness of the family Rhagionidae in Ukraine to six species.

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