

Contribution to the knowledge of flies from the families Empididae and Hybotidae (Diptera) from selected Sites of Community Importance in the area of the Pieniny Mts (Slovakia)

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Abstract: A species inventory of Diptera from the families Empididae and Hybotidae from 5 selected Sites of Community Importance in the Pieniny Mts. (Slovakia) is presented. The checklist comprises 43 taxa (34 taxa of the family Empididae and 9 species of the family Hybotidae), including first records of *Empis* (E.) *ciliatopennata* Strobl, 1893 and *Hilara curtisi* Collin, 1927 for the territory of Slovakia. The species-richness of the empidid fauna in Slovakia is increased to 285 species by this paper.

Key words: Pieniny Mts, Diptera, dance flies, Empididae, Hybotidae, faunistics, new records, Slovakia

Introduction

The inventory of species from the families Empididae and Hybotidae from selected Sites of Community Importance (SCI; Ministry of Environment 2004), belonging to NATURA 2000 network in the Slovak National Natural Reserve in Pieniny (The National Park of Pieniny - PIENAP) is published for the first time thanks to the project “Development of programs of care for selected protected areas included in the Natura 2000 network (ITMS: 24150120045)”. With the exception of Oboňa *et al.* (2016) this work brings the first data concerning these families from the selected SCI.

Last summarization of the family Empididae in Slovakia includes 276 species (Chvála 2009a). Later, this number increased Chvála & Merz (2009), Oboňa *et al.* (2014, 2016), van der Weele *et al.* (2015) to 283 species. Chvála (2009b) mentions in the same checklist the occurrence of 170 species of Hybotidae in Slovakia. Van der Weele *et al.* (2015) raised the number hybotid species to 172.

Material and methods

The material was collected by sweeping at five SCI in the Pieniny Mts. by Ľ. Hrivniak, P. Manko and J. Oboňa at the sites no. 1 – 4 on May 14, June 03 and July 17, 2015, at the study site no. 5 only on June 10, 2015.

The obtained material was preserved in 75% ethanol directly in the field. In the laboratory, all individuals were identified by R. van der Weele to the lowest possible taxonomic level. Identification and nomenclature were used according to Barták (1982), Grootaert & Chvála (1992), Chvála (2005), Barták & Kubík (2012).

Study sites

Study site no. 1 – SCI Veľké osturnianske jazero (lake), registered under the code SKUEV0334 (Natura 2000 – Standard data form; Ministry of Environment 2004). N 49°20.490', E 20°13.204', elevation 815 m a.s.l., area of water surface 0.25 ha, total SCI area 45.5 ha.

Study site no. 2 – SCI Malé osturnianske jazera (lakes), SKUEV0335 (Natura 2000 – Standard data form; Ministry of Environment 2004). N 49°20.254', E 20°12.348', elevation 883 m a.s.l., area of water surface 0.06 ha, total SCI area 6.5 ha.

Study site no. 3 – SCI Jarabinský prielom (gorge), SKUEV0339 (Natura 2000 – Standard data form; Ministry of Environment 2004). N 49°20.864', E 20°38.899', elevation 630 – 700 m a.s.l., total SCI area 5.5 ha.

Study site no. 4 – SCI Plavečské štrkoviská (gravel deposit), SKUV0338 (Natura 2000 – Standard data form; Ministry of Environment 2004). N 49°15.534', E 20°50.872', elevation 480 m a.s.l., total SCI area 66.24 ha.

Study site no. 5 – SCI Beliansky potok (brook), SKUEV0333 (Natura 2000 – Standard data form; Ministry of Environment 2004). N 49°12.12' E 20°25.33', elevation 630 – 650 m a.s.l., total SCI area 2.4 ha.

All five SCI are under the fourth level of protection according to Slovak legislative (Ministry of Environment 2002).

Results

Altogether 34 taxa of the family Empididae (together with Oboňa *et al.* 2016) and 9 species of the family Hybotidae (Table 1) were collected at five SCI in the Pieniny Mts.

LIST OF NEW RECORDS FOR SLOVAKIA

EMPIDIDAE

Empis (Empis) ciliatopennata Strobl, 1893

Material examined: Study site no. 3, 3.vi.2015, 1♂.

Note. Previously known from Austria, Czech Republic, France, Germany, Italy, Slovenia, and Switzerland (Chvála 2011).

Hilara curtisi Collin, 1927

Material examined: Study site no. 5, 10.vi.2015, 4♂.

Note. Previously known from French, Germany, Great Britain, Italy, and the Netherlands (Chvála 2011).

Discussion

Similar, however, much more intensive Diptera research (53 localities, during the years 1999-2009) was carried out in Poľana Protected Landscape Area – Biosphere Reserve (Central Slovakia) (Roháček & Ševčík 2009). In this research Barták & Roháček (2009a) published records of 92 species from family Empididae including 14 species which were new additions to dipterous fauna of Slovakia and Barták & Roháček (2009b) published records of 83 species from family Hybotidae, with 10 new country records. Non-random (scheduled) and intensive sampling in Slovakia can detect many more interesting faunistic results, especially at SCI where a permit for research is required.

Presents paper first records of *Empis (E.) ciliatopennata* and *Hilara curtisi* pointed above increase the empidid fauna of Slovakia (Chvála 2009a; Chvála & Merz 2009; Oboňa *et al.* 2014; 2016; van der Weele *et al.* 2015) to 285 species.

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Appendix.

Table 1: Checklist of Empididae and Hybotidae (Diptera) from selected SCI in Slovakia ("x" indicates the presence of taxa at a study site during the research; "cf." indicates the specimen is difficult to identify so actual identification cannot be certain).

	Study site no. 1	Study site no. 2	Study site no. 3	Study site no. 4	Study site no. 5
Empididae					
<i>Dolichocephala guttata</i> (Haliday, 1833)		cf.	cf.		
<i>Dolichocephala irrorata</i> (Fallén, 1816)		x	x	x	
<i>Dolichocephala oblongoguttata</i> (Dale, 1878)			x	x	
<i>Dolichocephala ocellata</i> (Costa, 1854)			cf.		
<i>Empis (Empis) ciliatopennata</i> Strobl, 1893			x		
<i>Empis (Empis) cognata</i> Egger, 1860				x	
<i>Empis (Empis) filata</i> Loew, 1873			x		
<i>Empis (Empis) nigripes</i> Fabricius, 1794	x				
<i>Heleodromia immaculata</i> Haliday, 1833			x		
<i>Hilara brevistyla</i> Collin, 1927			x		
<i>Hilara canescens</i> Zetterstedt, 1849				x	
<i>Hilara cilipes</i> Meigen, 1822				x	
<i>Hilara cornicula</i> Loew, 1873				x	
<i>Hilara curtisi</i> Collin, 1927					x
<i>Hilara discoidalis</i> Lundbeck, 1910				x	
<i>Hilara galactoptera</i> Strobl, 1910			x		cf.
<i>Hilara gallica</i> (Meigen, 1804)				cf.	
<i>Hilara longifurca</i> Strobl, 1892			x		
<i>Hilara lurida</i> (Fallén, 1816)				x	
<i>Hilara maura</i> (Fabricius, 1776)				x	
<i>Hilara pilospectinata</i> Strobl, 1892				x	
<i>Hilara quadrifasciata</i> Chvála, 2002				x	
<i>Chelifera aperticauda</i> Collin, 1927 *			x		
<i>Chelifera stigmatica</i> (Schiner, 1862)			x		
<i>Rhamphomyia (Rhamphomyia) atra</i> Meigen, 1822				x	
<i>Rhamphomyia (Holoclera) bohemica</i> Barták & Kubík, 2012			x	x	x
<i>Rhamphomyia (Rhamphomyia) crassirostris</i> (Fallén, 1816)					x
<i>Rhamphomyia (Lundstroemiella) hybotina</i> Zetterstedt, 1838				x	
<i>Rhamphomyia (Rhamphomyia) nigripennis</i> (Fabricius, 1794)					x
<i>Rhamphomyia (Pararhamphomyia) pilifer</i> Meigen, 1838	x				
<i>Rhamphomyia (Rhamphomyia) stigmata</i> Macquart, 1827	x	x			
<i>Trichopeza longicornis</i> (Meigen, 1822)			x		
<i>Wiedemannia (Wiedemannia) bistigma</i> (Curtis, 1834)			cf.		
<i>Wiedemannia (Wiedemannia) braueri</i> (Mik, 1880)			x		
Hybotidae					
<i>Leptopeza flavipes</i> (Meigen, 1820)				x	
<i>Ocydromia glabricula</i> (Fallén, 1816)				x	
<i>Oedalea montana</i> Chvála, 1981					x
<i>Platypalpus annulatus</i> (Fallén, 1815)				x	
<i>Platypalpus candicans</i> (Fallén, 1815)		x			
<i>Platypalpus cursitans</i> (Fabricius, 1775)	x				
<i>Platypalpus notatus</i> (Meigen, 1822)				x	
<i>Symbalophthalmus dissimilis</i> (Fallén, 1815)				x	
<i>Tachypeza nubila</i> (Meigen, 1804)	x				

*species published by Oboňa *et al.* 2016 is marked with an asterisk (*)

*species new to Slovakia are marked with bold