

## Updated checklist of the Bibionidae Fleming, 1821 (Diptera) of the Czech Republic and Slovakia

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### Abstract

The present checklist updates the ones published in the *Checklist of Diptera of the Czech Republic and Slovakia, electronic version 2* for families Bibionidae (Haenni & Bosák 2009) and Pleciidae (Bosák 2009), the latter being here reintegrated within Bibionidae. The number of species has increased by 1 in the Czech Republic (2 in Bohemia) and by 1 in Slovakia. The present list includes 21 species from the Czech Republic (20 from Bohemia and 20 from Moravia) and 21 from Slovakia. Relevant faunistic and systematic papers are listed.

**Key words:** march flies, biodiversity, Central Europe

### Introduction

The family Bibionidae is presently divided into four subfamilies: Hesperininae, Pleciinae, Penthetriinae and Bibioninae (Fitzgerald 2004, 2009). In the Czech Republic and Slovakia, the family is represented by two subfamilies: Bibioninae with genera *Dilophus* and *Bibio* (Haenni & Bosák 2009) and Penthetriinae with genus *Penthetria*, which was placed in the separate family Pleciidae in former versions of the checklist (Bosák 2009).

Bibioninae are small to large (3.0–15.0 mm) nematocerous flies with a strong sexual dimorphism that is evident in both the morphology (eyes holoptic in males, broadly separated in females) and the colour. Bibionids are robust flies with setose body, swollen fore femur, and fore tibia armed with series of spines (*Dilophus*) or strong apical spurs (*Bibio*). Antenna short with transverse antennomeres. Palpus four-segmented, longer than antenna. Wing with anterior veins darkened and posterior ones usually depigmented, basal radial and basal medial cells long, and Rs unforked. The phytosaprophagous larvae develop in decaying vegetable matter or leaf litter, and some species may become pests of crops while feeding on the roots of grasses and subterranean parts of plants. Penthetriinae are rather large flies, with elongate legs. Fore leg normal, with femur not swollen and tibia devoid of spines or enlarged apical spurs. Antennomeres short, hardly longer than wide. Palpus long, four-segmented. Wing darkened, without distinct stigma, all veins uniformly pigmented, vein Rs forked. Wings reduced in male of the European species.

The Bibioninae comprise about 420 world species, of which about 45 species occur in Europe (Skartveit 2013). Approximately 32 species of Penthetriinae are known worldwide. In Europe, the subfamily is represented by only one indigenous, widely distributed species, *Penthetria funebris* Meigen, 1804 (Skartveit 2013). A North American species, *Penthetria heteroptera* (Say, 1823), was recorded once from Germany (Fitzgerald & Werner 2004), probably

imported with garden soil or compost, but it has never been reported again from Europe.

The combined former checklist [Bibionidae + Pleciidae] (Haenni & Bosák 2009; Bosák 2009) included 21 [20+1] species from the Czech Republic, 18 [17+1] from Bohemia and 20 [19+1] from Moravia, and 19 [18+1] from Slovakia.

### Material and methods

The classification used here follows Fitzgerald (2004, 2009) while the nomenclature follows *Fauna Europaea* – Skartveit (2013). The format of the checklist itself sticks as much as possible to the one in Haenni & Bosák (2009).

### Results and Discussion

22 species are included in the present checklist: 21 from the Czech Republic (20 from Bohemia and 20 from Moravia) and 21 from Slovakia. The preceding electronic version of the checklist (Haenni & Bosák 2009) was based upon the printed version of the checklist (Pecina 1997) completed by recent faunistic papers (Haenni et al 2005, Bosák & Haenni 2006). A strictly boreal species, *Bibio rufipes* (Zetterstedt, 1838) was listed as doubtful in the first version of the checklist (Pecina 1987) but correctly omitted in subsequent versions. The only changes since the last version of the checklist (Haenni & Bosák 2009) are the new records of one species from Slovakia (Mantič et al. 2015) and Bohemia (Dvořák 2017), of another species for the Czech Republic and Bohemia (Skartveit 2017) and a nomenclatural change due to synonymy. Additional faunistic papers have been published (Oboňa et al. 2021; Beuk et al. 2023). In conclusion, the species richness of the bibionid fauna is well known in the Czech Republic and Slovakia, although one additional species recorded from Hungary, *B. handlirschi* Duda, 1930 (Papp & Haenni 2007), might possibly also occur.

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## Checklist

New records and nomenclatural changes are in bold, with relevant notes to be found at the end of the list.

## BIBIONINAE

*Bibio* Geoffroy, 1762

<i>brunnipes</i> (Fabricius, 1794)	<b>SK</b> <sup>1</sup>
<i>clavipes</i> Meigen, 1818	CZ (B M) SK
<i>femoralis</i> Meigen, 1838	CZ (B M) SK
<i>ferruginatus</i> (Linnaeus, 1767)	CZ (B M) SK
<i>hortulanus</i> (Linnaeus, 1758)	CZ (B M) SK
<i>johannis</i> (Linnaeus, 1767)	CZ (B M) SK
<i>lanigerus</i> Meigen, 1818	CZ (B M) SK
<i>lautaretensis</i> Villeneuve, 1924	CZ (M) <b>SK</b> <sup>2</sup>
<i>leucopterus</i> Meigen, 1804	CZ (B M) SK
<i>marci</i> (Linnaeus, 1758)	CZ (B M) SK
<i>nigriventris</i> Haliday, 1833	CZ (B M) SK
<i>pomona</i> (Fabricius, 1775)	CZ (B M) SK
<i>reticulatus</i> Loew, 1846	CZ (B M) SK
<i>varipes</i> Meigen, 1830	CZ (B M) SK
<i>venosus</i> (Meigen, 1804)	CZ (B M) SK
<i>villosus</i> Meigen, 1818	<b>CZ</b> <sup>3</sup> ( <b>B</b> <sup>3</sup> )

*Dilophus* Meigen, 1803

<i>bispinosus</i> Lundström, 1913	CZ ( <b>B</b> <sup>4</sup> M) <b>SK</b> <sup>5</sup>
<i>febrilis</i> (Linnaeus, 1758)	CZ (B M) SK
<i>femoratus</i> Meigen, 1804	CZ (B M) SK
<i>humeralis</i> Zetterstedt, 1850	CZ (B M) SK
<i>neglectus</i> Haenni, 1982	CZ (B M) SK

## PENTHETRIINAE

*Penthetria* Meigen, 1803

<i>funnebris</i> Meigen, 1803	CZ (B M) SK
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## Notes:

<sup>1</sup>) In previous checklists under the name *B. fulvipes* (Zetterstedt, 1838) (synonymy by Fitzgerald & Skartveit (1997)).

<sup>2</sup>) Erroneously omitted from Slovakia in the preceding checklist (Haenni & Bosák 2009), although correctly recorded in previous version of the checklist (Pecina 1997).

<sup>3</sup>) First record from Bohemia of this long forgotten species of controversial identity published by Skartveit (2017).

<sup>4</sup>) First record from Bohemia published by Dvořák (2017).

<sup>5</sup>) First record from Slovakia published by Mantič et al. (2015).

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