

Bibionidae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni)

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Diagnosis: Small to large (3.0-15.0 mm) robust nematocerous flies, with marked sexual dimorphism, both in colour and in morphology. Body setose, generally dark brownish to black, females sometimes partly yellowish to reddish. Antennae short, not longer than head (except in *Penthetria*), with 4-10 flagellomeres; palpi long, 4-5 segmented. Front tibia either with conspicuous spur and apical spine (*Bibio*), with combs of smaller spines (*Dilophus*), or simple (*Penthetria*). Wing with costa almost reaching wing tip, basal radial and basal medial cells long, pterostigma generally well marked, RS unforked in Bibionidae, forked in *Penthetria*, posterior veins often colourless, membrane hyaline or with a yellowish, brownish or blackish tinge. Male eyes large, holoptic, divided into a dorsal and a ventral section, female eyes small, dichoptic. *Penthetria* was sometimes considered as belonging to a separate family Pleciidae.

Biology: Most species of *Bibio* are univoltine spring-species, while several *Dilophus* are bivoltine. Adults are often found on flowers and are considered important pollinators. In some species they may sometimes appear in very large numbers, with males swarming in the air or aggregating in the vegetation, where females can also be observed. Saprophytophagous larvae live mostly gregarious in the upper layer of the soil, in grasslands or wooded areas, where they contribute to the decomposition of leaf litter. Some species may become minor pests in agricultural landscape and in green spaces while feeding on the subterranean parts of crops and roots of grasses.

Nomenclature and classification: Nomenclature follows Fauna Europaea (Skartveit 2013), with some minor changes, subfamilial classification according to Fitzgerald (2004).

Number of species: CH: 24 (1998 Checklist: 24), BE: 18, CZ: 19, DE: 20, FR: 27, GB: 18, HU: 19, IT: 25, NL: 17, SK: 18, Europe: ~40, World: ~700.

Level of faunistic knowledge in Switzerland: Good; 1-2 additional species present in vicinuous countries might possibly also occur in Switzerland.

General references: D'Arcy-Burt & Blackshaw (1991) [economic importance], Duda (1930) [keys, Palaearctic species], Freeman & Lane (1985) [keys, British species], Haarto (2012) [key, Finnish species], Haenni (1982) [*Dilophus*, key, European species], Krivosheina (1986) [catalogue, Palaearctic species], Skartveit (1997) [general, key to genera], Skartveit (2002) [key, larvae, European species], Skartveit (2013) [Fauna Europaea], Verbeke (1971) [*Bibio*, key, Belgian species], Zeegers (1997) [key, Dutch species].

References to the Swiss fauna: Greve & Haenni (1994), Haenni (1982, 1997, 1998), Haenni et al. (2023), Haenni & Obrecht (2001), Merz et al. (2002), Merz & Haenni (2012), Skartveit & Haenni (1997).



Bibio marci,
male (CMPD2, p.42).

Checklist

Bibioninae

Bibio Geoffroy, 1762

- *brunnipes* (Fabricius, 1794) !
= *fulvipes* Zetterstedt, 1838
- *clavipes* Meigen, 1818 ! N1
= *lepidus* Loew, 1871
- *femorialis* Meigen, 1838 !
- *ferruginatus* (Linnaeus, 1767) !
- *fulvicollis* Gimmerthal, 1842 L
- *hortulanus* (Linnaeus, 1758) !
- *johannis* (Linnaeus, 1767) !
- *lanigerus* Meigen, 1818 !
- *lautaretensis* Villeneuve, 1924 !
- *leucopterus* (Meigen, 1804) !
- *marci* (Linnaeus, 1758) !
- *nigriventris* Haliday, 1833 !
- *pomona* (Fabricius, 1775) !
- *reticulatus* Loew, 1846 !
- *siebkei* Mik, 1887 !
- *varipes* Meigen, 1830 !
- *venosus* (Meigen, 1804) !

Dilophus Meigen, 1803

- *bispinosus* Lundström, 1913 !
- *borealis* Skartveit, 1993 !

- *febrilis* (Linnaeus, 1758) !
- *femoratus* Meigen, 1804 !
- *humeralis* Zetterstedt, 1850 !
- *neglectus* Haenni, 1982 !

Penthetriinae

Penthetria Meigen, 1804

- *funebria* Meigen, 1804 !

Notes

N1 The status of *Bibio lepidus* (a junior synonym of *B. longipes* Loew, 1864) is controversial. For some authors it is considered as a separate species, while others treat it as a mere synonym of *B. clavipes*, as is the case here.

References

- D'Arcy-Burt S. & Blackshaw R.P. 1991. Bibionidae (Diptera, Bibionidae) in agricultural land: a review of damage, benefits, natural enemies and control. *Annals of Applied Biology* 118: 695-708.
- Duda O. 1930. 4. Bibionidae. In: Lindner E. (ed). *Die Fliegen der palaearktischen Region*. Vol. 2(1), 4: 1-75, Taf. 1-3. Schweizerbart, Stuttgart.
- Fitzgerald S.J. 2004. Evolution and classification of Bibionidae (Diptera: Bibionomorpha). Ph.D. dissertation. Oregon State University, Corvallis, OR, [14] + 385 pp.
- Fitzgerald S. & Skartveit J. 1997. Holarctic distributions in the genus *Bibio* (Diptera: Bibionidae). *Entomologica Scandinavica* 28: 103-119.
- Freeman P. & Lane R.P. 1985. Bibionids and scatopsid flies. *Diptera: Bibionidae and Scatopsidae, Handbooks for the Identification of British Insects*. Vol. 9(7). Royal Entomological Society, London, 74 pp.
- Greve L. & Haenni J.-P. 1994. Revision of the European species of the *Bibio lautaretensis*-group (Diptera, Bibionidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 67(3-4): 385-392.
- Haarto A. 2012. Suomen karvasääsket ja maasääsket (Diptera, Bibionidae ja Pleciidae). *W-album* 12: 3-31. [in Finnish, with key in English]
- Haenni J.-P. 1982. Révision des espèces du groupe de *Dilophus febrilis* (L.), avec description d'une espèce nouvelle. *Revue Suisse de Zoologie* 89(2): 337-354.
- Haenni J.-P. 1997. Présence en Suisse d'un Bibionidé méridional, *Dilophus bispinosus* Lundstr. (Diptera, Bibionidae). *Bulletin Romand d'Entomologie* 15: 17-19.
- Haenni J.-P. 1998. 25. Bibionidae. In: Merz B., Bächli G., Haenni J.-P. & Gonsseth Y. (eds). *Diptera - Checklist. Fauna Helvetica* 1: 145-146. CSCF / SEG, Neuchâtel, 369 pp.
- Haenni J.-P., Combrisson D. & Claude J. 2023. À propos de quelques Bibionidés boréo-alpins, dont *Bibio brunripes* (Fabricius, 1794), espèce nouvelle pour la faune de France (Diptera, Bibionidae). *Bulletin de la Société entomologique de France*, 128 (2): 143-150.
- Haenni J.-P. & Obrecht E. 2001. Une espèce de Bibionidae (Diptera) nouvelle pour la faune de Suisse. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 74: 1-5.
- Krivoshchina N.P. 1986. Family Bibionidae. In: Soós Á. & Papp L. (eds). *Catalogue of Palaearctic Diptera*. Vol. 4: 319-330. Akadémiai Kiadó, Budapest, 441 pp.
- Merz B., Bächli G. & Haenni J.-P. 2002. Erster Nachtrag zur Checkliste der Diptera der Schweiz. *Mitteilungen der Entomologischen Gesellschaft Basel* 51(3-4) (2001): 110-140.
- Merz B. & Haenni J.-P. 2012. 8.36.5. Superfamille Bibionoidea. In: Merz B. (ed). *Liste annotée des insectes (Insecta) du canton de Genève. Instrumenta Biodiversitatis* 8: 347. Muséum d'histoire naturelle, Genève, 532 pp.
- Skartveit J. 1997. 2.5. Family Bibionidae. In: Papp L. & Darvas B. (eds). *Contributions to a Manual of Palaearctic Diptera (with special reference to flies of economic importance)*. Vol. 2, Nematocera and Lower Brachycera: 41-49. Science Herald, Budapest, 592 pp.

- Skartveit J. 2002. The larvae of European Bibioninae (Diptera, Bibionidae). *Journal of Natural History* 36: 449-485.
- Skartveit J. 2013. Fauna Europaea: Bibionidae. In: Beuk P. & Pape T. (eds). *Fauna Europaea: Diptera Nematocera*. Fauna Europaea version 2.6. <http://www.faunaeur.org/>.
- Skartveit J. & Haenni J.-P. 1997. Three species of Bibionidae (Diptera) new to the fauna of Switzerland. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 70(1-2): 29-33.
- Verbeke J. 1971. Bibionidae de la faune belge. Etude des matériaux de l'Institut Royal des Sciences naturelles de Belgique. I. Le genre *Bibio* Geoffroy. *Bulletin de l'Institut Royal des Sciences naturelles de Belgique* 47(23): 1-22.
- Zeegers T. 1997. Een veldtabel vor de inheemse zwarte vliegen (Bibionidae). *De Vliegenmepper* 6: 4-9.