

Lauxaniidae

Anatole I. Shatalkin (1998 Checklist: Bernhard Merz)

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Diagnosis: Small- to medium-sized acalyptate flies, body length 2.0-11 mm, black, grey or yellow in body colour, often with marks, spots, bands, wings clear or infuscated in some parts, often spotted along the longitudinal veins, with bands or reticulating patterns. The family can be distinguished from other muscoids by the following suite of characters: C unbroken; Sc complete, separated from R_1 , cell *cua* – anterior cubital cell (formerly *cup* – posterior cubital cell) small with rounded apex; no oral vibrissae, postocellar setae convergent, two strong fronto-orbital setae, both facing backwards; legs each with preapical dorsal tibial seta. For more information on the morphology of flies and immature stages, see Papp & Shatalkin (1998); Gaimari & Silva (2010a); Semelbauer & Kozanek (2014); Gaimari & Miller (2021).

Biology: Adult flies are common in grass, on the leaves of shrubs and trees (some as fungal grazers). As a rule, they are slow creatures, motionless sitting or slowly moving along the surface of the sheet. The larvae are mainly saprophagous, develop in decaying fallen leaves, in plant matter from bird nests, sometimes in rotting wood and fungi. They feed in the first place on microorganisms (fungal hyphae and spores, bacterial films), associated with decaying substances, less often on living plant tissues as miners.

Nomenclature and classification: Traditionally, the family was divided into two subfamilies, Homoneurinae (with one genus *Homoneura* in the fauna of Switzerland) and Lauxaniinae. More recently, Gaimari & Silva (2010b) included neotropical broad-headed flies (*Eurychoromyiidae*) in Lauxaniidae as the third subfamily *Eurychoromyiinae*.

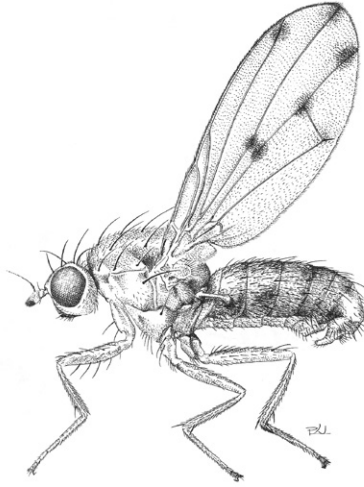
Number of species: CH: 79 (1998 Checklist: 64), BE: 56, CZ: 76, DE: 56, FI: 45, IT: 56, NL: 49, NO: 43, UK: 56, Europe: 157, World: 1890. (CZ: Dvořáková & Gaimari 2009, FI: Kahanpää 2014, IT: Checklist Italiana Diptera 2005, NL: Beuk 2019, NO: Greve 2009, UK: Chandler 1998, 2019, Europe: Fauna Europaea 2015, World: Pape et al. 2011.)

Level of faunistic knowledge in Switzerland: Excellent.

General references: Papp & Shatalkin (1998) [key to Palaearctic genera], Shatalkin (2000) [keys to Palaearctic species], Gaimari & Silva (2010a, 2010b) [Central American Lauxaniidae, *Eurychoromyiinae*], Semelbauer & Kozanek (2014) [preimaginal stages], Semelbauer (2016) [molecular phylogeny].

References to the Swiss fauna: Merz (1998), Merz et al. (2002, 2006), Bächli et al. (2014).

Meiosimyza decempunctata,
male (CMPD3, p.383).



Checklist

Homoneurinae

- Homoneura* Van der Wulp, 1891
- *biumbrata* (Loew, 1873) !
 - *christophi* (Becker, 1895) !
 - *consobrina* (Zetterstedt, 1847) !
 - *dilecta* (Rondani, 1868) !
 - *interstincta* (Fallén, 1820) !
 - *limnea* (Becker, 1895) !
 - *mediospinosa* Merz, 2003 !
 - *minor* (Becker, 1895) !
 - *notata* (Fallén, 1820) ! N1
 - = *subnotata* Papp, 1978
 - *patelliformis* (Becker, 1895) !
 - *remmi* Papp, 1978 !
 - *thalhammeri* Papp, 1978 !

Lauxaniinae

- Aulogastromyia* Hendel, 1925
- *anisodactyla* (Loew, 1845) !
- Calliopum* E. Strand, 1928
- *aeneum* (Fallén, 1820) !
 - *elisae* (Meigen, 1826) !
 - *simillimum* (Collin, 1933) !
 - *splendidum* Papp, 1978 !
- Cnemacantha* Macquart, 1835

- *muscaria* (Fallén, 1823) ! N2
- Eusapromyza* Malloch, 1923
 - *multipunctata* (Fallén, 1820) !
- Lauxania* Latreille, 1804
 - (*Callixania* Papp, 1978) N3
 - *minor* Martinek, 1974 !
 - (*Czernushka* Shatalkin, 2000)
 - *albomaculata* Strobl, 1909 ! N4
 - = *Calliopum albomaculatum* (Strobl, 1909)
 - (*Lauxania* s.str.)
 - *bilobata* Merz, 2001 !
 - *cylindricornis* (Fabricius, 1794) !
- Meiosimyza* Hendel, 1925 N5
 - *affinis* (Zetterstedt, 1847) ! N6
 - *conjugata* (Becker, 1895) ! N6
 - *decempunctata* (Fallén, 1820) ! N6
 - *decipiens* (Loew, 1847) ! N6
 - *illota* (Loew, 1847) ! N6
 - *laeta* (Zetterstedt, 1838) ! N6
 - *mihalyii* (Papp, 1978) ! N6
 - *platycephala* (Loew, 1847) ! N6
 - *rorida* (Fallén, 1820) ! N6
 - *subfasciata* (Zetterstedt, 1838) ! N6
- Minettia* Robineau-Desvoidy, 1830
 - *fasciata* (Fallén, 1826) ! N7
 - = *rivosa* (Meigen, 1826)
 - *flaviventris* (Costa, 1844) !
 - *inusta* (Meigen, 1826) !
 - *longiseta* (Loew, 1847) !
 - *lupulina* (Fabricius, 1787) !
 - *plumicornis* (Fallén, 1820) !
 - *tabidiventris* (Rondani, 1877) !
 - *tubifer* (Meigen, 1826) !
 - (*Frendelia* Collin, 1948)
 - *austriaca* Hennig, 1951 !
 - *longipennis* (Fabricius, 1794) !
 - *martineki* Ceianu, 1991 !
 - (*Plesiominettia* Shatalkin, 2000)
 - *filia* (Becker, 1895) !
 - *helvola* (Becker, 1895) !
 - *loewi* (Schiner, 1864) !
- Pachycerina* Macquart, 1835
 - *pulchra* (Loew, 1850) !
 - *seticornis* (Fallén, 1820) !
- Peplomyza* Haliday, 1837
 - *discoidea* (Meigen, 1830) ! [1]

- *intermedia* Remm, 1979 !
- *litura* (Meigen, 1826) !
- Poecilolycia* Shewell, 1986 N8
 - *vittata* (Walker, 1849) !
- Pseudolyciella* Shatalkin, 2000 N9
 - *pallidiventris* (Fallén, 1820) !
 - *stylata* (Papp, 1978) !
 - *subpallidiventris* Papp, 1978 !
- Sapromyza* Fallén, 1810
 - *albiceps* Fallén, 1820 !
 - *alpina* Merz, 2007 !
 - *apicalis* Loew, 1847 !
 - *basalis* Zetterstedt, 1847 !
 - *bisigillata* Rondani, 1869 !
 - *intonsa* Loew, 1847 !
 - *multiseriata* Czerny, 1932 L N10
 - *obscuripennis* Loew, 1847 !
 - *obsoleta* Fallén, 1820 !
 - *opaca* Becker, 1895 !
 - *palpella* Rondani, 1868 !
 - *schnabli* Papp, 1987 !
 - *sexpunctata* Meigen, 1826 !
 - *simplicior* Hendel, 1908 !
 - *tuberculosa* Becker, 1895 ! N11
 - = *sordida* Haliday, 1833
 - *viciespunctata* Czerny, 1932 !
 - *zetterstedti* Hendel, 1908 !
- (*Sapromyzosoma* Lioy, 1864)
 - *laevatrispina* Carles-Tolrà, 1992 !
 - *quadricincta* Becker, 1895 !
 - *quadripunctata* (Linnaeus, 1767) !
- (*Schumannimyia* Papp, 1978)
 - *hyalinata* (Meigen, 1826) !
- Tricholauxania* Hendel, 1925
 - *praeusta* (Fallén, 1820) !
- Trigonometopus* Macquart, 1835
 - *frontalis* (Meigen, 1830) !

Notes

- N1 *Homoneura subnotata* Papp, 1978 in the 1998 Checklist (Merz 1998 [p. 254]) was synonymised with *Homoneura notata* by Merz (2003).
- N2 According to the results of molecular analysis (Semelbauer 2016), *Cnemocantha muscaria* (Fallén, 1823) is stably located inside the *Homoneura* clade.
- N3 According to the results of molecular analysis (Semelbauer 2016), this subgenus with two species, *Lauxania* (*Callixania*) *minor* and *Lauxania* (*Callixania*) *martineki* Shatalkin, 1998 (from Far East), has a basal position relative to *Lauxania cylindricornis*, *Calliopum* and a large group of *Sapromyza* species. The

- real relationship between the last two genera was cleared recently by Ebejer (2019). Therefore, one can agree with Semelbauer (2016) that the subgenus *Callixania* deserves a generic status.
- N4 Was recorded in the 1998 Checklist (Merz 1998 [p. 254]) as *Calliopum albomaculatum* (Strobl, 1909). Czerny (1932 [p. 65]) included *Lauxania albomaculata* Strobl, 1909 in the genus *Halidayella* Hendel, 1925 (now *Calliopum* Strand). Morphologically, this species occupies a separate position within *Lauxania*, and Shatalkin (2000 [p. 82]) established for it a separate subgenus *Czernushka*. There are no grounds for revising this decision yet.
- N5 The genus *Meiosimyza* includes predominantly yellow species having a pre-sutural seta on the mesonotum and thin setulae on pteropleuron. Morphologically, it is similar to the genera *Aulogastromyia*, *Eusapromyza* and *Tricholauxania*, which is confirmed by the results of molecular reconstruction. This means that the single taxon *Lyciella* sensu Collin (1948), with species belonging to *Meiosimyza*, *Poecilolycia*, and *Pseudolyciella* is at best a paraphyletic group.
- N6 *Meiosimyza affinis*, *M. conjugata*, *M. decempunctata*, *M. decipiens*, *M. illota*, *M. laeta*, *M. mihalyii*, *M. plattycéphala*, *M. rorida*, *M. subfasciata* were recorded in the 1998 Checklist (Merz 1998 [p. 254]) as *Lyciella* Collin, 1948.
- N7 *Minettia rivosá* (Meigen, 1826), recorded by Merz et al. (2002 [p. 124]), was later synonymised with *Minettia fasciata* (Merz 2004, p. 209).
- N8 Shewell (1986) proposed this genus for American species (the type species is *Sapromyza quadrilineata* Loew, 1860), similar to the transpalearctic *Lyciella vittata*. On the basis of all diagnostic characters, *Poecilolycia vittata* differs from *Meiosimyza* and related genera, which is confirmed by the results of molecular reconstruction (Semelbauer 2016). On the cladogram, *Poecilolycia vittata* occupies a basal position.
- N9 The genus *Pseudolyciella* Shatalkin, 2000 has been established for yellow or brownish-yellow species of *Meiosimyza* (*Lyciella*), with pteropleuron without setulae (visible at high magnification) and frons and mesonotum devoid of brown longitudinal vittae, as is typical for *Poecilolycia* species.
- N10 No further information than what Merz (1998 [p. 256, note 5]) already stated in the 1998 Checklist could be found: *Sapromyza multiseriata* was described after specimens from Switzerland. The species has not been recorded again since then, and a type revision is also missing. As the description is very short and not clear enough, the status of the species cannot be determined with certainty.
- N11 Ebejer (2019) established that *Sapromyza sordida* Haliday, 1833 (preocc. Wiedemann, 1830) is a junior synonym for *Sapromyza tuberculosa* Becker, 1895. The latter was transferred from the genus *Sapromyza* to the genus *Calliopum*. The male terminalia of *Calliopum tuberculosum* resemble those of *C. elisae*.

Species records

- [1] 1M, GR, Soglio, 5-19.6.2020, 1117 m, leg. Vico Roganti

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