

Asilidae

Christian Monnerat (1998 Checklist: Medeea Weinberg & Gerhard Bächli)

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Diagnosis: Small to large (4-26 mm), but generally medium-sized brachycerous flies with various shapes, ranging from long and slender (*Leptogaster*) to short and stocky (*Andrenosoma*). There is little sexual dimorphism in most species, but when present, dimorphism concerns the shape of the legs, the colouring of the abdomen (*Dasypogon*), wings (*Holopogon*) or pubescence (*Choerades*). The head is dorsally concave between the developed, dichoptic eyes where the ocelli are located. The face bears a bulge with long bristles called mystax or beard and powerful, piercing mouthparts that are characteristic when viewed from the side. The shape of the antennae is variable, while the elongated third segment is generally followed by one or two segments that may form an arista or style, which is sometimes absent (Laphrinae). The body varies in colour and pubescence from dark metallic blue to paler colours, with orange or yellow parts, with some species resembling bees or wasps. The legs are long and powerful, often armed with strong bristles and the tibiae have apical bristles or spurs. The wings with open m3 cell and open or closed cup cells are generally clear but sometimes mottled (*Cyrtopogon*, *Erax*), misty or even black (*Dioctria*, *Holopogon*), sometimes white at the base (*Holopogon*, *Pamponerus*). Seven subfamilies are present in Switzerland.

Biology: Most species are univoltine, some semivoltine. The eggs are laid in the soil in sandy or earthy substrates, in herbaceous plants, under bark or in wood. All species are exclusively predatory, both as larvae and adults. Asilids are found mainly in dry, warm open environments or in lowland thermophilous oak and pine woods, but also in other types of forests. More fresh-wet habitats are home to fewer species, and some are specific to sandy or stony environments. Many species are found only in the Alps, some of them mainly above the upper limit of the forest. Adults perch on various supports, using them as vantage points for hunting, like herbaceous vegetation, shrubs or on trunks or stumps, or also on bare soil or mineral microstructures. Robber flies adults are active between March and October, with a peak in summer (June-July). Adults can live for several weeks, with an average lifespan of 45 days known for *Machimus rusticus*.

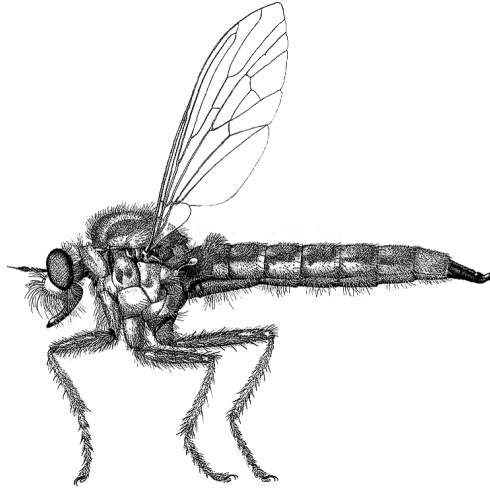
Nomenclature and classification: According to Dikow (2009) and Robber Flies of the World (2024).

Number of species: CH: 106 (1998 Checklist: 103),

AT: 103, BE: 51, CZ: 85, DE: 84, DK: 30, F: ~200, FI: 38, GB: 28, HU: 73, IT: 140, NL: 41, PL: 75, SK: 101, Europe: ~540, World: > 7200.

Level of faunistic knowledge in Switzerland: Good.

General references: Engel (1938) [key, Palaearctic], Haarto et al. (2022) [key, north-eastern Europe], Lehr (1988) [catalogue, Palaearctic], Trojan (1970) [key, Poland], Van den Broek & Schulten (2017) [key, The Netherlands, Belgium], Wolff et al. (2018) [key, Germany].



Machimus rusticus,
male (CMPD2, p.550).

References to the Swiss fauna: Bächli et al. (1995), Bächli & Rezbanyai-Reser (1996, 1998, 2005), Blöchlinger (1990), Monnerat (2018, 2023), Pétremand & Blanc (2024), Pétremand & Bosák (2024), Rühl (1888), Weinberg & Bächli (1993a, 1993b, 1994, 1995, 1998a, 1998b, 1998c, 1999, 2008), Weinberg et al. (1993, 1994, 1995, 1996).

Checklist

Andrenosoma Rondani, 1856

- *albibarbe* (Meigen, 1820) !
- *atrum* (Linnaeus, 1758) !

Aneomochtherus Lehr, 1996

- *flavicornis* (Ruthé, 1831) !
= *Neomochtherus flavicornis* (Ruthé, 1831)
- *flavipes* (Meigen, 1820) !
= *Neomochtherus flavipes* (Meigen, 1820)

Antipalus Loew, 1849

- *similis* Moucha & Hradsky, 1966 !
- *varipes* (Meigen, 1820) !

Antiphrisson Loew, 1849

- *trifarius* (Loew, 1849) !

Asilus Linnaeus, 1758

- *crabroniformis* Linnaeus, 1758 !

Cerdistus Loew, 1849

- *erythrurus* (Meigen, 1820) !

Choerades Walker, 1851

- *dioctriaeformis* (Meigen, 1820) !
- *femorata* (Meigen, 1804) !
- *fimbriata* (Meigen, 1820) !
- *fuliginosa* (Panzer, 1798) !
- *fulva* (Meigen, 1804) ! N1
- *gilva* (Linnaeus, 1758) !
- *igneae* (Meigen, 1820) !
- *marginata* (Linnaeus, 1758) !
- *mouchai* (Hradský, 1985) !
- *rufipes* (Fallén, 1814) !

Cyrtopogon Loew, 1847

- *culminum* Bigot, 1885 !
- *flavimanus* (Meigen, 1820) !
- *fulvicornis* (Macquart, 1834) !
- *lateralis* (Fallén, 1814) !
- *maculipennis* (Macquart, 1834) !
- *meyerduerii* Mik, 1864 !
- *platycerus* (Villeneuve, 1913) !
 - = *Cyclosocerus platycerus* (Villeneuve, 1913)
- *ruficornis* (Fabricius, 1794) !

Dasyopogon Meigen, 1803

- *diadema* (Fabricius, 1781) !

Didysmachus Lehr, 1996

- *picipes* (Meigen, 1820) !
 - = *Dysmachus picipes* (Meigen, 1820)

Dioctria Meigen, 1803

- *atricapilla* Meigen, 1804 !
- *bicincta* Meigen, 1820 !
- *cothurnata* Meigen, 1820 !
- *gracilis* Meigen, 1820 !
- *harcyniae* Loew, 1844 !
- *humeralis* Zeller, 1840 !
- *hyalipennis* (Fabricius, 1794) !
 - = *baumhaueri* Meigen, 1820
- *lateralis* Meigen, 1804 !
- *linearis* (Fabricius, 1787) !
- *liturata* Loew, 1873 !
- *oelandica* (Linnaeus, 1758) !
- *rufipes* (De Geer, 1776) !
- *sudetica* Duda, 1940 !

Dysmachus Loew, 1860

- *cristatus* (Wiedemann, 1820) !
- *fuscipennis* (Meigen, 1820) !
- *harpax* Villeneuve, 1904 !
- *stylifer* (Loew, 1854) !
- *trigonus* (Meigen, 1804) !

Echthistus Loew, 1849

- *rufinervis* (Meigen, 1820) !

Erax Scopoli, 1763

- *punctipennis* (Meigen, 1820) !

Eutolmus Loew, 1848

- *mediocris* Becker, 1923 !
- *rufibarbis* (Meigen, 1820) !

Holopogon Loew, 1847

- *fumipennis* (Meigen, 1820) !
- *nigripennis* (Meigen, 1820) !
- *priscus* (Meigen, 1820) !
- *venustus* (Rossi, 1790) !

Laphria Meigen, 1803

- *ephippium* (Fabricius, 1781) !
- *flava* (Linnaeus, 1760) !
- *gibbosa* (Linnaeus, 1758) !
- *vulpina* Meigen, 1820 ! N2

Lasiopogon Loew, 1847

- *bellardii* Jaenicke, 1867 !
- *cinctus* (Fabricius, 1781) !
- *immaculatus* Strobl, 1893 !
- *macquarti* (Perris, 1852) !
- *montanus* Schiner, 1862 !

Leptarthrus Stephens, 1829

- *brevirostris* (Meigen, 1804) !
- *vitripennis* (Meigen, 1820) !

Leptogaster Bleeker, 1870

- *cylindrica* (De Geer, 1776) !
- *guttiventris* Zetterstedt, 1842 !
- *pubicornis* Loew, 1847 !
- *pumila* (Macquart, 1834) !
- *subtilis* Loew, 1847 !

Lithoeciscus Bezzi, 1927

- *heydenii* (Loew, 1871) !

Machimus Loew, 1849

- *annulipes* (Brullé, 1832) !
- *caliginosus* (Meigen, 1820) ! N3
- *chrysitis* (Meigen, 1820) !
- *cyanopus* (Loew, 1849) ! N3
- *rusticus* (Meigen, 1820) !
- *setibarbus* (Loew, 1849) ! N3

Molobratia Hull, 1958

- *teutonus* (Linnaeus, 1767) !

Neoepitriptus Lehr, 1992

- *setosulus* (Zeller, 1840) !
- = *Epitriptus setosulus* (Zeller, 1840)

Neoitamus Osten Sacken, 1878

- *cothurnatus* (Meigen, 1820) !
- *cyanurus* (Loew, 1849) !
- *socius* (Loew, 1871) !
- *splendidus* Oldenberg, 1912 !

Neomochtherus Osten Sacken, 1878

- *alpinus* (Meigen, 1820) !
 - = *Paritamus melanopus* (Meigen, 1820)
- *confusus* Tsacas, 1965 !
- *geniculatus* (Meigen, 1820) !
 - = *Paritamus geniculatus* (Meigen, 1820)
- *pallipes* (Meigen, 1820) !
- *schineri* (Egger, 1855) !

Palamopogon Bezzi, 1927

- *longibarbus* Loew, 1857 !
 - = *Cyrtopogon longibarbus* Loew, 1857

Pamponerus Loew, 1849

- *germanicus* (Linnaeus, 1758) !
- *helveticus* (Mik, 1864) !

Philonicus Loew, 1849

- *albiceps* (Meigen, 1820) !

Pogonosoma Rondani, 1856

- *maroccanum* (Fabricius, 1794) !

Premochtherus Lehr, 1996

- *aquitanus* Tsacas, 1964 !
 - = *Neomochtherus aquitanus* Tsacas, 1964

Rhadiurgus Loew, 1849

- *variabilis* (Zetterstedt, 1838) !

Stenopogon Loew, 1847

- *sabaudus* (Fabricius, 1794) !

Stichopogon Loew, 1847

- *albofasciatus* (Meigen, 1820) !
- *schineri* Koch, 1872 !

Stilpnogaster Loew, 1849

- *aemula* (Meigen, 1820) !

Tolmerus Loew, 1849

- *atricapillus* (Fallén, 1814) !
- *atripes* Loew, 1854 ! N4
- *cingulatus* (Fabricius, 1781) !
 - = *Epitriptus cingulatus* (Fabricius, 1781)
- *inconstans* (Wiedemann, 1820) !
 - = *Epitriptus inconstans* (Wiedemann, 1820)
- *poecilogaster* (Loew, 1849) ! N4
- *pyragra* (Zeller, 1840) !

Excluded species

- Dioctria flavipennis* (Meigen, 1820) N5
Dysmachus basalis (Loew, 1848) N6
Machimus arthriticus (Zeller, 1840) N7
Machimus gonatistes (Zeller, 1840) N5
Saropogon vestitus (Wiedemann, 1828) N8
Tolmerus cowini Hobby, 1946 N9

Notes

- N1 Specimens identified as *Choerades fulva* should be revised. They could refer to a closely related species.
 N2 *Laphria vulpina* is considered a synonym of *L. flava* by some authors (see Wolf et al. 2018).
 N3 The *Machimus setibarbus* complex represented in Switzerland by three species, *M. caliginosus*, *M. cyanopus* and *M. setibarbus*, needs to be revised on a European scale. The variability of the criteria used means that assignment is often problematic, even for males (Van den Broek & Schulten 2017, Wolff et al. 2018).
 N4 Specimens identified as *Tolmerus atripes* and *T. poecilogaster* should be revised. They could refer to closely related species.
 N5 *Dioctria flavipennis* and *Machimus gonatistes* are mentioned for Switzerland by Wolff et al. (2018), who repeat their listing in Fauna Europaea for Switzerland. Searches to locate reference specimens of these two species have been unsuccessful. Whether these two species belong to the Swiss fauna remains to be confirmed.
 N6 *Dysmachus basalis* was described by Loew on the basis of a single female specimen of « Swiss » origin sent by Johann Jacob Bremi-Wolf of Zürich (Loew 1848). This information was subsequently taken up by Engel (1930) and later in the Palaeartic catalogue and the 1998 Checklist. This taxon is reported from the Czech Republic and Slovakia in Robber Flies of the World but is not cited by Bosák (1997). Whether this species belongs to the Swiss fauna remains to be confirmed.
 N7 *Machimus arthriticus* was mentioned (as *Epitriptus arthriticus*) in the 1998 Checklist from Switzerland based on its listing in the Catalogue of Palaearctic Diptera (Lehr 1988), but to date the author is not aware of any specimens of these species from Switzerland. Whether this species belongs to the Swiss fauna remains to be confirmed.
 N8 *Saropogon vestitus* was reported from Switzerland on the basis of a female specimen labelled Follaterres [VS], 4.VIII deposited at the Muséum d'Histoire Naturelle de Genève (MHNG) (Weinberg et al. 1994). A labelling error seems obvious, as the species is distributed in the Near East (Theodor 1980).
 N9 *Tolmerus cowini* was mentioned in the 1998 Checklist as *Epitriptus cowini* Hobby, 1946 with a question mark. This species is, along with others, a potential species for the Swiss fauna because it is known in neighbouring countries, but no specimen has yet been confirmed. For the time being, it has been excluded from the national list.

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