

## Muscidae

Adrian C. Pont & Andreas Grossmann (1998 Checklist: Adrian C. Pont & Bernhard Merz)

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**Diagnosis:** The Muscidae is a medium-sized family of the Muscoidea series of Calyptrate families. There are some 5000 species worldwide and the family includes some of the best-known Diptera pests such as the common house fly (*Musca domestica*), the face fly (*Musca autumnalis*), the stable fly (*Stomoxys calcitrans*) and the horn fly (*Haematobia irritans*). Adults can be recognised by the following combination of characters: absence of a vertical row of strong setae on the meron, though a few scattered setulae may be present in a few species; vein A<sub>1</sub> incomplete but extending over half the distance from crossvein CuA<sub>2</sub> to wing-margin; hind tibia without a true dorsal submedian seta, though often with a similar seta, the calcar, placed slightly posterior of dorsal; hind tarsomere 1 without a ventral basal seta. The absence of postabdominal spiracles in the female ovipositor is a significant autapomorphy (spiracle 6 re-acquired in the Neotropical genus *Cariocamyia* Snyder).

**Biology:** Adult muscids are found in most habitats, except the driest ones, and are particularly speciose in central and northern Europe. In Alpine regions they are the dominant insect group and at high altitude are, together with Anthomyiidae, the principal pollinators of flowers. Adults of some groups hover or swarm, some rest on leaves, tree trunks, boulders, stones, others are more retiring and only found by sweeping low herbage. All adults of the Coenosiinae are predaceous and are known to feed on blackflies (Simuliidae), mosquitoes (Culicidae) and, in greenhouses, on a variety of horticultural pests (white fly, aphids, black fungus gnats). A few are of medical or veterinary importance as the passive vectors of pathogens and parasites. Larvae are found in a wide range of habitats, from mammal dung and carrion, to decaying vegetable matter, wood, fungi, to the nests and lairs of mammals, birds, insects, to water margins, rot holes, running water. They may be coprophagous/saprophagous, facultative carnivores or obligate carnivores, feeding on other insects and other small invertebrates.

**Nomenclature and classification:** This follows the Catalogue of Palaearctic Diptera (Pont 1986), with updated nomenclature and incorporating some of the more recent conclusions based on molecular work (Kutty et al. 2014, Haseyama et al. 2015).

**Number of species:** CH: 298 (1998 Checklist: 218), BE: 223, CZ: 314, DE: 346, FR: 336, GB: 293; HU: 216, IT: 297, NL: 191; SK: 272, Europe: ~580, World: ~5000.

**Level of faunistic knowledge in Switzerland:** Good.

**General references:** Gregor et al. (2016) [keys, descriptions and figures, Central European species], Hennig (1955-1964) [descriptions and figures, Palaearctic species; still indispensable], Pont (1986) [catalogue, Palaearctic species], Pont (2014) [Fauna Europaea].



*Phaonia tenuiseta*,  
male (1998 Checklist, p. 321).

**References to the Swiss fauna:** Bächli et al. (2014), Barták et al. (2004), Faucherre & Cherix (1998), Gregor et al. (2003), Grossmann & Pont (2024), Haenni & Pont (2008), Merz (2000), Merz et al. (2002, 2006), Merz & Pont (2001, 2012), Pont (2000), Pont et al. (2007), Pont & Merz (1998), Pont & Werner (2005), Rozkošný et al. (2004), Schiegg et al. (1999).

## Checklist

### Atherigoninae

- Atherigona* Rondani, 1856  
- *varia* (Meigen, 1826) !

### Azeliinae

- Achanthiptera* Rondani, 1856  
- *rohrelliformis* (Robineau-Desvoidy, 1830) !
- Azelia* Robineau-Desvoidy, 1830  
- *aterrima* (Meigen, 1826) !  
- *cilipes* (Haliday, 1838) !  
- *gibbera* (Meigen, 1826) !  
- *monodactyla* Loew, 1874 !  
- *nebulosa* Robineau-Desvoidy, 1830 !  
  = *macquarti* Staeger, 1843  
- *parva* Rondani, 1866 !  
- *trigonica* Hennig, 1956 !  
- *triquetra* (Wiedemann, 1817) !  
- *zetterstedtii* Rondani, 1866 !
- Drymeia* Meigen, 1826  
- *brumalis* (Rondani, 1866) !

- *cinerea* (Meigen, 1826) !
- *glacialis* (Rondani, 1866) !
  - = *alpicola* (Rondani, 1871)
- *hamata* (Fallén, 1823) !
- *tetra* (Meigen, 1826) !
- *vicana* (Harris, 1780) !

*Hydrotaea* Robineau-Desvoidy, 1830

- *aenescens* (Wiedemann, 1830) !
- *albipuncta* (Zetterstedt, 1845) !
- *armipes* (Fallén, 1825) !
- *basdeni* Collin, 1939 L
- *borussica* Stein, 1899 !
- *capensis* (Wiedemann, 1818) !
- *cyrtoneurina* (Zetterstedt, 1845) !
- *dentipes* (Fabricius, 1805) !
- *diabolus* (Harris, 1780) !
- *floccosa* Macquart, 1835 !
- *glabricula* (Fallén, 1825) !
- *hirticeps* (Fallén, 1824) !
- *ignava* (Harris, 1780) !
  - = *leucostoma* (Wiedemann, 1817)
- *irritans* (Fallén, 1823) !
- *meridionalis* Portschinsky, 1882 L
- *meteorica* (Linnaeus, 1758) !
- *militaris* (Meigen, 1826) !
- *nidicola* Malloch, 1925 !
- *palaestrica* (Meigen, 1826) L
- *pandellei* Stein, 1899 !
- *parva* Meade, 1889 !
- *penicillata* (Rondani, 1866) L
- *pilipes* Stein, 1903 !
- *pilitibia* Stein, 1916 L
- *similis* Meade, 1887 L
- *tuberculata* Rondani, 1866 !
- *velutina* Robineau-Desvoidy, 1830 !

*Muscina* Robineau-Desvoidy, 1830

- *levida* (Harris, 1780) !
  - = *assimilis* (Fallén, 1823)
- *pascuorum* (Meigen, 1826) !
- *prolapsa* (Harris, 1780) !
  - = *pabulorum* (Fallén, 1817)
- *stabulans* (Fallén, 1817) !

*Potamia* Robineau-Desvoidy, 1830

- *littoralis* Robineau-Desvoidy, 1830 !
  - = *querceti* (Bouché, 1834)

*Thricops* Rondani, 1856

- *aculeipes* (Zetterstedt, 1838) !
- *beckeri* (Pokorny, 1893) !
- *culminum* (Pokorny, 1889) !
- *cunctans* (Meigen, 1826) !
  - = *hirsutula* (Zetterstedt, 1838)
- *diaphanus* (Wiedemann, 1817) !
- *furcatus* (Stein, 1916) !
- *genarum* (Zetterstedt, 1838) !
  - = *sundewalli* (Zetterstedt, 1845)
- *innocuus* (Zetterstedt, 1838) !
- *lividiventris* (Zetterstedt, 1845) !
- *longipes* (Zetterstedt, 1845) !
- *nigrifrons* (Robineau-Desvoidy, 1830) !
- *nigritellus* (Zetterstedt, 1838) !
- *rostratus* (Meade, 1882) !
- *semicinereus* (Wiedemann, 1817) !
- *separ* (Zetterstedt, 1845) !
- *simplex* (Wiedemann, 1817) !
- *sudeticus* (Schnabl, 1888) !
- *villosus* (Hendel, 1903) !

### Coenosiinae

#### *Coenosia* Meigen, 1826

- *acuminata* Strobl, 1898 !
- *agromyzina* (Fallén, 1825) !
- *albicornis* Meigen, 1826 !
  - = *sexnotata* Meigen, 1826
- *alpicola* (Pokorny, 1893) !
- *ambigua* Séguy, 1923 !
- *ambulans* Meigen, 1826 !
- *atra* Meigen, 1830 !
- *bilineella* (Zetterstedt, 1838) !
- *campestris* (Robineau-Desvoidy, 1830) !
- *dubiosa* Hennig, 1961 !
- *femoralis* (Robineau-Desvoidy, 1830) !
- *flavimana* (Zetterstedt, 1845) !
- *gracilis* Stein, 1916 !
- *humilis* Meigen, 1826 !
- *infantula* Rondani, 1866 !
- *intermedia* (Fallén, 1825) !
- *lineatipes* (Zetterstedt, 1845) !
- *means* Meigen, 1826 !
- *mollicula* (Fallén, 1825) !
- *nevadensis* Lyneborg, 1970 !
- *nigridigita* Rondani, 1866 !
- *obscuricula* (Rondani, 1871) !

- *octosignata* Rondani, 1866 !
- *paludis* Tiensuu, 1939 !
- *pedella* (Fallén, 1825) !
- *perpusilla* Meigen, 1826 !
- *pudorosa* Collin, 1953 !
- *pumila* (Fallén, 1825) !
- *pygmaea* (Zetterstedt, 1845) !
- *rufipalpis* Meigen, 1826 !
- *sallae* Tiensuu, 1938 !
- *sexmaculata* Meigen, 1838 !
- *sexpustulata* Rondani, 1866 !
- *strigipes* Stein, 1916 !
- *styriaca* Hennig, 1961 !
- *testacea* (Robineau-Desvoidy, 1830) !
  - = *tricolor* (Zetterstedt, 1845)
- *tigrina* (Fabricius, 1775) !
- *verralli* Collin, 1953 !

*Limnophora* Robineau-Desvoidy, 1830

- *caesia* (Villeneuve, 1936) !
- *latevittata* Schnabl, 1911 !
- *maculosa* (Meigen, 1826) !
- *mediterranea* Pont, 2012 !
- *nigripes* (Robineau-Desvoidy, 1830) !
- *olympiae* Lyneborg, 1965 !
- *pandellei* Séguy, 1923 !
- *riparia* (Fallén, 1824) !
- *scrupulosa* (Zetterstedt, 1845) L
- *setinerva* Schnabl in Schnabl & Dziedzicki, 1911 !
- *tigrina* (Am Stein, 1860) !
- *triangula* (Fallén, 1825) !

*Limnospila* Schnabl, 1902

- *albifrons* (Zetterstedt, 1849) !

*Lispe* Latreille, 1796

- *consanguinea* Loew, 1858 !
- *nana* Macquart, 1835 !
- *pygmaea* Fallén, 1825 !
- *tentaculata* (De Geer, 1776) !
- *uliginosa* Fallén, 1825 !

*Lispocephala* Pokorný, 1893

- *alma* (Meigen, 1826) !
- *brachialis* (Rondani, 1877) !
- *erythrocerata* (Robineau-Desvoidy, 1830) !
- *pallipalpis* (Zetterstedt, 1845) !
- *spuria* (Zetterstedt, 1838) !
- *verna* (Fabricius, 1794) !

*Macrorchis* Rondani, 1877

- *meditata* (Fallén, 1825) !
- Orchisia* Rondani, 1877
  - *costata* (Meigen, 1826) !
- Pseudocoenosia* Stein, 1916
  - *solitaria* (Zetterstedt, 1838) L
- Schoenomyza* Haliday, 1833
  - *litorella* (Fallén, 1823) !
- Spanochaeta* Stein, 1919
  - *dorsalis* (von Roser, 1840) !
- Spilogona* Schnabl, 1911
  - *alpica* (Zetterstedt, 1845) !
  - *atricans* (Pandellé, 1899) !
  - *brunneisquama* (Zetterstedt, 1845) !
  - *caliginosa* (Stein, 1916) !
  - *carbonella* (Zetterstedt, 1845) !
  - *contractifrons* (Zetterstedt, 1838) !
  - *denigrata* (Meigen, 1826) !
  - *depressiuscula* (Zetterstedt, 1838) !
  - *dispar* (Fallén, 1823) !
  - *kuntzei* (Schnabl in Schnabl & Dziedzicki, 1911) !
  - *meadei* (Schnabl in Becker et al., 1915) !
  - *pacifica* (Meigen, 1826) !
  - *semiglobosa* (Ringdahl, 1916) !
  - *solitaria* (Collin, 1921) !
  - *spininervis* (Villeneuve, 1922) L
  - *surda* (Zetterstedt, 1845) L
  - *varsaviensis* Schnabl in Schnabl & Dziedzicki, 1911 !

## Muscinae

- Dasyphora* Robineau-Desvoidy, 1830
  - *albofasciata* (Macquart, 1839) L
  - *penicillata* (Egger, 1865) !
  - *pratorum* (Meigen, 1826) !
- Eudasyphora* Townsend, 1911
  - *cyanella* (Meigen, 1826) !
  - *cyanicolor* (Zetterstedt, 1845) !
  - *zimini* (Hennig, 1963) !
- Haematobosca* Bezzi, 1907
  - *stimulans* (Meigen, 1824) !
- Mesembrina* Meigen, 1826
  - *meridiana* (Linnaeus, 1758) !
  - *mystacea* (Linnaeus, 1758) !
- Morellia*
  - *aenescens* Robineau-Desvoidy, 1830 !
  - *hortorum* (Fallén, 1817) !
  - *podagrica* (Loew, 1857) !

*Musca* Linnaeus, 1758

- *autumnalis* De Geer, 1776 !
- *domestica* Linnaeus, 1758 !
- *osiris* Wiedemann, 1830 !
  - = *vitripennis* auct. nec Meigen, 1826
- *tempestiva* Fallén, 1817 !

*Neomyia* Walker, 1859

- *cornicina* (Fabricius, 1781) !
  - = *caesarion* (Meigen, 1826)
- *viridescens* (Robineau-Desvoidy, 1830) !
  - = *cornicina* auct. nec (Fabricius, 1781)

*Polietes* Rondani, 1866

- *domitor* (Harris, 1780) !
- *lardarius* (Fabricius, 1781) !
- *meridionalis* Peris & Llorente, 1963 !

*Pyrellia* Robineau-Desvoidy, 1830

- *rapax* (Harris, 1780) !
- *vivida* Robineau-Desvoidy, 1830 !

*Stomoxys* Geoffroy, 1762

- *calcitrans* (Linnaeus, 1758) !

*Ziminellia* Nihei & Carvalho, 2007 N1

- *simplex* (Loew, 1857) !

**Mydaeinae***Graphomya* Robineau-Desvoidy, 1830

- *maculata* (Scopoli, 1763) !
- *minor* Robineau-Desvoidy, 1830 L

*Gymnodia* Robineau-Desvoidy, 1830 N2

- *humilis* (Zetterstedt, 1860) !

*Hebecnema* Schnabl, 1889

- *fumosa* (Meigen, 1826) !
- *nigra* (Robineau-Desvoidy, 1830) !
- *nigricolor* (Fallén, 1825) !
- *umbratica* (Meigen, 1826) !
- *vespertina* (Fallén, 1823) !
  - = *affinis* Malloch, 1921

*Mydaea* Robineau-Desvoidy, 1830

- *affinis* Meade, 1891 !
- *ancilla* (Meigen, 1826) !
- *anicula* (Zetterstedt, 1860) !
- *corni* (Scopoli, 1763) !
  - = *scutellaris* Robineau-Desvoidy, 1830
- *deserta* (Zetterstedt, 1845) !
- *detrita* (Zetterstedt, 1845) ! N3
  - = *electa* (Zetterstedt, 1860)
- *humeralis* Robineau-Desvoidy, 1830 !

- *nebulosa* (Stein, 1893) !
- *nubila* Stein, 1916 !
- *obscurella* Malloch, 1921 L
- *orthonevra* (Macquart, 1835) L
  - = *detrita* auct. nec (Zetterstedt, 1845)
- *rufinervis* (Pokorny, 1889) !
- *setifemur* Ringdahl, 1924 !
- *urbana* (Meigen, 1826) !

*Myospila* Rondani, 1856

- *alpina* Hendel, 1901 !
- *bimaculata* (Macquart, 1834) !
  - = *hennigi* Gregor & Povolný, 1959
- *meditabunda* (Fabricius, 1781) !

**Phaoniinae**

*Helina* Robineau-Desvoidy, 1830

- *abdominalis* (Zetterstedt, 1846) !
- *annosa* (Zetterstedt, 1838) !
- *arctata* Collin, 1953 !
- *atricolor* (Fallén, 1825) !
  - = *denudata* (Zetterstedt, 1845)
- *balsaci* (Séguy, 1947) L
- *calceata* (Rondani, 1866) L
- *celsa* (Harris, 1780) L
- *cilipes* (Schnabl, 1902) !
- *cinerella* (van der Wulp, 1867) !
- *clara* (Meigen, 1826) !
- *concolor* (Czerny, 1900) !
- *confinis* (Fallén, 1825) !
- *consimilis* (Fallén, 1825) !
- *cothurnata* (Rondani, 1866) !
- *crinita* Collin, 1953 ?
- *decipiens* Mihályi, 1974 !
- *deleta* (Stein, 1914) !
- *depuncta* (Fallén, 1825) !
- *evecta* (Harris, 1780) !
  - = *laetifica* (Robineau-Desvoidy, 1830)
- *flavisquama* (Zetterstedt, 1849) !
- *fratercula* (Zetterstedt, 1845) !
- *fulvisquama* (Zetterstedt, 1845) !
- *impuncta* (Fallén, 1824) !
- *lasiophthalma* (Macquart, 1835) !
- *latitarsis* Ringdahl, 1924 !
- *laxifrons* (Zetterstedt, 1860) !
- *longicornis* (Zetterstedt, 1838) !
- *maculipennis* (Zetterstedt, 1845) L

- *moedlingensis* (Schnabl in Schnabl & Dziedzicki, 1911) !
- *montana* (Rondani, 1866) L
- *obscurata* (Meigen, 1826) !
- *obtusipennis* (Fallén, 1823) !
- *pandellei* (Villeneuve, 1922) !
- *parcepilosa* (Stein, 1907) !
- *pertusa* (Meigen, 1826) !
- *protuberans* (Zetterstedt, 1845) !
- *pubescens* (Stein, 1893) !
- *pubiseta* (Zetterstedt, 1845) !
- *quadrinotata* (Meigen, 1826) !
- *quadrum* (Fabricius, 1805) !
- *reversio* (Harris, 1780) !
  - = *duplicata* (Meigen, 1826)
- *setiventris* Ringdahl, 1924 !
- *sexmaculata* (Preyssler, 1791) !
- *subvittata* (Séguy, 1923) !
  - = *rothi* Ringdahl, 1939
- *tetrastigma* (Meigen, 1826) !
- *trivittata* (Zetterstedt, 1860) !
- *vicina* (Czerny, 1900) !

*Lophosceles* Ringdahl, 1922

- *cinereiventris* (Zetterstedt, 1845) !
- *frenatus* (Holmgren, 1872) !

*Phaonia* Robineau-Desvoidy, 1830

- *aeneiventris* (Zetterstedt, 1845) !
- *alpicola* (Zetterstedt, 1845) !
- *amabilis* (Meigen, 1826) !
- *angelicae* (Scopoli, 1763) !
  - = *basalis* (Zetterstedt, 1838)
- *apicalis* Stein, 1914 !
- *atriceps* (Loew, 1858) !
- *chalinata* (Pandellé, 1899) !
- *cincta* (Zetterstedt, 1846) !
- *consobrina* (Zetterstedt, 1838) !
- *czernyi* Hennig, 1963 !
- *disjuncta* Stein, 1916 ! [1]
- *errans* (Meigen, 1826) !
- *erronea* (Schnabl, 1887) !
- *exoleta* (Meigen, 1826) !
- *fuscata* (Fallén, 1825) !
- *gobertii* (Mik, 1881) !
- *grandaeva* (Zetterstedt, 1845) !
- *halterata* (Stein, 1893) !
- *hybrida* (Schnabl, 1888) !
- *incana* (Wiedemann, 1817) !

- *jugorum* (Strobl, 1910) L
- *laeta* (Fallén, 1823) !
- *latifrontalis* Hennig, 1963 !
- *latipalpis* Schnabl in Schnabl & Dziedzicki, 1911 !
- *liliputa* Zinovjev, 1989 !
- *lugubris* (Meigen, 1826) !  
= *morio* (Zetterstedt, 1845)
- *meigeni* Pont, 1986 !  
= *lugubris* auct. nec (Meigen, 1826)
- *mystica* (Meigen, 1826) !
- *pallida* (Fabricius, 1787) !
- *palpata* (Meigen, 1830) L
- *perdita* (Stein, 1897) !
- *pratensis* (Robineau-Desvoidy, 1830) !
- *profugax* (Pandellé, 1899) !
- *pullata* (Czerny, 1900) !
- *pura* (Loew, 1873) L  
= *candicans* (Pandellé, 1898)
- *rufipalpis* (Macquart, 1835) !
- *rufiventris* (Scopoli, 1763) !  
= *populi* (Meigen, 1826)
- *serva* (Meigen, 1826) !
- *siebecki* Schnabl in Schnabl & Dziedzicki, 1911 !
- *signata* (Meigen, 1826) !  
= *tuguriorum* auct. nec (Scopoli, 1763) N4
- *subventa* (Harris, 1780) !  
= *variegata* (Meigen, 1826)
- *tenuiseta* (Pokorny, 1893) !
- *trimaculata* (Bouché, 1834) !
- *tuguriorum* (Scopoli, 1763) !  
= *scutellata* (Zetterstedt, 1845) N4
- *valida* (Harris, 1780) !  
= *viarum* Robineau-Desvoidy, 1830
- *villana* Robineau-Desvoidy, 1830 L
- *vivida* (Rondani, 1871) !
- *zugmayeriae* (Schnabl, 1888) !

## Notes

- N1 The genus *Ziminellia* Nihei & Carvalho, 2007 was founded for *Morellia simplex* (Loew, 1857) and other species with a setulose prosternum that were formerly included in *Morellia* Robineau-Desvoidy, 1830.
- N2 *Gymnodia* Robineau-Desvoidy, 1863 was erroneously considered to be preoccupied and was replaced by *Brontaea* Kowarz, 1873 (e.g. Pont 1986). However, it has subsequently been re-instated as the valid name for this genus (Evenhuis et al. 2010).
- N3 The correct name for *Mydaea detrita* of authors is *Mydaea orthonevra* (Macquart, 1835). The true *Mydaea detrita* (Zetterstedt, 1845) is an older name for *Mydaea electa* (Zetterstedt, 1860) (see Pont 2011, 2012).
- N4 *Phaonia tuguriorum* (Scopoli, 1763) is a senior synonym of *P. scutellata* (Zetterstedt, 1845) and the name *P. signata* (Meigen) is the valid name for *P. tuguriorum* auctt. according to Michelsen & Pont (2024).

## Species records

[1] 1M, VS, Lötschental, Fafleralp, Grund, 22.5.2023, 1850 m., leg. Andreas Grossmann

## References

- Bächli G., Merz B. & Haenni J.-P. 2014. Dritter Nachtrag zur Checkliste der Diptera der Schweiz. Entomo Helvetica 7: 119-140.
- Barták M., Gregor F. & Rozkošný R. 2004. New records of interesting Palaearctic Muscidae (Diptera). In: Kubik S. & Barták M. (eds). Dipterologica Bohemoslovaca, 11. Folia Facultatis Scientiarum Naturalium Universitatis Masarykianae Brunensis, Biologia 109: 7-16.
- Evenhuis N.L., O'Hara J.E., Pape T. & Pont A.C. 2010. Nomenclatural studies toward a world list of Diptera genus-group names. Part I. André-Jean-Baptiste Robineau-Desvoidy. Zootaxa 2373: 1-265.
- Faucherre J. & Cherix D. 1998. Contribution à la connaissance des diptères nécrophages du Jorat (Vaud, Suisse). Mitteilungen der schweizerischen entomologischen Gesellschaft 71: 211-217.
- Gregor F., Barták M. & Rozkošný R. 2003. New records of interesting Fanniidae and Muscidae (Diptera) from the Czech Republic and some other European countries. Studia dipterologica 10: 331-337.
- Gregor F., Rozkošný R., Barták M. & Vaňhara J. 2016. Manual of Central European Muscidae (Diptera). Morphology, taxonomy, identification and distribution. Zoologica 162: 219 pp.
- Grossmann A. & Pont A.C. 2024. Neufunde und aktuelle Bestätigungen von Vorkommen der Muscidae und Fanniidae (Diptera) in der Schweiz. Entomo Helvetica 17: 165-173..
- Haenni J.-P. & Pont A.C. 2008. Muscidae and Fanniidae (Diptera) from the Alp Flix area (Swiss Alps, Grisons), with special reference to species from the alpine level. In: Müller J.P. & Briner T. (eds). Schatzinsel Flix. Ergebnisse von Forschungsarbeiten der Jahre 2000 bis 2007. Jahresbericht der naturforschenden Gesellschaft Graubündens 114: 99-106.
- Hennig W. 1955-1964. Muscidae. In: Lindner E. (ed). Die Fliegen der Palaearktischen Region 63b. Schweizerbart, Stuttgart, 1110 pp.
- Haseyama K.L.F., Wiegmann B.M., Almeida E.A.B. & de Carvalho C.J.B. 2015. Say goodbye to tribes in the new house fly classification: a new molecular phylogenetic analysis and an updated biogeographical narrative for the Muscidae (Diptera). Molecular Phylogenetics and Evolution 89: 1-12.
- Kutty S.N., Pont A.C., Meier R. & Pape T. 2014. Complete tribal sampling reveals basal split in Muscidae (Diptera), confirms saprophagy as ancestral feeding mode, and reveals an evolutionary correlation between instar numbers and carnivory. Molecular Phylogenetics and Evolution 78: 349-364.
- Lyneborg L. 1970. Some Muscidae from Southern Spain, with descriptions of six new species. Steenstrupia 1: 29-54.
- Merz B. 2000. Hilltopping von Dipteren in der alpinen Stufe. Entomologica basiliensis 22: 297-302.
- 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., Bächli G. & Haenni J.-P. 2006. Zweiter Nachtrag zur Checkliste der Diptera der Schweiz. Mitteilungen aus der entomologischen Gesellschaft Basel 56(4): 135-165.
- Merz B. & Pont A.C. 1997. Neue Muscidae (Diptera) für die Fauna der Schweiz. Mitteilungen aus der entomologischen Gesellschaft Basel 47: 38-44.
- Merz B. & Pont A.C. 2001. Weitere Muscidae (Diptera) neu für die Fauna der Schweiz. Mitteilungen aus der entomologischen Gesellschaft Basel 51: 25-32.
- Merz B. & Pont A.C. 2012. Muscidae. In: Merz B. (ed). Liste annotée des insectes (Insecta) du canton de Genève. Instrumenta Biodiversitatis 8: 418-420, Muséum d'histoire naturelle, Genève, 532 pp.
- Michelsen V. & Pont A.C. 2024. Macaronesian Muscidae (Diptera). V. The genera *Phaonia* Robineau-Desvoidy and *Muscina* Robineau-Desvoidy. Zootaxa 5458(4): 581-596.
- Nihei S.S. & de Carvalho C.J.B. 2007. Phylogeny and classification of Muscini (Diptera, Muscidae). Zoological Journal of the Linnean Society 149: 493-532.
- Pont A.C. 1986. Family Muscidae. In: Soós Á. & Papp L. (eds). Catalogue of Palaearctic Diptera. Vol. 11, Scathophagidae – Hypodermatidae: 57-215. Akadémiai Kiadó, Budapest, 346 pp.
- Pont A.C. 2000. Revalidation of *Coenosia ambigua* Ségué, 1923 (Diptera, Muscidae). Studia dipterologica 7: 491-495.

- Pont A.C. 2011. The Muscidae described by J.W. Zetterstedt (Insecta: Diptera). With an appendix by Christer Bergström and Adrian C. Pont. *Zootaxa* 2852: 83.
- Pont A.C. 2012. Muscoidea (Fanniidae, Anthomyiidae, Muscidae) described by P.J.M. Macquart (Insecta, Diptera). *Zoosystema* 34: 39-111.
- Pont A.C. 2014. Fauna Europaea: Muscidae. In: Pape T. (ed). Fauna Europaea: Diptera, Brachycera. Fauna Europaea version 2017.06. <https://fauna-eu.org>.
- Pont A.C. 2022. The genus *Drymeia* Meigen in the Caucasus Mountains, with a note on the identity of *Aspilia glacialis* Rondani, 1866 (Diptera: Muscidae). *Zootaxa* 5134(3): 355-382.
- Pont A.C., Lole M.J., LeBlanc H.N. & Cole J.H. 2007. The American black dump fly *Hydrotaea aenescens* (Wiedemann, 1830) (Diptera, Muscidae) in Britain and Ireland. *Dipterists Digest* (2) 14: 23-29.
- Pont A.C. & Merz B. 1998. 99. Muscidae. In: Merz B., Baechli G., Haenni J.-P. & Gonseth Y. (eds). Diptera - Checklist. *Fauna Helvetica* 1: 323-329. CSCF / SEG, Neuchâtel, 369 pp.
- Pont A.C. & Werner D. 2005. *Coenosia styriaca* Hennig, 1961, neu für Deutschland. *Entomologische Nachrichten* Berlin 49: 63-64.
- Rozkošný R., Gregor F. & Barták M. 2004. Additions and corrections to «The Muscidae (Diptera) of Central Europe», I. In: Bitušík P. (ed). *Diptera bohemoslovaca*. Vol. 12. *Acta Facultatis Ecologiae*, 12, Suppl. 1: 123-127.
- Schiegg K., Obrist M., Duelli P., Merz B. & Ewald K.C. 1999. Diptera and Coleoptera collected in the forest reserve Sihlwald ZH. *Mitteilungen aus der entomologischen Gesellschaft Basel* 72: 289-302.