FAUNA HELVETICA

DIPTERA

CHECKLIST

SEG · info fauna

Jean-Paul Haenni
Gerhard Bächli
Marco Bernasconi
Christophe Dufour
Lisa Fisler
Yves Gonseth
Brigitte Lods-Crozet
Christian Monnerat
Lucia Pollini Paltrinieri (eds)

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FAUNA HELVETICA
35

DIPTERA – CHECKLIST
(updated 2024 edition)

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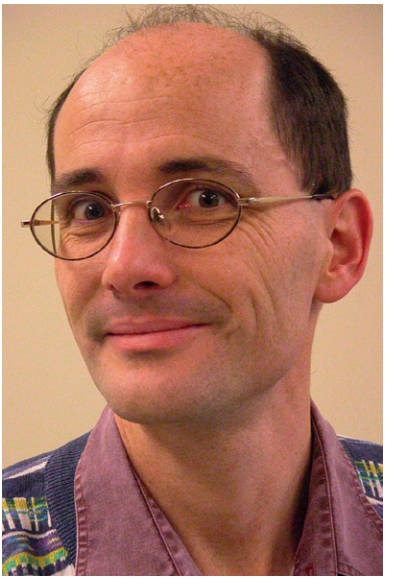
In memoriam Bernard Merz



We dedicate this second version of the Checklist of Diptera of Switzerland with emotion and gratitude to the memory of our dear colleague and friend Bernhard Merz, who passed away in February 2023. Bernhard was the initiator and linchpin of the first checklist issued in 1998. Thanks to his encyclopedic knowledge of so many families of flies, he authored alone or in collaboration with other authors no less than 35 families, representing one third of all families known to occur in Switzerland ! Through his enthusiastic commitment, he brought together many Swiss and foreign specialists to take part in the project. His unwavering demand for quality and meticulous data control ensured the eventual publication of this essential tool, which laid a solid foundation for our knowledge of the fauna of Swiss Diptera.

Foreword

A checklist is by nature a never-finished task, an evolving tool reflecting the state of advancement of knowledge and research efforts. In the first checklist of 1998, 6088 species of Diptera were included. This number grew to 6427 with the first supplement (2002), to 6813 with the second supplement (2006), and to 7068 with the third published supplement (2014). The present updated list includes 7514 species, but this number is evidently still not definitive and does not reflect the total biodiversity of the mega-diverse order Diptera in Switzerland. No doubt, several hundred species remain to be recorded. Several families, some of them important in terms of diversity and number of species, remain poorly known in our country.

Diptera alone probably include one fifth of the total animal biodiversity of Switzerland (32'343 species recorded in 2010, but more than 40'000 estimated) and despite the important role they play in many biological cycles (pollination, decomposition, etc.), the order is still understudied.

Not only new records but also numerous taxonomic and nomenclatural changes have been included in the new checklist, making it an up-to-date tool. More than 55 authors have contributed to the new checklist and once again we are happy to acknowledge the important help of so many foreign dipterists who kindly agreed to deal with the numerous families for which there are no specialists in our country. We are grateful to all the contributors who helped to make the list as complete and as nomenclaturally accurate as possible.

The coordinators are also very grateful to info fauna (previously CSCF), particularly to the former director, Yves Gonseth, who took an active part in the project from its beginning. Thanks to him and to the current info fauna team, the present checklist is hosted on the info fauna website and accessible to everyone. This collaboration is also a guarantee that the list will be maintained and regularly updated in the future.

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Abstract

In 1998 the first complete Checklist of the Diptera of Switzerland was published, followed by three supplements in 2002, 2006, and 2014. After 26 years, the first full update is now published, and freely available online, with the intention of updating it regularly. It has again been a collaborative project in which over 55 authors have taken part. From the 106 families and 6088 species of the first checklist, we are now at 105 families – following systematic changes – and 7514 species, with many newly recorded species for Switzerland. The most important result of this compilation is that 10% of the families are faunistically very well investigated, 60% well investigated, 20% moderately investigated, and 10% poorly to very poorly investigated. This highlights the still insufficient state of knowledge of this large order of insects in Switzerland. A comparison with adjacent countries suggests that 8500-9000 species can actually be expected to occur in the country.
Each family is treated as a separate chapter, with its own bibliography in which key works useful for the identification of Swiss species are listed, as well as faunistic and taxonomic literature.

Abbreviations

Abbreviations used in the checklist

?	the identification of the species is uncertain, or its taxonomic status is not clear.
!	the author(s) of the present checklist, (or the author(s) of the 1998 Checklist) has seen at least one specimen of Swiss provenance.
L	the species is reliably recorded from Switzerland in the literature available.
Nx	Further details are given under Note n° x.
1998 Checklist	Merz B., Bächli G., Haenni J.-P. & Gonseth Y. (eds). 1998. Diptera-Checklist. Fauna Helvetica 1, 369 pp. [pdf downloadable via https://www.infofauna.ch/fr/faune-de-suisse/insectes/dipteres#publications]
S1	Supplement 1 to 1998 Checklist: 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. [pdf downloadable via https://www.infofauna.ch/fr/faune-de-suisse/insectes/dipteres#publications]
S2	Supplement 2 to 1998 Checklist: Merz B., Bächli G. & Haenni J.-P. 2006. Zweiter Nachtrag zur Checkliste der Diptera der Schweiz. Mitteilungen der Entomologischen Gesellschaft Basel 56(4) (2006): 135-165. [pdf downloadable via https://www.infofauna.ch/fr/faune-de-suisse/insectes/dipteres#publications]
S3	Supplement 3 to 1998 Checklist: Bächli, G., Merz, B. & Haenni, J.-P. 2014. Dritter Nachtrag zur Checkliste der Diptera der Schweiz. Entomo Helvetica 7: 119-140. [pdf downloadable via https://www.infofauna.ch/fr/faune-de-suisse/insectes/dipteres#publications]
CPDx	Catalogue of Palaearctic Diptera, Vol. x (Soós & Papp 1984-1993).
CMPDx	Contributions to a Manual of Palaearctic Diptera, Vol. x (Papp & Darvas 1997-2000).
MNDx	Manual of Nearctic Diptera, Vol. x (McAlpine et al. 1981-1989)

Abbreviations used for the collections referred to in the checklist:

BNM	Bündner Natur-Museum, Chur
CAD	Collection Alain Ducommun, Neuchâtel
CAS	California Academy of Sciences, San Francisco
CBM	Collection Bernhard Merz, Zürich, now in BNM
CGB	Collection Gerhard Bächli, Dietikon
CHR	Privatsammlung Hans-Georg Rudzinski, Schwanewede-Meyenburg
CKH	Privatsammlung Kai Heller, Kiel
CKR	Collection Knut Rognes, Stavanger
CRD	Collection R.H.L. Disney, Cambridge
CSP	Collection Sabine Prescher, Braunschweig
CWM	Privatsammlung Werner Mohrig, Greifswald
DEI	Deutsches Entomologisches Insitut, Eberswalde
DZUG	Department of Zoology, University of Gdańsk
EAWAG	Swiss Federal Institute of Aquatic Science and Technology
ETHZ or ETH	Eidgenössische Technische Hochschule, Zürich
HNHM	Hungarian Natural History Museum, Budapest
INRC	Italian National Research Council
IRSNB	Institut royal des Sciences naturelles de Belgique, Bruxelles
LEBA	Laboratoire d'Ecologie et de Biologie Aquatique, now integrated in: Département F.A.Forel des Sciences de l'Environnement et de l'Eau & Institut des Sciences de l'Environnement, Université de Genève
MCSN	Museo cantonale di Storia naturale, Lugano (formerly MSNL)
MHND	Muséum d'Histoire Naturelle, Dijon, France
MHNG	Muséum d'Histoire naturelle, Genève
MHNN	Muséum d'Histoire naturelle, Neuchâtel
MLUH	Zoologisches Institut der Martin-Luther-Universität, Halle/Saale
MNHN	Muséum national d'Histoire naturelle, Paris
MZL	Naturéum, Muséum cantonal des sciences naturelles, Département de zoologie, Lausanne
NHBB	Naturhistorisches Museum der Burgergemeinde Bern
NHM	Natural History Museum, London (= British Museum, Natural History)
NHMB	Naturhistorisches Museum, Basel
NHMD	Natural History Museum of Denmark
NHMW	Naturhistorisches Museum, Wien
NMBE	Naturhistorisches Museum Bern
NML	Museum Luzern
SMFD	Forschungsinstitut und Museum Senckenberg, Frankfurt am Main
SMNS	Staatliches Museum für Naturkunde, Stuttgart
WSL	Swiss Federal Institute for Forest, Snow and Landscape
ZFMK	Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn
ZMHB	Zoologisches Museum, Humboldt-Universität, Berlin
ZMUC	Zoological Museum of University, Copenhagen
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ZSMC	Zoologische Staatssammlung des Bayerischen Staates, München

Generalities

The text of this introductory chapter is based largely on the corresponding chapter of the 1998 Checklist (Merz et al. 1998). Additions, adaptations, and necessary updates covering the 26 years between the present and the 1998 Checklist have been made. In the different family chapters however, the sources for the inclusion of species in the checklist have not always been re-included since the 1998 Checklist and the further supplements. It is therefore still useful and highly recommended to use these works in conjunction with the current checklist. The 1998 Checklist and the supplements are downloadable via https://www.infofauna.ch/fr/faune-de-suisse/insectes/dipteres#publications.

1. Objectives

- To provide as complete a list as possible of all the species so far known from Switzerland, together with information on the origin of new records (literature or species record).
- To evaluate the quality of each family list regarding the number of species expected in the country.
- To compile the most important literature covering faunistic papers and identification keys for the Swiss fauna.
- To pinpoint the gaps in knowledge, thereby providing a basis for future projects.
- To provide a short diagnosis and notes on the biology of each family.

2. Introduction

In terms of numbers of individuals and species, the Diptera (gnats, midges, flies) are the dominant group in most terrestrial and freshwater ecosystems, sometimes together with the Hymenoptera or Coleoptera. They constitute a significant element of biodiversity and interlock with all the trophic structures of every ecosystem. **Phytophagous** species reduce populations of their host plants by feeding on the roots, stems, leaves, flowers, or fruits. Many species are therefore of economic significance in agriculture and forestry. Competitors for human food include *Rhagoletis cerasi* (cherry fly), *Chamaepsila rosae* (carrot fly), and *Delia radicum* (cabbage root fly). Some species have a positive relationship with humans by attacking introduced and undesirable weeds; many of these are already used for biological control. **Carnivores**, **parasites**, and **parasitoids** regulate the abundance of their prey and hosts. Almost all animal groups serve as hosts for these parasitic species, including arthropods, molluscs, amphibians, birds, and mammals. Many of these species are of great importance in human and veterinary medicine. For example, *Anopheles* (vectors of malaria), *Aedes* (vectors of yellow fever), or *Phlebotomus* (vectors of leishmaniasis) are of global medical significance. Though they currently have no medical relevance in Switzerland, they could easily become so again. In Central Europe, domestic animal productivity can be reduced by the activities of Simuliidae (blackflies), Culicidae (mosquitoes), and Oestridae (warble flies). On the other hand, the effects of parasitoids such as Tachinidae on arthropod host populations cannot be overstated. Finally, the vast number of **saprophagous** Diptera species plays a critical role in recycling dead organic material back into the food chain. A rough estimate suggests that one-third of Diptera species fall into each of these feeding categories: phytophage, carnivore/parasite, and saprophage.
Given the great ecological significance of Diptera in basic and applied entomology, one might expect them to be well-researched, for the most important prerequisite for all entomological work is a knowledge of the systematics and distribution of the group under study. However, it must be stated unambiguously that the Diptera together with the Hymenoptera are the least well-studied of the major insect orders in Switzerland. Until the publication of the 1998 Checklist, no comprehensive Swiss faunal list covered all Diptera families, although such lists had long been available for the Coleoptera (Stierlin 1898-1900) and the Lepidoptera (Vorbrodt & Müller-Rutz 1911-1914). This neglect is largely

due to challenges of collecting Diptera and difficulties of identifying them. Faunistic data are essential for many disciplines. In theoretical contexts, they enable conclusions to be drawn on **speciation**, **biogeography**, **evolution** and **the origin of biodiversity**. They provide the basis for **Red lists** which serve as political tools for environmental assessments, the implementation of conservation areas, protective measures or for technical interventions (Duelli 1994). Repeated faunistic surveys reveal **changes** over time in the natural landscape, whether caused by human activity or climatic factors. Flies are the cornerstones of **bioindication** and **biomonitoring**. Moreover, significant environmental changes occurred during the past 25 years, including both the general loss of biodiversity and insect population declines in Europe, mainly driven by human activities. These include changes in agricultural practices, the introduction of new biocides, and the effects of global warming, all of which have led to rapidly shifting faunal compositions. These factors make it especially important and urgent to provide an updated summary of our knowledge of the Swiss Diptera. Some 20% of all indigenous insect species in Switzerland belong to the Diptera, and they have a decisive influence on our living environment. A wave of new dipterists in the country as well as the publication of the Catalogue of Palaearctic Diptera (Soós & Papp 1984-1993) and new European checklists at the time also helped pave the way for the first checklist. Since its publication in 1998, numerous national checklists have been created or updated, including those for:

- The British Isles: Chandler (1998), regularly updated since then at least annually, e.g. Chandler (2024);
- Germany: Schumann et al. (1999, 2002, 2004, 2009), Kehlmaier & Stuke (2023-);
- Poland: Zatwarnicki (2001) (update of the 1991 checklist);
- Hungary: Papp (2001);
- Denmark: Petersen & Meier (2001);
- The Netherlands: Beuk (2002), regularly updated online;
- Spain, Portugal and Andorra: Carles-Tolrá Hjorth-Andersen (2002);
- Italy: Ruffo & Stoch (2005), Bologna et al. (2021);
- Lithuania: Pakalniškis et al. (2006);
- Czech Republic and Slovakia: Jedlička et al. (2009);
- Finland: Kahanpää & Salmela (2014), Haarto et al. (2019), regularly updated online;
- Bulgaria: Hubenov (2021).

The development of a European nomenclatural, systematic and faunistic database project, including all zoological taxa occurring in the continent, culminated in the creation of the *Fauna Europaea* website in 2004, an important tool for scientists and environmentalists. Unfortunately, the cessation of updates and maintenance of the database a decade later significantly weakened the project. As of 2024, the database is temporarily unavailable online. However, an archived 2004 version is accessible through the PESI portal (https://www.eu-nomen.eu/portal/search.php?search=adv), which includes European distribution maps and allows users to generate country-specific species lists. For nomenclatural references, the *Systema Dipterorum* database (http://www.diptera.org/) gives the most authoritative and up-to-date source. Additionally, Oosterbroek's (2006) book provides essential and synthetic information on all European Diptera families, together with an extensive identification key for the Dipteran families. Main facts on systematics, numbers of European genera and species, diagnostic characters, key notes

on biology of adults and immature stages together with a list of annotated identification references are given for each family. Another important source to mention is Martinez (2024) who provides a very extensive identification key to the families at World level, together with an updated list of important references (including for identification) arranged by family, synthetic tables of number of genera and species for each zoogeographic region and a rich iconography.
The next sections begin with a brief account of the history of dipterology in Switzerland, followed by an overview of the entomological collections in Switzerland with notable Diptera holdings. The arrangement of the checklist is then explained, concluding with an evaluation of the results, including an overview of all families.

3. The history of dipterology in Switzerland

This section gives a brief account of dipterology in Switzerland. Other, partly more detailed historical accounts can be found in Keiser (1947) and Dufour et al. (1983).
The development of our knowledge of the Diptera of Switzerland can be divided into four partly overlapping periods.

General entomologists
Those collectors who worked on various insect orders and included Diptera in their studies are assigned to this period. The father of Swiss dipterology was Fuesslin (1775), who included 126 Diptera species in his « Verzeichnis der ihm bekannten Schweizerischen Inseckten ». As his collection is unfortunately no longer in existence, his data cannot be checked. Later generalists were von Heyden (1867), who listed Diptera captures from the Upper Engadine, and Killias (1862), who gave an enumeration of Diptera from the Puschlav. Shortly after this, Dietrich (1871) published a list of 149 Diptera from the vicinity of Zürich, and Tournier (1889/90) gave a list of 242 fly species known from Switzerland with special reference to the vicinity of Geneva. This was followed by papers by Wegelin (1892, 1896) on the insect fauna of St Gallen and Appenzell, in which some 200 Diptera species were listed.

General dipterists
The first dipterist to deal exclusively with the dipterous fauna of Switzerland was J. J. Bremi-Wolf. Although he only published on the Cecidomyiidae (Bremi-Wolf 1847), he formed a large collection (now at ETHZ) which has served as the basis for many subsequent studies. The first comprehensive faunistic list of Diptera was published by Am Stein (1857) for Graubünden canton. 584 species were included, covering the entire order. One of the best-known dipterists, T. Becker, began his career in the Upper Engadine (Becker 1887). His list of 115 species of Brachycera from this region provided an important basis for subsequent investigations. The first attempt at a comprehensive listing of all the Diptera of Switzerland was undertaken by Schoch (1889), whose « Prolegomena zur Fauna Dipterorum Helvetiae » should be regarded as a precursor of the present work. In an admirable manner, he gathered all the available information on Diptera and identified a large number of specimens. He worked particularly intensively on the collections of the MHNG (specimens from Frey-Gessner, Jurine and Buess) and the ETHZ (many specimens

from R. Meyer-Dür, K. Dietrich and G. Huguenin). Only one part of his work was published, covering the Brachycera, Aschiza and Oestridae (22 families) and recording 812 species from Switzerland. Unfortunately, his wish that the « Prolegomena » should serve as the starting-point for more intensive investigations of the Diptera was never fulfilled: « I have far too little material of the Nematocera and Muscidae at my disposal to be able to offer an even approximately complete list of these flies » he wrote (p. 25), and he was fully aware that much more work would be needed before his vision could be fulfilled. His identification keys for various families of the Brachycera, especially the Stratiomyidae, can be seen as a by-product of these endeavours (Schoch 1890). One contemporary of Schoch was the medical doctor G. Huguenin who published a monograph on the Tipulomorpha (Huguenin 1888). Unfortunately, this enthusiastic entomologist published no further works on the Diptera because of his other interests (Coleoptera, Lepidoptera) and his professional duties. The last dipterist at the turn of the century was J. Escher-Kündig, who formed a large collection of Diptera but only published a few short notes. A little later, Jacob (1912) published a short note on the Diptera of the Jura.
The career of F. Keiser, who made a very important collection of Diptera from the National Park and from around Basel, began around 1920. Originally, three volumes of reports on the Diptera of the National Park were planned, but unfortunately only one volume on the Brachycera was ever published (Keiser 1947), which listed 202 species. During the years 1920-1965 there were no other general Diptera specialists in Switzerland apart from Keiser. It is therefore hardly surprising that during this period only a single extensive work on Diptera was produced: O. Ringdahl, a Swedish dipterist, spent several holidays in Switzerland, and he published his results in « Fliegenfunde aus den Alpen » (Ringdahl, 1957). Some 600 species of Diptera in 30 families were recorded from Switzerland. Here, for the second time since Am Stein, it was again mainly the Calyptrates that were worked on. Other works that should be mentioned are by Blöchlinger (1990), who dealt with several Brachycera families from eastern Switzerland, and Tóth (1996a, b) and Tóth & Rezbanyai-Reser (1997), who published local records for various Brachycera and Syrphidae in Switzerland.

Diptera specialists

The increase in knowledge that took place towards the middle of the century, after 1940, was due to research workers in Switzerland restricting themselves to a few families. Before 1980 there were monographic treatments of the Limoniidae, Dixidae and Ptychopteridae by Bangerter (1939, 1943, 1946, 1948); the Tabanidae by Bouvier (1945), Leclercq (1966) and Auroi (1978); the Thaumaleidae by Schmid (1951); the Lonchopteridae by Baud (1973); the Drosophilidae by Burla (1951); the Hippoboscidae on birds by Wegelin (1933); and the Nycteribiidae by Aellen (1955). The Diptera fauna of caves was comprehensively dealt with by Matile (1962) and Papp (1982). It was only around 1970 that Swiss dipterology began to awake from its long slumber. Since then, well over 100 papers have appeared that contain faunistic and taxonomic studies on the Diptera of Switzerland. The monographic revisions published in the series « Insecta Helvetica » are particularly noteworthy: Drosophilidae (Bächli & Burla, 1985), Limoniidae Limoniinae (Geiger, 1986a, b), Tephritidae (Merz, 1994) and Asilidae (Weinberg & Bächli, 1995). With the foundation in 1985 of the « Centre Suisse de Cartographie de la Faune » (CSCF), now « info fauna », an institution was created which had as its goal the systematic inventorying of the animal fauna of Switzerland. Results are published in the series « Documenta Faunistica Helvetiae » (monographic works) and

« Miscellanea Faunistica Helvetiae » (smaller contributions), and two distribution atlases on Diptera have so far appeared, the Tipulidae (Dufour, 1986) and Hippoboscidae (Büttiker, 1993), as well as a faunistical checklist of the Syrphidae (Maibach et al. 1992). Dufour's work (op. cit.) is particularly noteworthy because he discusses the methods for faunistic research in Switzerland in conjunction with the biogeographic regions.
The following dipterists were active at the end of the 20th century in Switzerland: V. Aellen† (Nycteribiidae), Ch. Auroi (Tabanidae), G. Bächli (Drosophilidae and other fly families), H. Briegel (Culicidae), H. Burla† (Drosophilidae), W. Büttiker† (Hippoboscidae), H. G. Dirickx† (Syrphidae), A. Ducommun (several families), C. Dufour (Tipulidae), W. Geiger (Limoniidae), R. Glatthaar† (Simuliidae), P. Goeldlin de Tiefenau (Syrphidae), J.-P. Haenni (Scatopsidae, Bibionidae and other families of the Nematocera and Orthorrhapha), B. Lods-Crozet (Chironomidae), A. Maibach (Syrphidae), W. Matthey† (several families), B. Merz† (Tephritidae and many other fly families), St. Naglis† (Dolichopodidae), L. Pollini Paltrinieri (Dolichopodidae, Periscelididae), G. Raboud† (Culicidae), F. Rampazzi (Dolichopodidae) and C. Vaucher-von Ballmoos (Empididae).
Since the publication of the 1998 Checklist, among the new entomologists active in dipterology in Switzerland (or overlooked in the 1998 Checklist), these authors can be cited: M. Bernasconi (Scathophagidae), H. Blöchlinger (Bombyliidae, Mythicomyiidae), B. Droz (Hippoboscidae), L. Fisler (Syrphidae), E. Flacio (Culicidae), C. Monnerat (Conopidae, Asilidae), G. Pétremand (Asilidae, Syrphidae, Stratiomyidae), P. Rohner (Sepsidae), F. Schaffner (Culicidae), P. Stucki (Blephariceridae, Athericidae).

Dipterists with different research angles
Diptera have been the subject of numerous ecological studies spanning a wide range of topics. While a non-exhaustive selection of works published prior to 1998 is available in the first checklist, it is not currently feasible to compile all relevant studies in this work. Some information is instead integrated directly within the family chapters.

4. Entomological collections in Switzerland

A survey of the location of historic collections in Switzerland is provided to help students orient themselves. The abbreviations used throughout this checklist are indicated in brackets.

Bündner Natur-Museum, Chur (BNM)
Consists of the historic Diptera collection of J. Am Stein (published in 1857) and the collection by F. Keiser from the National Park (ca 30'000 specimens, partly published in 1947). The private collection of B. Merz (CBM) is also deposited in BNM.

Entomological collection of the Eidgenössische Technische Hochschule, Zürich (ETHZ)
Old collections of J. J. Bremi-Wolf (still in the original boxes, generally in poor condition), G. Huguenin (ca 15'000 specimens) and J. Escher-Kündig (ca 20'000 specimens) are preserved here. Also, smaller old collections from R. Meyer-Dür, K. Dietrich, E. Schindler and M. Paul. Subsequent additions are from L. Zürcher (especially Chloropidae), W. Sauter and B. Merz.

Muséum d'Histoire naturelle, Geneva (MHNG)

Contains mainly the small, old collections of E. Frey-Gessner, Jurine, Buess and Maerky. Only the Tabanidae and Oestridae collections of G. Bouvier and the Tachinidae collection are larger. New acquisitions are from B. Lods-Crozet (Chironomidae), C. Besuchet, J. Hamon, J. Steffen and B. Merz.

Muséum d'Histoire naturelle, Neuchâtel (MHNN)

The old collection includes material from E. Piaget from the Jura. Since 1970, considerable efforts have been made by Ch. Dufour, J.-P. Haenni and W. Geiger to build up a comprehensive collection of Diptera. Notes on the collecting sites and methods have been explained in Dufour et al. (1983) and Dufour (1986). Recently, the collection of W. Matthey has been acquired, containing material mainly from the Neuchâtel Jura. B. Droz's collection of Hippoboscidae from birds was also recently deposited in MHNN.

Musée cantonal de Zoologie, Lausanne (MZL), now Naturéum, Muséum cantonal des sciences naturelles, Département de zoologie

The basis of the present comprehensive collection is the material collected around Neuchâtel by B. Jacob. Between 1955 and 1960 a very fine collection of Diptera was assembled by Passello. J. de Beaumont, F. Schmid and J. Aubert collected many Diptera during their investigations, mainly from Vaud canton. The results of this intensive collecting activity and studies on migration at the Col de Bretolet (VS) were summarised by Aubert et al. (1976). Since 1974 the Syrphidae collection has been greatly enlarged by P. Goeldlin and A. Maibach and more recently, the material of different studies carried out in the canton or in the country have also been deposited in the museum. In 2000, a collection of Chironomidae was started on the different biogeographical zones of Switzerland and various environments (streams, ponds and lakes). Most of the specimens are preserved in alcohol and microscopic slides. The collection consists mainly of cantonal, national and research surveys. A collection of typical material resulting from the description of new Swiss and foreign species is also deposited in the museum.

Naturhistorisches Museum der Burgergemeinde, Bern (NHBB)

The foundations of the small Diptera collection were laid by R. Meyer-Dür. Unfortunately, his specimens are without adequate labelling, so this collection is of little more than historic value. Larger collections were made by H. Bangerter (Tipulidae and Limoniidae) and Gansser (Oestridae). Many specimens of more recent date have been donated by E. Obrecht.

Naturhistorisches Museum, Basel (NHMB)

The two collections of Th. Steck and F. Keiser form over 90% of the largest Diptera collection in Switzerland. Steck's specimens are mainly from the Bern region, Wallis and Misox, whilst Keiser collected mainly in the region of Basel, Graubünden and Wallis. The collection of Swiss Diptera numbers over 60'000 specimens.

Natur-Museum, Lucerne (NML), now Museum Luzern
Since 1972 L. Rezbanyai-Reser has been collecting intensively with automatic light traps in Central and Southern Switzerland, in order to compile a faunistic account of the Macrolepidoptera (Rezbanyai, 1977). In the course of this survey, several thousand Diptera have been collected and mounted. Since 1994, S. Tóth (Zirc, Hungary) has been publishing localities for the Syrphidae and other Orthorrhapha families (summaries in Tóth 1996a, b and Tóth & Rezbanyai-Reser 1997). Also important is the Diptera collection of W. Linsenmaier, comprising some 4'500 specimens acquired by the Natur-Museum in 2001. In total, about 37'000 dipteran specimens, mounted, preserved in alcohol or dried, are housed in Lucerne.

Natural History Museum, University of Zurich, Zürich (ZMUZ)
This contains one of the largest collections of Drosophilidae in the world, which has been built up continuously since 1945 by H. Burla and G. Bächli. The private Diptera collection of G. Bächli will be housed there.

Museo cantonale di Storia naturale, Lugano (MCSN)
The collection consists mainly of material collected in Ticino in the course of various surveys, the results of which are often published only in internal reports; most of the specimens are preserved in alcohol. They originate from research carried out at the Bolle di Magadino reserve (L. Pollini Paltrinieri), Fiume Brenno (M. Moretti, L. Pollini Paltrinieri), peat bogs (F. Rampazzi), Syrph the Net analyses (L. Pollini Paltrinieri, B. Koch, I. Forini-Giacalone); much identified material still has to be integrated into the collection. The dry collection consists mainly of specimens collected by L. Rezbanyai-Reser and M. Moretti.

Private collections
The private collections of *G. Bächli (CGB)* in Dietikon and *B. Merz (CBM)* in Zürich are probably currently the largest private Diptera collections in Switzerland and the latter is now deposited in BNM.

5. Arrangement of the checklist

a) Each family is considered as a separate publication. In the future, the families will be updated individually inside the checklist, with the « Last update » month and year being key indicators for each family.

b) For the most part, the limits of families follow the « Catalogue of Palaearctic Diptera » (= CPD), with the following exceptions, already present in the 1998 Checklist:
   - the Pediciidae are treated as a separate family, distinct from the Limoniidae
   - the Macroceridae are included as a subfamily of the Keroplatidae
   - the Pleciidae are included as a subfamily of the Bibionidae
   - the Otitidae is a junior synonym of the Ulidiidae
   - the Neottiophilidae are included in the Piophilidae
   - the Gasterophilidae and Hypodermatidae are included as subfamilies of the Oestridae

Since the publication of 1998 Checklist, the following new changes in high level classification have been introduced, in accordance with recent advances in dipterology:

- *Heterotricha takkae* is included in the Sciaroidea *incertae sedis*
- the Mycetobiidae are included as a subfamily of the Anisopodidae
- the Coenomyiidae are included as a subfamily of the Xylophagidae
- the Mythicomyiidae are treated as a separate family, distinct from the Bombyliidae
- the Microphoridae are included as a subfamily of the Dolichopodidae
- the Brachystomatidae are treated as a separate family, distinct from the Empididae
- some genera of Empididae of controversial placement are included in Empidoidea *incertae sedis*
- the Trixoscelidae are included as a subfamily of the Heleomyzidae
- the Cremifaniidae are included as a subfamily of the Periscelididae
- The Rhinophoridae are included as a subfamily of the Calliphoridae
- The Polleniidae are treated as a separate family, distinct from the Calliphoridae.

The nomenclature for the taxa mostly follows the CPD and/or Fauna Europaea, with other relevant literature referenced in each chapter.

c) Subfamilies (when provided by the authors), genera, subgenera (when provided by the authors) and species are listed alphabetically. Synonyms are given when the species was recorded from Switzerland under a name which differs from the current valid name in use.

d) Authors of each family were asked to give a figure for the number of species known from Europe. The boundaries encompass Europe in the traditional sense, including the European part of Russia (except the Caucasus) but excluding Turkey, Cyprus, and Macaronesian Islands. Each author then decided for which countries to give an approximate figure. Most of these figures originate from a mix of diverse sources combined with author knowledge, and should not be regarded as accurate, but as approximations useful for comparison. Some of the sources used in these sections can be found in Table 2 (p. 24) and some are directly listed in the family chapters.

e) Under the heading « Faunistic knowledge of Switzerland », the following grades have generally been used:
   - very good: exhaustively investigated family, and virtually no species new to Switzerland to be expected.
   - good: local species lists available, and extensive samples present in the collections, with a 10-20% increase in the number of species to be expected from targeted investigations, **or** a very small family with most of the species listed but from only a few specimens
   - moderate: very incomplete list, with few published faunistic lists, and a 20-40% increase in the number of species to be expected
   - poor: only few investigations known to have taken place, few specimens studied, and the number of species listed only about 50% of the number likely to occur
   - very poor: the list includes less than 50% of the number of species likely to occur, and only very few specimens examined for this checklist.

f) Authors were asked to provide a source for every new species listed for Switzerland. Importance was attached to whether authors have seen Swiss specimens themselves (marked with « ! ») or whether a reliable published record is available (marked with « L »). The abbreviations used for this and for collections are explained in the « Abbreviations » part of the introduction (p. 10).

g) Authors could remove species from the list, to list them under « Excluded species » at the end of the list.

h) Under the heading « Notes » authors could give some annotations to the list. These are numbered sequentially within each family. Critical cases such as improbable records, poorly preserved specimens, etc, have been discussed here.

i) All the systematic and faunistic papers used in the compilation of the checklist are included in the reference list. In addition, authors were requested to include identification works which can be used for the Swiss fauna.

j) We recommend that the individual family contributions are cited as follows:
Chandler P.J. 2024. Bolitophilidae (last update: Jul 2024). In: Haenni J.-P., Bächli G., Bernasconi M.V., Dufour C., Fisler L., Gonseth Y., Lods-Crozet B., Monnerat C. & Pollini Paltrinieri L. (eds.) 2024. Diptera – Checklist. Fauna Helvetica 35: 126-127, info fauna & SEG, Neuchâtel.

6. Summary of the results

In Tab. 1 (p. 21) the families are listed in systematic order, along with the number of Swiss species and the state of knowledge in Switzerland. The following families have not yet been recorded from Switzerland but are likely to be found as they are known to occur in neighbouring countries: Curtonotidae, Cryptochaetidae. Two additional families, Axymyiidae and Pachyneuridae, might also occur in Switzerland, although their presence is considered less likely.
The first comprehensive Checklist of the Diptera of Switzerland (1998 Checklist) recorded 6088 species (Merz et al. 1998). Subsequent additions and corrections in S1-S3 (Merz et al. 2002, 2006, Bächli et al. 2014) increased this number to 7068 species. The present checklist enumerates 7514 species. A comparison with the checklists of other European countries (Tab. 2, p. 24) reveals that the Swiss fauna remains insufficiently studied. Based on biogeographic considerations and the checklists from other insect orders, de Beaumont (1947) and Sauter (1974) estimated that Switzerland should host around 9000 species of Diptera. This estimate is supported by the well-documented fauna of the Czech Republic and Slovakia (Jedlická et al. 2009), as a similar number of species to that found in the Czech Republic and Slovakia (i.e. around 8800) is to be expected in Switzerland. Further evidence comes from the development of faunistic studies in Great Britain where the number of recorded species increased from 5218 in 1945 to 7267 in 2024 (Chandler, 2024). Considering the traditionally advanced level of research in the British Isles, it is reasonable to expect 8500-9000 species for Switzerland.

Many species listed in the checklist are known from only a few specimens, often more than 80 years old, and may no longer occur in Switzerland due to the loss of their host plant, host species or habitat. Unless specifically noted under « Notes », such a situation cannot be inferred from the list itself. Additional sources of potential error include accidentally introduced species, sporadic migrants or incorrectly labelled specimens, all of which must be taken into account when interpreting the data.
Although individual authors may differ in their assessment of the state of faunistic knowledge, and while substantial progress has been made since the 1998 Checklist (Table 3), approximately 10% of Diptera families remain poorly to very poorly known. These under-researched families are often highly species-rich, such as Phoridae, Cecidomyiidae, and Sciaridae. Families of minute flies (e.g., Ceratopogonidae) are also poorly documented, as are families for which identification literature is inadequate (e.g., Agromyzidae) or those requiring special collection techniques (e.g., species living in tree canopies or with short-lived adults, such as Oestridae). In contrast, the best-studied families (10% very well investigated, 60% well investigated, 20% moderately investigated) include those in which studies began early in the last century (Tipulidae, Limoniidae, Stratiomyidae, Tabanidae) or families containing large and attractive species (Asilidae, Syrphidae). Families of great economic importance (Culicidae, Tephritidae) or those used in applied research (Drosophilidae in genetics, Syrphidae in nature conservation, Tachinidae in biological control) are also well-studied.

7. List of families and tables

Table 1. Summary of the results: families of Diptera represented in the Swiss fauna, with author(s) of family chapter, number of species recorded so far in Switzerland and evaluation of the state of knowledge.

Family	Author(s)	Number of species (1998 Checklist)	State of knowledge
Trichoceridae	Krzeminska E.	34 (21)	++++
Tipulidae	Dufour C.	155 (151)	++++
Cylindrotomidae	Dufour C.	4 (4)	++++
Pediciidae	Starý J.	36 (34)	++++
Limoniidae	Starý J.	300 (289)	++++
Ptychopteridae	Dufour C.	6 (6)	++++
Blephariceridae	Haenni J.-P.	5 (5)	++++
Psychodidae	Wagner R. & Schaffner F.	79 (61)	++
Dixidae	Wagner R.	9 (9)	++
Chaoboridae	Wagner R.	2 (2)	++
Culicidae	Schaffner F.	41 (35)	+++++
Thaumaleidae	Wagner R.	8 (8)	++
Simuliidae	López-Peña D.	35 (34)	++++
Ceratopogonidae	Szadziewski R.	104 (55)	++
Chironomidae	Lods-Crozet B.	455 (290)	+++
Bibionidae	Haenni J.-P.	24 (24)	++++
Bolitophilidae	Chandler P.J.	18 (18)	++++
Diadocidiidae	Chandler P.J.	3 (3)	+++
Ditomyiidae	Chandler P.J.	3 (3)	++++
Keroplatidae	Chandler P.J.	48 (45)	+++
Mycetophilidae	Chandler P.J.	517 (440)	++++

Family	Author(s)	Number of species (1998 Checklist)	State of knowledge
Sciaridae	Haenni J.-P.	170 (126)	++
Sciaroidea incertae sedis	Chandler P.J.	1 (0)	++++
Cecidomyiidae	Skuhravá M., Jaschhof M. & Roskam H.	257 (237)	+ to +++
Canthyloscelidae	Haenni J.-P.	1 (1)	++++
Scatopsidae	Haenni J.-P.	71 (61)	++++
Anisopodidae (incl. Mycetobiinae)	Haenni J.-P. & Chandler P.J.	11 (11 [7+4])	++++
Xylophagidae (incl. Coenomyiinae)	Haenni J.-P.	4 (4 [3+1])	++++
Vermileonidae	Haenni J.-P.	1 (1)	++++
Rhagionidae	Zeegers T.	28 (31)	++++
Athericidae	Haenni J.-P.	3 (2)	++++
Tabanidae	Zeegers T.	56 (51)	++++
Acroceridae	Weniger R.	7 (8)	+++
Hilarimorphidae	Haenni J.-P.	1 (2)	++++
Xylomyidae	Haenni J.-P.	2 (2)	++++
Stratiomyidae	Haenni J.-P.	70 (63)	++++
Bombyliidae (excl. Mythicomyiidae)	Blöchlinger H.	49 (40)	+++
Mythicomyiidae	Haenni J.-P.	1 (2)	++++
Asilidae	Monnerat C.	106 (103)	++++
Therevidae	Gaimari S.D.	24 (19)	++++
Scenopinidae	Haenni J.-P.	3 (3)	++++
Atelestidae	Haenni J.-P.	3 (2)	++++
Hybotidae	Pollini Paltrinieri L.	199 (184)	+++
Empididae (excl. Brachystomatidae, excl. Empidoidea incertae sedis)	Haenni J.-P.	315 (246 [255-5-4])	+++
Empidoidea incertae sedis	Haenni J.-P.	5 (4)	+++
Brachystomatidae	Haenni J.-P.	5 (5)	+++
Dolichopodidae (incl. Microphorinae)	Pollini Paltrinieri L. & Pollet M.	300 (187 [180+7])	+++
Lonchopteridae	Haenni J.-P.	9 (7)	++++
Phoridae	Haenni J.-P.	216 (184)	++
Opetiidae	Chandler P.J.	1 (1)	++++
Platypezidae	Chandler P.J.	32 (28)	++++
Syrphidae	Fisler L.	495 (453)	++++
Pipunculidae	Claude J.	110 (83)	++++
Pseudopomyzidae	Bächli G.	1 (1)	+++++
Micropezidae	Bächli G.	10 (10)	+++
Tanypezidae	Bächli G.	1 (1)	+++++
Strongylophthalmyiidae	Bächli G.	1 (1)	++++
Megamerinidae	Bächli G.	1 (1)	++++
Psilidae	Shatalkin A.I.	36 (31)	++++
Conopidae	Monnerat C. & Stuke J.-H.	48 (44)	+++
Lonchaeidae	MacGowan I.	49 (31)	++++
Pallopteridae	Ozerov A.L.	15 (15)	++++
Piophilidae	Bächli G.	17 (14)	++++
Ulidiidae	Kameneva E.P.	29 (26)	++++
Pyrgotidae	Korneyev V.A.	1 (1)	++++
Platystomatidae	Bächli G.	4 (4)	++++
Tephritidae	Korneyev V.A.	124 (118)	+++++

Family	Author(s)	Number of species (1998 Checklist)	State of knowledge
Lauxaniidae	Shatalkin A.I.	79 (64)	+++++
Chamaemyiidae (incl. Cremifaniinae)	Gaimari S.D.	37 (33 [32+1])	+++
Dryomyzidae	Bächli G.	3 (3)	+++++
Sciomyzidae	Vala J.-C.	78 (75)	++++
Sepsidae	Rohner P.T.	29 (24)	++++
Clusiidae	Bächli G.	10 (8)	++++
Acartophthalmidae	Bächli G.	3 (2)	+++++
Odiniidae	Gaimari S.D.	8 (8)	++++
Agromyzidae	Černý M.	406 (140)	+++
Opomyzidae	van Zuijlen J.W.A.	17 (13)	+++
Anthomyzidae	Roháček J.	15 (11)	?+++
Aulacigastridae	Mathis W.N.	3 (1)	+++++
Periscelididae (incl. Stenomicrinae)	Pollini Paltrinieri L.	8 (4 [3+1])	++++
Asteiidae	Bächli G.	7 (7)	++++
Milichiidae	Brake I.	18 (17)	++++
Carnidae	Stuke J.-H.	28 (19)	+++++
Braulidae	Bächli G.	1 (1)	++++
Canacidae	Munari L.	1 (0)	+++
Chloropidae	Kubík S.	161 (136)	++++
Heleomyzidae (incl. Trixoscelidinae)	Woźnica A.J.	85 (77 [73+4])	+++
Chyromyidae	Ebejer M.J.	7 (4)	++++
Sphaeroceridae	Gatt P.	117 (108)	+++
Drosophilidae	Bächli G.	75 (65)	++++
Campichoetidae	Chandler P.J.	3 (3)	+++
Camillidae	Bächli G. & Máca J.	5 (2)	++++
Diastatidae	Chandler P.J.	7 (5)	++++
Ephydridae	Zatwarnicki T.	104 (88)	+++
Hippoboscidae	Haenni J.-P.	17 (15)	+++++
Nycteribiidae	Szentiványi T.	11 (11)	+++++
Scathophagidae	Bernasconi M.V. & Šifner F.	58 (45)	+++
Anthomyiidae	Michelsen V. & Grossmann A.	208 (118)	++
Fanniidae	Pont A.C. & Grossmann A.	63 (55)	++++
Muscidae	Pont A.C. & Grossmann A.	298 (218)	++++
Calliphoridae (incl. Rhinophorinae, excl. Polleniidae)	Rognes K., Cerretti P. & Gisondi S.	58 (55 [52+14-11])	++++
Polleniidae	Rognes K., Cerretti P. & Gisondi S.	11 (11)	++++
Sarcophagidae	Whitmore D. & Pape T.	125 (119)	++++
Tachinidae	Cerretti P., Badano D. & Gisondi S.	560 (526)	++++
Oestridae	Pape T. & Whitmore D.	11 (11)	++++

Abbreviations		
	very good	+++++
	good	++++
	moderate	+++
	poor	++
	very poor	+

Table 2. Number of Dipteran species in some European countries

Country	Source	Number of species
Germany	Schumann et al. 1999	ca. 8600*
	Schumann 2009 (update)	9544*
Former Czechoslovakia (Czech Republic and Slovakia)	Ježek 1987	6498
	Chvála 1997	7640
	Jedlička et al. 2009	8816
Czech Republic	Jedlička et al. 2009	7917
Switzerland	Merz et al. 1998 (1998 Checklist)	6088
	Merz et al. 2002 (update S1)	6427
	Merz et al. 2006 (update S2)	6813
	Bächli et al. 2014 (update S3)	7068
	Present checklist	**7514**
Great Britain	Kloet & Hincks 1976	5950
	Chandler 1998	6644
	Chandler 2024 (update)	7267
Finland	Hackmann 1980a,b	4852
	Kahanpää & Salmela 2014	6920
	Haarto et al. 2019 (update)	7027
Slovakia	Jedlicka et al. 2009	6840
Poland	Razowski 1991	6620
	Zatwarnicki 2001 (update)	6721
Italy	Minelli et al. 1995 Ruffo & Stoch 2005 (update)	6552**
Spain (continental)	Carles-Tolrá Hjorth-Andersen 2002	5800
Netherlands	Beuk 2002	4964
	Beuk 2024 (update)	ca. 5500
Hungary	Papp 2001	ca. 5500
Bulgaria	Hubenov 2021	5038
Belgium	Grootaert et al. 1991	4474
Denmark	Petersen & Meier 2001	4361
Ireland	Chandler 1998	2760
	Chandler 2024 (update)	3481
Lithuania	Pakalniškis et al. 2006	3311

*These lists include also species which presence in Germany is probable but that have not been recorded so far. Kehlmaier & Stuke (2023-) started publication of Catalogus dipterorum Germaniae, the new German checklist, by fascicles (each dealing with one family), with presently 30 families published (https://www.ak-diptera.de/catalogus/archiv/)

**These lists include also species which presence in Italy is based on unverified ancient sources. Bologna et al. (2021) provides a partial updated critical list including 5052 species, but only 54 families are dealt with so far (https://www.lifewatchitaly.eu/en/initiatives/checklist-fauna-italia-en/checklist/)

Table 3: State of knowledge of Swiss Diptera

State of knowledge	Number of families (1998)		Number of families (2024)	
+++++	8		11	
++++	47		63	(+1)
+++	27	(+2)	21	(+2)
++	18	(+1)	8	
+	4	(+1)		(+1)

(in brackets state not precisely defined)

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Checklists

Trichoceridae

Ewa Krzemińska (1998 Checklist: Jaroslav Starý & Ewa Krzemińska)
Last update: Jul 2024

Diagnosis: Small to medium (3.5-12.0 mm) cranefly-like nematocerous flies, sexual dimorphism indistinct; females are usually larger than males. Body colour from reddish to black, setosity scarce. Antennae usually long, reaching behind thorax if bent backwards, with 13 flagellomeres; scape and pedicel round; palpi usually as long as head, 5-segmented; first segment very small and barely visible. Tibial spurs 1:2:2. Wing longer than body. Pattern of venation consistent throughout the family; cross vein sc-r about middle of wing; cross vein r-r, R_{2+3+4} and R_{2+3} present; dM_{1+2} present; m-cu at fork of M_{3+4}, A_2 well developed, short to medium, in *Cladoneura* as long as that of some Limoniidae. Three ocelli present; eyes with microtrichia between ommatidia.

Biology: Trichoceridae, or winter gnats, are known for their autumn-winter appearance; several species fly till late spring. Males of most species form characteristic swarms over vegetation; females are usually observed flying just above soil and seeking place for ovipositing. In winter they are commonly met on snow, and hatching may occur also throughout winter. Saprophytous and/or coprophytous larvae of *Trichocera* spend summer in diapause buried deep in soil. Species of C*ladoneura* appear in summer.

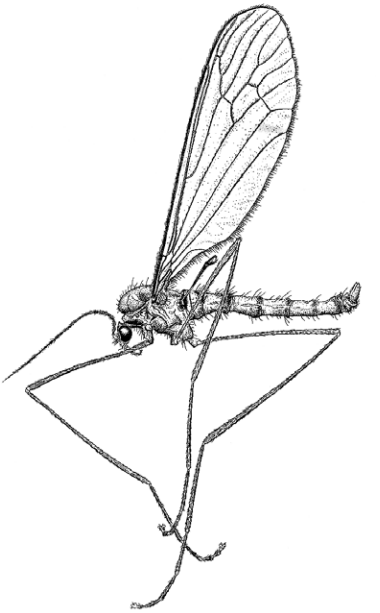
Nomenclature and classification: According to Fauna Europaea (Krzemińska 2013), with addition of a fourth subgenus to *Trichocera*: *T.* (*Staryia*) Krzemińska & Gorzka 2016, with 12 species (Krzemińska 2020).

Number of species: CH: 34 (1998 Checklist: 21),
CZ: 30, DE: 18, FI: 14, FR: 10, GB: 10, HU: 21, LT: 12, PL: 30, RO: 16, SE: 22, SK: 32, Europe: 55, World: ~180.

Level of faunistic knowledge in Switzerland: Good.

General references: Dahl (1965, 1969, 1970) [behaviour, adaptations], Dahl & Alexander (1976) [world catalogue of Trichoceridae to 1976], Dahl & Krzemińska (1997) [general biology], Hågvar & Krzemińska (2008) [biology, life under snow], Krzemińska & Gorzka (2016) [ventral receptacle in *Staryia*], Krzemińska et al. (2009) [evolution, phylogeny], Starý (1999) [key to *saltator* related species].

References to the Swiss fauna: Krzemińska (2000, 2013, 2021) [Fauna Europaea], Starý (2000), Starý & Krzemińska (1998, 2000), Starý & Martinovský (1996), Starý & Podenas (1995).



Trichocera annulata,
male (CMPD2, p. 228).

Checklist

Cladoneura Scudder, 1864 N1
- *hirtipenne* (Siebke, 1863) !

Trichocera Meigen, 1803
(*Metatrichocera* Dahl, 1966)
- *candida* Dahl, 1976 !
- *forcipula* Nielsen, 1920 !
- *lutea* Becher, 1886 !
  = *stecki* Bangerter, 1948
- *ticina* Starý & Podenas, 1995 !

(*Saltrichocera* Krzemińska, 2002)
- *alpina* Starý, 2000 ! N2
- *annulata* Meigen, 1818 !
- *antennata* Starý, 1999 ! [1]
- *brevis* Krzemińska, 2002 ! [2]
- *dahlae* Mendl, 1971 !
- *hirta* Starý & Martinovský, 1996 ! [3]
- *implicata* Dahl, 1976 !
- *maculipennis* Meigen, 1818 !
- *michali* Krzemińska, 1999 ! [4]
- *montium* Starý, 2001 ! [5]
- *mutica* Dahl, 1966 !
- *obtusa* Starý & Martinovský, 1996 !
- *pappi* Krzemińska, 2003 ! [6]
- *parva* Meigen, 1804 !
- *pubescens* Starý & Martinovský, 1996 ! [7]

- *recondita* Starý, 2000 ! N2
- *regelationis* (Linnaeus, 1758) !
- *rufescens* Edwards, 1921 !
- *rufulenta* Edwards, 1938 !
- *saltator* (Harris, 1776) !
- *simonyi* Mik, 1886 ! N3
  = *tenuistylus* Starý & Geiger, 1995 N4
- *sparsa* Starý & Martinovský, 1996 !
- *thaleri* Starý, 2000 ! [8]

(*Staryia* Krzemińska & Gorzka, 2016)
- *altipons* Starý, 1998 ! [9]
- *dufouri* Krzemińska, 2020 ! [10]
- *geigeri* Starý & Krzemińska, 2000 ! N5

(*Trichocera* s.str.)
- *hiemalis* (De Geer, 1776) !
- *inexplorata* (Dahl, 1967) !
- *major* Edwards, 1921 !

Notes

N1 *Diazosma* is a younger synonym of *Cladoneura* Scudder.
N2 Specimens of *Trichocera alpina* and *T. recondita* are listed in Starý (2000), including paratypes.
N3 *Trichocera simonyi* is listed in Krzemińska (2000).
N4 *Saltrichocera tenuistylus* was synonymised with *Saltrichocera simonyi* by Krzemińska (2000).
N5 *Trichocera geigeri* was transferred from *Trichocera* (*Trichocera*) to *T.* (*Staryia*).

Species records

[1] ZH, Birmensdorf, Pt 676, 13.10.1980, 676 m., leg. Christophe Dufour (MHNN)
[2] UR, Altdorf, 9.1983, leg. Ladislaus Rezbanyai-Reser
[3] NE, Couvet, 26-27.10.1984, 780 m., leg. J-P. Jeanneret (MHNN)
[4] NE, Rochefort 780 m, 29.11.1982, 780 m., leg. Christophe Dufour (MHNN)
[5] LU, Rigi, 10.1980, leg. Christophe Dufour (MHNN)
[6] TI, Generoso, 9.9.1970, leg. Ladislaus Rezbanyai-Reser
[7] NE, Rochefort Château 780 m, 3.11.1982, 780 m., leg. Christophe Dufour (MHNN)
[8] TI, Osco, Nei Pini, 24.9.1992, 2016 m., leg. Willy Geiger (MHNN)
[9] ZH, Birmensdorf, Pt 676, 13.10.1980, 676 m., leg. Christophe Dufour (MHNN)
[10] ZH, Birmensdorf, Pt 676, 13.10.1980, 676 m., leg. Christophe Dufour (MHNN)

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Tipulidae

Christophe Dufour (1998 Checklist: Christophe Dufour)
Last update: Jul 2024

Diagnosis: Medium to large-sized, slender-bodied flies (body length exceptionally up to 60 mm, wing length up to 40 mm). Adults are distinguished by the following combination of characters: elongate maxillary palps, the last segment usually being longer than the combined length of the preceding segments. Usually 13 antennal segments. Rostrum well developed and often with nasus. Compound eyes large, separated and bare. Ocelli absent. Thorax with a transverse V-shaped mesonotal suture. Wings elongate with 2 anal veins reaching wing margin. Vein Sc usually ending in R (not in C). No short cross vein proximal to tip of Sc. Cell m-1 (discal cell) usually present. Females sometimes with reduced wings. Legs very long and slender. Tibiae without or with 1 or 2 apical spurs. Abdomen long and slender. Male terminalia (hypopygium) with a variety of characteristic features. Female terminalia (ovipositor) including 2 pairs of elongate valves (cerci and hypovalvae)(Oosterbroek et al. 2007).

Biology: Some species have aquatic larvae but usually the larvae live in semi-aquatic or terrestrial environments, such as along streams, lakes, ponds, or marshes, in moist to wet cushions of mosses or liverworts, wood or sodden logs in various stages of decay, leaf litter, mud, sandy or gravelly riversides, dry soils of pasturelands, lawns, steppes and even semi-deserts (after Oosterbroek et al. 2007). The spectacular members of the subfamily Ctenophorinae are mimics of ichneumons and wasps. The long and vicious-looking ovipositor of some species appear as going to sting when picked up. But these species which represent a significant conservation element of the saproxylic fauna are of course harmless (Stubbs 2021). Because of their abundance and their size, Tipulidae are of great ecological importance as food for numerous vertebrates, insects and spider species. In the Swiss Alps, White-winged Snowfinches, *Montifringilla nivalis nivalis* (Linnaeus), feed their nestlings during breeding season predominantly with larvae from Tipulidae which are especially nutritious (Heiniger 1991). The highest known altitude for a crane fly in the Swiss Alps is 3100 m (Dufour 1992).

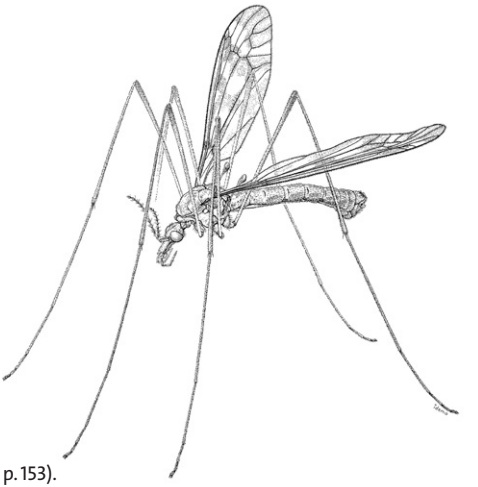
Nomenclature and classification: According to Oosterbroek (2023).

Number of species: CH: 155 (1998 Checklist: 151),
AT: 145, BE: 98, CZ: 128, DE: 142, FR: 185, GB: 87, HU: 81, IT: 182, NL: 89, Europe: 521, World: 4483 (Kolcsar et al. 2023, Oosterbroek 2023).

Level of faunistic knowledge in Switzerland: Good. Another ten species can be expected.

General references: Oosterbroek (2023).

References to the Swiss fauna: Bächli et al. 2014, Dufour (1986, 1991, 1992, 1994, 1998), Dufour & Brunhes (1984), Dufour et al. (2020), Huguenin (1888), Merz et al. (2002), Tillier et al. (2020), Weibel & Kessler (2021).



Tipula trivittata,
male, not present in Switzerland (MND1, p. 153).

Checklist

Ctenophorinae

Ctenophora Meigen, 1804
(*Cnemoncosis* Enderlein, 1921)
- *elegans* Meigen & Wiedemann, 1818 ! N1 [1]
- *festiva* Meigen, 1804 !
- *ornata* Meigen & Wiedemann, 1818 !

(*Ctenophora* s.str.)
- *flaveolata* (Fabricius, 1794) !
- *guttata* Meigen & Wiedemann, 1818 !
- *pectinicornis* (Linnaeus, 1758) !

Dictenidia Brullé, 1833
- *bimaculata* (Linnaeus, 1760) !

Tanyptera Latreille, 1804
(*Tanyptera* s.str.)
- *atrata* (Linnaeus, 1758) !
- *nigricornis* (Meigen, 1818) !

Dolichopezinae

Dolichopeza Curtis, 1825
(*Dolichopeza* s.str.)
- *albipes* (Ström, 1768) !
- *bifida* Oosterbroek & Lantsov, 2011 !
- *nitida* Mik, 1874 ! N2 [2]

(*Oropeza* Needham, 1908)
- *modesta* (Savchenko, 1980) !

Tipulinae

Nephrotoma Meigen, 1803
- *aculeata* (Loew, 1871) !
- *analis* (Schummel, 1833) !
- *appendiculata appendiculata* (Pierre, 1919) !
- *appendiculata pertenua* Oosterbroek, 1978 !
- *austriaca* (Mannheims & Theowald, 1959) !
- *cornicina* (Linnaeus, 1758) !
- *crocata* (Linnaeus, 1758) !
- *croceiventris lindneri* (Mannheims, 1951) !
- *dorsalis* (Fabricius, 1781) !
- *euchroma* (Mik, 1874) !
- *flavescens* (Linnaeus, 1758) !
- *flavipalpis* (Meigen, 1830) !
- *guestfalica* (Westhoff, 1879) !
- *helvetica* (Mannheims & Theowald, 1959) !
- *lamellata* (Riedel, 1910) !
- *lunulicornis* (Schummel, 1833) !
- *pratensis* (Linnaeus, 1758) !
- *quadrifaria* (Meigen, 1804) !
- *quadristriata* (Schummel, 1833) !
- *scalaris* (Meigen, 1818) !
- *scurra* (Meigen, 1818) !
- *submaculosa* Edwards, 1928 !
- *tenuipes* (Riedel, 1910) !

Nigrotipula Hutson & Vane-Wright, 1969
- *nigra* (Linnaeus, 1758) !

Prionocera Loew, 1844
- *pubescens* Loew, 1844 !
- *turcica* (Fabricius, 1787) !

Tipula Linnaeus, 1758

(*Acutipula* Alexander, 1924)
- *bosnica* Strobl, 1898 !
- *fulvipennis* De Geer, 1776 !
- *luna* Westhoff, 1879 !
- *maxima* Poda, 1761 !
- *vittata* Meigen, 1804 !

(*Beringotipula* Savchenko, 1961)
- *unca* Wiedemann, 1817 !

(*Dendrotipula* Savchenko, 1964)
- *flavolineata* Meigen, 1804 !

(*Emodotipula* Alexander, 1965)
- *gomina* Dufour, 2003 ! N3 [3]
- *obscuriventris* Strobl, 1900 !
- *saginata* Bergroth, 1891 !

(*Lindnerina* Mannheims, 1965)

- *bistilata* Lundström, 1907 !

(*Lunatipula* Edwards, 1931)

- *adusta* Savshenko, 1954 !
- *affinis* Schummel, 1833 !
- *alpina* Loew, 1873 !
- *bezzii* Mannheims & Theowald, 1959 !
- *bullata* Loew, 1873 !
- *circumdata* Siebke, 1863 !
- *falcata* Riedel, 1913 !
- *fascingulata* Mannheims, 1966 !
- *fascipennis* Meigen, 1818 !
- *handschini* Mannheims, 1967 !
- *helvola* Loew, 1873 !
- *heros* Egger, 1863 !
- *laetabilis* Zetterstedt, 1838 !
- *limitata* Schummel, 1833 !
- *livida* van der Wulp, 1859 !
- *longidens* Strobl, 1909 !
- *lunata* Linnaeus, 1758 !
- *magnicauda* Strobl, 1895 !
- *peliostigma* Schummel, 1833 !
- *pilicauda* Pierre, 1922 !
- *selene* Meigen, 1830 !
- *truncata* Loew, 1873 !
- *vernalis* Meigen, 1804 !
- *verrucosa* Pierre, 1919 !
- *xyrophora* Theischinger, 1977 !

(*Mediotipula* Pierre, 1924)

- *mikiana* Bergroth, 1888 !
- *sarajevensis* Strobl, 1898 !
- *siebkei* Zetterstedt, 1852 !
- *stigmatella* Schummel, 1833 !

(*Odonatisca* Savchenko, 1956)

- *nodicornis* Meigen, 1818 !

(*Platytipula* Matsumura, 1916)

- *luteipennis agilis* Dufour & Brunhes, 1984 !
- *luteipennis luteipennis* Meigen, 1830 !
- *melanoceros* Schummel, 1833 !

(*Pterelachisus* Rondani, 1842)

- *apicispina* Alexander, 1933 !
- *austriaca* (Pokorny, 1887) !
- *berteii* (Rondani, 1842) !
- *bilobata* Pokorny, 1887 !
- *cinereocincta* Lundström, 1907 !
- *glacialis* (Pokorny, 1887) !
- *irregularis* (Pokorny, 1887) !

- *irrorata* Macquart, 1826 !
- *luridorostris* Schummel, 1833 !
- *mayerduerii* Egger, 1863 !
- *neurotica* Mannheims, 1966 !
- *pabulina* Meigen, 1818 !
- *padana* Dufour, 1981 !
- *pseudocrassiventris* Theowald, 1980 !
- *pseudoirrorata* Goetghebuer, 1921 !
- *pseudopruinosa* Strobl, 1895 !
- *pseudovariipennis* Czizek, 1912 !
- *sauteri* Dufour, 1982 !
- *subglacialis* Mannheims & Theowald, 1959 !
- *submarmorata* Schummel, 1833 !
- *trifascingulata* Theowald, 1980 !
- *truncorum* Meigen, 1830 !
- *varipennis* Meigen, 1818 !
- *winthemi* Lackschewitz, 1932 !

(*Savtshenkia* Alexander, 1965)

- *alpium* Bergroth, 1888 !
- *benesignata* Mannheims, 1954 !
- *breviantennata* Lackschewitz, 1933 !
- *cheethami* Edwards, 1924 !
- *confusa* van der Wulp, 1884 !
- *gimmerthali* Lackschewitz, 1925 !
- *goriziensis* Strobl, 1893 !
- *grisescens* Zetterstedt, 1851 !
- *interserta* Riedel, 1913 !
- *invenusta subinvenusta* Slipka, 1950 !
- *limbata* Zetterstedt, 1838 !
- *nielseni* Mannheims & Theowald, 1959 !
- *obsoleta* Meigen, 1818 !
- *pagana* Meigen, 1818 !
- *pechlaneri* Mannheims & Theowald, 1959 !
- *rufina* Meigen, 1818 !
- *serrulifera* Alexander, 1942 !
- *signata* Staeger, 1840 !
- *subnodicornis* Zetterstedt, 1838 !
- *subsignata* Lackschewitz, 1933 !
- *subvafra* Lackschewitz, 1936 !
- *tulipa* Dufour, 1983 !

(*Schummelia* Edwards, 1931)

- *variicornis* Schummel, 1833 !
- *zernyi* Mannheims, 1952 !
- *zonaria* Goetghebuer, 1921 !

(*Tipula* s.str.)

- *italica* Lackschewitz, 1930 !

- *oleracea* Linnaeus, 1758 !
- *orientalis* Lackschewitz, 1930 !
- *paludosa* Meigen, 1830 !
- *subcunctans* Alexander, 1921 !

(*Vestiplex* Bezzi, 1924)

- *cisalpina* Riedel, 1913 !
- *crolina* Dufour, 1992 !
- *excisa* Schummel, 1833 !
- *hemiptera strobliana* Mannheims, 1966 !
- *hortorum* Linnaeus, 1758 !
- *montana* Curtis, 1834 !
- *nubeculosa* Meigen, 1804 !
- *pallidicosta* Pierre, 1924 !
- *scripta* Meigen, 1830 !

(*Yamatotipula* Matsumura, 1916)

- *caesia* Schummel, 1833 !
- *couckei* Tonnoir, 1921 !
- *italia* Theowald, Dufour & Oosterbroek, 1982 ! N4
  - = *afriberia italia* Theowald, Dufour & Oosterbroek, 1982
  - = *montium italia* Theowald, Dufour & Oosterbroek, 1982
- *lateralis* Meigen, 1804 !
- *marginella* Theowald, 1980 !
- *montium* Egger, 1863 !
- *pierrei* Tonnoir, 1921 !
- *pruinosa* Wiedemann, 1817 !
- *submontium* Theowald, 1981 !

Notes

N1 First evidence for Switzerland of *Ctenophora elegans* Meigen & Wiedemann, 1818 based on the photography by Daniel Kessler of one male in a partly overgrown garden with old fruit trees, including sour cherries (Weibel & Kessler 2021).

N2 *Dolichopeza nitida* Mik, 1874 which turned out to be the same as *Dolichopeza graeca* Mannheims, 1954 is reported for the first time from Switzerland (Tessin); *Dolichopeza nitida* sensu authors, also present in Switzerland, represents a different species described as *Dolichopeza bifida* by Oosterbroek and Lantsov (2011). Unpublished data.

N3 Several females of *Tipula* (*Emodotipula*) captured in Switzerland in 1982 and 1990 and illustrated as « unusual type » (Dufour 1991) have been identified as *Tipula* (*Emodotipula*) *gomina* (Tillier et al. 2020), a new species for Switzerland.

N4 *Tipula* (*Yamatotipula*) *italia*, previously a subspecies *T. (Y.) afriberia italia* was elevated to species level by Hancock (2020).

Species records

[1] 1M, SH, Schaffhausen, Munot, Emmersberg, 27.4.2007, 460 m., leg. Daniel Kessler

[2] 1M, TI, Monte Ceneri, 26.6.1979, 540 m., leg. Willy Geiger (MHNN)

[3] 1F, VS, Monthey, Les Giettes, 16.06.1982, 1250 m., leg. Christophe Dufour

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Cylindrotomidae

Christophe Dufour (1998 Checklist: Christophe Dufour)
Last update: Jul 2024

Diagnosis: Cylindrotomidae, a sister group of Tipulidae with only seven species in Europe, represent the smallest family of the Tipulomorpha characterised by long antennae of males with 16 cylindrical segments, short wings and long abdomen. The common name of damsel craneflies refers to the same combination of short wings and long abdomen found in damselflies Odonata (Stubbs 2021).

Biology: Larvae are phytophagous, living on mosses or herbaceous plants, but not in a substrate as those of Tipulidae, Limoniidae and Pediciidae. The immature stages of *Phalacrocera replicata* and *Triogma trisulcata* are truly aquatic, while those of *Cylindrotoma* and *Diogma* are terrestrial (Brinkmann 1997).

Nomenclature and classification: According to Oosterbroek (2023).

Number of species: CH: 4 (1998 Checklist: 4),
AT: 4, BE: 4, DE: 4, FR: 4, GB: 4, IT: 3, NL: 4, Europe: 7, World: 76.
(Kolcsar et al. 2023, Oosterbroek 2023.)

Level of faunistic knowledge in Switzerland: Good.

General references: Oosterbroek (2023), Peus (1952).

References to the Swiss fauna: Dufour (1998), Huguenin (1888).

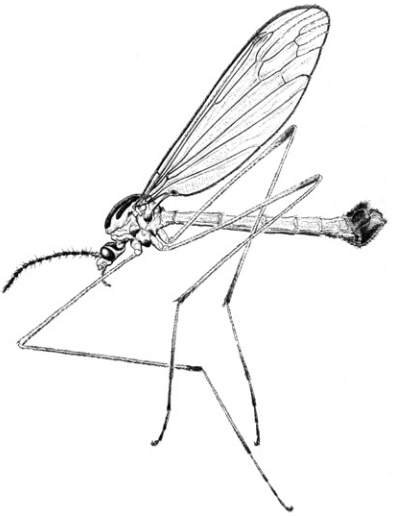
Checklist

Cylindrotoma Macquart, 1834
- *distinctissima* (Meigen, 1818) !

Diogma Edwards, 1938
- *glabrata* (Meigen, 1818) !

Phalacrocera Schiner, 1863
- *replicata* (Linnaeus, 1758) !

Triogma Schiner, 1863
- *trisulcata* (Schummel, 1829) !



Cylindrotoma distintissima,
male (CMPD1, p.164).

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Pediciidae

Jaroslav Starý (1998 Checklist: Jaroslav Starý & Willy Geiger)
Last update: Dec 2020

Diagnosis: Medium-sized to large species, with a maximum wing length of 25 mm (*Pedicia*). Characterised by pubescent eyes and spurred tibiae in combination with certain venational features, such as Sc_2 retracted before origin of Rs and four-branched media. Rostrum short, without nasus; ocelli absent; antenna with 12-17 segments; wing with two anal veins, in some cases with characteristic markings (*Pedicia*). Exceptionally, wings reduced in female, both sexes or even in male only (*Dicranota*).

Biology: The larvae are predominantly aquatic or semiaquatic, preying on oligochaetes, mites, insect larvae or other invertebrates. The larvae of the genus *Ula* are mycetophagous. In general, adults occupy similar habitats as Limoniidae, but a considerable proportion of the species are found along rapidly flowing mountain streams.

Nomenclature and classification: According to the Catalogue of the Craneflies of the World (Oosterbroek 2020).

Number of species: CH: 36 (1998 Checklist: 34),
AT: 40, BE: 16, CZ: 40, DE: 37, FR: 32, GB: 20, HU: 15, IT: 37, NL: 12, Europe: 73, World: 525.

Level of faunistic knowledge in Switzerland: Good, a few other species may be discovered.

General references: Oosterbroek (2020) [catalogue].

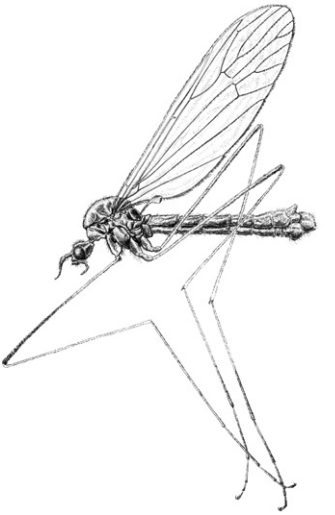
References to the Swiss fauna: Starý & Geiger (1998), Merz et al. (2002, 2006), Bächli et al. (2014).

Checklist

Dicranota Zetterstedt, 1838
(*Dicranota* s.str.)
- *bimaculata* (Schummel, 1829) !
- *guerini* Zetterstedt, 1838 L

(*Ludicia* Hutson & Vane-Wright, 1969)
- *lucidipennis* (Edwards, 1921) !

(*Paradicranota* Alexander, 1934)
- *brevicornis* Bergroth, 1891 !
- *brevitarsis* Bergroth, 1891 !
- *candelisequa* Starý, 1981 !
- *capillata* Lackschewitz, 1940 !
- *cinerascens* Lackschewitz, 1940 !



Tricyphona immaculata,
male (CMPD1, p. 168).

- *flammatra* Starý, 1981 !
- *fuscipennis* Lackschewitz, 1940 !
- *gracilipes* Wahlgren, 1905 !
- *lackschewitziana* Mendl, 1988 !
- *landrocki* Czizek, 1931 L
- *minuta* Lackschewitz, 1940 !
- *pallens* Lackschewitz, 1940 !
- *pavida* (Haliday, 1833) !
  = *longitarsis* Bergroth, 1891
- *simulans* Lackschewitz, 1940 !
- *subtilis* Loew, 1871 !

Pedicia Latreille, 1809
(*Amalopis* Haliday, 1856)
- *fusca* Ujvarosi & Balint, 2012 !
- *occulta* (Meigen, 1830) !

(*Crunobia* Kolenati, 1859)
- *littoralis* (Meigen, 1804) !
- *riedeli* (Lackschewitz, 1940) !
- *straminea* (Meigen, 1838) !
- *tjederi* Mendl, 1974 !

(*Pedicia* s.str.)
- *rivosa* (Linnaeus, 1758) !

Tricyphona Zetterstedt, 1837
(*Tricyphona* s.str.)
- *alpigena* (Strobl, 1909) !
- *alticola* Strobl, 1909 !
- *contraria* Bergroth, 1888 !

- *immaculata* (Meigen, 1804) !
- *livida* Madarassy, 1881 !
- *schummeli* Edwards, 1921 !
- *unicolor* (Schummel, 1829) !

Ula Haliday, 1833

(*Ula* s.str.)

- *bolitophila* Loew, 1869 !
- *mixta* Starý, 1983 !
- *mollissima* Haliday, 1833 !
- *sylvatica* (Meigen, 1818) !

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Starý & Geiger. 1998. 6. Pediciidae. In: Merz B., Baechli G., Haenni J.-P. & Gonseth Y. (eds). Diptera - Checklist. Fauna Helvetica 1: 81-82. CSCF / SEG, Neuchâtel, 369 pp.

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Limoniidae

Jaroslav Starý (1998 Checklist: Jaroslav Starý & Willy Geiger)
Last update: Dec 2020

Diagnosis: One of the most species-rich families of Diptera. Slender flies with elongate, rather narrow wings and very long legs. Diverse in many respects including size, ranging from about 2 mm (*Tasiocera*) to over 20 mm (*Eutonia*). Diagnosed by certain peculiarities in structure of thoracic sclerites and male terminalia. Rostrum usually short and always without nasus (greatly elongate in *Elephantomyia*, less so in *Helius*); ocelli absent; antenna usually with 14-16 segments (6 segments in *Hexatoma*); wing with two anal veins, in some cases with characteristic markings. Exceptionally wings reduced in females (e.g. *Prionolabis*, some *Idioptera* and *Phylidorea*) or in both sexes (*Chionea*).

Biology: The larvae usually occur in water, waterlogged soil, under damp leaf mould, in decaying wood, fungi, or similar substrates. A few genera, or individual species, live in hygropetric situations and feed on algae (e.g. *Dactylolabis*). A considerable proportion of the larvae are phytosaprophagous, but some may exceptionally affect living plant tissue. Some species are mycetophagous (*Metalimnobia*), or predatory (subfamily Limnophilinae). Like their larvae, the adults are predominantly associated with moist environments and are usually found in low vegetation alongside streams, lakes and other water bodies, in swamps and marshes of various types, in damp forests, and similar habitats.

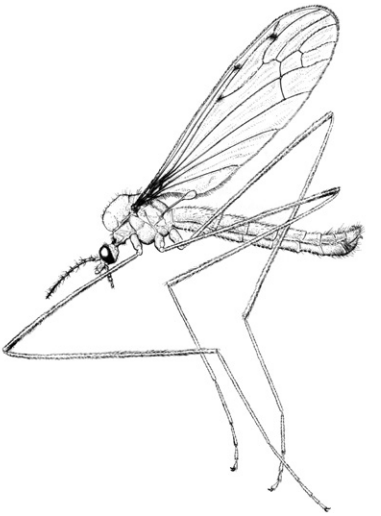
Nomenclature and classification: According to the Catalogue of the Craneflies of the World (Oosterbroek 2020).

Number of species: CH: 300 (1998 Checklist: 289),
AT: 276, BE: 165, CZ: 300, DE: 292, FR: 269, GB: 227, HU: 162, IT: 274, NL: 153, Europe: 661, World: 11'087
(Oosterbroek 2020)

Level of faunistic knowledge in Switzerland: Good, yet a number of species is certainly to be discovered.

General references: De Jong & Ciliberti (2014), Oosterbroek (2020), Podeniene & Gelhaus (2014, 2017), Starý (2006, 2007, 2011, 2019), Starý & Reusch (2009), Starý & Stubbs (2011).

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



Limonia phragmitidis,
male (CMPD1, p. 170).

Checklist

Chioneinae

Arctoconopa Alexander, 1955
- *melampodia* (Loew, 1873) !

Cheilotrichia Rossi, 1848
(*Cheilotrichia* s.str.)
- *cinerea* (Strobl, 1898) !
- *fully* Podenas & Geiger, 2000 !
- *imbuta* (Meigen, 1818) !
- *monstrosa* Bangerter, 1947 L

(*Empeda* Osten Sacken, 1869)
- *affinis* (Lackschewitz, 1927) !
- *alpina* (Strobl, 1895) !
  = *caerulea* Starý, 1987 N1
- *cinerascens* (Meigen, 1804) !
- *minima* (Strobl, 1898) !
- *neglecta* (Lackschewitz, 1927) !
- *staryi* Mendl, 1973 !

Chionea Dalman, 1816 N2
- *alpina* Bezzi, 1908 !
- *araneoides* Dalman, 1816 !
- *belgica* (Becker, 1912) !
- *lutescens* Lundström, 1907 !
  = *besucheti* (Bourne, 1979)

Crypteria Bergroth, 1913
(*Crypteria* s.str.)
- *limnophiloides* Bergroth, 1913 !

Ellipteroides Becker, 1907
(*Ellipteroides* s.str.)
- *lateralis* (Macquart, 1835) !
  = *pseudolateralis* Bangerter, 1947

(*Protogonomyia* Alexander, 1934)
- *adrastea* Starý & Mendl, 1984 !
- *alboscutellatus* (von Roser, 1840) !
  = *ater* (Huguenin, 1888)
- *limbatus* (von Roser, 1840) !
  = *huguenini* Bangerter, 1947

Erioconopa Starý, 1976
- *diuturna* (Walker, 1848) !
- *symplectoides* Kuntze, 1914 !
- *trivialis* (Meigen, 1818) !

Erioptera Meigen, 1803
(*Erioptera* s.str.)
- *aletschina* Starý, 1997 !
- *divisa* (Walker, 1848) !
- *flavata* (Westhoff, 1882) !
  = *flavescens* Meigen, 1804
  = *gemina* Tjeder, 1967
- *fuscipennis* Meigen, 1818 !
- *fusculenta* Edwards, 1938 !
- *griseipennis* Meigen, 1838 !
- *limbata* Loew, 1873 L
- *lutea* Meigen, 1804 !
- *meijerei* Edwards, 1921 !
- *nielseni* de Meijere, 1921 !
- *pederi* Tjeder, 1969 !
- *sordida* Zetterstedt, 1838 !
- *verralli* Edwards, 1921 !
  = *nigripalpis* Goetghebuer in Goetghebuer & Tonnoir, 1920

Gnophomyia Osten Sacken, 1860
- *lugubris* (Zetterstedt, 1838) !
  = *tripudians* Bergroth, 1891
- *viridipennis* (Gimmerthal, 1847) !

Gonempeda Alexander, 1924
- *flava* (Schummel, 1829) !

Gonomyia Meigen, 1818
(*Gonomyia* s.str.)
- *abscondita* Lackschewitz, 1935 ! N3
- *bifida* Tonnoir in Goetghebuer & Tonnoir, 1920 !
- *conoviensis* Barnes, 1924 !

- *dentata* de Meijere, 1920 !
- *hippocampi* Stubbs & Geiger, 1993 !
- *lucidula* de Meijere, 1920 !
  = *lobifera* Bangerter, 1947
  = *microdentata* Bangerter, 1947
- *recta* Tonnoir in Goetghebuer & Tonnoir, 1920 !
- *securiformis* Starý, 2011 !
- *simplex* Tonnoir in Goetghebuer & Tonnoir, 1920 !
- *tenella* (Meigen, 1818) !
  = *symmetrica* Bangerter, 1947

(*Prolipophleps* Savchenko, 1972)
- *abbreviata* Loew, 1873 !
- *divergens* Bangerter, 1947 L
- *reducta* Bangerter, 1947 !

(*Teuchogonomyia* Alexander, 1968)
- *edwardsi* Lackschewitz, 1925 !
- *ithyphallus* Lackschewitz, 1935 !

Hoplolabis Osten Sacken, 1869
- *idiophallus* (Savchenko, 1973) ! N4

(*Parilisia* Savchenko & Krivolutskaya, 1976)
- *areolata* (Siebke, 1872) !
- *complicata* (Bangerter, 1947) !
- *fluviatilis* (Vaillant, 1970) !
- *mannheimsi* (Mendl, 1974) !
- *punctigera* (Lackschewitz, 1940) !
- *sororcula* (Lackschewitz, 1940) !
  = *intermedia* (Bangerter, 1947)
- *spinula* (Mendl, 1973) !
- *subalpina* (Bangerter, 1947) !
- *vicina* (Tonnoir in Goetghebuer & Tonnoir, 1920) !
- *yezoana* (Alexander, 1924) !
  = *czizeki* (Bangerter, 1947)

Hoverioptera Alexander, 1963

(*Tesserioptera* Mendl & Geiger, 1992)
- *pilosa* Mendl & Geiger, 1992 !

Idiocera Dale, 1842

(*Euptilostena* Alexander, 1938)
- *jucunda* (Loew, 1873) !

(*Idiocera* s.str.)
- *bradleyi* (Edwards, 1939) !
- *connexa* (Loew, 1873) !
- *pulchripennis* (Loew, 1856) L
- *punctata* (Edwards, 1938) L

Ilisia Rondani, 1856
- *maculata* (Meigen, 1804) !
- *occoecata* Edwards, 1936 !

Molophilus Curtis, 1833
(*Molophilus* s.str.)
- *appendiculatus* (Staeger, 1840) !
- *armatissimus* Bangerter, 1947 !
- *ater* (Meigen, 1804) !
- *bifidus* Goetghebuer in Goetghebuer & Tonnoir, 1920 !
- *bihamatus* de Meijere, 1918 !
- *bischofi* Lackschewitz, 1940 !
- *brevihamatus* Bangerter, 1947 !
- *carstensis* Starý, 1971 !
- *cinereifrons* de Meijere, 1920 !
- *corniger* de Meijere, 1920 !
- *crassipygus* de Meijere, 1918 !
  = *ochrescens* Edwards, 1938
- *curvatus* Tonnoir in Goetghebuer & Tonnoir, 1920 !
  = *dentatus* Bangerter, 1947
- *flavus* Goetghebuer in Goetghebuer & Tonnoir, 1920 !
  = *latihamatus* Bangerter, 1947
- *fluviatilis* Bangerter, 1947 !
- *griseus* (Meigen, 1804) !
- *klementi* Mendl, 1973 !
- *lackschewitzianus* Alexander, 1953 !
- *maurus* Lackschewitz, 1925 !
- *medius* de Meijere, 1918 !
- *niger* Goetghebuer in Goetghebuer & Tonnoir, 1920 L
- *nodicornis* Lackschewitz, 1935 !
- *obscurus* (Meigen, 1818) !
- *occultus* de Meijere, 1918 !
- *ochraceus* (Meigen, 1818) !
- *pleuralis* de Meijere, 1920 !
- *priapus* Lackschewitz, 1935 !
- *propinquus* (Egger, 1863) !
- *pseudopropinquus* Mendl, 1973 !
  = *mystrophorus* Bangerter, 1947
- *pullus* Lackschewitz, 1927 L
- *repentinus* Starý, 1971 L
- *scutellatus* Goetghebuer, 1929 !
- *serpentiger* Edwards, 1938 !
- *undulatus* Tonnoir in Goetghebuer & Tonnoir, 1920 !
- *vafer* Lackschewitz, 1940 !
- *variispinus* Starý, 1971 !

Neolimnophila Alexander, 1920
- *bergrothi* (Kuntze, 1919) !
- *carteri* (Tonnoir in Goetghebuer & Tonnoir, 1920) !
- *placida* (Meigen, 1830) !

Ormosia Rondani, 1856

(*Ormosia* s.str.)
- *aciculata* Edwards, 1921 !
- *albitibia* Edwards, 1921 !
- *baldensis* Mendl, 1974 !
- *bicornis* (de Meijere, 1920) !
- *bifida* (Lackschewitz, 1940) !
- *bihamata* Lackschewitz, 1935 !
  = *armata* Bangerter, 1947
- *clavata* (Tonnoir in Goetghebuer & Tonnoir, 1920) !
- *depilata* Edwards, 1938 !
- *egena* (Bergroth, 1891) !
- *fascipennis* (Zetterstedt, 1838) !
  = *helvetica* (Loew, 1873)
  = *tephronota* (Loew, 1873)
- *hederae* (Curtis, 1835) !
- *lackschewitzi* Bangerter, 1947 L
- *lineata* (Meigen, 1804) !
- *loxia* Starý, 1983 !
- *nodulosa* (Macquart, 1826) !
- *pseudosimilis* (Lundström, 1912) !
- *rostrifera* Savchenko, 1973 !
- *ruficauda* (Zetterstedt, 1838) !
- *staegeriana* Alexander, 1953 !
  = *similis* (Staeger, 1840)

Rhabdomastix Skuse, 1890
(*Lurdia* Starý, 2003)
- *falcata* Starý, 2003 !
- *loewi* Starý, 2003 !
- *lurida* (Loew, 1873) !
- *mendli* Starý, 2003 !

(*Rhabdomastix* s.str.)
- *eugeni* Theowald, 1973 !
- *hirticornis* (Lackschewitz, 1940) !
  = *signata* Bangerter, 1947
- *japonica* Alexander, 1924 !

(*Sacandaga* Alexander, 1911)
- *laeta* (Loew, 1873) !
- *subparva* Starý, 1971 !

Rhypholophus Kolenati, 1860
- *bifurcatus* Goetghebuer in Goetghebuer & Tonnoir, 1920 !
- *haemorrhoidalis* (Zetterstedt, 1838) !
- *lichtwardti* (Lackschewitz, 1935) L
- *malickyi* (Mendl, 1975) !
- *phryganopterus* Kolenati, 1860 !
- *varius* (Meigen, 1818) L

Scleroprocta Edwards, 1938

- *pentagonalis* (Loew, 1873) !
- *sororcula* (Zetterstedt, 1851) !

Symplecta Meigen, 1830
(*Psiloconopa* Zetterstedt, 1838)
- *stictica* (Meigen, 1818) !

(*Symplecta* s.str.)
- *hybrida* (Meigen, 1804) !
  = *similis* (Staeger, 1840)

(*Trimicra* Osten Sacken, 1861)
- *pilipes* (Fabricius, 1787) !

Tasiocera Skuse, 1890
(*Dasymolophilus* Goetghebuer in Goetghebuer & Tonnoir, 1920)
- *exigua* Savchenko, 1973 !
- *fuscescens* (Lackschewitz, 1940) !
  = *muscula* (Schmid, 1949)
- *halesus* (Schmid, 1949) L
- *murina* (Meigen, 1818) !
  = *phlebotomus* (Schmid, 1949)
- *robusta* (Bangerter, 1947) L

Dactylolabinae

Dactylolabis Osten Sacken, 1860
(*Dactylolabis* s.str.)
- *denticulata* (Bergroth, 1891) !
- *sexmaculata* (Macquart, 1826) !
- *transversa* (Meigen, 1804) !

Limnophilinae

Adelphomyia Bergroth, 1891
- *punctum* (Meigen, 1818) !
  = *helvetica* Bergroth, 1891

Austrolimnophila Alexander, 1920
(*Archilimnophila* Alexander, 1934)
- *unica* (Osten Sacken, 1869) !

(*Austrolimnophila* s.str.)
- *ochracea* (Meigen, 1804) !

Dicranophragma Osten Sacken, 1860
(*Brachylimnophila* Alexander, 1966)
- *adjunctum* (Walker, 1848) ! N5
  = *Neolimnomyia (Brachylimnophila) adjuncta* (Walker, 1848)
- *nemorale* (Meigen, 1818) ! N5
  = *Neolimnomyia (Brachylimnophila) nemoralis* (Meigen, 1818)
- *separatum* (Walker, 1848) !

Eloeophila Rondani, 1856
- *apicata* (Loew, 1871) !
- *maculata* (Meigen, 1804) !

- *miliaria* (Egger, 1863) L
- *mundata* (Loew, 1871) !
- *submarmorata* (Verrall, 1887) !
- *trimaculata* (Zetterstedt, 1838) L
- *verralli* (Bergroth, 1912) !

Epiphragma Osten Sacken, 1860
(*Epiphragma* s.str.)
- *ocellare* (Linnaeus, 1760) !

Euphylidorea Alexander, 1972
(*Euphylidorea* s.str.)
- *aperta* (Verrall, 1887) !
- *dispar* (Meigen, 1818) !
- *lineola* (Meigen, 1804) !
- *meigenii* (Verrall, 1887) !
- *phaeostigma* (Schummel, 1829) !

Hexatoma Latreille, 1809
(*Eriocera* Macquart, 1838)
- *chirothecata* (Scopoli, 1763) !

(*Hexatoma* s.str.)
- *bicolor* (Meigen, 1818) !
- *longipes* (Loew, 1865) L N6

Idioptera Macquart, 1834
- *linnei* Oosterbroek, 1992 !
  = *fasciata* (Linnaeus, 1767)
- *pulchella* Meigen, 1830 !

Limnophila Macquart, 1834
(*Limnophila* s.str.)
- *arnoudi* Theowald, 1971 !
- *pictipennis* (Meigen, 1818) L
- *schranki* Oosterbroek, 1992 !
  = *punctata* (Schrank, 1781)

Neolimnomyia Seguy, 1937
(*Neolimnomyia* s.str.)
- *batava* (Edwards, 1938) !
- *filata* (Walker, 1856) !

Paradelphomyia Alexander, 1936 N7
- *czizekiana* Starý, 1971 !
- *ecalcarata* (Edwards, 1938) !
- *fuscula* (Loew, 1873) !
- *senilis* (Haliday, 1833) !

Phylidorea Bigot, 1854
(*Paraphylidorea* Savchenko, 1986)
- *fulvonervosa* (Schummel, 1829) !

(*Phylidorea* s.str.)
- *abdominalis* Staeger, 1840 !
- *ferruginea* (Meigen, 1818) !

- *heterogyna* (Bergroth, 1913) !
- *longicornis* (Schummel, 1829) !
- *squalens* (Zetterstedt, 1838) !

Phyllolabis Osten Sacken, 1877 N8
- *geigeri* Podenas & Starý, 1997 !
- *gohli* Mendl, 1976 !
- *macroura* (Siebke, 1863) !
- *mendli* Podenas & Starý, 1997 !
- *pubipennis* Lackschewitz, 1940 !

Pilaria Sintenis, 1889
- *discicollis* (Meigen, 1818) !
- *fuscipennis* (Meigen, 1818) !
- *meridiana* (Staeger, 1840) !
- *scutellata* (Staeger, 1840) !

Prionolabis Osten Sacken, 1860
- *hospes* (Egger, 1863) !
  = *platyptera* (Macquart, 1834)

Pseudolimnophila Alexander, 1919
(*Pseudolimnophila* s.str.)
- *lucorum* (Meigen, 1818) !
- *sepium* (Verrall, 1886) !

Limoniinae

Achyrolimonia Alexander, 1965
- *decemmaculata* (Loew, 1873) !
- *neonebulosa* (Alexander, 1924) !

Antocha Osten Sacken, 1860
(*Antocha* s.str.)
- *vitripennis* (Meigen, 1830) !
  = *fulvescens* Lackschewitz, 1940

(*Orimargula* Mik, 1883)
- *alpigena* (Mik, 1883) !

Atypophthalmus Brunetti, 1911
(*Atypophthalmus* s.str.)
- *inustus* (Meigen, 1818) !

(*Microlimonia* Savchenko, 1976)
- *machidai* (Alexander, 1921) !

Dicranomyia Stephens, 1829
(*Dicranomyia* s.str.)
- *aperta* Wahlgren, 1904 !
- *autumnalis* (Staeger, 1840) !
- *chorea* (Meigen, 1818) !
- *conchifera* (Strobl, 1901) !
- *didyma* (Meigen, 1804) !
- *distendens* Lundström, 1912 !
- *frontalis* (Staeger, 1840) !

- *fuscinota* Starý, 2009 !
- *goritiensis* (Mik, 1864) !
- *handlirschi* Lackschewitz, 1928 !
- *imbecilla* Lackschewitz, 1941 ! N9
- *incisurata* Lackschewitz, 1928 !
- *longipennis* (Schummel, 1829) !
- *lorettae* Geiger, 1985 !
- *lucida* de Meijere, 1918 !
- *mattheyi* Geiger, 1985 !
- *mitis* (Meigen, 1830) !
- *modesta* (Meigen, 1818) !
- *omissinervis* de Meijere, 1918 !
- *ornata* (Meigen, 1818) !
- *strobli* Pagast, 1941 !
- *ventralis* (Schummel, 1829) !

(*Glochina* Meigen, 1830)

- *bangerteri* (Mendl, 1974) !
- *hansiana* Starý & Geiger, 1985 !
- *kinensis* (Alexander, 1934) !
- *pauli* Geiger, 1983 !
- *schineriana* Lackschewitz, 1928 !
- *sericata* (Meigen, 1830) !
- *transsilvanica* Lackschewitz, 1928 !
- *tristis* (Schummel, 1829) !
  = *retroflexa* Bangerter, 1948

(*Idiopyga* Savchenko, 1987)

- *alpina* Bangerter, 1948 !
- *halterella* Edwards, 1921 !
- *lackschewitzi* Edwards, 1928 !
- *megacauda* Alexander, 1924 !
- *nigristigma* Nielsen, 1919 !
- *stigmatica* (Meigen, 1830) !

(*Melanolimonia* Alexander, 1965)

- *caledonica* Edwards, 1926 !
- *morio* (Fabricius, 1787) !
- *occidua* Edwards, 1926 !
- *rufiventris* (Strobl, 1901) !
- *stylifera* Lackschewitz, 1928 !

(*Numantia* Bigot, 1854)

- *fusca* (Meigen, 1804) !

(*Sivalimnobia* Alexander, 1963)

- *aquosa* Verrall, 1886 !

Dicranoptycha Osten Sacken, 1860

- *fuscescens* (Schummel, 1829) !
- *livescens* Loew, 1871 !
- *paralivescens* Starý, 1972 !

- *pseudocinerea* Starý, 1972 !

Discobola Osten Sacken, 1865
- *annulata* (Linnaeus, 1758) !
- *caesarea* (Osten Sacken, 1854) !

Elephantomyia Osten Sacken, 1860
(*Elephantomyia* s.str.)
- *edwardsi* Lackschewitz, 1932 !
- *krivosheinae* Savchenko, 1976 !

Elliptera Schiner, 1863
- *hungarica* Madarassy, 1881 !
- *omissa* Schiner, 1863 !

Geranomyia Haliday, 1833
- *caloptera* Mik, 1867 !

Helius Lepeletier & Serville, 1828
(*Helius* s.str.)
- *flavus* (Walker, 1856) !
- *longirostris* (Meigen, 1818) !
- *pallirostris* Edwards, 1921 !

Limonia Meigen, 1803
- *albifrons* (Meigen, 1818) !
- *flavipes* (Fabricius, 1787) !
- *hercegovinae* (Strobl, 1898) !
- *interjecta* Starý, 1974 !
- *macrostigma* (Schummel, 1829) ! N10
- *nigropunctata* (Schummel, 1829) !
- *nubeculosa* Meigen, 1804 !
- *phragmitidis* (Schrank, 1781) !
  = *tripunctata* (Fabricius, 1782)
- *stigma* (Meigen, 1818) !
- *sylvicola* (Schummel, 1829) !
- *taurica* (Strobl, 1895) !
- *trivittata* (Schummel, 1829) !

Lipsothrix Loew, 1873
- *errans* (Walker, 1848) !
- *nervosa* Edwards, 1938 !
- *remota* (Walker, 1848) !

Metalimnobia Matsumura, 1911
(*Metalimnobia* s.str.)
- *bifasciata* (Schrank, 1781) !
- *quadrimaculata* (Linnaeus, 1760) !
- *quadrinotata* (Meigen, 1818) !
- *zetterstedti* (Tjeder, 1968) !

Neolimonia Alexander, 1964
- *dumetorum* (Meigen, 1804) !

Orimarga Osten Sacken, 1869
(*Orimarga* s.str.)

- *attenuata* (Walker, 1848) !
- *juvenilis* (Zetterstedt, 1851) !
- *virgo* (Zetterstedt, 1851) !

Rhipidia Meigen, 1818
(*Rhipidia* s.str.)
- *ctenophora* Loew, 1871 !
- *maculata* Meigen, 1818 !
- *punctiplena* Mik, 1887 !
- *uniseriata* Schiner, 1864 !

Thaumastoptera Mik, 1866
(*Thaumastoptera* s.str.)
- *calceata* Mik, 1866 !

Excluded species

Prionolabis elapsa (Bergroth, 1888) N11
Dicranomyia luteipennis Goetghebuer in Goetghebuer & Tonnoir, 1920

Notes

N1 *Cheilotrichia caerulea* was synonimised with *Cheilotrichia alpina* by Starý (2006).
N2 Subgeneric classification abolished (de Jong & Ciliberti 2014).
N3 *Gonomyia (Gonomyia) abscondita*: this species was considered as needing confirmation for Switzerland by Starý (2011), and consequently by Oosterbroek (2020). However, Dufour (pers. comm. December 2020), confirms that *Gonomyia abscondita* was correctly identified by Podenas in 1992. It was also correctly mapped (Podenas et al. 2006) from three swiss localities (Delémont (JU), Fully (Branson) (VS), and Bardonnex (Croix-de-Rozon) (GE)) . The relevant material in alcohol is deposited at the MHNN.
N4 Subgeneric name suppressed due to homonymy.
N5 *Dicranophragma* (*Brachylimnophila*) *adjunctum* and *D. (B.) nemorale* were transferred from the genus *Neolimnomyia* by Starý & Reusch (2009).
N6 *Hexatoma longipes*: uncertain status (Podenas et al. 2006).
N7 Subgeneric classificatiom abolished (Starý 2019).
N8 After Podeniene and Gelhaus (2014, 2017), the systematic position of *Phyllolabis* has been transferred from Chioneinae to Limnophilinae.
N9 *Dicranomyia imbecilla* was recorded in Switzerland by Starý & Stubbs (2015).
N10 *Limonia alpicola* cited in the 1998 Checklist has to be treated as a form of *L. macrostigma* (Starý 2007).
N11 *Prionolabis elapsa*: doubtful species (Starý 2006).

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Ptychopteridae

Christophe Dufour (1998 Checklist: Christophe Dufour)
Last update: Jul 2024

Diagnosis: Flies of moderate size and tipuloid appearance, with the halteres provided with a distinct basal appendage, the prehalter. In Europe, the family is represented by a single genus, *Ptychoptera* Meigen, 1803, which is characterised by its shining black body colour and the wings often with distinct markings. The venation is characteristic and has an additional longitudinal fold crossing r-m (much as the vena spuria in Syrphidae) and another one extending from A_1 to the bend of Cu. (After Starý 2009).

Biology: The larvae are aquatic or semiaquatic, inhabiting saturated mud and feeding on decaying vegetable matter. The adults frequent the muddy banks of streams and pools, marshes of various types, and similar habitats. (After Starý 2009). Adults are normally active during the middle of the day, especially in sunny conditions. The shining black, or black with orange and yellow markings, is standard warning colouration for an insect that is nasty to eat or which stings. The deception is very convincing in its flight, resembling a solitary or ichneumon wasp. (After Stubbs 2021).

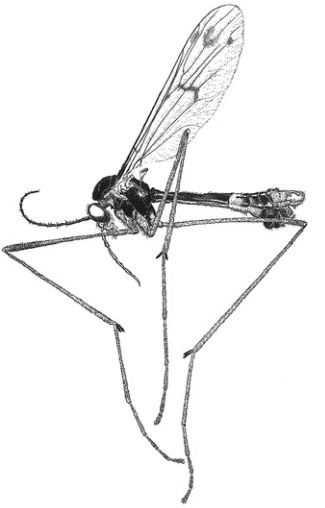
Nomenclature and classification: According to Zwick (2017).

Number of species: CH: 6 (1998 Checklist: 6),
AT: 6, BE: 7 CZ: 9, DE: 8, FR: 7, GB: 7, IT: 4, NL: 7, Europe: 18, World: 90.
(Dvořák et al. 2023, Rozkošný 1992, Wagner et al. 2008).

Level of faunistic knowledge in Switzerland: Rather good. Two additional species can be expected.

General references: Andersson (1997), Krzemiński (1986), Krzemiński & Zwick (1993), Peeters & Oosterbroek (2015), Peus (1958), Rozkošný (1992), Starý (2009), Stubbs (1993, 2021), Tillier (2015), Tillier & Quindroit (2017), Wagner et al. (2008), Zwick (2017), Zwick & Starý (2003).

References to the Swiss fauna: Bangerter (1932), Dufour (1998)



Ptychoptera albimana,
male (CMPD2, p. 291).

Checklist

Ptychoptera Meigen, 1803
(*Paraptychoptera* Tonnoir, 1919)
- *lacustris* Meigen, 1830 !
- *longicauda* Tonnoir, 1919 !
- *paludosa* Meigen, 1804 !

(*Ptychoptera* s.str.)
- *albimana* (Fabricius, 1787) !
- *contaminata* (Linnaeus, 1758) !
- *scutellaris* Meigen, 1818 !

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Blephariceridae

Jean-Paul Haenni (1998 Checklist: Peter Zwick)
Last update: Jul 2024

Diagnosis: 3-15 mm long, delicate long-legged midges, characterised by wing membrane with a net-like pattern of folds. Mouthparts well developed in females, reduced in males; eyes often divided transversally. Larvae aquatic, cylindrical and flattened ventrally, 6-segmented, each segment bearing a ventral suctorial disc and gill tufts. Pupae aquatic, attached to the substratum, bearing paired respiratory organs.

Biology: Larvae are adapted for life in rapid flowing waters, in rapids and waterfalls of streams where they feed by grazing the periphyton (film of diatoms and other algae, bacteria and organic matter) on submerged rocks. Adults may be found in the vicinity of the biotopes where larvae develop; females are predatory on small insects.

Nomenclature and classification: According to Zwick (1992, 2013).

Number of species: CH: 5 (1998 Checklist: 5),
AT: 5, CZ: 6, DE: 7, PL: 6, SK: 6, Europe: 37, World: ~300.

Level of faunistic knowledge in Switzerland: Good. The present list is entirely based upon the one published in the previous checklist (Zwick 1998).

General references: Courtney (2000) [general, keys to genera], Nicolai (1983) [keys], Zwick (1980) [keys], Zwick (1992) [nomenclature, catalogue Palaearctic region], Zwick (2013) [Fauna Europaea database].

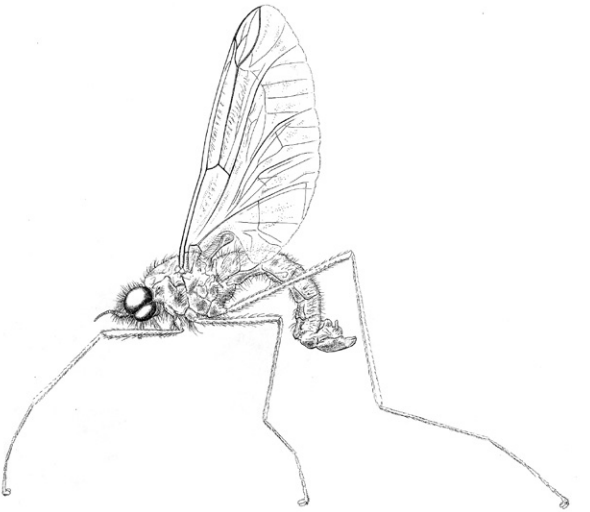
References to the Swiss fauna: Frutiger & Gammeter (1998) [faunistics], Frutiger & Jolidon (2000) [keys, larvae and pupae], Zwick (1998) [checklist].

Checklist

Blepharicera Macquart, 1843
- *fasciata* (Westwood, 1842) !

Hapalothrix Loew, 1876
- *lugubris* Loew, 1876 !

Liponeura Loew, 1844
- *cinerascens minor* Bischoff, 1922 !
- *cordata* Vimmer, 1916 !
- *decipiens* Bezzi, 1913 !



Hapalothrix lugubris,
male (CMPD A, p. 7).

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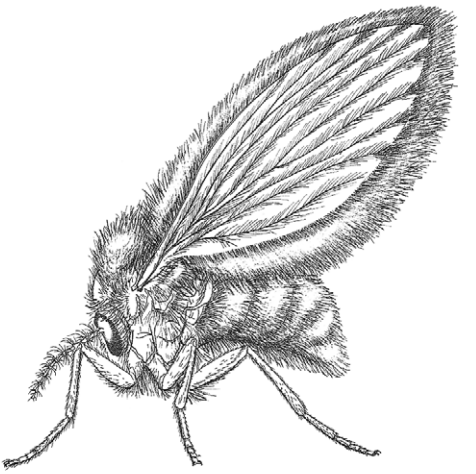
Psychodidae

Rüdiger Wagner & Francis Schaffner (1998 Checklist: Rüdiger Wagner)
Last update: Jul 2024

Diagnosis: Psychodidae (moth flies or owl flies; Phlebotominae: sand flies) is a family of the lower Diptera (Nematocera) that consists of 6 extant and 1 extinct subfamilies, four of which – Phlebotominae, Sycoracinae, Trichomyiinae and Psychodinae – occur in Switzerland. Wings and body of the slightly humpbacked adults are mostly covered by hairs and setae (except Sycoracinae) that make them look like small hopping wool balls; Psychodidae are therefore unmistakeably distinguished even in the field. The elongate to oval wings have nine or ten longitudinal veins and almost no cross-veins. Antenna consists of scape, pedicel and a flagellum of usually 13 flagellomeres in Phlebotominae, Trichomyiinae and Sycoracinae and 14 flagellomeres in Psychodinae, apical segments sometimes reduced in size or number. Flagellomeres with ascoids, hyaline sensory rods of very different size and shape. Mouthparts of female Phlebotominae and Sycoracinae are adapted for piercing animal skin. Male Psychodinae have several remarkable structures on head and thorax. Posterior part of head with club-shaped structures in some genera (e.g. *Clytocerus*, *Panimerus*, *Jungiella*). Males of some genera have eversable or permanently everted structures on pro- and/or mesothorax for sexual display or to release pheromones (e.g. *Ulomyia*, *Pneumia*, *Peripsychoda*). Abdomen with 8 segments and terminalia; male genitalia usually rotated by 180° – unrotated in Sycoracinae. Larvae of Phlebotominae are terrestrial, head with 3 antennal segments, abdomen segments with ventral creeping welts, terminal segment with 4 long setae. Pseudosegmentation adumbrate. Sycoracinae larvae are aquatic, very small, similar in appearance to isopods. Trichomyiinae larvae are elongate with a sclerotised head capsule, antenna 1-segmented, body weakly sclerotised; rarely collected in tree holes and rotting wood (chestnut, elm, willow).
The amphipneustic larvae of Psychodinae are characteristic; the body is divided in usually 26 (27 in genus *Atrichobrunettia*) body rings (annuli). The thorax segments and the first abdomen segment are composed of 2 rings, and the abdomen segments 2-7 of 3 rings. The terminal segments are lumped to a « siphonal apparatus » with anus ventral and stigmata dorsal. Annuli with plates of different size and shape, tergites are largest. More or less elongate true and/or accessorial setae insert on the plates. Number and position of setae are characteristic; thus larvae are often identifiable to species. Larvae and adults live in or near aquatic or at least « very moist » habitats, in springs, streams, or waterfalls with generally hygropetric or madicolous conditions. Pupae are indistinguishable.

Biology: Adults are poor flyers and usually found near larval habitats. Adults of some species are known to use pheromones to detect conspecifics (Elger 1981, Feuerborn 1922). Many Psychodinae larvae are stenotopic, and can be used to characterise habitats. Vaillant (1971) proposed a system of ecological groups for Palearctic Psychodinae. Basic requirements for larvae are sufficient moisture, solid substrate with food, and permanent access to atmospheric oxygen. Larvae (individual genera) live from mosses in clean mountain streams to garbage dumps. Some euryecious species are widely distributed in Europe or even cosmopolitans. *Clogmia albipunctata*, a species originating from the tropics, invaded parts of West- and Central Europe during the last decades. The euryecious larvae cause nuisance to man; they occur in old swimming pools,



Tinearia alternata,
male (CMPD2, p. 206).

rotting moist wood, compost heaps, and there are even reports of male and female human genitalia infestation. Some *Psychoda* species are pollinators of *Arum maculatum*, attracted by the unpleasant smell (Remmert 1969, Gfrerer et al. 2022, Laina et al. 2022). Favourable environments for the occurrence of Phlebotominae sand flies are related to the presence of old barns, shelters and house basements with non-concrete ground, and of stone walls, rocks and caves, preferably sun exposed.
A life cycle comprises egg, 4 larval instars pupae and adults. Generation time is 1 year or even longer in species from high mountains or cold streams; in some euryecous species the life cycle is only 1-2 weeks under optimal conditions.
Phlebotominae bite birds, mammals and reptiles, and sometimes man; they may be vectors of disease pathogens (e.g. *Leishmania* parasite or Phleboviruses). Sycoracinae bite amphibians and can transmit microfilarial worms. *Phlebotomus (Larroussius) perniciosus* Newstead and *Phlebotomus (Larroussius) neglectus* Tonnoir are considered as important vectors of *Leishmania* parasites to dogs and occasionally to humans. The second species is spreading eastwards and northward in Europe and was recently detected in Switzerland (Ticino). *Psychoda* (*Tinearia*) *alternata* Say and *Clogmia albipunctata* (Williston) are two species of medical importance. Larvae of both may infest humans by dirty wounds or insufficient cleanliness; recently *C. albipunctata* was detected in hospital wastewater systems (Rupprecht et al. 2022). Thereby they may transfer diseases (myiasis and others). Decaying bodies of adults are known to cause illnesses similar to bronchial asthma.

Nomenclature and classification: According to Vaillant (1971-1982) with a number of nomenclatorial changes (Ježek 1983, 1984, 1985, Kvifte 2014) and more.

Number of species: CH: 79 (1998 Checklist: 61),
DE: ~120, FR: ~150, IT: ~90, Europe: ~300, World: ~2500.

Level of faunistic knowledge in Switzerland: Complete and up-to-date for Phlebotominae, in need of improvement for Psychodinae.

General references: Vaillant (1971-1982, 1990) [Palearctic fauna with ecological information], Desportes (1942), Szabó (1970), Krek (1999).

References to the Swiss fauna: Wagner (1998), Schaffner et al. (2023), Knechtli & Jenni (1989), Grimm et al. (1993).

Checklist

Bazarella Vaillant, 1961
- *subneglecta* (Tonnoir, 1922) L

Berdeniella Vaillant, 1976
- *freyi* (Berdén, 1954) !
- *glacialis* (Vaillant, 1958) !
- *helvetica* (Sarà, 1957) !
- *magniseta* (Sará, 1953) !
- *manicata* (Tonnoir, 1919) L
- *nivalis* Vaillant, 1976 L
- *unispinosa* (Tonnoir, 1919) !

Clogmia Enderlein, 1937
- *albipunctatus* (Williston, 1893) !

Clytocerus Eaton, 1904
(*Boreoclytocerus* Duckhouse, 1978)
- *dalii* (Eaton, 1893) !
- *ocellaris* (Meigen, 1804) !

Feuerborniella Vaillant, 1974
- *obscura* (Tonnoir, 1919) !

Jungiella Vaillant, 1972
(*Jungiella* s.str.)
- *soleata* (Walker, 1856) L

Mormia Enderlein, 1935
(*Hemimormia* Hemimormia Krek, 1971)
- *eatoni* (Tonnoir, 1940) !

(*Limomormia* Vaillant, 1983)
- *helvetica* Vaillant, 1974 !

(*Mormia* s.str.)
- *nigripennis* Krek, 1971 !
- *revisenda* (Eaton, 1893) !

(*Perimormia* Vaillant, 1974)
- *albicornis* (Tonnoir, 1919) !

Panimerus Eaton, 1913
- *albifacies* (Tonnoir, 1919) L

- *maynei* (Tonnoir, 1920) !

Paramormia Enderlein, 1935
- *ustulata* (Walker, 1856) L

Pericoma Haliday in Walker, 1856
(*Pachypericoma* Vaillant, 1978)
- *blandula* Eaton, 1893 !

(*Pericoma* s.str.)
- *alticola* Vaillant, 1955 !
- *exquisita* Eaton, 1893 !
- *pannonica* Szabó, 1960 L
- *pseudoexquisita* Tonnoir, 1940 !
- *trifasciata* (Meigen, 1804) L

Peripsychoda Enderlein, 1935
- *auriculata* (Curtis, 1839) !

Philosepedon Eaton, 1904
- *humeralis* (Meigen, 1818) ?

Phlebotomus Rondani & Berté, 1840
(*Larroussius* Nitzulescu, 1931)
- *neglectus* Tonnoir, 1921 !
- *perniciosus* Newstead, 1911 !

(*Transphlebotomus* Artemiev, 1984)
- *mascittii* Grassi, 1908 !

Phyllotelmatoscopus Vaillant, 1982
- *longipennis* (Krek, 1972) !

Pneumia Enderlein, 1935
- *canescens* (Meigen, 1804) !
- *cubitospinosa* (Jung, 1953) !
- *delphiniensis* (Georges, 1964) !
- *nubila* (Meigen, 1818) L
- *palustris* (Meigen, 1818) !
- *pilularia* (Tonnoir, 1940) L
- *trivialis* (Eaton, 1893) !

Psychoda Latreille, 1797
- *albipennis* Zetterstedt, 1850 !
- *brevicornis* Tonnoir, 1940 !
- *buxtoni* Withers, 1988 !
- *cinerea* Banks, 1894 !
- *crassipenis* Tonnoir, 1940 !
- *erminea* Eaton, 1898 !
- *gemina* (Eaton, 1904) !
- *grisescens* Tonnoir, 1922 !
- *lobata* Tonnoir, 1940 !
- *minuta* Banks, 1894 !
- *mycophila* Vaillant, 1988 !
- *parthenogenetica* Tonnoir, 1940 !
- *phalaenoides* (Linnaeus, 1758) !

- *setigera* Tonnoir, 1922 !
- *surcoufi* Tonnoir, 1922 ?
- *trinodulosa* Tonnoir, 1922 !

Saraiella Vaillant, 1973
- *auberti* (Sarà, 1954) L
- *crypta* (Vaillant, 1955) L
- *onerata* (Vaillant, 1957) !

Seoda Enderlein, 1935 N1
- *britteni* Tonnoir, 1940 L
- *morula* (Eaton, 1893) !

Sergentomyia Franca & Parrot, 1920
(*Sergentomyia* s.str.)
- *minuta* (Rondani, 1843) !

Sycorax Haliday, 1839
- *feuerborni* Jung, 1954 !
- *silacea* Haliday in Curtis, 1839 !
- *similis* (Müller, 1927) !
- *tonnoiri* Jung, 1954 !

Telmatoscopus Eaton, 1904 N1
- *advena* (Eaton, 1893) !

Threticus Eaton, 1904
- *balkaneoalpinus* Krek, 1971 !
- *incurvus* Krek, 1972 L
- *lucifugus* (Walker, 1856) ?

Tinearia Schellenberg, 1803
- *alternata* (Say, 1824) !
- *lativentris* (Berdén, 1952) !

Tonnoiriella Vaillant, 1971
- *nigricauda* (Tonnoir, 1919) !
- *pulchra* (Eaton, 1893) !

Trichomyia Haliday, 1839
- *urbica* Haliday in Curtis, 1839 !

Trichopsychoda Tonnoir, 1922
- *hirtella* (Tonnoir, 1919) !

Ulomyia Walker, 1856
- *fuliginosa* (Meigen, 1804) !
- *hispanica* (Sarà, 1954) ? N2

(*Periulomyia* Krek, 1999)
- *cognata* (Eaton, 1893) !

Notes

N1 Kvifte (2014) revised genera *Telmatoscopus* and *Seoda*.

N2 *Ulomyia undulata* (Tonnoir, 1919) might have been a misidentification. New material is needed to confirm its presence in Switzerland.

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Dixidae

Rüdiger Wagner (1998 Checklist: Rüdiger Wagner)
Last update: Jan 2020

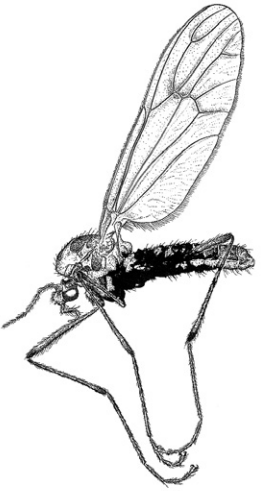
Diagnosis: Dixidae (or « meniscus midges ») are a small family of the lower Diptera. The long-legged adults resemble Culicidae, but differ by the presence of scales on wings and body (wing length 2-6 mm). Eyes separate, ocelli absent, antenna with scape, pedicel and a flagellum of 14 flagellomeres, mouth parts non-biting. Thorax with patterns of brown and yellowish stripes on pleurae and scutum, scutellum prominent. Fore and mid tibiae with short spurs, empodium small, pulvilli missing. Wing usually translucent, in some species with a characteristic pattern of brownish to black spots, surface covered with microtrichia. Wing venation shows radial and cubital fork, r-m crossvein distinct, no discal cell. Male genitalia inverted by subsequent torsion of segments 5-8. Larvae eucephalic, ventral surface of abdomen segments bears ambulatory combs. *Dixa* larvae bear in addition a number of dorsal « crowns of setae » that are absent in *Dixella*. The terminal complex is blackish with a pair of open spiracles in a sclerotised area, a pair of lateral « paddles » and a single caudal appendage with several long setae. Pupae resemble superficially those of mosquitoes (Culicidae). In contrast, mosquito pupae have no caudal paddles. Eggs bulbous to streamlined with a probably specific microsculpture on the surface.

Biology: Adults are poor fliers and do not feed. They sit or fly close to the water, sometimes gathering in mating swarms. Larvae are filter-feeders and develop at the edge of running or standing waters. They rest in a typical inverted U-shaped position on the water meniscus or on emergent structures. *Dixa* larvae are generally found along running waters, *Dixella* species prefer stagnant waters. *Dixa* larvae are abundant in the drift of streams (Elliott & Tallett 1977). Dixid pupae also rest in a U-shaped but live in « dryer » microhabitats along the banks of water bodies. Early instars of Dixidae larvae, especially in standing waters, may be infected by viruses (Goldie-Smith 1987). A dixid life cycle includes egg, four larval instars, pupae and adult stages. Little is known about the length of the life cycle, but laboratory cultures by Peach & Fowler (1986) indicated that a generation takes 60 days and field observations suggest a similar length in European species (60-80 days). The number of generations per year seems to increase with temperature. Prior to egg laying, females hold the disk-shaped jelly egg masses that contain several dozen eggs by the hind legs. Oviposition occurs at the water's edge on solid substrate or organic material.

Nomenclature and classification: According to Disney (1999).

Number of species: CH: 9 (1998 Checklist: 9),
DE: 17, FR: 18, IT: 11, Europe: 28, World: ~190.

Level of faunistic knowledge in Switzerland: In need of improvement.



Dixa maculata,
male (CMPD2, p. 300).

General references: Brindle (1963) [taxonomy larvae], Oboňa et al. (2015) [Slovakia species list], Rozkošný (1990) [catalogue Palearctic], Salmela et al. (2014) [species list Finland], Saether (1997) [Checklist Finland], Wagner (1997) [general, species in North Europe].

References to the Swiss fauna: Wagner (1998).

Checklist

Dixa Meigen, 1818
- *maculata* Meigen, 1818 !
- *nebulosa* Meigen, 1830 L
- *obsoleta* Peus, 1934 !
- *puberula* Loew, 1849 !
- *submaculata* Edwards, 1920 !

Dixella Dyar & Shannon, 1924
- *aestivalis* (Meigen, 1818) !
- *amphibia* (De Geer, 1776) L
- *autumnalis* (Meigen, 1838) !
- *serotina* (Meigen, 1818) !

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Chaoboridae

Rüdiger Wagner (1998 Checklist: Rüdiger Wagner)
Last update: Jan 2020

Diagnosis: Chaoboridae (phantom midges) are small to medium sized non-biting lower Diptera (Nematocera). They are closely related to Culicidae and Corethrellidae. Eyes reniform, antenna bare in both sexes of *Chaoborus* and in male *Mochlonyx*. Antenna with scapus, pedicel and flagellum with 13 flagellomeres. Mouthparts elongate, palpus 5-segmented. Wing elongate with 10 longitudinal veins. Legs delicately setose, but without scales, tibiae with 0-2 spurs, tarsal claws of different size and shape. Abdomen with 8 segments and terminalia; tergite 9 (epandrium) well-developed, sternite 9 (hypandrium) reduced. Gonocoxites well developed with subapical projection. Sclerites consist of only a pair of penis valves. Female genitalia with 3 seminal capsules and 2 or 3 spermathecal ducts. Larvae transparent to brownish with a pair of conspicuous air sacs in thorax and in abdominal segment 7. Head capsule complete, antenna prehensile. Thorax large with three segments fused into a single unit. Abdomen with 8 larger segments, 1 size-reduced and one anal segment. *Chaoborus* larvae apneustic (without functional spiracles). Pupae similar to culicid pupae but pale translucent with abdomen hanging straight down. End of abdomen with a pair of large anal paddles. Eggs often laid in floating disc-shaped jelly-like matrix.

Biology: All larvae are aquatic and prey on specimens of their own species and other small arthropods (insects, daphnids, cyclopoids, oligochaetes, rotifers). *Chaoborus* larvae live in permanent small to large water bodies (with or without fish), *Cryophila* and *Mochlonyx* prefer small or temporary water bodies (e.g. tree-holes). Only some *Chaoborus* species are planktonic. Overwintering in egg stage is common in *Mochlonyx* and *Cryophila*, and also in some *Chaoborus* species.

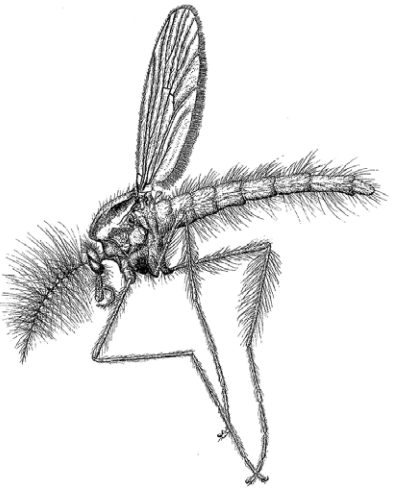
Nomenclature and classification: According to Saether (2002).

Number of species: CH: 2 (1998 Checklist: 2),
AT: 2, DE: 7, FR: 4, IT: 6, Europe: ~9, World: ~90.

Level of faunistic knowledge in Switzerland: In need of improvement.

General references: Saether (2002) [general].

References to the Swiss fauna: Wagner (1998).



Chaoborus crystallinus,
male (CMPD2, p. 306).

Checklist

Chaoborus Lichtenstein, 1800
(*Chaoborus* s.str.)
- *crystallinus* (De Geer, 1776) !
- *flavicans* (Meigen, 1830) !

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Saether O.A. 2002. Insecta: Diptera: Chaoboridae. In: Schoerbel J. & Zwick P. (eds). Süßwasserfauna von Mitteleuropa 21(10): 1-37.

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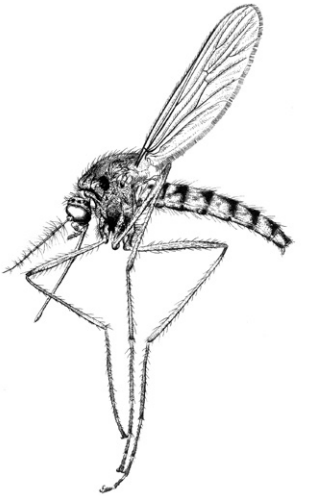
Culicidae

Francis Schaffner (1998 Checklist: Hans Briegel)
Last update: Jul 2024

Diagnosis: Culicidae (« true » mosquitoes) adults are small to medium (3.0-12.0 mm) slender delicate nematocerous flies with slight sexual dimorphism in morphology. Eyes reniform, with facets of equal size, similar in both sexes; ocelli absent. Biting mouthparts (proboscis) much longer than head, extending far beyond clypeus. Antenna long with very small scape, enlarged globose pedicel, and 13 long slender flagellomeres; each flagellomere with a whorl of hairs that are usually much longer and more abundant in male than in female. Palpi, 4-5 segmented, short (Culicinae) or long (Anophelinae) and with short hairs in females, but always long and with long hairs in males (both subfamilies) for Palaearctic species. Legs slender and long, tarsi clearly five-segmented. Scales present on wing veins, head and legs and usually on thorax and abdomen, forming different colour patterns that allow species identification.

Biology: The immature stages of Culicidae are aquatic. Larvae and pupae are active swimmers in quiet waters (except those of *Coquillettidia* spp. which are fixed on immerged plant roots), and breathe at the water surface. Larvae feed on particles of detritus, algae, bacteria, etc.; pupae do not feed anymore. They develop in many habitats, mainly in any shallow stagnant waters, either temporary (e.g. *Aedes* spp.) or (semi-) permanent (e.g. *Anopheles* and *Culex* spp.). Some species utilise small containers only, either natural (phytotelms) or artificial (human-made), in particular the common house mosquito (*Culex pipiens*) and the *Aedes* invasive species (e.g. *Aedes albopictus*). Adults feed on plants to get a sugar meal, but females also take a blood meal from various hosts, in order to obtain proteins for the development of their eggs. Feeding preferences and behaviour varies from one species to another, but many of them bite mammals, including humans. Some species are univoltine (e.g. snow-melt species) while others have successive generations from spring to fall (e.g. container-inhabiting species). They overwinter either as eggs in the ground (e.g. snow-melt and floodwater species) or on the water container inner surfaces (e.g. *Aedes* container-inhabiting species), or as larvae in water habitats (a few *Aedes*, *Anopheles*, *Culiseta* spp.) or as adult females in shelters (some *Anopheles*, *Culex*, and *Culiseta* spp.). The Culicidae can occur locally in huge numbers, in particular after natural flooding (e.g. alluvial plains in spring) or in case of accumulation of human-made containers. Due to their feeding habits, mosquitoes can generate disturbing nuisance, and some species can transmit disease pathogens to animal and human (e.g. malaria parasites, dirofilaria worms, chikungunya, dengue and West Nile viruses).

Nomenclature and classification: Classification used herein is consistent with the Systematic catalogue of Culicidae which is recognised as a reference, maintained by the Walter Reed Biosystematics Unit (http://www.mosquitocatalog.org), and recently published in the form of a book (Wilkerson et al. 2021).



Aedes vexans,
female (CMPD A, p. 94).

Number of species: CH: 41 (1998 Checklist: 35),
AT: 38, BE: 31, DE: 53, ES: 60, FR: 61, IT: 62, LI: 9, Europe: 101, World: ~3500.
(World: Harbach 2007, European countries: Robert et al. 2019.)

Level of faunistic knowledge in Switzerland: Very good, but occurrences of 6 recorded species need to be confirmed, and 1-2 additional species can be expected.

General references: Becker et al. (2010) [key female, male and larvae, species descriptions, biology, medical importance, control, Europe, vector species of other biogeographical regions], Gunay et al. (2018) [computer-aided key female, male and larvae, Europe, Near East, North Africa], Harbach (2007) [phylogeny], Kampen & Schaffner (2008) [biology, pest and vector role, control], Medlock et al. (2015) [invasive species Europe], Minař (1990) [species list Europe], Medlock et al. (2012) [sampling methods], Robert et al. (2019) [distribution Western-Palaearctic region], Schaffner & Mathieu (2020) [mosquito identification methods], Schaffner et al. (2001) [computer-aided key female, male and larvae, biology, vector role, distribution, Europe], Schaffner et al. (2012) [monitoring invasive species, biology, risk], Schaffner et al. (2014) [monitoring native species, biology, risk], Wilkerson et al. (2021) [systematics, synonymy, biology, vector role, distribution, illustrations, world].

References to the Swiss fauna: Briegel (1973), Briegel (1998), Briegel et al. (2002), Flacio et al. (2004), Flacio et al. (2014), Fouque et al. (1991), Merz et al. (2006), Raboud (1980), Schaffner & Mathis (2011), Schaffner & Mathis (2013), Schaffner et al. (2009), Suter et al. (2015), Wagner et al. (2018).

Checklist

Aedes Meigen, 1818
(*Aedes* s.str.)
- *cinereus* Meigen, 1818 !
- *geminus* Peus, 1970 !

(*Aedimorphus* Theobald, 1903)
- *vexans* (Meigen, 1830) !

(*Dahliana* Reinert, Harbach & Kitching, 2007)
- *geniculatus* (Olivier, 1791) !

(*Hulecoeteomyia* Theobald, 1904)
- *japonicus* (Theobald, 1901) !
- *koreicus* (Edwards, 1917) L

(*Ochlerotatus* Lynch Arribalzaga, 1891)
- *annulipes* (Meigen, 1830) !
- *cantans* (Meigen, 1818) !
- *caspius* (Pallas, 1771) ! N1
- *cataphylla* Dyar, 1916 !
- *communis* (De Geer, 1776) !
- *excrucians* (Walker, 1856) ? N2
- *flavescens* (Müller, 1764) L
- *intrudens* Dyar, 1919 ? N3
- *pullatus* (Coquillett, 1904) !
- *punctor* (Kirby, 1837) !
- *riparius* Dyar & Knab, 1907 ? N4
- *sticticus* (Meigen, 1838) !

(*Rusticoidus* Shevchenko & Prudkina, 1973)
- *refiki* Medschid, 1928 L
- *rusticus* (Rossi, 1790) !

(*Stegomyia* Theobald, 1901)
- *albopictus* (Skuse, 1894) !

Anopheles Meigen, 1818
(*Anopheles* s.str.)
- *claviger* (Meigen, 1804) !
- *maculipennis s.l.* Meigen, 1818 ! N5
- *messeae* Falleroni, 1926 !
- *plumbeus* Stephens, 1828 !

Coquillettidia Dyar, 1905
(*Coquillettidia* s.str.)
- *buxtoni* (Edwards, 1923) !
- *richiardii* (Ficalbi, 1889) !

Culex Linnaeus, 1758
(*Barraudius* Edwards, 1921)
- *modestus* Ficalbi, 1889 !

(*Culex* s.str.)
- *pipiens s.l.* Linnaeus, 1758 ! N6

- *theileri* Theobald, 1903 ? N7
- *torrentium* Martini, 1925 !

(*Maillotia* Theobald, 1907)

- *hortensis* Ficalbi, 1890 !

(*Neoculex* Dyar, 1905)

- *martinii* Medschid, 1930 !
- *territans* Walker, 1856 !

Culiseta Felt, 1904

(*Allotheobaldia* Brolemann, 1919)

- *longiareolata* (Macquart, 1838) !

(*Culicella* Felt, 1904)

- *fumipennis* (Stephens, 1825) L
- *morsitans* (Theobald, 1901) !

(*Culiseta* s.str.)

- *alaskaensis* (Ludlow, 1906) L
- *annulata* (Schrank, 1776) !
- *glaphyroptera* (Schiner, 1864) ? N4

Orthopodomyia Theobald, 1904

- *pulcripalpis* (Rondani, 1872) ? N7

Excluded species

Aedes dorsalis (Meigen, 1830)

Notes

N1 *Aedes caspius*: some specimens were reported under the name *Aedes dorsalis*, most probably because of a misidentification due to inverted figures in the identification key used (Cranston et al. 1987, cited by the author in the 1998 Checklist [Briegel 1998]); thus *Ae. dorsalis* is removed from the species list.

N2 *Aedes excrucians s.l.* is a species complex, of which two members could occur in Switzerland: *Ae. excrucians s.str.* and *Ae. surcoufi*; to date, the precise identity of the Swiss population is not clear (Schaffner & Mathis 2011).

N3 *Aedes intrudens*: reported at three occasions in the literature (Briegel 1973, Fouque et al. 1991, Flacio et al. 2004), but specimens need to be checked for confirmation. Since the Swiss records are located outside the species' known distribution range, its presence has to be confirmed.

N4 *Culiseta glaphyroptera* and *Aedes riparius*: only a few specimens reported at one occasion in the literature (Briegel 1973) and no specimens available; since these records are located at the margin of their known distribution range, their presence needs to be confirmed.

N5 *Anopheles maculipennis s.l.* (*An. maculipennis s.str.* and *An. messeae*) is a species complex of which the members can be accurately identified only by molecular methods. Thus, historical records of *An. atroparvus* and *An. melanoon* are removed from the checklist (including an erroneously PCR-identified record of *An. atroparvus* in Schaffner & Mathis (2011).

N6 *Culex pipiens s.l.*: this species complex comprises two biotypes, namely *pipiens* and *molestus*. Whereas the first is considered ornithophilic and has a winter diapause, the second is considered mostly anthropophilic, autogenous (first egg batch laid without blood meal) and breeds throughout the year in underground sheltered sites (pits and flooded cellars). However this picture becomes unclear during summer, when both populations meet and hybridise, with offspring showing mixed characteristics. Both forms occur in Switzerland.

N7 *Culex theileri* and *Orthopodomyia pulcripalpis*: only a few specimens reported at one occasion in the literature (Fouque et al. 1991) and no specimens available; since these records are located at the margin of their known distribution range, their presence needs to be confirmed.

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Thaumaleidae

Rüdiger Wagner (1998 Checklist: Paul H. Arnaud)
Last update: Jan 2020

Diagnosis: Adults are 2-5 mm long small lower Diptera (Nematocera), body dark yellow, orange to dark brown. Head small round; eyes large; ocelli missing; antenna with scapus, pedicellus and 10 segmented flagellum; palpus 5–segmented. Thorax firm; wing broad; cross-veins in the basal half of the wing. Legs short; no tibial spurs; 4th tarsal segment slightly bilobed. Abdomen with 8 segments and unrotated male terminalia. Epandrium and hypandrium laterally fused to a ring. Female cercus 1-segmented. Larvae elongate cylindrical; head hypognathous. Single prolegs on prothorax and terminal abdomen segment.

Biology: Thaumaleid larvae live in thin waterfilms on rock or organic surfaces (madicolous and hygropetric habitats like spray zones along waterfalls and streams, even road cuts); number of larval instars seemingly not fixed. Specimens feed from the biofilms of their habitats, adults do not feed. Pupae live near larval habitats but prefer « drier » situation (e.g. wet moss, mats of organic matter). Some species have a single generation while others seem to be permanent (Sternberg 1997, Wagner et al. 1998).

Nomenclature and classification: According to Wagner (2002).

Number of species: CH: 8 (1998 Checklist: 8),
AT: 20, DE: 15, FR: 23, IT: 9, Europe: ~76, World: ~300.

Level of faunistic knowledge in Switzerland: In need of improvement.

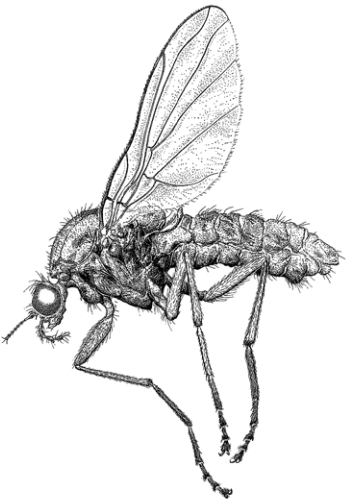
General references: Vaillant (1969, 1977, 1981), Edwards (1929), Martinovský & Rozkošný (1976).

References to the Swiss fauna: Arnaud (1998), Schmid (1951, 1958).

Checklist

Androprosopa Mik, 1898
- *larvata* (Mik, 1888) L

Thaumalea Ruthé, 1831
- *austriaca* Edwards, 1929 L
- *bezzii* Edwards, 1929 L
- *caudata* Bezzi, 1913 L
- *freyi* Edwards, 1929 L
- *major* Bezzi, 1913 L
- *testacea* Ruthé, 1831 L
- *valdesia* Schmid, 1951 L



Thaumalea bezzii,
male (CMPD2, p. 326).

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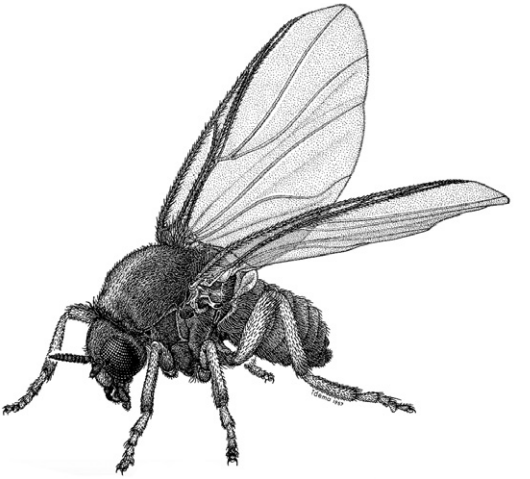
Simuliidae

David López-Peña (1998 Checklist: Rolph Glatthaar)
Last update: Jul 2024

Diagnosis: These nematocerous Diptera are characterised by their small size (3.0-6.0 mm), robust body and generally dark colouration. However, some species can also be brownish, yellowish or orange. Members of this family exhibit sexual dimorphism, with the male having holoptic eyes divided into a dorsal section (large eye facets) and a ventral section (small eye facets), while the female's eyes are dichoptic, separated from each other and with the same facet size. Simuliids have a pair of short but broad, membranous and colourless wings, varying in length from 1.4 to 6.0 mm. In addition, the costal (Cs), subcostal (Sc), middle (M), radial (Rs) and first radial (R_1) veins, responsible for maintaining shape and transmitting wing beats, are more robust than the false veins. This wing morphology, combined with significant muscle development, makes them extraordinary flyers. The antennae are usually short and cylindrical and, unlike other Nematocera, with short hairs in both sexes. They are usually made up of eleven segments, although some species have ten and rarely only nine. Another noteworthy feature of this family is the presence of the Lutz organ, which consists of a sensory orifice located in the third segment of the female's maxillary palps. It is used to detect carbon dioxide exhaled by its potential host. In some species, both sexes also have structures on their legs called *calcipala* and *pedisulcus*. The former is a semicircular extension located on the basitarsus of the first tarsomere, while the latter is a notch or groove located at the base of the second tarsomere.

Biology: Many simuliids are univoltine or bivoltine species, although *Simulium* genus includes many multivoltine species. The number of generations per year depends on the geographical distribution and environmental conditions. Females of several species often need to ingest blood for the development and maturation of their eggs, while males and females of other species feed on flower nectar, thus contributing to pollination. From time to time, specimens of some species emerge in very large numbers, aggregating in swarms, which can have major consequences in the case of hematophagous species, since they affect both animals and humans. The immature stages are mainly found in running waters where they live attached to a substratum. The larval stages can vary between seven and eleven instars, depending on the species and environmental conditions. The larvae stand out for their body morphology, the extremities of which are wider than the central area. They also have characteristic structures such as the pseudopod, located in the ventral part of the thorax, the adhesive disc in the last abdominal segment and the anal brachia near the latter. In addition, eye spots or stemmata on both sides of the cephalic capsule allow them to detect light, and a pair of filter fans used for feeding identifies them unequivocally. The pupal stage is very important for species identification and classification, because of the often-unique structures on the pupal case. In the same way, the respiratory structures or gill filaments are key characters for identification. Most keys deal therefore with pupal stages, rather than larval and adult stages. Finally, the eggs have a subtriangular shape that ranges from 0.1 to 0.5 mm. At the time of laying, they are whitish in colour and as they mature and the larva develops inside, they acquire a yellowish-brown colour.



Prosimulium mixtum,
female, not present in Switzerland
(MND1, p. 355).

Nomenclature and classification: According to Adler (2022) with some minor changes.

Number of species: CH: 35 (1998 Checklist: 34),
AT: 51, BE: 22, CZ: 43, DE: 55, ES: 51, FR: 50, IT: 72, LI: 4, NL: 18, PL: 52, PT: 33, SI: 26, SK: 46, Europe: 288, World: 2398.

Level of faunistic knowledge in Switzerland: Good; but it is possible that the number of simuliid species in Switzerland could be increased considering that neighbouring countries have a greater number of species; however, it is difficult to give an estimated number of species that could be present in Switzerland.

General references: Knoz (1965) [key to species of Czechoslovakia], Crosskey (1990) [general], Jedlička & Stloukalová (1997) [general, key to Palaearctic genera], Jedlička et al. (2004) [key to Central European species, pupae], Adler et al. (2004) [general], Roskov et al. (2019) [species catalogue], Adler (2022) [taxonomic and geographical inventory], Kúdela et al. (2022) [keys to larvae and pupae].

References to the Swiss fauna: Glatthaar (1978, 1998).

Checklist

Prosimulium Roubaud, 1906
(*Prosimulium* s.str.)
- *hirtipes* (Fries, 1824) !
- *latimucro* (Enderlein, 1925) !

= *conistylum* auct. nec Rubtsov
- *rufipes* (Meigen, 1830) !
- *tomosvaryi* (Enderlein, 1921) !

Simulium Latreille, 1802
- *canescens* Bremi, 1842 N1

(*Boophthora* Enderlein, 1921)
- *erythrocephalum* (De Geer, 1776) !

(*Eusimulium* Roubaud, 1906)
- *angustipes* Edwards, 1915 !
  = *securiforme* Rubtsov, 1956
- *aureum* (Fries, 1824) L

(*Hellichiella* Rivosecchi & Cardinali, 1975)
- *latipes* (Meigen, 1804) !
  = *subexcisum* Edwards, 1915

(*Nevermannia* Enderlein, 1921)
- *angustitarse* (Lundström, 1911) !
- *bertrandi* Grenier & Dorier, 1959 !
- *carthusiense* Grenier & Dorier, 1959 !
- *costatum* Friederichs, 1920 !
- *crenobium* (Knoz, 1961) !
- *cryophilum* (Rubtsov, 1959) !
- *lundstromi* (Enderlein, 1921) !
  = *latigonium* Rubtsov, 1956
- *quasidecolletum* Crosskey, 1988 L
  = *truncatum* Rivosecchi & Cardinali, 1975
- *vernum* Macquart, 1826 !

(*Obuchovia* Rubtsov, 1947)
- *auricoma* Meigen, 1818 N2

(*Simulium* Latreille, 1802 s.str.)
- *argenteostriatum* Strobl, 1898 !
- *argyreatum* Meigen, 1838 !
  = *rheophilum* Knoz, 1961
- *bezzii* (Corti, 1914) !
- *degrangei* Dorier & Grenier, 1960 !
- *ibariense* Zivkovic & Grenier, 1959 !
- *maximum* (Knoz, 1961) !
- *monticola* Friederichs, 1920 !
- *noelleri* Friederichs, 1920 !
  = *argyreatum* auct. (incl. Rothfels, 1979) nec Meigen
- *ornatum* Meigen, 1818 !
- *reptans* (Linnaeus, 1758) !
- *trifasciatum* Curtis, 1839 !
  = *spinosum* Doby & Deblock, 1957
- *tuberosum* (Lundström, 1911) ? N3
- *variegatum* Meigen, 1818 !

(*Wilhelmia* Enderlein, 1921)

- *equinum* (Linnaeus, 1758) !
- *lineatum* (Meigen, 1804) !

Twinnia Stone & Jamnback, 1955

- *hydroides* (Novák, 1956) !

Excluded species

Simulium lividum (Schellenberg, 1803) N4

Notes

N1 *Simulium* (unplaced subgenus) *canescens* Bremi, 1847: was recorded from Switzerland by Roskov et al. (2019). It was also recorded as « *canescens* Brème, 1842 [in Kölliker] » (among « *Simulium* sensu lato species unplaced to subgenus » in Adler (2022: 130). This species was already mentioned under the name *canescens* Brême, 1842 as « doubtful species » of *Simulium* in Rubzov & Yankovsky (1988). Indeed, there has been continuous confusion about the authors name in the literature and the opportunity is taken here to correct these mistakes. The author of this species is not Brème or Brême or Breme, as can also be found, but the Swiss entomologist J. J. Bremi, as mentioned in the very short original description of « *Simulia canescens* Br. » in Kölliker (1842). Johann Jacob Bremi (1791-1857), whose full name was Johann Jacob Bremi-Wolf, constantly only used the surname Bremi in his publications, was a Swiss entomologist who studied primarily Cecidomyiidae (Diptera) but had interest in many other groups of insects. The description in Kölliker (1842: 11, footnote 2) is preceded by the following sentence « Species novam, cui diligens noster naturae rerum inquisitor turicensis Bremi nomen imposuit, brevi hic describam » [new species for which the thorough researcher of natural history from Zürich Bremi gives the name and shortly describes here]. The description itself which follows is very short (3 lines in Latin). The plate II displays the stages of embryonic development of this species and a figure of the internal anatomy of the larva. However, although the description clearly does not allow to recognize this species, the name is valid according to the ICZN. Bremi's specimens still exist and are housed at ETHZ (Eidgenössische Technische Hochschule Zürich). Future studies of the specimens will reveal if this species can continue to be considered as such or if, on the contrary, it is a synonym of other known species.

N2 *Simulium* (*Obuchovia*) *auricoma* Meigen, 1818: although this species was recorded from Switzerland in the 1998 Checklist (Glatthaar 1998), it was not included in the « World blackflies (Diptera: Simuliidae): A comprehensive review of the taxonomic and geographical inventory [2022] » (Adler 2022) because the entry in Glatthaar's checklist had been overlooked. As a result of this updating, the species will be reported from Switzerland in the next edition of the aforementioned inventory.

N3 *Simulium tuberosum* (Lundström, 1911): was recorded as present in Switzerland in the 1998 Checklist (Glatthaar 1998), however, the presence of this species in several European countries including Switzerland is doubtful, since the name « *tuberosum* » has been widely used across a vast geographic range, with numerous European records actually pertaining to different species of the *tuberosum* species-group. This situation could also occur with the material from Switzerland. Therefore this species must be considered in Switzerland as « *S. tuberosum* (?) » or « *S. tuberosum* complex » until its occurrence in this country is confirmed.

N4 *Simulium lividum* (Schellenberg, 1803): was recorded from Switzerland among « *Simulium* sensu lato species unplaced to subgenus » in Adler (2022: 130). It was originally described as *Hirtaea livida* (Schellenberg & anonymi 1803: 24-27, pl. XXXVIII, figs. 3, f-k), but neither the description nor the figures allow unequivocal recognition of this species. Furthermore, the specimens collected by Schellenberg could not be found by several Swiss museum curators in their museum holdings; therefore, the specimens can tentatively be considered lost, and *S. lividum* can be treated as a nomen dubium. Accordingly, it has been decided that this species is not officially considered in the Swiss checklist, although Martin Rees and Dr. Carl Sagan's quote should be considered: « Absence of evidence does not mean evidence of absence », since although the material cannot be found, Schellenberg's specimens might exist in another collection (although the possibility is remote), and the illustration and the brief description provided by Schellenberg remain.

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Ceratopogonidae

Ryszard Szadziewski (1998 Checklist: Ryszard Szadziewski)
Last update: Jul 2024

Diagnosis: Small nematocerous midges (wing length 0.6-4.8 mm) common in moist habitats. Flagellum longer than head, composed of 13 flagellomeres in both sexes, in males plumose with decumbent plume hairs. Proboscis usually slightly elongate, in females adapted for piercing with well-developed biting mouthparts. Postnotum without median groove. Wing veins M_1 and M_2 usually well developed. Fore legs relatively short. Legs unarmed or greatly modified and armed with spines in predatory species. In similar Chironomidae: first medial veins are fused, plume erect in male, mouthparts greatly reduced, legs unarmed, fore legs usually long. Eggs of most Ceratopogonidae are more or less oval, in the genus *Dasyhelea* horse-shoe shaped. Larvae apneustic (without functional spiracles) with unique heavily sclerotised pharyngeal apparatus well visible through the head capsule. Pupae have respiratory horns with spiracular openings which contact the atmosphere.

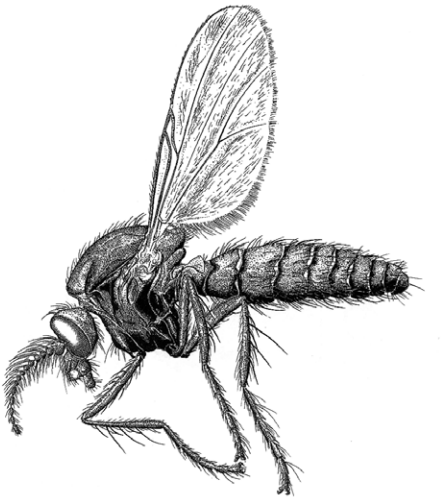
Biology: The bloodsucking adult females of biting midges are important vectors of pathogenic organisms (arboviruses, filarial parasites, protozoan blood parasites) in frogs, birds and mammals. *Culicoides* are vectors of dangerous bluetongue viral disease affecting cattle, sheep, goats, camelids and wild ruminants. Larvae are common inhabitants of shallow water bodies and semiaquatic habitats. Some species in the genera *Dasyhelea*, *Forcipomyia*, *Atrichopogon* and *Culicoides* live in typical terrestrial habitats like rotting wood, horse or cow dung or even ant nests, tree holes and sap flows. Feeding habits of adults are diverse. Fully functional biting mouthparts are restricted to the females. Males only take meals of sugar and water from flower nectar and honeydew. In all *Dasyhelea* and some *Forcipomyia*, both sexes feed exclusively on nectar. Females of other genera usually only supplement their protein rich diet with nectar. A protein rich meal is necessary for ovarian development in most species. The females of *Culicoides* suck blood from mammals and birds, while *Forcipomyia* (*Lasiohelea*) *velox* feed on frogs. Some species of *Forcipomyia* and *Atrichopogon* are ectoparasites on caterpillars and adults of Lepidoptera, Odonata, Coleoptera and Neuroptera from which they suck the hemolymph. The females of the subfamily Ceratopogoninae, except *Culicoides*, are predators on small insects. They inject proteolytic enzymes into their prey, which dissolve tissues. The digested fluid is then sucked out.

Nomenclature and classification: According to World catalogue (Borkent & Dominiak 2020) and Fauna Europaea (Szadziewski et al. 2013), with some changes.

Number of species: CH: 104 (1998 Checklist: 55),
CZ: 175, DE: 256, EE: 184, FR: 243, GB: 169, PL 220, SL: 137, Europe: ~600, World: ~6300.

Level of faunistic knowledge in Switzerland: Poor.

General references: Boorman (1997) [keys, Palaearctic genera], Borkent (2014) [keys, pupae of the world], Glukhova (2005) [keys to species of *Culicoides*, Russia and adjacent



Forcipomyia brevipennis, male (CMPD2, p. 351).

countries], Goetghebuer (1934) [keys to Palaearctic species], González & Goldarazena (2011) [keys to *Culicoides* of north Spain], Szadziewski et al. (1997) [keys to genera, north Europe], Remm (1988) [catalogue, Palaearctic species], Szadziewski et al. (2013) [Fauna Europaea], Wirth & Grogan (1988) [predatory genera of the world].

References to the Swiss fauna: Cagienard et al. (2006), Casati et al. (2009), Delécolle & Schiegg (1998, 1999a, 1999b), Schiegg et al. (1999), Szadziewski (1998), Wenk et al. (2012).

Checklist

Atrichopogon Kieffer, 1906
(*Atrichopogon* s.str.)
- *brunnipes* (Meigen, 1804) !
- *fuscus* (Meigen, 1804) !
- *minutus* (Meigen, 1830) !
- *pavidus* (Winnertz, 1852) !

(*Lophomyidium* Cordero, 1929)
- *fusculus* (Coquillett, 1901) !
  = *polydactylus* Nielsen, 1951

(*Meloehelea* Wirth, 1956)
- *lucorum* (Meigen, 1818) !
  = *setosipennis* (Kieffer, 1911)
- *oedemerarum* Stora, 1939 !
- *winnertzi* Goetghebuer, 1922 !

(*Psammopogon* Remm, 1979)
- *flaveolus* Zilahi-Sebess, 1936 L

(*Psilokempia* Enderlein, 1936)
- *appendiculatus* (Goetghebuer, 1920) !
- *forcipatus* (Winnertz, 1852) L
- *maculatus* (Lundström, 1910) !
  = *avastensis* Remm, 1959

Bezzia Kieffer, 1899
(*Bezzia* s.str.)
- *winnertziana* Kieffer, 1919 !

(*Pygobezzia* Remm, 1974)
- *albicornis* (Meigen, 1818) !
- *fuliginata* Clastrier, 1962 !

Brachypogon Kieffer, 1899
(*Brachypogon* s.str.)
- *fagicola* Delécolle & Schiegg, 1999 !

(*Isohelea* Kieffer, 1917)
- *alpinus* (Clastrier, 1961) L
- *babiogorensis* Szadziewski, 1994 !
- *hudjakovi* (Remm, 1974) !
- *nitidulus* (Edwards, 1921) !

Ceratoculicoides Wirth & Ratanaworabhan, 1971
- *moravicus* Knoz, 1987 !
  = *havelkai* Wirth & Grogan, 1988
- *tontoeguri* (Havelka, 1980) !

Ceratopogon Meigen, 1803
- *grandiforceps* (Kieffer, 1913) !

Culicoides Latreille, 1809
(*Avaritia* Fox, 1955)
- *chiopterus* (Meigen, 1830) !
- *dewulfi* Goetghebuer, 1936 !
- *imicola* Kieffer, 1913 !
- *obsoletus* (Meigen, 1818) !
- *scoticus* Downes & Kettle, 1952 !

(*Beltranmyia* Vargas, 1953)
- *circumscriptus* Kieffer, 1918 !

(*Culicoides* s.str.)
- *deltus* Edwards, 1939 !
- *fagineus* Edwards, 1939 !
- *flavipulicaris* (Dzafarov, 1964) !
- *grisescens* Edwards, 1939 !
- *impunctatus* Goetghebuer, 1920 !
- *newsteadi* Austen, 1921 !
- *pulicaris* (Linnaeus, 1758) !
- *punctatus* (Meigen, 1804) !

(*Groganomyia* Szadziewski & Dominiak, 2019)

- *cameroni* Campbell & Pelham-Clinton, 1960 !

(*Monoculicoides* Khalaf, 1954)

- *helveticus* Callot, Kremer & Déduit, 1962 L
- *nubeculosus* (Meigen, 1830) !

(*Oecacta* Poey, 1853)

- *albicans* (Winnertz, 1852) !
- *brunnicans* Edwards, 1939 !
- *vexans* (Staeger, 1839) !

(*Sensiculicoides* Shevchenko, 1977)

- *cataneii* (Clastrier, 1957) !
- *comosioculatus* Tokunaga, 1956 !
- *duddingstoni* Kettle & Lawson, 1955 !
- *festivipennis* Kieffer, 1914 !
- *furcillatus* Callot, Kremer & Paradis, 1962 !
- *indistinctus* (Khalaf, 1961) !
- *jurensis* Callot, Kremer & Paradis, 1962 !
- *kibunensis* Tokunaga, 1937 !
- *pictipennis* (Staeger, 1839) !
- *pseudoheliophilus* Callot & Kremer, 1961 !

(*Silvaticulicoides* Glukhova, 1977)

- *achrayi* Kettle & Lawson, 1955 !
- *fascipennis* Staeger, 1839 !
- *pallidicornis* Kieffer, 1919 L

(*Wirthomyia* Vargas, 1973)

- *reconditus* Campbell & Pelham-Clinton, 1960 !
- *segnis* Campbell & Pelham-Clinton, 1960 !

Dasyhelea Kieffer, 1911

(*Dasyhelea* s.str.)

- *bilineata* Goetghebuer, 1920 !
  - = *saxicola* (Edwards, 1929)
- *flavifrons* (Guérin-Méneville, 1833) !
  - = *dufouri* (Laboulbène, 1869)
  - = *paludicola* Kieffer, 1925
- *malleola* Remm, 1962 !
- *pallidiventris* (Goetghebuer, 1931) !

(*Dicryptoscena* Enderlein, 1936)

- *modesta* (Winnertz, 1852) !
- *notata* Goetghebuer, 1920 !

(*Prokempia* Kieffer, 1913)

- *flaviventris* (Goetghebuer, 1910) !

(*Pseudoculicoides* Malloch, 1915)

- *arenivaga* Macfie, 1943 !

Forcipomyia Meigen, 1818

(*Caloforcipomyia* Saunders, 1956)

- *glauca* Macfie, 1934 !

(*Euprojoannisia* Bréthes, 1914)

- *alacris* (Winnertz, 1852) !
- *borealis* Remm, 1966 !
- *palustris* (Meigen, 1804) !
- *phlebotomoides* Bangerter, 1933 L
- *titillans* (Winnertz, 1852) !

(*Forcipomyia* s.str.)

- *bipunctata* (Linnaeus, 1767) !
  - = *tenuisquama* Kieffer, 1924
- *braueri* (Wasman, 1893) L
- *brevipennis* (Macquart, 1826) !
- *ciliata* (Winnertz, 1852) !
- *costata* (Zetterstedt, 1838) !
  - = *picea* (Winnertz, 1852)
- *longisetosa* Krivosheina & Remm, 1974 !
  - = *helvetica* Delécolle & Schiegg, 1999
- *nigra* (Winnertz, 1852) !
- *pallida* (Winnertz, 1852) !
- *pseudonigra* Delécolle & Schiegg, 1999 !
- *pulchrithorax* Edwards, 1924 !
- *sahariensis* Kieffer, 1923 !
  - = *acanthophora* Remm, 1976
- *sihlwaldensis* Delécolle & Schiegg, 1999 !
- *tenuis* (Winnertz, 1852) !

(*Lasiohelea* Kieffer, 1921)

- *velox* (Winnertz, 1852) !

(*Lepidohelea* Kieffer, 1917)

- *tibialis* Remm, 1961 !

(*Microhelea* Kieffer, 1917)

- *fuliginosa* (Meigen, 1818) !

(*Pterobosca* Macfie, 1940)

- *paludis* (Macfie, 1936) !

(*Thyridomyia* Saunders, 1925)

- *monilicornis* (Coquillett, 1905) !

(*Trichohelea* Goetghebuer, 1920)

- *eques* (Johannsen, 1908) !
- *tonnoiri* (Goetghebuer, 1920) !

Kolenohelea de Meillon & Wirth, 1981

- *calcarata* (Goetghebuer, 1920) !

Mallochohelea Wirth, 1962

- *alpina* (Clastrier, 1962) L

Palpomyia Meigen, 1818

- *brachialis* (Hailday, 1833) !
- *distincta* (Haliday, 1833) !
- *flavicornis* (Staeger, 1839) !
- *lineata* (Meigen, 1818) !
- *serripes* (Meigen, 1818) !

- *spinipes* (Panzer, 1806) !

Schizohelea Kieffer, 1917

- *leucopeza* (Meigen, 1804) !

Serromyia Meigen, 1818

- *femorata* (Meigen, 1804) !
- *ledicola* Kieffer, 1925 !
- *subinermis* Kieffer, 1919 !

Excluded species

Dasyhelea turficola Kieffer, 1925 N1

Dasyhelea flavoscutellata (Zetterstedt, 1850) N2

Notes

N1 *Dasyhelea turficola* Kieffer, 1925 was mentioned without locality from Switzerland by mistake by Dominiak & Szadziewski (2010).

N2 Specimens from Switzerland determined as *Dasyhelea flavoscutellata* actually concern *D. arenivaga*.

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Chironomidae

Brigitte Lods-Crozet (1998 Checklist: Brigitte Lods-Crozet)
Last update: Jul 2024

Diagnosis: Small to large larvae (3-60 mm) having a well-developped, complete, non-retractile head capsule. The larvae may be distinguished from other nematocerous larvae by the absence of spiracles (apneustic), paired prolegs on first thoracic and terminal abdominal segments and paired procerci bearing apically a tuft of setae on the terminal abdominal segment. The pupal stage (3-22 mm) is short-lived compared with the larval stage (duration few hours to several days). The pupa is comma shaped, with a swollen cephalothorax and dorsoventrally flattened abdomen. The paired thoracic respiratory organs are tubular or ramified and the two anal lobes form a swimming lobe bearing setae and/or spines. Adults are very small to large (1-15 mm) with no marked sexual dimorphism, except for antenna and genitalia. Male have generally prominent and plumose antenna. The mouthparts are shortened and characteristic of non-biting midges. Wing venation is reduced relative to the basic Dipteran pattern. Abdominal segments are dorsoventrally flattened without prominent pleurae. The female abdomen is shorter and more swollen than that of the male. Identification keys are generally based on male adult material. Five subfamilies are present in Switzerland.

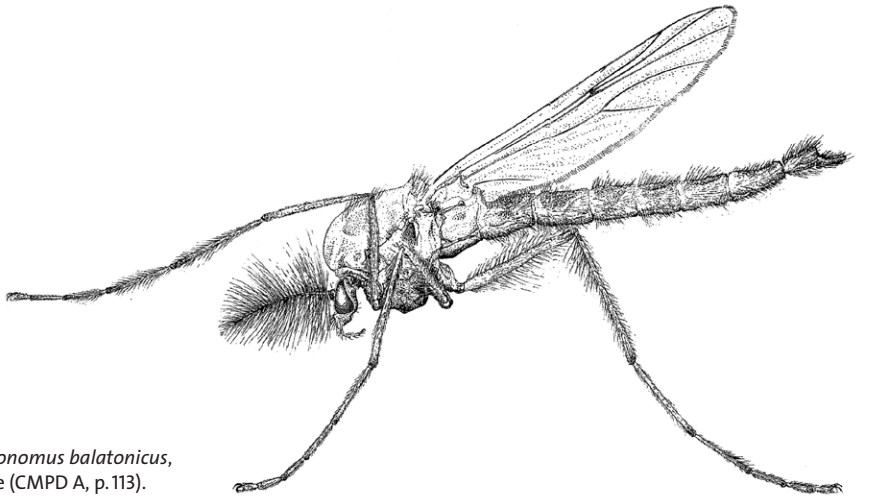
Biology: Most species are univoltine to bivoltine but three or more generations per year are not unusual. A substantial number of species, especially among the subfamily Orthocladiinae, are multivoltine with continuous recruitment for much of the year. Larvae have different feeding behaviours and can be herbivorous, detritivorous and/or carnivorous. Most species of the Tanypodinae subfamily are predators and have the ability to pierce and withdraw body fluids from their prey. Adults may feed on flowers. They colonise every type of freshwater environment from glacial waters to the deepest parts of lakes and moist soils. The pupa swims to the surface where the adult usually emerges within a few seconds. Adult midges live for up to a few weeks, but for many species, adult life lasts just a few days.

Nomenclature and classification: According to Fauna Europaea (Spies & Saether 2013), with some minor changes.

Number of species: CH: 455 (1998 Checklist: 290),
AT: 596, BE: 305, DE: 767, FI: 782, FR: 677, GB: 606, IT: 529, NL: 551, RO: 403, Europe: ~1200, World: > 15'000.

Level of faunistic knowledge in Switzerland: Medium

General references: Andersen, Cranston & Epler (2013) [key to genera, larvae, Holarctic], Langton (1991) [key to species, pupal exuviae, West Palaearctic], Orendt (2008) [key to genera, pupal exuviae, Europa], Wiederholm (1986) [key to genera, pupae, Holarctic], Wiederholm (1989) [key to genera, male adults, Holarctic].



Chironomus balatonicus, male (CMPD A, p. 113).

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

Checklist

Chironominae

Benthalia Lipina, 1939
- *carbonaria* (Meigen, 1804) !
  - = *dissidens* (Walker, 1856)

Chironomus Meigen, 1803
(*Chironomus* s.str.)
- *aberratus* Keyl, 1961 L
- *acutiventris* Wülker, Ryser & Scholl, 1983 L
- *alpestris* Goetghebuer, 1934 L
- *annularius* auct. nec De Geer, 1776 !
- *anthracinus* Zetterstedt, 1860 !
- *balatonicus* Devai, Wuelker & Scholl, 1983 L
- *bernensis* Klötzli in Wülker & Klötzli, 1973 !
- *cingulatus* Meigen, 1830 !
- *clarus* Hirvenoja, 1962 L
- *commutatus* Keyl, 1960 !
- *crassimanus* Strenzke, 1959 L
- *entis* Shobanov, 1989 L
- *holomelas* Keyl, 1961 L
- *lacunarius* Wülker in Wülker & Klötzli, 1973 L
- *longistylus* Goetghebuer, 1921 L

- *lugubris* Zetterstedt, 1850 L
- *luridus* Strenzke, 1959 !
- *melanescens* Keyl, 1961 L
- *melanotus* Keyl, 1961 L
- *muratensis* Ryser, Scholl & Wülker, 1983 !
- *nuditarsis* Keyl, 1961 !
- *nudiventris* Ryser, Scholl & Wülker, 1983 !
- *obtusidens* (Goetghebuer, 1921) !
- *pallidivittatus* (Malloch, 1915) !
- *piger* Strenzke, 1956 L
- *plumosus* (Linnaeus, 1758) !
- *pseudothummi* Strenzke, 1959 L
- *riparius* Meigen, 1804 !
- *sororius* Wülker, 1973 L
- *striatus* Strenzke, 1959 L
- *tentans* Fabricius, 1805 L
- *uliginosus* Keyl, 1960 L
- *venustus* Staeger, 1839 L

(*Lobochironomus* Ryser, Wülker & Scholl, 1985)

- *dorsalis* Meigen, 1818 !
  - = *longipes* (Staeger, 1839)
- *mendax* Stora, 1936 L
  - = *Einfeldia mendax* (Storå, 1936)
- *montuosus* Ryser, Wülker & Scholl, 1985 L
- *storai* Goetghebuer, 1937 L

Cladopelma Kieffer, 1921

- *edwardsi* (Kruseman, 1933) !
- *krusemani* (Goetghebuer, 1935) L
- *virescens* (Meigen, 1818) L
- *viridulum* (Linnaeus, 1767) !

Cladotanytarsus Kieffer, 1922

(*Cladotanytarsus* s.str.)

- *atridorsum* Kieffer, 1924 L
- *mancus* (Walker, 1856) !
- *nigrovittatus* (Goetghebuer, 1922) L
- *pallidus* Kieffer, 1922 L

Cryptochironomus Kieffer, 1918

(*Cryptochironomus* s.str.)

- *albofasciatus* (Staeger, 1839) !
- *obreptans* (Walker, 1856) L
- *psittacinus* (Meigen, 1830) !
- *redekei* (Kruseman, 1933) L
- *rostratus* Kieffer, 1921 L
- *supplicans* (Meigen, 1830) L

Cryptotendipes Lenz, 1941

- *holsatus* Lenz, 1959 L

Demeijerea Kruseman, 1933
- *rufipes* (Linnaeus, 1760) L

Demicryptochironomus Lenz, 1941
(*Demicryptochironomus* s.str.)
- *vulneratus* (Zetterstedt, 1838) !

(*Irmakia* Reiss, 1988)
- *neglectus* Reiss, 1988 L

Dicrotendipes Kieffer, 1913
- *lobiger* (Kieffer, 1921) !
- *nervosus* (Staeger, 1839) !
- *notatus* (Meigen, 1818) !
- *pulsus* (Walker, 1856) !
  = *modestus* (Say, 1823)
- *tritomus* (Kieffer, 1916) !

Einfeldia Kieffer, 1924
- *pagana* (Meigen, 1838) !

Endochironomus Kieffer, 1918
- *albipennis* (Meigen, 1830) !
- *lepidus* (Meigen, 1830) L
- *tendens* (Fabricius, 1775) !

Glyptotendipes Kieffer, 1913
(*Caulochironomus* Heyn, 1993)
- *imbecilis* (Walker, 1856) L

(*Glyptotendipes* s.str.)
- *cauliginellus* Kieffer, 1913 !
  = *gripekoveni* (Kieffer, 1913)
- *pallens* (Meigen, 1804) L
- *paripes* (Edwards, 1929) L

Harnischia Kieffer, 1921
- *curtilamellata* (Malloch, 1915) !

Microchironomus Kieffer, 1918
- *tener* (Kieffer, 1918) !

Micropsectra Kieffer, 1908
- *apposita* Walker, 1856 !
  = *contracta* Reiss, 1965
- *aristata* Pinder, 1976 ! [1]
- *atrofasciata* (Kieffer, 1911) L
  = *bidentata* (Goetghebuer, 1921)
- *attenuata* Reiss, 1969 !
- *junci* (Meigen, 1818) !
- *lindrothi* Goetghebuer, 1931 !
- *logani* Johannsen, 1928 !
  = *groenlandica* Soegaard Andersen, 1937
- *notescens* (Walker, 1856) L
- *oberaarensis* Stur & Ekrem, 2008 L
- *radialis* Goetghebuer, 1939 !

- *recurvata* Goetghebuer, 1928 L
- *roseiventris* (Kieffer, 1909) !
  = *fusca* (Meigen, 1804)
- *schrankelae* Stur & Ekrem, 2006 !
- *sofiae* Stur & Ekrem, 2006 !

Microtendipes Kieffer, 1915
- *britteni* (Edwards, 1929) L
- *chloris* (Meigen, 1818) !
- *diffinis* (Edwards, 1929) !
- *pedellus* (De Geer, 1776) !
- *rydalensis* (Edwards, 1929) !

Neostempellina Reiss, 1984
- *thienemanni* Reiss, 1984 !

Neozavrelia Goetghebuer, 1941
- *bernensis* Reiss, 1968 L
- *cuneipennis* (Edwards, 1929) ! [41]
- *fuldensis* Fittkau, 1954 !

Pagastiella Brundin, 1949
- *orophila* (Edwards, 1929) L

Parachironomus Lenz, 1921
- *biannulatus* (Staeger, 1839) L
- *frequens* (Johannsen, 1905) L
- *gracilor* Kieffer, 1918 !
  = *arcuatus* (Goetghebuer, 1919)
- *monochromus* (van der Wulp, 1874) !
- *parilis* (Walker, 1856) !
- *tenuicaudatus* (Malloch, 1915) L
- *vitiosus* (Goetghebuer, 1915) L

Paracladopelma Harnisch, 1923
- *camptolabis* (Kieffer, 1913) L
- *laminatum* (Kieffer, 1921) L
- *mikianum* (Goetghebuer, 1937) L
- *nigritulum* (Goetghebuer, 1942) L

Paralauterborniella Lenz, 1941
- *nigrohalteralis* (Malloch, 1915) !

Paratanytarsus Thienemann & Bause, 1913
- *austriacus* (Kieffer, 1924) !
- *bituberculatus* (Edwards, 1929) L
- *brevicalcar* (Kieffer, 1909) !
  = *intricatus* (Goetghebuer, 1921)
- *dimorphis* Reiss, 1965 L
- *dissimilis* (Johannsen, 1905) L
- *inopertus* (Walker, 1856) !
- *laccophilus* (Edwards, 1929) !
- *laetipes* (Zetterstedt, 1850) L
- *penicillatus* (Goetghebuer, 1928) L

- *tenellulus* (Goetghebuer, 1921) !
- *tenuis* (Meigen, 1830) L

Paratendipes Kieffer, 1911
- *albimanus* (Meigen, 1818) !
- *nudisquama* (Edwards, 1929) !

Phaenospectra Kieffer, 1921
- *flavipes* (Meigen, 1818) !

Polypedilum Kieffer, 1912
(*Pentapedilum* Kieffer, 1913)
- *nubens* (Edwards, 1929) L
- *sordens* (van der Wulp, 1874) !
- *tritum* (Walker, 1856) !
- *uncinatum* (Goetghebuer, 1921) !

(*Polypedilum* s.str.)
- *albicorne* (Meigen, 1838) L
- *laetum* (Meigen, 1818) L
- *nubeculosum* (Meigen, 1804) !
- *pedestre* (Meigen, 1830) !

(*Tripodura* Townes, 1945)
- *bicrenatum* Kieffer, 1921 !
- *pullum* (Zetterstedt, 1838) L
- *quadriguttatum* Kieffer, 1921 L
- *scalaenum* (Schrank, 1803) !

(*Uresipedilum* Oyewo & Saether, 1998)
- *convictum* (Walker, 1856) L
- *cultellatum* Goetghebuer, 1931 !

Pseudochironomus Malloch, 1915
- *prasinatus* (Staeger, 1839) !

Rheotanytarsus Thienemann & Bause, 1913
- *nigricauda* Fittkau, 1960 L

Sergentia Kieffer, 1922
- *coracina* (Zetterstedt, 1850) !

Stempellina Thienemann & Bause, 1913
- *bausei* (Kieffer, 1911) L

Stempellinella Brundin, 1947
- *brevis* (Edwards, 1929) L
- *edwardsi* (Spies & Saether, 2004) !
  = *minor* (Edwards, 1929)
- *flavidula* (Edwards, 1929) !

Stenochironomus Kieffer, 1919
(*Stenochironomus* s.str.)
- *gibbus* (Fabricius, 1794) !

Stictochironomus Kieffer, 1919
- *crassiforceps* (Kieffer, 1922) L
- *maculipennis* (Meigen, 1818) L
- *pictulus* (Meigen, 1830) L

- *rosenschoeldi* (Zetterstedt, 1838) L

Synendotendipes Grodhaus, 1987
- *dispar* (Meigen, 1830) !

Tanytarsus Van Der Wulp
- *aberrans* Lindeberg, 1970 L
- *bathophilus* Kieffer, 1911 !
- *brundini* Lindeberg, 1963 L
- *chyniensis* Goetghebuer, 1934 ! [2]
- *debilis* (Meigen, 1830) L
- *ejuncidus* (Walker, 1856) L
- *eminulus* (Walker, 1856) !
- *excavatus* Edwards, 1929 !
- *mendax* Kieffer, 1925 !
- *miriforceps* (Kieffer, 1921) L
- *multipunctatus* Brundin, 1947 L
- *nemorosus* Edwards, 1929 !
- *niger* Soegaard Andersen, 1937 !
- *occultus* Brundin, 1949 L
- *palettaris* Verneaux, 1969 L
- *pallidicornis* (Walker, 1856) L
- *sinuatus* (Goetghebuer, 1936) !
- *usmaensis* Pagast, 1931 L
- *verralli* Goetghebuer, 1928 !

Tribelos Townes, 1945
- *intextum* (Walker, 1856) L

Virgatanytarsus Pinder, 1982
- *ansatus* Reiss & Schürch, 1984 L
- *arduennensis* (Goetghebuer, 1922) !

Xenochironomus Kieffer, 1921
- *xenolabis* (Kieffer, 1916) !

Zavrelia Kieffer, 1913
- *pentatoma* Kieffer in Bause, 1913 L

Zavreliella Kieffer, 1920
- *marmorata* (van der Wulp, 1858) !

Diamesinae

Boreoheptagyia Brundin, 1966
- *alpicola* Serra-Tosio, 1898 !
- *legeri* (Goetghebuer, 1933) !
- *monticola* (Serra-Tosio, 1964) ! [3]

Diamesa Meigen, 1835
(*Diamesa* s.str.)
- *aberrata* Lundbeck, 1889 L
- *bertrami* Edwards, 1935 !
- *bohemani* Goetghebuer, 1932 !
- *cinerella* Meigen in Gistl, 1835 !

- *dampfi* (Kieffer, 1924) !
- *goetghebueri* Pagast, 1947 !
- *hamaticornis* Kieffer, 1924 L
- *incallida* (Walker, 1856) !
- *insignipes* Kieffer, 1908 !
- *kasymovi* Kownacki & Kownacka, 1973 L
- *laticauda* Serra-Tosio, 1964 !
- *latitarsis* (Goetghebuer, 1921) !
- *lindrothi* Goetghebuer, 1931 !
- *modesta* Serra-Tosio, 1967 L
- *nowickiana* Kownacki & Kownacka, 1975 !
- *starmachi* Kownacki & Kownacka, 1970 L
- *steinboecki* Goetghebuer, 1933 !
- *thomasi* Serra-Tosio, 1970 ! [4]
- *tonsa* (Walker, 1856) L
- *vaillanti* Serra-Tosio, 1972 !
- *wuelkeri* Serra-Tosio, 1964 !
- *zernyi* Edwards, 1933 !

Potthastia Kieffer, 1922
- *gaedii* (Meigen, 1838) L
- *longimanus* (Kieffer, 1922) !

Protanypus Kieffer, 1906
- *caudatus* Edwards, 1924 ! [5]
- *forcipatus* (Egger, 1863) !
- *morio* (Zetterstedt, 1838) L

Pseudodiamesa Goetghebuer, 1939
(*Pseudodiamesa* s.str.)
- *branickii* (Nowicki, 1873) !
- *nivosa* (Goetghebuer, 1928) !

Pseudokiefferiella Zavrel, 1941
- *parva* (Edwards, 1932) !

Syndiamesa Kieffer, 1918
- *edwardsi* (Pagast, 1947) !
- *nigra* Rossaro, 1980 L [6]

Orthocladiinae

Acricotopus Kieffer, 1921
- *lucens* (Zetterstedt, 1850) !

Allocladius Kieffer, 1913
- *arenarius* (Strenzke, 1960) ! [42]

Brillia Kieffer, 1913
- *bifida* (Kieffer, 1909) !
  = *modesta* (Meigen, 1830)
- *flavifrons* (Johannsen, 1905) !
- *longifurca* Kieffer, 1921 ! [7]

Bryophaenocladius Thienemann, 1934

- *femineus* (Edwards, 1929) !
- *helveticus* Moubayed-Breil, 2022 !
- *nidorum* (Edwards, 1929) L
- *subvernalis* (Goetghebuer, 1921) !

Camptocladius van der Wulp, 1874
- *stercorarius* (De Geer, 1776) L

Cardiocladius Kieffer, 1912
- *capucinus* (Zetterstedt, 1850) !

Chaetocladius Kieffer, 1911
(*Chaetocladius* s.str.)
- *castellae* Moubayed-Breil, 2018 !
- *coppai* Moubayed-Breil, 2017 ! [8]
- *curtistylus* (Goetghebuer, 1940) ! [9]
- *dentiforceps* (Edwards, 1929) !
- *dissipatus* (Edwards, 1929) L
- *insolitus* Caspers, 1987 L
- *laminatus* Brundin, 1947 L
- *lencioniae* Moubayed-Breil, 2018 !
- *lodscrozetae* Moubayed-Breil, 2018 !
- *macunensis* Moubayed-Breil, 2018 !
- *melaleucus* (Meigen, 1818) !
- *minutissimus* (Goetghebuer, 1942) L
- *muttensis* Moubayed-Breil, 2018 !
- *perennis* (Meigen, 1830) L
- *piger* (Goetghebuer, 1913) ! [10]
- *suecicus* (Kieffer, 1916) !

Corynoneura Winnertz, 1846
- *arctica* Kieffer, 1923 !
- *brevipennis* (Goetghebuer, 1913) L
- *carriana* Edwards, 1924 !
- *celtica* Edwards, 1924 !
- *coronata* Edwards, 1924 !
- *edwardsi* Brundin, 1949 !
- *lacustris* Edwards, 1924 L
- *lobata* Edwards, 1924 !
- *scutellata* Winnertz, 1846 !

Cricotopus van der Wulp, 1874
(*Cricotopus* s.str.)
- *albiforceps* (Kieffer, 1916) L
- *annulator* Goetghebuer, 1927 !
- *bicinctus* (Meigen, 1818) L
- *curtus* Hirvenoja, 1973 L
- *festivellus* (Kieffer, 1906) L
- *fuscus* (Kieffer, 1909) L
- *similis* Goetghebuer, 1921 L
- *tibialis* (Meigen, 1804) !

- *tremulus* (Linnaeus, 1758) L
- *triannulatus* Macquart, 1826 L
- *trifascia* Edwards, 1929 L
- *vierriensis* Goetghebuer, 1935 L

(*Isocladius* Kieffer, 1909)

- *intersectus* (Staeger, 1839) !
- *laricomalis* Edwards, 1929 L
- *obnixus* (Walker, 1856) L
- *reversus* Hirvenoja, 1973 L
- *sylvestris* (Fabricius, 1794) !
- *tricinctus* (Meigen, 1818) L
- *trifasciatus* (Meigen, 1810) L

(*Nostococladius* Ashe & Murray, 1980)

- *lygropis* Edwards, 1929 L

Diplocladius Kieffer, 1908

- *cultriger* Kieffer, 1908 ! [11]

Dratnalia Saether & Halvorsen, 1981

- *potamophylaxi* (Fittkau & Lellak, 1971) !

Epoicocladius Sulc & Zavrel, 1924

- *ephemerae* (Kieffer, 1924) ! N1 [12]

Eukiefferiella Thienemann, 1926

- *brevicalcar* (Kieffer, 1911) !
- *claripennis* (Lundbeck, 1898) !
- *clypeata* (Kieffer, 1923) L
- *coerulescens* (Kieffer, 1926) !
- *cyanea* Thienemann, 1936 L
- *devonica* (Edwards, 1929) !
- *dittmari* Lehmann, 1972 ! [13]
- *fittkaui* Lehmann, 1972 !
- *fuldensis* Lehmann, 1972 !
- *gracei* (Edwards, 1929) !
- *ilkleyensis* (Edwards, 1929) !
- *lobifera* Goetghebuer, 1934 !
- *minor* (Edwards, 1929) !
- *pseudomontana* Goetghebuer, 1935 L
- *tirolensis* Goetghebuer, 1938 !

Eurycnemus Wulp, 1874

- *crassipes* Meigen, 1810 L

Euryhapsis Oliver, 1981

- *subviridis* (Siebert, 1979) !

Georthocladius Strenzke, 1941

- *luteicornis* (Goetghebuer, 1941) ! [14]

Gymnometriocnemus Edwards, 1932

(*Gymnometriocnemus* s.str.)

- *subnudus* (Edwards, 1929) L

(*Rhaphidocladius* Saether, 1983)

- *brumalis* (Edwards, 1929) L
- *volitans* (Goetghebuer, 1940) L

Heleniella van der Wulp, 1874
- *dorieri* Serra-Tosio, 1967 !
- *helvetica* Moubayed-Breil, 2016 !
- *ornaticollis* (Edwards, 1929) !
- *serratosioi* Ringe, 1976 L

Heterotanytarsus Spärck, 1923
- *apicalis* (Kieffer, 1921) ! [15]

Heterotrissocladius Spärck, 1923
- *grimshawi* (Edwards, 1929) !
- *marcidus* (Walker, 1856) !
- *scutellatus* (Goetghebuer, 1942) !

Hydrosmittia Ferrington &, 2011
- *brevicornis* Strenzke, 1950 ! [16]
- *oxoniana* (Edwards, 1922) L
- *ruttneri* Strenzke & Thienemann, 1942 !

Krenosmittia Thienemann & Krüger, 1939
- *boreoalpina* (Goetghebuer, 1944) !
- *camptophleps* (Edwards, 1929) !

Larsia Fittkau, 1962
- *atrocincta/curticalcar* (Goetghebuer, 1942)/(Kieffer, 1918) ! [43]

Limnophyes Eaton, 1875
- *angelicae* Saether, 1990 ! [17]
- *asquamatus* Soegaard Andersen, 1937 !
  = *squamatus* Soegaard Andersen, 1937 nec Kieffer, 1921
- *bidumus* Saether, 1990 !
- *brachytomus* (Kieffer, 1922) ! [18]
- *difficilis* Brundin, 1947 ! [19]
- *edwardsi* Saether, 1990 !
- *gelasinus* Saether, 1990 ! [20]
- *gurgicola* (Edwards, 1929) !
- *habilis* (Walker, 1856) L
- *knispelae* Moubayed & Lods-Crozet, 2023 !
- *minimus* (Meigen, 1818) !
- *natalensis* (Kieffer, 1914) !
- *ninae* Saether, 1975 ! [21]
- *pentaplastus* (Kieffer, 1921) !
- *pumilio* Holmgren, 1869 ! [22]
- *punctipennis* Goetghebuer, 1921 L
- *sartorii* Moubayed & Lods-Crozet, 2024 !

Metriocnemus Van der Wulp, 1874
(*Metriocnemus* s.str.)
- *albolineatus* (Meigen, 1818) L
- *beringensis* Cranston & Oliver, 1988 ! [44]
- *brusti* Saether, 1989 ?

- *eurynotus* (Holmgren, 1883) !
  = *hygropetricus* Kieffer, 1912
- *fuscipes* (Meigen, 1818) !
- *picipes* (Meigen, 1818) ! [23]
- *tristellus* Edwards, 1929 ! [45]
- *ursinus* (Holmgren, 1869) !

Nanocladius Kieffer, 1913
(*Nanocladius* s.str.)
- *balticus* (Palmen, 1959) L
- *dichromus* (Kieffer, 1906) !
  = *bicolor* (Zetterstedt, 1838)
- *rectinervis* (Kieffer, 1911) L

Orthocladius Wulp, 1874
(*Eudactylocladius* Thienemann, 1935)
- *fuscimanus* (Kieffer, 1908) !
- *olivaceus* (Kieffer, 1911) !
- *priomixtus* (Saether, 2004) !
  = *mixtus* (Holmgren, 1869)

(*Euorthocladius* Thienemann, 1935)
- *ashei* Soponis, 1990 !
- *luteipes* Goetghebuer, 1938 !
- *rivicola* Kieffer, 1921 !
- *rivulorum* Kieffer, 1909 !
- *thienemanni* Kieffer, 1906 !

(*Mesorthocladius* Sæther, 2005)
- *frigidus* (Zetterstedt, 1838) !

(*Orthocladius* s.str.)
- *oblidens* (Walker, 1856) !
- *pedestris* Kieffer, 1909 !
- *rhyacobius* Kieffer, 1911 ! [24]
- *rivinus* Kieffer, 1915 !
- *rubicundus* (Meigen, 1818) !
- *wetterensis* Brundin, 1956 L

(*Pogonocladius* Brundin, 1956)
- *consobrinus* (Holmgren, 1869) L

(*Symposiocladius* Cranston, 1982)
- *holsatus* Goetghebuer, 1937 !
- *lignicola* Kieffer, 1915 !
- *ruffoi* Rossaro, 1991 L

Paracladius Hirvenoja, 1973
- *alpicola* (Zetterstedt, 1830) !
- *conversus* (Walker, 1856) L

Paracricotopus Thienemann & Harnisch, 1932
- *niger* (Kieffer, 1913) !

Parakiefferiella Thienemann, 1936
- *bathophila* (Kieffer, 1912) L

- *dentifera* (Wülker, 1957) L
- *gracillima* (Kieffer, 1924) !
- *minuta* Tuiskunen, 1986 ! [25]
- *normandia* Moubayed-Breil & Langton, 2008 ! [26]
- *triquetra* (Pankratova, 1970) ! [46]

Parametriocnemus Goetghebuer, 1931
- *boreoalpinus* Gowin & Thienemann, 1942 ! N1 [27]
- *stylatus* (Kieffer, 1924) L

Paraphaenocladius Thienemann, 1924
- *exagitans monticola* Strenzke, 1950 L
- *impensus* (Walker, 1856) ! N2
- *irritus* (Walker, 1856) L
- *pseudirritus* Strenzke, 1950 ! N2

Parasmittia Strenzke, 1950
- *carinata* Strenzke, 1950 L

Paratrichocladius Santo-Abreu, 1918
- *nivalis* (Goetghebuer, 1938) L
- *rufiventris* (Meigen, 1830) !
- *skirwithensis* (Edwards, 1929) ! N3
- *spiesi* Ashe & O'Connor, 2012 L

Paratrissocladius Zavrel, 1937
- *excerptus* (Walker, 1856) L

Parorthocladius Thienemann, 1935
- *nudipennis* Kieffer in Kieffer & Thienemann, 1908 !

Psectrocladius Kieffer, 1906
(*Allopsectrocladius* Wülker, 1956)
- *obvius* (Walker, 1856) !

(*Psectrocladius* s.str.)
- *barbimanus* (Edwards, 1929) L
- *brehmi* Kieffer, 1923 L
- *limbatellus* (Holmgren, 1869) !
- *octomaculatus* Wülker, 1956 L
- *oxyura* Langton, 1984 L
- *psilopterus* (Kieffer, 1906) L
- *schlienzi* Wülker, 1956 L
- *sordidellus* (Zetterstedt, 1838) !
- *zetterstedti* Brundin, 1949 L

Pseudorthocladius Goetghebuer, 1932
(*Pseudorthocladius* s.str.)
- *berthelemyi* Moubayed, 1990 !
- *curtistylus* (Goetghebuer, 1921) !
- *immezensis* Moubayed-Breil & Lods-Crozet, 2021 !

Pseudosmittia Goetghebuer, 1932
- *albipennis* (Goetghebuer, 1921) !
  = *curticosta* (Edwards, 1929)
- *angusta* (Edwards, 1929) !

- *forcipata* (Goetghebuer, 1921) !
- *holsata* Thienemann & Strenzke, 1940 L

Rheocricotopus Thienemann & Harnisch, 1932
(*Psilocricotopus* Sæther, 1985)
- *chalybeatus* (Edwards, 1929) L
- *tirolus* (Lehmann, 1969) !

(*Rheocricotopus* s.str.)
- *effusus* (Walker, 1856) !
- *fuscipes* (Kieffer, 1909) !

Smittia Holmgren, 1869
- *alpicola* Goetghebuer, 1941 !
- *alpilonga* Rossaro, 2000 !
- *aterrima* (Meigen, 1818) L
- *contingens* Walker, 1856 ! [28]
- *edwardsi* Goetghebuer, 1932 !
- *foliosa* (Kieffer in Thienemann, 1921) ! [29]
- *nudipennis* (Goetghebuer, 1913) !
- *paranudipennis* Brundin, 1947 ! [30]
- *pratorum* (Goetghebuer, 1927) L
- *reissi* Rossaro & Orendt, 2001 ! [31]
- *rostrata* Goetghebuer in Schmölzer, 1962 !

Stilocladius Rossaro, 1979
- *montanus* Rossaro, 1979 !

Symbiocladius Kieffer, 1925
- *rhithrogenae* (Zayrel, 1924) !

Synorthocladius Thienemann, 1935
- *semivirens* (Kieffer, 1909) !

Thienemannia Kieffer, 1909
- *fulvofasciata* (Kieffer, 1921) L
- *gracei* (Edwards, 1929) L
- *gracilis* Kieffer, 1909 !

Thienemanniella Kieffer, 1911
- *caspersi* Saether, 2003 !
- *clavicornis* (Kieffer, 1911) L [32]

Tokunagaia Saether, 1973
- *rectangularis* (Goetghebuer, 1940) !

Tvetenia Kieffer, 1922
- *bavarica* (Goetghebuer, 1934) !
- *calvescens* (Edwards, 1929) !
- *verralli* (Edwards, 1929) L

Prodiamesinae

Monodiamesa Kieffer, 1922
- *alpicola* (Brundin, 1952) L

Odontomesa Pagast, 1947
- *fulva* (Kieffer, 1919) !

Prodiamesa Kieffer, 1906
- *olivacea* (Meigen, 1818) !

Tanypodinae

Ablabesmyia Johannsen, 1905
(*Ablabesmyia* s.str.)
- *longistyla* Fittkau, 1962 !
- *monilis* (Linnaeus, 1758) !
- *phatta* (Eggert, 1863) !

Apsectrotanypus Fittkau, 1962
- *trifascipennis* (Zetterstedt, 1838) L [33]

Arctopelopia Fittkau, 1962
- *barbitarsis* (Zetterstedt, 1850) L
- *griseipennis* (van der Wulp, 1858) L

Clinotanypus Kieffer, 1913
- *nervosus* (Meigen, 1818) !

Conchapelopia Fittkau, 1957
- *melanops* (Meigen, 1818) !

Guttipelopia Fittkau, 1962
- *guttipennis* (van der Wulp, 1861) ! [34]

Krenopelopia Fittkau, 1962
- *binotata* (Wiedemann, 1817) L

Macropelopia Thienemann, 1916
- *fehlmanni* (Kieffer, 1912) !
- *fittkaui* Ferrarese & Ceretti, 1987 ! [35]
- *nebulosa* (Meigen, 1804) L
- *notata* (Meigen, 1818) !

Monopelopia Fittkau, 1962
- *tenuicalcar* (Kieffer, 1918) !

Natarsia Fittkau, 1962
- *punctata* (Meigen, 1804) L

Nilotanypus Kieffer, 1923
- *dubius* (Meigen, 1804) L

Paramerina Fittkau, 1962
- *cingulata* (Walker, 1856) !

Pentaneurella Fittkau & Murray, 1983
- *katterjokki* Fittkau & Murray, 1983 L

Procladius Skuse, 1889
(*Holotanypus* Roback, 1982)
- *choreus* (Meigen, 1804) !
- *culiciformis* (Linnaeus, 1767) ! [36]
  = *pectinatus* Kieffer, 1909
- *sagittalis* (Kieffer, 1909) !
- *signatus* (Zetterstedt, 1850) !
- *simplicistilus* Fremann, 1948 !
- *tatrensis* Gowin, 1944 ! [37]

Psectrotanypus Kieffer, 1909
- *varius* (Fabricius, 1787) !

Tanypus Meigen, 1803
(*Tanypus* s.str.)
- *kraatzi* (Kieffer, 1912) !
- *punctipennis* Meigen, 1818 !
- *vilipennis* (Kieffer, 1918) !

Telmatopelopia Fittkau, 1962
- *nemorum* (Goetghebuer, 1921) !

Thienemannimyia Fittkau, 1957
- *geijskesi* (Goetghebuer, 1934) L
- *northumbrica* (Edwards, 1929) L [38]

Trissopelopia Kieffer, 1923
- *longimanus* (Staeger, 1839) ! [39]

Xenopelopia Fittkau, 1962
- *nigricans* (Goetghebuer, 1927) !

Zavrelimyia Fittkau, 1962
- *barbatipes* (Kieffer, 1911) L
- *melanura* (Meigen, 1804) !
- *punctatissima* (Goetghebuer, 1934) L [40]

Excluded species

Paratrichocladius smolandica (Brundin, 1947) N4
Parorthocladius nigritus (Goetghebuer, 1938)
Smittia leucopogon (Meigen, 1804)

Notes

N1 *Epoicocladius ephemerae* and *Parametriocnemus boreoalpinus*: new species for Switzerland, first observed by the Biodiversity Monitoring Schweiz 2018.

N2 *Paraphaenocladius impensus* and *P. pseudirritus* have been added in the 3rd Supplement to the Checklist (Bächli et al. 2014) based on material published by the author (Lods-Crozet 2012). However the identifications of these two species have not been confirmed by a specialist of the genus and remain therefore tentative.

N3 The occurrence of *Paratrichocladius skirwithensis* in Switzerland is considered as doubtul in Fauna Europaea. The identity of the material seen by the author has not been checked by a specialist of the genus and remains therefore tentative.

N4 *Paratrichocladius smolandica* (Brundin, 1947) was erroneously listed in the 1998 Checklist. This species does not exist and the name is therefore removed from the present list.

Species records

[1] 1L, TI, Lago Tomeo outlet, 29.9.2021, 1692 m, leg. Chiara Pradella Caissutti
[2] 2N, VD, étang Avale, 23.5.2021, 385 m, leg. DGE_EAU_VD
[3] 1L, GR, Morteratsch stream, 2014, leg. Roman Alther (EAWAG)
[4] 1M, GR, Macun, Lej Immez outlet, 30.7.2021, 2612 m, leg. Christopher Robinson (EAWAG)
[5] 1N, GR, Parc national suisse, Macun Lej Immez, 2013, leg. Brigitte Lods-Crozet (MZL)
[6] 1L, TI, lagetto Superiore, 1991, leg. Angela Boggero (INRC)
[7] 1N, VD, Rivière: Grande Eau, station amont Aigle, 13.3.2012, leg. DGE_EAU_VD
[8] 1M, VS, Gletschboden, 30.9.1998, 1775 m, leg. Sandra Knispel (MZL)
[9] 1M, VS, Gletschboden downstream Muttbach, 17.6.1998, 1790 m, leg. Sandra Knispel (MZL)

[10] 1L, TI, lagetto Superiore, 1991, leg. Angela Boggero (INRC)
[11] 1L, TI, Lago Bianco, 2009, leg. Angela Boggero (INRC)
[12] 3L, ZH, Dachseggbächli, Rüti, 10.4.2018, leg. Remo Wüthrich
[13] 1L, 1N, GR, Macun, 17.7.2002, leg. Christopher Robinson (EAWAG)
[14] 1N, GR, Macun, Lej Immez outlet, 30.7.2021, 2612 m, leg. Christopher Robinson (EAWAG)
[15] 1L, 1N, TI, lagetto Superiore, 1991, leg. Angela Boggero (INRC)
[16] 1M, VS, Rhône, Gletschboden, 17.6.1998, 1790 m, leg. Sandra Knispel (MZL)
[17] 1M, VS, Gletschboden, 30.9.1998, 1775 m, leg. Sandra Knispel (MZL)
[18] 1M, VS, Gletschboden, 30.9.1998, 1775 m, leg. Sandra Knispel (MZL)
[19] 1M, VS, Gletschboden, 30.9.1998, 1775 m, leg. Sandra Knispel (MZL)
[20] 1M, VS, Gletschboden, 30.9.1998, 1775 m, leg. Sandra Knispel (MZL)
[21] 1M, VS, Gletschboden, 30.9.1998, 1775 m, leg. Sandra Knispel (MZL)
[22] 1M, VS, Gletschboden, 30.9.1998, 1775 m, leg. Sandra Knispel (MZL)
[23] 10M, TI, Bolle di Magadino, 2001, leg. Fondazione Bolle di Magadino
[24] 1N, VD, Grande Eau, les Diablerets, 18.4.2012, leg. DGE_EAU_VD
[25] 1M, VS, Affluent Muttbach, .9.1997, 2500 m, leg. Brigitte Lods-Crozet (LEBA)
[26] 1M, VS, Rhône, Gletschboden, 17.6.1998, 1790 m, leg. Sandra Knispel (MZL)
[27] 2N, VD, Puidoux, 9.4.2018, leg. DGE_EAU_VD
[28] 1M, VS, Rhône, Gletschboden, 17.6.1998, 1790 m, leg. Sandra Knispel (MZL)
[29] 1M, VS, Rhône, Gletschboden, 17.6.1998, 1790 m, leg. Sandra Knispel (MZL)
[30] 1M, VS, Rhône, Gletschboden, 17.6.1998, 1790 m, leg. Sandra Knispel (MZL)
[31] 1M, GR, Swiss National Park, Macun, 2013, leg. Brigitte Lods-Crozet (MZL)
[32] 1N, TI, Naret piccolo, 1993, leg. Angela Boggero (INRC)
[33] 1N, TI, Lago Starlarescio, 2003, leg. Angela Boggero (INRC)
[34] 1L, SO, Burgäschisee, 2013
[35] 2P, VS, Muttbach, 8.7.2022, 2100 m, leg. Brigitte Lods-Crozet (MZL)
[36] VD, Lausanne, Grangette 5d, 18.6.2021, 627 m, leg. Christian Widmann
[37] 1N, GR, Swiss National Park, Macun, 2011, leg. Uta Mürle
[38] 1N, TI, lagetto Superiore, 1991, leg. Angela Boggero (INRC)
[39] 1N, TI, Lago Tomeo, 2004, leg. Angela Boggero (INRC)
[40] 1N, TI, lagetto Superiore, 1991, leg. Angela Boggero (INRC)
[41] 8M, TI, Bolle di Magadino, 31.05.2021, leg. Fondazione Bolle di Magadino
[42] 1L, 1P, GR, Macun, pond M11, 29.07.2004, leg. HEPIA
[43] 3P, VD, cours d'eau du bois du Jorat, 5.7.2023, leg. DGE_EAU_VAUD
[44] 1M, TI, Bolle di Magadino, 29.04.2022, leg. Fondazione Bolle di Magadino
[45] 1M, GR, Macun, Lake Grond, 30.07.2014, leg. Brigitte Lods-Crozet (MZL)
[46] BE, Thunersee, 2013, leg. Noëmi Zweifel

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Bibionidae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni)
Last update: Jul 2024

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 vicinous 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].

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

Checklist

Bibioninae

Bibio Geoffroy, 1762
- *brunnipes* (Fabricius, 1794) !
  - = *fulvipes* Zetterstedt, 1838
- *clavipes* Meigen, 1818 ! N1
  - = *lepidus* Loew, 1871
- *femoralis* 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 !
- *pomonae* (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

- *funebris* 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.

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Haenni J.-P. 2024. Bibionidae (last update: Jul 2024). In: Haenni J.-P., Bächli G., Bernasconi M., Dufour C., Fisler L., Gonseth Y., Lods-Crozet B., Monnerat C. & Pollini Paltrinieri L. (eds.) 2024. Diptera – Checklist. Fauna Helvetica 35: 122-125, info fauna & SEG, Neuchâtel, 590 p.

Bolitophilidae

Peter J. Chandler (1998 Checklist: Peter J. Chandler)
Last update: Jul 2024

Diagnosis: Small to medium sized (4-7 mm), slender bodied, grey or brown gnats with long, slender legs. Head small; three ocelli present; antenna long and slender with 2+14 segments, sometimes with long hairs on flagellomeres. Thorax humpbacked. Wing narrow, with a pterostigma over the tip of R_1, otherwise either unmarked or with ill-defined spots on the crossveins; membrane lacking macrotrichia; vein Sc long, ending in the costa; R_{2+3} present and short, ending either in C or R_1 (used as a subgeneric character within the single genus *Bolitophila*, probably without any phylogenetic validity); crossvein r-m at an angle to Rs and meeting M_{1+2} shortly before branching of median fork; M_4 (anterior branch of posterior fork) either with a separate short base or a basal fusion at junction with m-Cu, so that posterior fork appears fused with M basally; anal lobe weak or absent. Coxae elongate; tibiae with apical spurs.

Biology: The larvae all develop in soft fungi, tending to be oligophagous and their hosts include both terrestrial and saproxylic fungi. Larvae are white, with the head capsule sclerotised, with a three-segmented antenna, and are hemipneustic, i.e. the prothorax and seven abdominal segments bear spiracles. The pupa is free, without a cocoon. The adults are mainly found in moist habitats, by streams in wooded areas and congregating around their fungus hosts. Some species aestivate or hibernate in caves.

Nomenclature and classification: According to Fauna Europaea (Chandler 2005).

Number of species: CH: 18 (1998 Checklist: 18),
AT: 15, BE: 10, CZ: 17, DE: 22, FR: 15, GB: 16, HU: 8, IT: 13, NL: 8, SK: 19, Europe: 36, World: 64.

Level of faunistic knowledge in Switzerland: Good. There are no changes to the list in Chandler (1998). There are five other European species that are widespread and recorded from adjacent countries, so could be expected to occur. Several other species described only from females, and with few national records, require further evaluation to determine their validity.

General references: Bechev & Chandler (2011) [world catalogue], Hutson et al. (1980) [keys, British species], Søli et al. (2000) [keys, families and genera of Sciaroidea], Zaitzev (1994) [keys, Russian species].

References to the Swiss fauna: Chandler (1998).

Checklist

Bolitophila Meigen, 1818
(*Bolitophila* s.str.)
- *austriaca* (Mayer, 1950) !
- *basicornis* (Mayer, 1951) !
- *cinerea* Meigen, 1818 !
- *saundersii* (Curtis, 1836) !
- *spinigera* Edwards, 1925 !
- *tenella* Winnertz, 1863 !

(*Cliopisa* Enderlein, 1936)
- *bimaculata* Zetterstedt, 1838 !
- *bispinosa* Mayer, 1951 !
- *dubia* Siebke, 1861 !
- *glabrata* Loew, 1869 !
- *hybrida* (Meigen, 1804) !
- *ingrica* Stackelberg, 1969 !
- *maculipennis* Walker, 1836 !
  = *coronata* Mayer, 1951
- *modesta* Lackschewitz, 1937 !
- *nigrolineata* Landrock, 1912 !
- *occlusa* Edwards, 1913 !
- *pseudohybrida* Landrock, 1912 !
- *rectangulata* Lundström, 1913 !

References

Bechev D. & Chandler P. 2011. Catalogue of the Bolitophilidae and Diadocidiidae of the World (Insecta: Diptera). Zootaxa 2741: 38-58.

Chandler P. 1998. 16. Bolitophilidae. In: Merz B., Bächli G., Haenni J.-P. & Gonseth Y. (eds). Diptera - Checklist. Fauna Helvetica 1: 108. CSCF / SEG, Neuchâtel, 369 pp.

Chandler P. 2005. Fauna Europaea: Bolitophilidae. In: de Jong H. (ed). Fauna Europaea: Diptera, Nematocera. Fauna Europaea, version 1.2. http://www.faunaeur.org.

Hutson A.M., Ackland D.M. & Kidd L.N. 1980. Mycetophilidae (Bolitophilinae, Ditomyiinae, Diadocidiinae, Keroplatinae, Sciophilinae and Manotinae) Diptera, Nematocera. Handbooks for the Identification of British Insects. Vol. 9(3). Royal Entomological Society, London, 111 pp.

Søli G.E.E., Vockeroth R.J. & Matile L. 2000. 4. Families of Sciaroidea. In: Papp L. & Darvas B. (eds). Contributions to a Manual of Palaearctic Diptera (with special reference to flies of economic importance). Appendix: 49-92. Science Herald, Budapest, 604 pp.

Zaitzev A.I. 1994. Fungus gnats of the fauna of Russia and adjacent regions. Part 1. Nauka, Moscow, 288 pp. [In Russian].

Chandler P.J. 2024. Bolitophilidae (last update: Jul 2024). In: Haenni J.-P., Bächli G., Bernasconi M., Dufour C., Fisler L., Gonseth Y., Lods-Crozet B., Monnerat C. & Pollini Paltrinieri L. (eds.) 2024. Diptera – Checklist. Fauna Helvetica 35: 126-127, info fauna & SEG, Neuchâtel, 590 p.

Diadocidiidae

Peter J. Chandler (1998 Checklist: Peter J. Chandler)
Last update: Jul 2024

Diagnosis: Small (3-4.5 mm), yellowish to dark brown gnats with unmarked wings and a characteristic venation. Head and eyes small; three ocelli present; antenna slender with 2 + 14 segments. Thorax humpbacked. Wing membrane covered with macrotrichia; vein Sc ending in costa; Rs unbranched, R_{2+3} absent; M_{1+2} branched as a median fork; crossveins r-m, bm-m and m-Cu in a nearly straight vertical line, so that M_4 and CuA do not obviously form a posterior fork. Legs slender, coxae elongate, tibiae with apical spurs.

Biology: The larvae are found in and beneath moist decaying wood, associated with fungal growth, and live within mucous tubes. Adults are found in moist and shaded woodland habitats.

Nomenclature and classification: According to Fauna Europaea (Chandler 2005).

Number of species: CH: 3 (1998 Checklist: 3),
AT: 3, BE: 2, CZ: 5, DE: 2, FR: 3, GB: 3, HU: 4, IT: 3, NL: 2, SK: 5, Europe: 6, World: 24.

Level of faunistic knowledge in Switzerland: Moderate. There have been no changes to the list in Chandler (1998), but other species could occur: *Diadocidia trispinosa* Polevoi, 1996 and *D. fissa* Zaitzev, 1994 have been recorded from the Czech Republic (Ševčík, 2001, 2006), and *D. setistylus* Papp, 2003 was described from Hungary (Papp, 2003).

General references: Bechev & Chandler (2011) [world catalogue], Hutson et al. (1980) [keys, British species, same as in Switzerland], Papp (2003) [description of *Diadocidia setistylus*], Polevoi (1996) [description of *Diadocidia trispinosa*], Søli et al. (2000) [keys, families and genera of Sciaroidea], Zaitzev (1994) [keys, Russian species].

References to the Swiss fauna: Chandler (1998).

Checklist

Diadocidia Ruthé, 1831
(*Adidocidia* Laštovka & Matile, 1972)
- *valida* Mik, 1874 !

(*Diadocidia* s.str.)
- *ferruginosa* (Meigen, 1830) !
- *spinosula* Tollet, 1948 !

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Bechev D. & Chandler P. 2011. Catalogue of the Bolitophilidae and Diadocidiidae of the World (Insecta: Diptera). Zootaxa 2741: 38-58.

Chandler P. 1998. 19. Diadocidiidae. In: Merz B., Bächli G., Haenni J.-P. & Gonseth Y. (eds). Diptera - Checklist. Fauna Helvetica 1: 112. CSCF / SEG, Neuchâtel, 369 pp.

Chandler P. 2005. Fauna Europaea: Diadocidiidae. In: de Jong H. (ed). Fauna Europaea: Diptera, Nematocera. Fauna Europaea version 1.2. http://www.faunaeur.org.

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Ševčík J. 2006. Faunistic records from the Czech and Slovak Republics. Diadocidiidae. In Kinkorová J. (ed). Dipterologica bohemoslovaca. Vol. 13. Acta Universitatis Carolinae – Biologica 50, 136 pp.

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Zaitzev A.I. 1994. Fungus gnats of the fauna of Russia and adjacent regions. Part 1. Nauka, Moscow, 288 pp. [In Russian].

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Ditomyiidae

Peter J. Chandler (1998 Checklist: Peter J. Chandler)
Last update: Jul 2024

Diagnosis: Medium sized (6-8 mm), yellowish brown gnats with long and slender legs and abdomen, and broad wings with a characteristic venation (including a long vein R_{2+3}). Head and eyes small; three ocelli present; antenna with 2+14 segments, cylindrical or laterally compressed and/or long pubescent. Thorax humpbacked. Wings broad, clear or slightly tinged (*Symmerus and Ditomyia macroptera* Winnertz, 1852) or with transverse brown bands (*Ditomyia fasciata* (Meigen, 1818)); membrane bearing macrotrichia; vein Sc short, ending free; vein Rs deeply forked with both branches long, anterior branch (R_{2+3}) ending in costa; base of M missing, vein bm-m linking M_{1+2} to base of M_4 in line with m-Cu, which meets CuA well beyond its base; anal lobe weak or absent. Coxae elongate; tibiae with long apical spurs.

Biology: The larvae live in bracket fungi (*Ditomyia)* or in decaying wood with fungal growth (*Symmerus)*. They are white, with a strongly sclerotised head capsule, and are peripneustic with the prothorax and eight abdominal segments bearing spiracles. The pupa is free, without a cocoon. The adults are found in woodland.

Nomenclature and classification: According to Fauna Europaea (Chandler 2005).

Number of species: CH: 3 (1998 Checklist: 3),
AT: 1, BE: 2, CZ: 4, DE: 4, FR: 4, GB: 3. HU: 3, IT: 3, NL: 2, SK: 4, Europe: 4, World: 90.

Level of faunistic knowledge in Switzerland: Good. There have been no changes to the list in Chandler (1998). The fourth European species *Ditomyia macroptera* could also occur. It is everywhere rare, but is widespread, with records from Germany, Italy, France, Czech Republic, Slovakia, Poland and Bulgaria (Kurina & Chandler 2018).

General references: Chandler (2001) [characters of *Symmerus nobilis]*, Hutson et al. (1980) [keys, British species], Kurina & Chandler (2018) [characters of *Ditomyia macroptera]*, Søli et al. (2000) [keys, Palaearctic genera], Zaitzev (1994) [keys, Russian species].

References to the Swiss fauna: Chandler (1998).

Checklist

Ditomyia Winnertz, 1846
- *fasciata* (Meigen, 1818) !

Symmerus Walker, 1848
- *annulatus* (Meigen, 1830) !
- *nobilis* Lackschewitz, 1937 !

References

Chandler P.J. 1998. 17. Ditomyiidae. In: Merz B., Bächli G., Haenni J.-P. & Gonseth Y. (eds). Diptera - Checklist. Fauna Helvetica 1: 109. CSCF / SEG, Neuchâtel, 369 pp.

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Kurina O. & Chandler P. 2018. New European records of *Ditomyia macroptera* Winnertz (Diptera: Ditomyiidae) with notes on its distribution. Biodiversity Data Journal 6: e24857.

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Zaitzev A.I. 1994. Fungus gnats of the fauna of Russia and adjacent regions. Part 1. Nauka, Moscow, 288 pp. [In Russian]

Chandler P.J. 2024. Ditomyiidae (last update: Jul 2024). In: Haenni J.-P., Bächli G., Bernasconi M., Dufour C., Fisler L., Gonseth Y., Lods-Crozet B., Monnerat C. & Pollini Paltrinieri L. (eds.) 2024. Diptera – Checklist. Fauna Helvetica 35: 130-131, info fauna & SEG, Neuchâtel, 590 p.

Keroplatidae

Peter J. Chandler (1998 Checklist: Loïc Matile)
Last update: Jul 2024

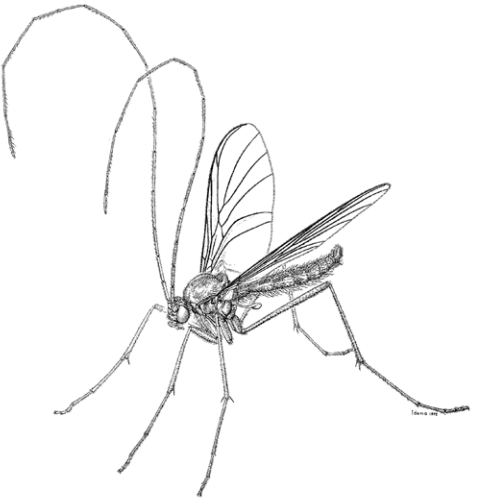
Diagnosis: Medium to large (3-15 mm), slender to relatively stout gnats, variously marked with yellow, brown or black colouration, and with a characteristic wing venation in which crossvein r-m is absent and replaced by a short radiomedial fusion (an exception to this is *Paleoplatyura*, recently recorded as new to Europe from Sicily (Mantič & Ševčík 2017)). Head small; mouthparts sometimes elongate; three ocelli present; antenna usually with 2+14 segments (a few species with a reduced number of flagellomeres), ranging from relatively short and sometimes (in Keroplatini) with laterally compressed segments, to very slender and up to several times longer than the body (in *Macrocera*). Thorax humpbacked. Wing relatively wide, clear or with various dark markings; usually without macrotrichia (present in some *Macrocera*); vein Sc ending in costa; vein R_{2+3} short and ending in costa (ending in R_1 in *Keroplatus* and *Platyura*) or absent; M_{1+2} with short stem before median fork; a short vein bm-m links base of radiomedial fusion with base of M_4 and with a short crossvein m-Cu that meets CuA well beyond its base; anal lobe weakly developed, except in *Macrocera* where it is broad and angular. Coxae elongate; tibiae with apical spurs. Abdomen usually narrow.

Biology: Poorly known for most genera. Known larvae are predaceous or mycophagous, living in webs they construct and are usually found in moist woodland. They are usually light coloured (sometimes with dark markings) with a darker sclerotised head capsule, and are apneustic (without functioning spiracles). Some larvae form webs under bracket fungi, where they feed on spores collected in their web (e.g. *Keroplatus*), while the predatory species form webs on various substrates and catch small invertebrates in their web, in which case acids may be used to kill their prey. *Macrocera* larvae are found under tree bark or below moist fallen dead wood. The adults are found near the larval habitats, but the biology of some species that usually occur in open habitats is unknown, including those genera with an elongate proboscis (*Antlemon*, *Asindulum*, *Macrorrhyncha*) which visit flowers, where they feed on nectar. Species of *Macrocera* may be observed on leaves, standing high on their legs and holding their wings slightly spread out.

Nomenclature and classification: According to Fauna Europaea (Chandler 2005), with minor changes, including recognition of subfamily Platyurinae by Mantič et al. (2020).

Number of species: CH: 48 (1998 Checklist: 45),
AT: 26, BE: 42, CZ: 60, DE: 56, FR: 62 [3 Corsica only], GB: 51, HU: 38, IT: 59 [8 Sardinia or Sicily only], NL: 39, SK: 47, Europe: 123, World: ~1000.

Level of faunistic knowledge in Switzerland: Moderate. Eleven additional species of *Macrocera* and twelve in other genera have been recorded from adjacent countries, so between 70 and 80 species of the family could be expected to occur in Switzerland.



Macrocera variola,
male, not present in Switzerland (MND1, p. 223).

General references: Chandler et al. (2006)) [key, *Macrorrhyncha*], Evenhuis (2006) [world catalogue], Hutson et al. (1980) [keys, British species], Matile (1990) [monograph with keys to genera of Macrocerinae and Keroplatini], Søli et al. (2000) [keys, Palaearctic genera], Zaitzev (1994) [keys, Russian species].

References to the Swiss fauna: Chandler & Blasco-Zumeta (2001), Matile (1998).

Checklist

Keroplatinae

Antlemon Haliday, 1871
(*Antlemonopsis* Tollet, 1953)
- *brevimanum* (Loew, 1871) !
- *servulum* (Walker, 1836) !

Asindulum Latreille, 1805
- *nigrum* Latreille, 1805 !

Cerotelion Rondani, 1856
- *racovitzai* Matile & Burghele-Balacesco, 1969 !
- *striatum* (Gmelin, 1792) !
  = *lineatum* auct.

Isoneuromyia Brunetti, 1912
- *pseudochracea* Landrock, 1927 !
- *semirufa* (Meigen, 1818) !
  = *baumhaueri* Meigen, 1818

Keroplatus Bosc, 1792
- *reaumurii* (Dufour, 1839) !
- *testaceus* (Dalman, 1818) !

Macrorrhyncha Winnertz, 1846
- *ancae* Matile, 1975 !
- *collarti* (Tollet, 1955) !
  = *exempla* Plassmann, 1978
- *flava* Winnertz, 1846 !

Monocentrota Edwards, 1925
- *lundstromi* Edwards, 1925 !

Neoplatyura Malloch, 1928
- *flava* (Macquart, 1826) !
- *modesta* (Winnertz, 1864) !
- *nigricauda* (Strobl, 1893) !

Orfelia Costa, 1857
- *bicolor* (Macquart, 1826) ! [1]
- *discoloria* (Meigen, 1818) !
- *fasciata* (Meigen, 1804) !
- *lugubris* (Zetterstedt, 1851) ! N1
  = *tristis* (Lundström, 1911)
- *nemoralis* (Meigen, 1818) !
- *nigricornis* (Fabricius, 1805) !
- *ochracea* (Meigen, 1818) ! N2
  = *unicolor* (Staeger, 1840)
- *persimilis* Caspers, 1991 !

Pyratula Edwards, 1929
- *alpicola* Chandler, 2001 !
- *oracula* Chandler, 1994 !
- *subcanariae* Chandler, 2001 !
- *zonata* (Zetterstedt, 1855) !

Rocetelion Matile, 1988
- *humerale* (Zetterstedt, 1850) !

Rutylapa Edwards, 1929
- *ruficornis* (Zetterstedt, 1851) !

Urytalpa Edwards, 1929
- *dorsalis* (Staeger, 1840) ! N2
  = *ochracea* (Meigen, 1818)
- *rhapsodica* Chandler, 1995 !

Macrocerinae

Macrocera Meigen, 1803
- *anglica* Edwards, 1925 !
- *angulata* Meigen, 1818 !
- *centralis* Meigen, 1818 !
- *fasciata* Meigen, 1804 !
- *inversa* Loew, 1869 !

= *bipunctata* Edwards, 1925
- *lutea* Meigen, 1804 !
- *nigricoxa* Winnertz, 1864 !
= *tusca* Loew, 1869
- *parva* Lundström, 1914 !
- *phalerata* Meigen, 1818 !
- *pilosa* Landrock, 1917 !
- *pumilio* Loew, 1869 !
- *pusilla* Meigen, 1830 !
= *nana* auct. nec Macquart, 1826
- *stigma* Curtis, 1837 !
- *stigmoides* Edwards, 1925 !
- *vittata* Meigen, 1830 !

Platyurinae

Platyura Meigen, 1803
- *marginata* Meigen, 1804 !

Excluded species

Pyratula perpusilla (Edwards, 1913) N3

Notes

N1 Kjærandsen et al. (2007) placed *Orfelia tristis* (Lundström, 1911) in synonymy with *O. lugubris* (Zetterstedt, 1851).

N2 Kjærandsen et al. (2009) established that the name *Platyura ochracea* Meigen, 1818 correctly applied to *Orfelia unicolor* (Staeger, 1840) and that the valid name for the *Urytalpa* species previousy known as *ochracea* was *U. dorsalis* (Staeger, 1840).

N3 *Pyratula perpusilla* (Edwards, 1913) should be removed from the list as Swiss material of this group has been referred to as *P. alpicola*, *P. oracula* and *P. subcanariae* by Chandler & Blasco-Zumeta (2001).

Species records

[1] 1M, TI, Biasca, 16.6.1995, leg. Bernhard Merz (CGB)

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Chandler P.J., Bechev D.N. & Caspers N. 2006. The fungus gnats (Diptera: Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophilidae) of Greece, its islands and Cyprus. Studia dipterologica 12: 255-314.

Chandler P. & Blasco-Zumeta J. 2001. The fungus gnats (Diptera, Bolitophilidae, Keroplatidae and Mycetophilidae) of the Monegros region (Zaragoza, Spain) and five other new European species of *Pyratula* Edwards and *Sciophila* Meigen. Zapateri, Revista aragonensis de entomologia 9: 1-24.

Evenhuis N.L. 2006. Catalog of the Keroplatidae of the World (Insecta: Diptera). Bishop Museum Bulletin of Entomology 13: 1-178.

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Mycetophilidae

Peter J. Chandler (1998 Checklist: Peter J. Chandler)
Last update: Jul 2024

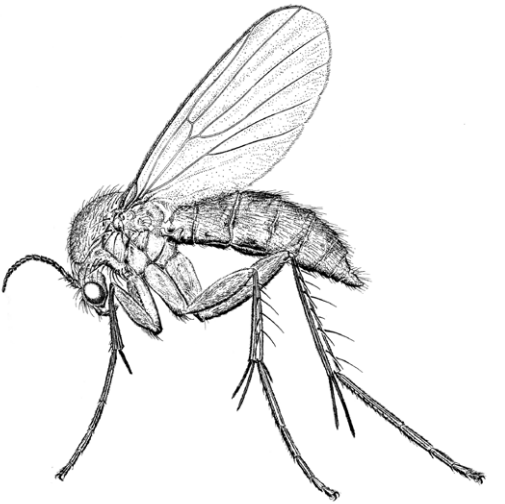
Diagnosis: A large and diverse family of slender to relatively stout gnats, minute to large (2-15 mm) but more usually small to medium sized (4-8 mm), variously marked with yellow, brown or black colouration. Head small; eyes dichoptic; 2 or 3 ocelli present; antenna usually with 2 + 14 segments, scape and pedicel short, flagellum usually long and slender but sometimes relatively short with narrow segments and (in *Cordyla*) with a reduced number of flagellomeres varying between species; mouthparts short, usually no more than half as long as the height of the head, but sometimes longer or even extremely elongate as in *Gnoriste*. Thorax humpbacked, with bristling of pleural sclerites varying between genera. Wing clear or with various markings; wing membrane with or without macrotrichia; vein Sc ending in C, free or in R; base of vein Rs short before crossvein r-m; vein R_{2+3} short and ending in R_1 or absent; vein R_{4+5} unbranched; stem of M_{1+2} shorter than the fork of M_1 and M_2 (anterior fork) which is usually long and narrow (its branches detached basally in *Manota*); a longitudinal vein bm-m connecting M_{1+2} with base of stem of posterior fork, which is composed of M_4 and CuA which are fused basally as the stem of this fork, its anterior branch M_4 absent in some genera; anal lobe absent or weak. Legs varying from long and slender with weak bristling to more robust with more or less strong bristling; coxae elongate and tibiae with long apical spurs. Abdomen usually narrow.

Biology: The larvae of most species are mycophagous, feeding on the mycelia or fruiting bodies of various fungi. They either feed internally in the fungus or live in a web they have spun on or beneath fungi or rotten wood. Some species of *Mycetophila* and *Platurocypta* specialise in feeding on myxomycetes. A few species are known to develop in bird nests (some *Leia* and *Docosia*), or on mosses or liverworts (some *Boletina* and *Gnoriste*). Larvae usually white with a dark sclerotised head capsule, and usually hemipneustic, with 1 pair of thoracic and at most 7 pairs of abdominal spiracles (the propneustic larva of the cave-dwelling *Speolepta* is an exception). Pupae either free or within a silk cocoon, in either case may be in the substrate, suspended in larval webs or within the fungus tissue where this is less subject to rapid decay. The adults (fungus gnats) occur chiefly in moist habitats, around decaying wood and in undergrowth of forests, especially shaded places beside streams, and they find refuge in cavities and overhangs, although some species may occur in more open wetlands and montane habitats. Some species regularly aestivate or hibernate in caves. Some species visit flowers and are important as pollinators.

Nomenclature and classification: According to Fauna Europaea (Chandler, 2005), with minor changes.

Number of species: CH: 517 (1998 Checklist: 440),
AT: 320, BE: 161, CZ: 542, DE: ~580, GB: 503, FR: 457 [16 Corsica only], HU: 280, IT: 428 [27 Sardinia or Sicily only], NL: 252, SK: 445, Europe: ~1200, World: ~4500.

Level of faunistic knowledge in Switzerland: Good.



Mycetophila fungorum, male (CMPD A, p. 49).

General references: Chandler (2022) [keys, British species of Mycetophilinae], Hutson et al. (1980) [keys, British species except Mycetophilinae], Søli et al. (2000) [keys to Palaearctic genera], Zaitzev (1994) [keys, Russian species except Mycetophilinae], Zaitzev (2003) [keys, Russian species of Mycetophilinae].

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

Checklist

Gnoristinae

Apolephthisa Grzegorzek, 1885
- *subincana* (Curtis, 1837) !

Boletina Staeger, 1840
- *abdita* Plassmann, 1980 !
- *arctica* Holmgren, 1872 !
- *basalis* (Meigen, 1818) !
- *bidenticulata* Sasakawa & Kimura, 1974 ! [1]
- *brevicornis* Zetterstedt, 1852 ! [2]
- *cincticornis* (Walker, 1848) !
- *digitata* (Lundström, 1914) ! [3]
- *dispecta* Dziedzicki, 1885 !
- *dubia* (Meigen, 1804) !
- *gripha* Dziedzicki, 1885 !
- *griphoides* Edwards, 1925 ! [4]

- *jamalensis* Zaitzev, 1994 ! [5]
- *lundstroemi* Landrock, 1912 !
- *maculata* Holmgren, 1870 !
- *moravica* Landrock, 1912 !
- *nigricans* Dziedzicki, 1885 ! [6]
- *nigrofusca* Dziedzicki, 1885 ! [7]
- *nitida* Grzegorzek, 1885 !
- *oreadophila* Chandler, 1995 !
- *pallidula* Edwards, 1925 !
- *plana* (Walker, 1856) !
- *rejecta* Edwards, 1941 !
- *sciarina* Staeger, 1840 !
- *silvatica* Dziedzicki, 1885 !
- *trispinosa* Edwards, 1913 !
- *trivittata* (Meigen, 1818) !

Coelosia Winnertz, 1864
- *flava* (Staeger, 1840) !
- *fusca* Bezzi, 1892 !
  = *silvatica* Landrock, 1918
- *tenella* (Zetterstedt, 1852) !
- *truncata* Lundström, 1909 !

Docosia Winnertz, 1864
- *chandleri* Ševčík & Laštovka, 2008 ! [8]
- *fuscipes* (von Roser, 1840) !
- *gilvipes* (Walker, 1856) !
- *lastovkai* Chandler, 1994 !
- *montana* Laštovka & Ševčík, 2006 ! [9]
- *moravica* Landrock, 1915 !
- *pallipes* Edwards, 1941 !
- *sciarina* (Meigen, 1830) !
- *setosa* Landrock, 1916 !
- *tibialis* Laštovka & Ševčík, 2006 ! [10]

Dziedzickia Johannsen, 1909
- *marginata* (Dziedzicki, 1885) ! [11]

Ectrepesthoneura Enderlein, 1911
- *colyeri* Chandler, 1980 !
- *hirta* (Winnertz, 1846) !
- *pubescens* (Zetterstedt, 1860) !

Gnoriste Meigen, 1818
- *bilineata* Zetterstedt, 1852 !
- *harcyniae* von Röder, 1887 !

Grzegorzekia Edwards, 1941
- *collaris* (Meigen, 1818) !
  = *diversa* (Walker, 1856)
- *hungarica* Papp & Ševčík, 2007 ! [12]

Katatopygia Martinsson & Kjaerandsen, 2012 N1

- *erythropyga* (Holmgren, 1883) !
- *sahlbergi* (Lundström, 1906) ! [13]

Palaeodocosia Meunier, 1904
- *alpicola* (Strobl, 1895) !
- *vittata* (Coquillett, 1901) ! N2
  = *janickii* (Dziedzicki, 1923)

Saigusaia Vockeroth, 1980
- *flaviventris* (Strobl, 1894) !

Synapha Meigen, 1818
- *fasciata* Meigen, 1818 !
- *vitripennis* (Meigen, 1818) !

Syntemna Winnertz, 1864
- *daisetsuzana* Okada, 1938 !
- *hungarica* (Lundström, 1912) !
- *nitidula* Edwards, 1925 !
- *setigera* (Lundström, 1914) ! N3
  = *haagvari* (Økland, 1995)

Tetragoneura Winnertz, 1864
- *sylvatica* (Curtis, 1837) !

Leiinae

Clastobasis Skuse, 1890
- *alternans* (Winnertz, 1864) !
  = *unicolor* (Winnertz, 1864)
- *loici* Chandler, 2001 !

Greenomyia Brunetti, 1912
- *borealis* (Winnertz, 1864) ! [14]
- *mongolica* Laštovka & Matile, 1974 !
  = *theresae* Matile, 2002

Leia Meigen, 1818
- *arsona* Hutson, 1978 !
- *bilineata* (Winnertz, 1864) !
- *bimaculata* (Meigen, 1804) !
- *crucigera* Zetterstedt, 1838 !
- *cylindrica* (Winnertz, 1864) !
- *fascipennis* Meigen, 1818 !
- *martinovskyi* Ševčík & Papp, 2003 ! N4 [15]
- *picta* Meigen, 1830 !
- *subfasciata* (Meigen, 1818) !
- *winthemii* Lehmann, 1822 !

Megophthalmidia Dziedzicki, 1889
- *crassicornis* (Curtis, 1837) !

Novakia Strobl, 1893
- *scatopsiformis* Strobl, 1893 !

Rondaniella Johannsen, 1909
- *dimidiata* (Meigen, 1804) !

Mycetophilinae

Allodia Winnertz, 1864
- *anglofennica* Edwards, 1921 !
- *lugens* (Wiedemann, 1817) !
- *lundstroemi* Edwards, 1921 !
- *ornaticollis* (Meigen, 1818) !
- *septentrionalis* Hackman, 1971 ! [16]
- *truncata* Edwards, 1921 !
- *zaitzevi* Kurina, 1998 !
  = *pyxidiiformis* sensu Zaitzev, 1983 partim

Allodiopsis Tuomikoski, 1966
- *domestica* (Meigen, 1830) !
- *korolevi* (Zaitzev, 1982) !
- *pseudodomestica* (Lackschewitz, 1937) !
- *rustica* (Edwards, 1941) !

Anatella Winnertz, 1864
- *ciliata* Winnertz, 1864 L
- *dampfi* Landrock, 1924 !
- *emergens* Caspers, 1987 !
- *flavomaculata* Edwards, 1925 !
- *gibba* Winnertz, 1864 !
- *lenis* Dziedzicki, 1923 !
- *longisetosa* Dziedzicki, 1923 !
- *minuta* (Staeger, 1840) !
- *novata* Dziedzicki, 1923 ! [17]
- *simpatica* Dziedzicki, 1923 !
- *stimulea* Plassmann, 1977 !
- *turi* Dziedzicki, 1923 !
- *unguigera* Edwards, 1921 !

Brachycampta Winnertz, 1864 N5
- *alternans* (Zetterstedt, 1838) !
- *barbata* Lundström, 1909 !
- *czernyi* Landrock, 1912 !
- *elevata* (Zaitzev, 1984) !
- *foliifera* Strobl, 1910 !
  = *triangularis* sensu Lundström, 1909
- *grata* (Meigen, 1830) !
- *neglecta* (Edwards, 1925) !
- *persolla* (Plassmann, 1972) ! [18]
- *pistillata* Lundström, 1911 !
- *protenta* (Laštovka & Matile, 1974) ! [19]
- *silvatica* Landrock, 1912 !
- *triangularis* Strobl, 1895 !
  = *retracta* (Plassmann, 1977)
  = *vernalis* (Polevoi & Zaitzev, 1995)
- *westerholti* (Caspers, 1980) !

= *retracta* (sensu Caspers & Plassmann, 1986)

Brachypeza Winnertz, 1864

- *bisignata* Winnertz, 1864 ! [20]

Brevicornu Marshall, 1896

- *auriculatum* (Edwards, 1925) !
- *bellum* (Johannsen, 1912) !
- *canadense* (Zaitzev, 1988) ! N6 [21]

  = *arcticum* sensu Chandler, 1998
- *canescens* (Zetterstedt, 1852) ! N7
- *fasciculatum* (Lackschewitz, 1937) !

  = *arcticoides* Caspers, 1985
- *fennicum* (Landrock, 1927) !
- *fissicauda* (Lundström, 1911) !
- *foliatum* (Edwards, 1925) !
- *fuscipenne* (Staeger, 1840) !
- *griseicolle* (Staeger, 1840) !
- *griseolum* (Zetterstedt, 1840) !

  = *boreale* (Lundström, 1914)
- *improvisum* Zaitzev, 1992 !
- *intermedium* (Santos Abreu, 1920) !

  = *hissaricum* Zaitzev, 1985
- *nigrofuscum* (Lundström, 1909) !
- *proximum* (Staeger, 1840) !
- *rosmellitum* Chandler, 2001 ! [22]
- *ruficorne* (Meigen, 1838) !
- *serenum* (Winnertz, 1864) !
- *sericoma* (Meigen, 1830) !
- *spathulatum* (Lundström, 1911) ! [23]
- *subfissicauda* Zaitzev, 1985 !

Cordyla Meigen, 1803

- *brevicornis* (Staeger, 1840) !
- *crassicornis* Meigen, 1818 !
- *fasciata* Meigen, 1830 !
- *fissa* Edwards, 1925 !
- *flaviceps* (Staeger, 1840) !
- *fusca* Meigen, 1804 !
- *insons* Laštovka & Matile, 1974 ! [24]
- *murina* Winnertz, 1864 !
- *nitens* Winnertz, 1864 !
- *nitidula* Edwards, 1925 !
- *pusilla* Edwards, 1925 !
- *semiflava* (Staeger, 1840) !
- *styliforceps* (Bukowski, 1934) !

Dynatosoma Winnertz, 1864

- *cochleare* Strobl, 1895 !
- *fuscicorne* (Meigen, 1818) !

- *majus* Landrock, 1912 !
- *nobile* Loew, 1873 !
- *reciprocum* (Walker, 1848) !
- *rufescens* (Zetterstedt, 1838) ! N8
  = *bukowskii* Zaitzev, 1986
- *thoracicum* (Zetterstedt, 1838) ? N9

Epicypta Winnertz, 1864
- *aterrima* (Zetterstedt, 1852) !
- *fumigata* (Dziedzicki, 1923) !
- *scatophora* Perris, 1849 ! [25]
- *torquata* Matile, 1977 ! [26]

Exechia Winnertz, 1864
- *bicincta* (Staeger, 1840) !
- *borealis* Lundström, 1912 ! N10
- *chandleri* Caspers, 1987 !
- *cincta* Winnertz, 1864 !
- *confinis* Winnertz, 1864 !
- *cornuta* Lundström, 1914 !
- *dentata* Lundström, 1916 ! [27]
- *dizona* Edwards, 1924 !
- *dorsalis* (Staeger, 1840) !
- *exigua* Lundström, 1909 !
- *festiva* Winnertz, 1864 !
- *fulva* Santos Abreu, 1920 ! [28]
- *fusca* (Meigen, 1804) !
- *lucidula* (Zetterstedt, 1838) !
- *lundstroemi* Landrock, 1923 !
- *macula* Chandler, 2001 ! N11
  = *maculipennis* (Stannius, 1831)
- *neorepanda* Johannsen, 1912 ! N12
  = *repanda* sensu Edwards, 1941
- *nigra* Edwards, 1925 ! [29]
- *nigroscutellata* Landrock, 1912 !
- *nitidicollis* Lundström, 1913 !
- *parva* Lundström, 1909 !
- *parvula* (Zetterstedt, 1852) !
  = *nana* (Staeger, 1840)
- *pectinivalva* Stackelberg, 1948 !
- *pseudocincta* Strobl, 1910 !
- *pseudofestiva* Lackschewitz, 1937 !
- *repandoides* Caspers, 1984 !
- *separata* Lundström, 1912 !
- *seriata* (Meigen, 1830) !
- *spinuligera* Lundström, 1912 !

Exechiopsis Tuomikoski, 1966
(*Exechiopsis* s.str.)

- *clypeata* (Lundström, 1911) !
- *distendens* (Lackschewitz, 1937) !
- *dryaspagensis* Chandler, 1977 !
- *dumitrescae* (Burghele-Balacesco, 1972) !
- *furcata* (Lundström, 1911) !
- *indecisa* (Walker, 1856) !
- *intersecta* (Meigen, 1818) !
- *januarii* (Lundström, 1913) !
- *jenkinsoni* (Edwards, 1925) !
- *lackschewitziana* (Stackelberg, 1948) !
- *magnicauda* (Lundström, 1913) !
- *patula* (Plassmann, 1978) !
- *pseudindecisa* Laštovka & Matile, 1974 !
- *pseudopulchella* (Lundström, 1912) !
- *pulchella* (Winnertz, 1864) !
- *sagittata* Laštovka & Matile, 1974 !
- *subulata* (Winnertz, 1864) !
- *triseta* (Tollet, 1955) !
- *unguiculata* (Lundström, 1911) !
- *vizzavonensis* (Edwards, 1928) !

(*Xenexechia* Tuomikoski, 1966)

- *crucigera* (Lundström, 1909) !
- *davatchii* Matile, 1969 ! [30]
- *leptura* (Meigen, 1830) !
- *membranacea* (Lundström, 1912) !
- *pollicata* (Edwards, 1925) !
- *seducta* (Plassmann, 1976) ! [31]

Macrobrachius Dziedzicki, 1889

- *kowarzii* Dziedzicki, 1889 !

Mycetophila Meigen, 1803

- *abiecta* (Laštovka, 1963) !
- *adumbrata* Mik, 1884 !
- *alea* Laffoon, 1965 !
- *attonsa* Laffoon, 1957 !
- *autumnalis* Lundström, 1909 !
- *bialorussica* Dziedzicki, 1884 !
- *biusta* Meigen, 1818 ! [32]
- *blanda* Winnertz, 1864 !
- *bohemica* (Laštovka, 1963) !
- *caudata* Staeger, 1840 !
- *cingulum* Meigen, 1830 !
- *confluens* Dziedzicki, 1884 !
- *confusa* Dziedzicki, 1884 !
- *curviseta* Lundström, 1911 !
- *czizekii* Landrock, 1911 ! [33]
- *dentata* Lundström, 1913 !

- *distigma* Meigen, 1830 !
- *dziedzickii* Chandler, 1977 !
- *edwardsi* Lundström, 1913 !
- *eppingensis* Chandler, 2001 ! [34]
- *evanida* Laštovka, 1972 !
- *exstincta* Loew, 1869 !
  = *mikii* Dziedzicki, 1884
- *finlandica* Edwards, 1913 !
- *forcipata* Lundström, 1913 !
- *formosa* Lundström, 1911 !
- *fraterna* Winnertz, 1864 !
- *freyii* Lundström, 1909 !
- *fungorum* (De Geer, 1776) !
- *gibbula* Edwards, 1925 !
- *hetschkoi* Landrock, 1918 !
- *hyrcania* Laštovka & Matile, 1969 !
- *ichneumonea* Say, 1823 !
- *idonea* Laštovka, 1972 !
- *immaculata* (Dziedzicki, 1884) !
- *laeta* Walker, 1848 !
- *lamellata* Lundström, 1913 ! [35]
- *lastovkai* Caspers, 1984 ! [36]
- *lubomirskii* Dziedzicki, 1884 !
- *luctuosa* Meigen, 1830 !
- *lunata* Meigen, 1904 !
- *magnicauda* Strobl, 1895 !
- *marginata* Winnertz, 1864 !
- *mitis* Johannsen, 1912 ! [37]
- *morosa* Winnertz, 1864 !
- *nigrofusca* Dziedzicki, 1884 !
- *occultans* Lundström, 1913 !
- *ocellus* Walker, 1848 !
- *ornata* Stephens, 1846 !
- *paracruciator* Laštovka & Matile, 1974 !
- *perpallida* Chandler, 1993 !
- *pictula* Meigen, 1830 !
- *pumila* Winnertz, 1864 !
- *quadra* Lundström, 1909 !
- *rudis* Winnertz, 1864 !
- *ruficollis* Meigen, 1818 !
- *schnablii* (Dziedzicki, 1884) !
- *scotica* Edwards, 1941 !
- *sepulta* (Laffoon, 1957) !
- *sigillata* Dziedzicki, 1884 !
- *sigmoides* Loew, 1869 !
- *signata* Meigen, 1830 !

- *signatoides* Dziedzicki, 1884 !
- *sinuosa* Plassmann & Schacht, 1999 ! [38]
- *sordida* van der Wulp, 1874 !
- *spectabilis* Winnertz, 1864 !
- *stolida* Walker, 1856 !
- *strigata* Staeger, 1840 !
- *strigatoides* (Landrock, 1927) !
- *strobli* Laštovka, 1972 !
- *stylata* (Dziedzicki, 1884) !
- *subsigillata* Zaitzev, 1999 ! [39]
- *telei* Zaitzev, 1999 ! N13 [40]
- *tomensis* (Plotnikova, 1962) ! [41]
- *triangularis* Lundström, 1912 ! [42]
- *trinotata* Staeger, 1840 !
- *uliginosa* Chandler, 1988 ! [43]
- *unicolor* Stannius, 1831 !
- *uninotata* Zetterstedt, 1852 !
- *unipunctata* Meigen, 1818 !
- *v-nigrum* Lundström, 1913 !
- *vittipes* Zetterstedt, 1852 !
- *xanthopyga* Winnertz, 1864 !
- *zetterstedtii* Lundström, 1906 !

Myrosia Tuomikoski, 1966 N14
- *maculosa* (Meigen, 1818) !

Notolopha Tuomikoski, 1966 N14
- *cristata* (Staeger, 1840) !

Phronia Winnertz, 1864
- *basalis* Winnertz, 1864 !
- *biarcuata* (Becker, 1908) !
- *bicolor* Dziedzicki, 1889 L
  = *fusciventris* van Duzee, 1928
- *braueri* Dziedzicki, 1889 !
- *caliginosa* Dziedzicki, 1889 !
- *cinerascens* Winnertz, 1864 !
- *conformis* (Walker, 1856) !
- *crassitarsus* Hackman, 1970 !
  = *bicolor* sensu Gagné, 1975
- *disgrega* Dziedzicki, 1889 !
- *dziedzickii* Lundström, 1906 !
- *egregia* Dziedzicki, 1889 !
- *exigua* (Zetterstedt, 1852) !
- *flavipes* Winnertz, 1864 !
- *forcipata* Winnertz, 1864 !
- *forcipula* Winnertz, 1864 !
- *gagnei* Chandler, 1992 !
- *humeralis* Winnertz, 1864 !

- *maculata* Dziedzicki, 1889 ! [44]
- *matilei* Hackman, 1972 L
- *minuta* Landrock, 1928 !
- *nigricornis* (Zetterstedt, 1852) !
- *nitidiventris* (van der Wulp, 1858) !
- *notata* Dziedzicki, 1889 !
- *obtusa* Winnertz, 1864 !
- *peculiaris* Dziedzicki, 1889 !
- *persimilis* Hackman, 1970 !
- *petulans* Dziedzicki, 1889 !
- *siebeckii* Dziedzicki, 1889 !
- *signata* Winnertz, 1864 !
- *strenua* Winnertz, 1970 !
- *taczanowskyi* Dziedzicki, 1889 !
- *tenuis* Winnertz, 1864 !
- *tiefii* Dziedzicki, 1889 L
- *triangularis* Winnertz, 1864 !
- *tyrrhenica* Edwards, 1928 !
- *unica* Dziedzicki, 1889 ! [45]
- *vitrea* Plassmann, 1999 ! [46]
- *willistoni* Dziedzicki, 1889 ! [47]

Platurocypta Enderlein, 1910
- *punctum* (Stannius, 1831) !
- *testata* (Edwards, 1925) !

Pseudexechia Tuomikoski, 1966
- *trisignata* (Edwards, 1925) !
- *trivittata* (Staeger, 1840) !
- *tuomikoskii* Kjærandsen, 2009 ! [48]

Pseudobrachypeza Tuomikoski, 1966
- *helvetica* (Walker, 1856) !
  = *pseudohelvetica* Plassmann, 1984

Pseudorymosia Tuomikoski, 1966
- *fovea* (Dziedzicki, 1910) !

Rymosia Winnertz, 1864
- *acta* Dziedzicki, 1910 !
- *affinis* Winnertz, 1864 !
  = *gracilipes* Dziedzicki, 1910
- *beaucournui* Matile, 1963 !
- *bifida* Edwards, 1925 !
- *caucasia* Plassmann, 1976 ! [49]
- *connexa* Winnertz, 1864 !
- *cottii* Tollet, 1956 L
- *fasciata* (Meigen, 1804) !
- *fraudatrix* Dziedzicki, 1910 !
- *lundstroemi* Dziedzicki, 1910 !
  = *matilei* Burghele-Balacesco, 1972, preocc.

- *placida* Winnertz, 1864 !
- *setiger* Dziedzicki, 1910 !
- *signatipes* (van der Wulp, 1859) ! [50]
- *spiniforceps* Matile, 1963 !
- *spinipes* Winnertz, 1864 !
- *tristis* Matile, 1967 !
- *virens* Dziedzicki, 1909 !

Sceptonia Winnertz, 1864
- *costata* (van der Wulp, 1859) !
- *cryptocauda* Chandler, 1991 !
- *flavipuncta* Edwards, 1925 ! [51]
- *fumipes* Edwards, 1925 ! [52]
- *fuscipalpis* Edwards, 1925 !
- *membranacea* Edwards, 1925 !
- *nigra* (Meigen, 1804) !
- *pappi* Ševčík, 2004 ! [53]
- *pilosa* Bukowski, 1934 !
- *pughi* Chandler, 1991 ! [54]
- *tenuis* Edwards, 1925 ! [55]

Stigmatomeria Tuomikoski, 1966
- *crassicornis* (Stannius, 1831) !

Synplasta Skuse, 1890
- *exclusa* (Dziedzicki, 1910) ! [56]
- *gracilis* (Winnertz, 1864) ! N15
  = *excogitata* (Dziedzicki, 1910)
- *ingeniosa* (Kidd, 1969) !
- *rufilatera* (Edwards, 1941) ! [57]

Tarnania Tuomikoski, 1966
- *dziedzickii* (Edwards, 1941) !
- *fenestralis* (Meigen, 1818) !
  = *bavaria* Plassmann, 1980
- *nemoralis* (Edwards, 1941) !
- *tarnanii* (Dziedzicki, 1910) !

Trichonta Winnertz, 1864
- *atricauda* (Zetterstedt, 1852) !
- *bezzii* Landrock, 1913 !
- *bicolor* Landrock, 1912 L
- *brevicauda* Lundström, 1906 !
- *clavigera* Lundström, 1913 !
- *comica* Gagné, 1981 !
- *conjungens* Lundström, 1909 !
- *falcata* Lundström, 1911 !
- *fissicauda* (Zetterstedt, 1852) !
- *flavicauda* Lundström, 1914 !
- *fragilis* Gagné, 1981 !
- *fusca* Landrock, 1918 ! [58]

- *girschneri* Landrock, 1912 !
- *hamata* Mik, 1880 !
- *lyrica* Gagné, 1981 ! [59]
- *melanura* (Staeger, 1840) !
- *subfusca* Lundström, 1909 !
- *subterminalis* Zaitzev & Menzel, 1996 ! N16 [60]
- *terminalis* (Walker, 1856) ! N16
- *tristis* (Strobl, 1898) !
- *venosa* (Staeger, 1840) !
- *vitta* (Meigen, 1830) !
- *vulcani* (Dziedzicki, 1889) !
- *vulgaris* Loew, 1869 L

Zygomyia Winnertz, 1864
- *humeralis* (Wiedemann, 1817) !
- *kiddi* Chandler, 1991 !
- *matilei* Caspers, 1980 ! [61]
- *notata* (Stannius, 1831) ! [62]
- *pictipennis* (Staeger, 1840) !
- *pseudohumeralis* Caspers, 1980 !
- *semifusca* (Meigen, 1818) !
  = *thaleri* Plassmann, 1986
- *setosa* Barendrecht, 1938 !
- *valeriae* Chandler, 1991 !
- *valida* Winnertz, 1864 !
- *vara* (Staeger, 1840) !

Mycomyinae

Mycomya Rondani, 1856
(*Cesamya* Väisänen, 1984) N17
- *pectinifera* (Edwards, 1924) !

(*Cymomya* Väisänen, 1984)
- *circumdata* (Staeger, 1840) !

(*Mycomya* s.str.)
- *alpina* (Matile, 1972) !
- *annulata* (Meigen, 1818) !
- *bialorussica* (Landrock, 1925) !
- *bicolor* (Dziedzicki, 1885) !
- *brunnea* (Dziedzicki, 1885) !
- *cinerascens* (Macquart, 1826) !
- *collini* (Edwards, 1941) !
- *danielae* (Matile, 1972) !
- *denmax* Väisänen, 1979 !
- *digitifera* (Edwards, 1925) !
- *dziedzickii* Väisänen, 1981 !
- *fissa* (Lundström, 1911) !
- *flavicollis* (Zetterstedt, 1852) !

- *fornicata* (Lundström, 1911) !
- *fuscata* (Winnertz, 1864) !
- *griseovittata* (Zetterstedt, 1852) !
  = *fasciata* (Zetterstedt, 1838), preocc.
- *hackmani* Väisänen, 1984 !
- *heydeni* (Plassmann, 1970) ! [63]
- *hiisi* Väisänen, 1979 ! [64]
- *insignis* (Winnertz, 1864) !
- *lambi* (Edwards, 1941) !
- *livida* (Dziedzicki, 1885) ! [65]
- *marginata* (Meigen, 1818) !
- *neohyalinata* Väisänen, 1984 !
- *nitida* (Zetterstedt, 1852) !
- *occultans* (Winnertz, 1864) !
- *ornata* (Meigen, 1818) !
- *parva* (Dziedzicki, 1885) !
- *prominens* (Lundström, 1913) !
- *punctata* (Meigen, 1804) ! [66]
- *ruficollis* (Zetterstedt, 1852) !
- *shermani* Garrett, 1924 !
  = *kingi* Edwards, 1941
- *siebecki* (Landrock, 1912) !
- *sigma* Johannsen, 1910 !
- *storai* Väisänen, 1979 !
- *tenuis* (Walker, 1856) !
- *trivittata* (Zetterstedt, 1838) !
- *tumida* (Winnertz, 1864) !
- *vittiventris* (Zetterstedt, 1852) !
- *wankowiczii* (Dziedzicki, 1885) !
- *winnertzi* (Dziedzicki, 1885) !

(*Mycomyopsis* Väisänen, 1984)

- *affinis* (Staeger, 1840) !
  = *flava* (Winnertz, 1864)
- *maura* (Walker, 1856) !
- *paradentata* Väisänen, 1984 ! [67]
- *permixta* Väisänen, 1984 ! [68]
- *trilineata* (Zetterstedt, 1838) !
  = *fusca* (Meigen, 1818)

(*Neomycomya* Väisänen, 1984)

- *fimbriata* (Meigen, 1818) !

Neoempheria Osten Sacken, 1878

- *bimaculata* (von Roser, 1840) !
- *lineola* (Meigen, 1818) !
- *pictipennis* (Haliday, 1833) !
- *proxima* (Winnertz, 1864) !
- *striata* (Meigen, 1818) !

- *stubbsi* Chandler & Ribeiro in Ševčík & Papp, 2003 ! [69]
- *winnertzi* Edwards, 1913 !

Sciophilinae

Acnemia Winnertz, 1864
- *amoena* Winnertz, 1864 !
- *longipes* Winnertz, 1864 !
- *nitidicollis* (Meigen, 1818) !

Allocotocera Mik, 1886
- *pulchella* (Curtis, 1837) !

Anaclileia Meunier, 1904
- *beshovskii* Bechev, 1990 !

Azana Walker, 1856
- *anomala* (Staeger, 1840) !

Coelophthinia Edwards, 1941
- *thoracica* (Winnertz, 1864) !

Leptomorphus Curtis, 1831
- *forcipatus* (Landrock, 1918) ! N18
  = *quadrimaculatus* sensu Matile, 1977
- *walkeri* Curtis, 1831 !

Megalopelma Enderlein, 1911
- *nigroclavatum* (Strobl, 1910) !

Monoclona Mik, 1886
- *braueri* (Strobl, 1895) ! [70]
- *rufilatera* (Walker, 1837) !

Neuratelia Rondani, 1856
- *nemoralis* (Meigen, 1818) !
- *subulata* Zaitzev, 1994 !

Paratinia Mik, 1874
- *sciarina* Mik, 1874 ! [71]

Phthinia Winnertz, 1864
- *dallaii* Zaitzev, 2001 !
- *humilis* Winnertz, 1864 !
- *mira* (Ostroverkhova, 1977) !
- *winnertzi* Mik, 1869 !

Polylepta Winnertz, 1864
- *borealis* Lundström, 1912 L
- *guttiventris* (Zetterstedt, 1852) !
- *zonata* (Zetterstedt, 1852) ! N19
  = *meridionalis* Bechev, 1990

Sciophila Meigen, 1818
- *adamsi* Edwards, 1925 ! [72]
- *arizonensis* Zaitzev, 1982 ! [73]
- *baltica* Zaitzev, 1982 !
- *corlutea* Chandler, 2001 !
- *fenestella* Curtis, 1837 ! [74]

- *geniculata* Zetterstedt, 1838 !
- *hirta* Meigen, 1818 !
- *jakutica* Blagoderov, 1992 !
- *limbatella* Zetterstedt, 1852 !
- *lutea* Macquart, 1826 !
- *modesta* Zaitzev, 1982 !
- *nigronitida* Landrock, 1925 !
- *nonnisilva* Hutson, 1979 !
- *pseudoflexuosa* Kurina, 1991 !
- *rufa* Meigen, 1830 !
- *silvatica* Zaitzev, 1982 !
- *spinifera* Zaitzev, 1982 !
- *subbicuspidata* Zaitzev & Økland, 1994 ! [75]
- *thoracica* Staeger, 1840 ! N20
  = *quadriterga* Hutson, 1979

Speolepta Edwards, 1925
- *leptogaster* (Winnertz, 1864) !

Excluded species

Exechia frigida (Boheman, 1868)

Notes

N1 The genus *Katatopygia* was erected by Martinsson & Kjærandsen (2012) for a group of species formerly included in *Boletina*.

N2 Chandler (2005) replaced *Palaeodocosia janickii* (Dziedzicki, 1923) with the senior synonym *vittata* (Coquillett, 1901).

N3 Polevoi (2003) proposed the synonymy of *Syntemna haagvari* Økland, 1995 with *S. setigera* (Lundström, 1914).

N4 *Leia martinovskyi* was described from a single male from Slovakia (Ševčík & Papp 2003). It was the new species of *Leia* mentioned in the 1998 Checklist by Chandler (1998 [p.124, note 4]). The Swiss males agree in structure with the figure of the holotype, but have the gonostylus (blackish brown in the holotype) brownish yellow and not different in colour from the gonocoxites.

N5 *Brachycampta* Winnertz, previously treated as a subgenus of *Allodia* Winnertz was raised to generic rank by Magnussen et al. (2021).

N6 Chandler (2022) recognised that the species listed in the 1998 Checklist by Chandler (1998) as *Brevicornu arcticum* (Lundström, 1913) is correctly identified as *B. canadense* (Zaitzev, 1988) and mentioned its occurrence in Switzerland.

N7 Application of the names *canescens* Zetterstedt, 1852 and *griseolum* Zetterstedt, 1840 in the genus *Brevicornu* was corrected by Kjærandsen (2005).

N8 *Dynatosoma bukowskii* Zaitzev, 1986 was synonymised with *D. rufescens* (Zetterstedt, 1838) by Zaitzev (2003).

N9 The identity of the Swiss record of *Dynatosoma thoracicum* (Zetterstedt, 1838) (MHNN) requires confirmation.

N10 Kjærandsen et al. (2007) established that *Exechia borealis* Lundström, 1912 was a distinct species that had been confused with *E. frigida* (Boheman, 1865). Swiss material identified previously as *E. frigida* has now been identified as *E. borealis*.

N11 Chandler (2001) proposed *macula* as a replacement name for *maculipennis* Stannius, 1831, which was preoccupied in the genus *Mycetophila* by Say, 1824.

N12 Lindemann et al. (2021) found that European specimens identified as *Exechia repanda* Johannsen, 1912 are a distinct species and proposed the name *E. neorepanda* for the European species.

N13 *Mycetophila telei* Zaitzev, 1999 was described from the Altai region of Russia and this is the first European record of this species.

N14 The subgenera *Myrosia* Tuomikoski, 1966 and *Notolopha* Tuomikoski, 1966 were raised to generic rank by Søli et al. (2000).

N15 Ševčík & Papp (2001) established that *gracilis* Winnertz, 1863 was the correct name for the species previously identified as *Synplasta excogitata* (Dziedzicki, 1910). It was not clear whether *excogitata* is the same species, or a nomen dubium.

N16 Chandler (2022) found that most specimens identified as *Trichonta terminalis* (Walker, 1856) are *T. subterminalis* Zaitzev & Menzel, 1996. Occurrence of *T. subterminalis* in Switzerland is confirmed here; presence of *T. terminalis* needs confirmation.

N17 Koçak & Kemal (2010) proposed *Cesamya* as a replacement name for *Lycomya* Väisänen, 1984, which was preoccupied in Asilidae by Bigot, 1857.

N18 *Leptomorphus forcipatus* Landrock, 1918 was shown to be a different species from *L. quadrimaculatus* (Matsumura, 1916) by Zaitzev & Ševčík (2002), and this was confirmed by Borkent & Wheeler (2012).

N19 Kurina (2003) proposed the synonymy of *Polylepta meridionalis* Bechev, 1990 with *zonata* Zetterstedt, 1852.

N20 Chandler (2001) proposed the synonymy of *Sciophila quadriterga* Hutson, 1979 with *S. thoracica* Staeger, 1840.

Species records

[1] 1M, SO, Bettlach, 2001, leg. Peter Duelli (CGB)
[2] 1M, GR, Dischmatal, 1.7.1992, leg. Peter Brodmann (CGB)
[3] 1M, TI, Robiei, 4.7.2008, leg. Gerhard Bächli (CGB)
[4] 1M, SO, Bettlach, 2001, leg. Peter Duelli (CGB)
[5] 1M, GR, Nationalpark, 2006, leg. Peter Duelli (CGB)
[6] 1M, BE, Beatenberg, 2006, leg. Peter Duelli (CGB)
[7] 1M, GR, Alp Flix, 4.8.1978, leg. Gerhard Bächli (CGB)
[8] 4M, GR, Alp Flix, 4.8.1975, leg. Gerhard Bächli (CGB)
[9] GR, Zernez, 15-18.8.1978, leg. Gerhard Bächli (CGB)
[10] 3M, VS, Riederalp, 31.7.1976, leg. Gerhard Bächli (CGB)
[11] 1M, GR, S-chanf-Flin, 7.8.1996, leg. Bernhard Merz
[12] 1M, ZH, Dietikon, 18.7.1999, leg. Gerhard Bächli (CGB)
[13] 2M, GR, Zernez, 15.8.1978, leg. Gerhard Bächli (CGB)
[14] 1M, GE, Jussy, 2000, leg. Peter Duelli (CGB)
[15] 19M, ZH, Sihlwald, 24.5.1996, leg. Karin Schiegg
[16] 1M, SZ, Alptal, 2000, leg. Peter Duelli (CGB)
[17] 1M, SO, Bettlach, 2001, leg. Peter Duelli (CGB)
[18] 1M, VD, Cudrefin, 29.6.1972, leg. Paul H. Arnaud (MNHN)
[19] 1M, GR, Santa Maria Müstair, 29.6.2013, leg. Gerhard Bächli (CGB)
[20] 1M, BL, Bubendorf, 3.8.2000, leg. Matthias Wolf (CGB)
[21] 1M, ZH, Dietikon, 5.1974, leg. Gerhard Bächli (CGB)
[22] 1M, GL, Klöntal, 11.9.1974, leg. Gerhard Bächli (CGB)
[23] 1M, AG, Sarmenstorf, 26.6.2019, leg. Beat Wermelinger (CGB)
[24] 2M, VS, Leuk, 7.7.1993, leg. Gerhard Bächli (CGB)
[25] 1M, TI, Bolle di Magadino, 9.8.1997, leg. Gerhard Bächli (CGB)
[26] 4M, BE, Weissenburg, , leg. Gustav Huguenin (ETH)
[27] 1M, TI, Biasca, 7.8.1997, leg. Gerhard Bächli (CGB)
[28] 2M, GR, Dischmatal, 30.5.1979, leg. Beat A. Wartmann (CGB)
[29] 1M, GR, Davos, 2001, leg. Peter Duelli (CGB)
[30] 1M, BE, Weissenburg, , leg. Gustav Huguenin (ETH)
[31] 1M, BL, Bubendorf, 7.9.2000, leg. Matthias Wolf (CGB)
[32] 1M, GR, Zernez, 4.8.1996, leg. Gerhard Bächli (CGB)

[33] 1M, BL, Bubendorf, 31.8.2000, leg. Matthias Wolf (CGB)
[34] 4M, TI, Someo, 25.7.1997, leg. Gerhard Bächli (CGB)
[35] 1M, SO, Messen, 15.5.2019, leg. Beat Wermelinger (CGB)
[36] 2M, SO, Messen, 28.3.2019, leg. Beat Wermelinger (CGB)
[37] 1M, ZG, Embrach, Haumühle, 9.5.1998, leg. Gerhard Bächli (CGB)
[38] 1M, TI, Acquarossa, 17.7.1998, leg. Gerhard Bächli (CGB)
[39] 1M, TI, Ravatoi/Calonico, 27.8.1981, leg. Gerhard Bächli (CGB)
[40] 1M, VS, Lens, 2001, leg. Peter Duelli (CGB)
[41] 1M, BL, Bubendorf, 13.7.2000, leg. Matthias Wolf (CGB)
[42] 1M, SO, Messen, 27.9.2004, leg. Beat Wermelinger (CGB)
[43] 1M, ZH, Zürich, 24.6.2006, leg. Thomas Sattler (CGB)
[44] 1M, SZ, Alptal, 2000, leg. Peter Duelli (CGB)
[45] 1M, BE, Weissenburg, , leg. Gustav Huguenin (ETH)
[46] 1M, SO, Bettlach, 2001, leg. Peter Duelli (CGB)
[47] 1M, VS, Leuk, 23.8.1977, leg. Gerhard Bächli (CGB)
[48] 1M, AG, Sarmenstorf, 2004, leg. Beat Wermelinger (CGB)
[49] 1M, SZ, Alptal, 2000, leg. Peter Duelli (CGB)
[50] 1M, AG, Habsburg, 19.4.2004, leg. Beat Wermelinger (CGB)
[51] 4M, TI, Someo, 25.7.1997, leg. Gerhard Bächli (CGB)
[52] 1M, SG, Sarmenstorf, 7.10.2019, leg. Beat Wermelinger (CGB)
[53] SO, Bettlach, 2001, leg. Peter Duelli (CGB)
[54] 2M, NE, Neuchâtel, 3.7.2010, leg. Gerhard Bächli (CGB)
[55] 1M, TI, Corzoneso, 17.7.1998, leg. Gerhard Bächli (CGB)
[56] 1M, SG, Sarmenstorf, 7.10.2019, leg. Beat Wermelinger (CGB)
[57] 1M, BL, Bubendorf, 3.8.2000, leg. Matthias Wolf (CGB)
[58] 1M, AG, Würenlingen, 6.6.1973, leg. Gerhard Bächli (CGB)
[59] 1M, VD, Lausanne, Bellevaux, 24.6.1976, leg. Paul H. Arnaud (MNHN)
[60] VS, Visperterminen, 16.12.1995, leg. Olivier Mermod (ETH)
[61] 1M, ZH, Dietikon, 2.8.1997, leg. Gerhard Bächli (CGB)
[62] 2M, JU, Delémont, 2.8.1974, leg. Gerhard Bächli (CGB)
[63] 1M, BE, Weissenburg, , leg. Gustav Huguenin (ETH)
[64] 2M, SZ, Alptal, 2006, leg. Peter Duelli (CGB)
[65] 1M, BE, Weissenburg, , leg. Gustav Huguenin (ETH)
[66] 1M, AG, Würenlingen, 6.6.1973, leg. Gerhard Bächli (CGB)
[67] 1M, UR, Seelisberg, 4.8.1973, leg. Gerhard Bächli (CGB)
[68] 6M, TI, Faido, 24.8.1981, leg. Gerhard Bächli (CGB)
[69] 1M, AG, Habsburg, 10.7.2019, leg. Beat Wermelinger (CGB)
[70] 1M, SZ, Alptal, 2000, leg. Peter Duelli (CGB)
[71] 2M, GR, Alp Flix, 4.8.1975, leg. Gerhard Bächli (CGB)
[72] 1M, BL, Bubendorf, 10.8.2000, leg. Matthias Wolf (CGB)
[73] 1M, TI, Angone/Anzonico, 21.8.1981, leg. Gerhard Bächli (CGB)
[74] 3M, AG, Sarmenstorf, 6.9.2004, leg. Beat Wermelinger (CGB)
[75] 1M, GR, Dischmatal, 16.6.1990, leg. Peter Brodmann (CGB)

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Chandler P.J. 2024. Mycetophilidae (last update: Jul 2024). In: Haenni J.-P., Bächli G., Bernasconi M., Dufour C., Fisler L., Gonseth Y., Lods-Crozet B., Monnerat C. & Pollini Paltrinieri L. (eds.) 2024. Diptera – Checklist. Fauna Helvetica 35: 138-156, info fauna & SEG, Neuchâtel, 590 p.

Sciaridae

Jean-Paul Haenni (1998 Checklist: Frank Menzel)
Last update: Jul 2024

Diagnosis: 1-7 mm midges, of uniform appearance, mostly brown or dark in colour. Rounded head with eyes forming an eye-bridge over antennae (except in some species with reduced wings); antennae with 14-segmented flagellum; wing venation uniform, with both M and CuA forked and only one cross-vein (r-m) present; tibia with apical spurs; abdomen cylindrical, 9-segmented. Male genitalia with paired gonostyles, which shape and extent of hairy and spinose ornamentation are species-specific and used for identification. Female abdomen tapering apically, characters of terminalia very uniform, not usable for identification. Some soil-dwelling species have wings and halters more or less reduced or even absent. Larvae have white, 12-segmented cylindrical body and black head capsule.

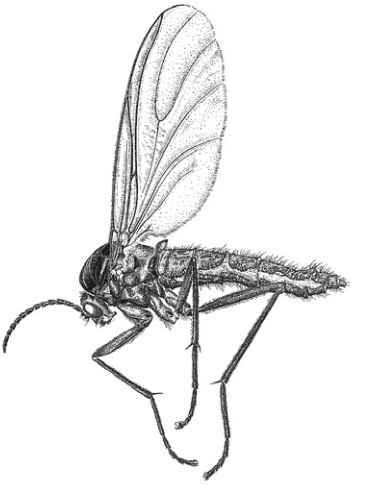
Biology: Sciarids are present in practically all terrestrial biotopes, with woodland being richer than open landscape. Larvae feed mainly in soil, on decaying plant material, but also in roots and stems of plants and in fungi. They are numerous in soils rich in decaying vegetal material and play an important role in the decomposition of litter. Animal burrows and caves are also inhabited by specialised species. Some species may become pests in glasshouses and mushroom cultures.

Nomenclature and classification: According to Menzel & Mohrig (2000), complemented by recent generic revisions, taxonomic works and checklists (Menzel & Heller 2006, 2007, Menzel et al. 2006, Heller et al. 2009, Hippa et al. 2010, Mohrig et al. 2013, Vilkamaa 2014, Vilkamaa & Menzel 2019, Menzel et al. 2020).

Number of species: CH: 170 (1998 Checklist: 126),
BE: 80, CZ: 230, DE: > 650, ES: 286, FI: 338, GB: 267, NL: 123, SK: 135, Europe: > 700, World: ~2720.

Level of faunistic knowledge in Switzerland: Poor; no systematic study of the Swiss fauna has been undertaken until now (except for the Sihlwald ZH, Schiegg et al. 1999). The present list is largely based upon the one published in the preceding checklist (Menzel 1998), complemented by the species added in the first and third published supplements (Merz et al. 2002, Bächli et al. 2014). During the last 20 years systematics of the family Sciaridae continued to go through considerable changes and a great number of nomenclatural changes occured. Some changes concerning the Swiss fauna may have been overlooked or misinterpreted by the compiler of the present list – not a specialist of the family –, who is responsible for any change from the initial 1998 list.

General references: Hippa et al. (2010) [revision Holarctic *Corynoptera*, key], Menzel & Mohrig (1997) [general, key to Palaearctic genera], Menzel & Mohrig (2000) [revision Palaearctic species, keys], Menzel & Schulz (2007) [ecology, ecosystemic importance, bio-indication], Vilkamaa & Menzel (2019) [revision *Lycoriella* s.l., keys].



Sciara hemerobioides,
female (CMPD2, p. 52).

References to the Swiss fauna: Bächli et al. (2014), Menzel (1998), Menzel et al. (1990), Merz et al. (1998, 2002), Röschmann & Mohrig (1994), Schiegg et al. (1999).

Checklist

Bradysia Winnertz, 1867
- *affinis* (Zetterstedt, 1838) L
  - = *pratincola* Tuomikoski, 1960
- *alpicola* (Winnertz, 1867) !
  - = *morio* (Fabricius, sensu Tuomikoski, 1960)
- *arcana* Menzel & Mohrig, 1998 L
  - = *fenestralis* (Zetterstedt), sensu Tuomikoski (1960)
- *bicolor* (Meigen, 1818) !
- *breviallata* Mohrig & Menzel, 1992 ?
- *brevispina* Tuomikoski, 1960 !
- *browni* (Shaw, 1935) !
  - = *diversiabdominalis* (Lengersdorf, 1941)
- *cinerascens* (Grzegorzek, 1884) !
  - = *lanicauda* Tuomikoski, 1960
- *confinis* (Winnertz, 1867) L
- *desolata* Rudzinski, 1994 L
- *excelsa* Menzel & Mohrig, 1998 L
  - = *affinis* (Zetterstedt), sensu Tuomikoski (1960)
- *fenestralis* (Zetterstedt, 1842) L
- *forficulata* (Bezzi, 1914) !
  - = *nocturna* Tuomikoski, 1960
- *fungicola* (Winnertz, 1867) !

= *ingrata* (Winnertz, 1867)
- *giraudii* (Schiner, 1864) L
- *hilariformis* Tuomikoski, 1960 L
- *hilaris* (Winnertz, 1867) L
- *impatiens* (Johannsen, 1912) !
= *difformis* Frey, 1948
= *paupera* Tuomikoski, 1960
- *lobulifera* Frey, 1948 L
- *longicauda* Mohrig & Menzel, 1990 L
- *longistylia* Mohrig & Krivosheina, 1982 !
- *lucida* Mohrig & Mamaev, 1989 L
- *maggiaensis* Mohrig & Röschmann, 1994 !
- *nervosa* (Meigen, 1818) L
- *nitidicollis* (Meigen, 1818) !
- *pallipes* (Fabricius, 1787) !
= *brunnipes* (Meigen, 1804)
= *engadinica* (Winnertz, 1867)
- *pectoralis* (Staeger, 1840) !
= *castanea* Mohrig & Menzel, 1990
- *pilistriata* Frey, 1948 !
- *placida* (Winnertz, 1867) !
= *fimbricauda* Tuomikoski, 1960
- *polonica* (Lengersdorf, 1929) !
- *praecox* (Meigen, 1818) !
- *pseudohilaris* Mohrig & Krivosheina, 1983 !
- *pseudopolonica* Mohrig & Röschmann, 1994 !
- *reflexa* Tuomikoski, 1960 !
- *regularis* (Lengersdorf, 1934) !
- *rufescens* (Zetterstedt, 1852) !
= *somnians* (Winnertz, 1867)
- *scabricornis* Tuomikoski, 1960 !
- *splendida* Mohrig & Krivosheina, 1989 !
- *strenua* (Winnertz, 1867) !
- *subaprica* Mohrig & Krivosheina, 1982 L
- *submoesta* Mohrig & Krivosheina, 1989 L
- *tilicola* (Loew, 1850) !
= *amoena* (Winnertz, 1867)
= *triseriata* Winnertz, 1867
- *trispinifera* Mohrig & Krivosheina, 1979 !
- *trivittata* (Staeger, 1840) !
= *spectrum* (Winnertz, 1867)
- *urticae* Mohrig & Menzel, 1992 !
- *vagans* (Winnertz, 1867) !
= *callicera* Frey, 1948
- *vernalis* (Zetterstedt, 1851) !
= *monticola* (Winnertz, 1867)

- *zetterstedti* Mohrig & Menzel, 1993 !

Bradysiopsis Tuomikoski, 1960

- *vittata* (Meigen, 1830) !
  - = *nigripes* (Strobl, 1898)

Camptochaeta Hippa & Vilkamaa, 1994

- *dentata* (Bukowski & Lengersdorf, 1936) L
- *praedentata* (Mohrig & Mamaev, 1987) L

Claustropyga Hippa, Vilkamaa & Mohrig, 2003

- *brevichaeta* (Mohrig & Antonova, 1978) L

Corynoptera Winnertz, 1867

- *abblanda* Freeman, 1983 L
- *bicuspidata* (Lengersdorf, 1926) L
- *boletiphaga* (Lengersdorf, 1940) L
- *breviformis* Mohrig & Krivosheina, 1983 L
- *deserta* Heller & Menzel, 2006 ! N1
  - = *Camptochaeta minutula* (Bukowski & Lengersdorf, 1936)
  - = *inundata* (Fritz, 1982)
- *flavicauda* (Zetterstedt, 1855) L
- *forcipata* (Winnertz, 1867) !
- *furcata* (Hippa & Vilkamaa, 1994) !
- *furcifera* Mohrig & Mamaev, 1987 L
- *globiformis* (Frey, 1945) L
- *grothae* Mohrig & Menzel, 1990 L
- *heteroclausa* Rudzinski, 1991 L
- *hypopygialis* (Lengersdorf, 1926) !
  - = *piniphila* (Lengersdorf, 1940)
- *inexpectata* Tuomikoski, 1960 !
- *irmgardis* (Lengersdorf, 1930) !
- *levis* Tuomikoski, 1970 L
- *luteofusca* (Bukowski & Lengersdorf, 1936) !
- *membranigera* (Kieffer, 1903) L
  - = *trispina* Tuomikoski, 1960
- *minima* (Meigen, 1818) L
- *patula* Hippa, Vilkamaa & Heller, 2010 L
- *perpusilla* Winnertz, 1867 !
- *praeforcipata* Mohrig & Mamaev, 1987 !
- *saccata* Tuomikoski, 1960 L
- *saetistyla* Mohrig & Krivosheina, 1985 L
- *sedula* Mohrig & Krivosheina, 1985 !
- *sphenoptera* Tuomikoski, 1960 !
- *subfurcifera* Mohrig & Hövemeyer, 1992 L
- *tetrachaeta* Tuomikoski, 1960 L
- *trepida* (Winnertz, 1867) L
  - = *subflava* (Lengersdorf, 1941)
- *tridentata* Hondru, 1968 !

Cratyna Winnertz, 1867

(*Cratyna* s. str.)
- *ambigua* (Lengersdorf, 1934) L
- *cryptospina* (Rudzinski, 1993) !
- *pernitida* (Edwards, 1915) L
- *uliginosa* (Lengersdorf, 1929) !

(*Peyerimhoffia* Kieffer, 1903)
- *vagabunda* (Winnertz, 1867) !
  = *brachyptera* (Kieffer, 1903)

(*Spathobdella* Frey, 1948)
- *egertoni* (Edwards, 1922) L
- *perplexa* (Winnertz, 1867) L

Ctenosciara Tuomikoski, 1966
- *hyalipennis* (Meigen, 1804) !

Epidapus Haliday, 1851

(*Epidapus* s. str.)
- *alnicola* (Tuomikoski, 1957) L N2
- *atomarius* (De Geer, 1778) !
- *gracilis* (Walker, 1848) !
- *lucifuga* (Mohrig, 1970) L N2
- *macrohalteratus* Mohrig & Menzel, 1992 !
- *microthorax* (Börner, 1903) !
- *schillei* (Börner, 1903) L

(*Pseudoaptanogyna* Vimmer, 1926)
- *absconditus* (Vimmer, 1926) !

Hemineurina Frey, 1942
- *algida* (Frey, 1948) ! N3
  = *globiceps* (Becher, 1886)
- *heydeni* (Winnertz, 1867) !
- *inflata* (Winnertz, 1867) !
  = *venosa* (Staeger, sensu Tuomikoski, 1960)
- *modesta* (Staeger, 1840) !

Leptosciarella Tuomikoski, 1960

(*Hirtipennia* Mohrig & Henzel, 1997)
- *hirtipennis* (Zetterstedt, 1838) !
  = *absurda* (Winnertz, 1867)

(*Leptosciarella* s. str.)
- *cerifera* Mohrig & Menzel, 1997 L
- *defecta* (Strobl, 1926) L
- *dimera* (Tuomikoski, 1960) L
- *fuscipalpa* (Mohrig & Mamaev, 1979) L
- *helvetica* (Rudzinski, 1992) !
- *melanoma* Mohrig & Menzel, 1990 L
- *pilosa* (Staeger, 1840) L
- *rejecta* (Winnertz, 1867) !
- *scutellata* (Staeger, 1840) L
- *subpilosa* (Edwards, 1925) !

- *trochanterata* (Zetterstedt, 1851) ! N4
- *viatica* (Winnertz, 1867) L
- *yerburyi* Freeman, 1983 L

Lycoriella Frey, 1942
- *acutostylia* Mohrig & Menzel, 1990 ! N5
- *brevipila* Tuomikoski, 1960 L
- *ingenua* (Dufour, 1839) L
  = *mali* (Fitch, 1856)
- *lundstromi* (Frey, 1948) !
- *micria* Mohrig & Menzel, 1990 L
- *minutula* Mohrig & Krivosheina, 1987 L N6
- *sativae* (Johannsen, 1912) !
  = *castanescens* (Lengersdorf, 1940)
- *subterranea* (Märkel, 1844) !
  = *vanderwieli* (Schmitz, 1920)
- *weberi* Menzel & Heller, 2013 !

Phytosciara Frey, 1942
(*Dolichosciara* Tuomikoski, 1960)
- *flavipes* (Meigen, 1804) L N7
- *ornata* (Winnertz, 1867) ! N7
- *subflavipes* (Mohrig & Menzel, 1994) L

(*Phytosciara* s. str.)
- *macrotricha* (Lengersdorf, 1926) !

(*Prosciara* Frey, 1942)
- *prosciaroides* (Tuomikoski, 1960) !
- *ungulata* (Winnertz, 1867) !

Pnyxia Johannsen, 1912
- *scabiei* (Hopkins, 1895) !

Pseudolycoriella Menzel & Mohrig, 1998
- *brunnea* (Bukowski & Lengersdorf, 1936) !
- *monticula* (Mohrig & Menzel, 1992) !
- *paludum* (Frey, 1948) !
- *subbruckii* (Mohrig & Hövemeyer, 1992) L
- *submonticula* (Mohrig & Mamaev, 1990) ?

Scatopsciara Edwards, 1927
(*Scatopsciara* s. str.)
- *antefluviatilis* Mohrig & Röschmann, 1994 !
- *atomaria* (Zetterstedt, 1851) !
  = *nacta* (Johannsen, 1912)
  = *soluta* (Winnertz, 1867)
  = *vivida* (Winnertz, 1867)
- *calamophila* Frey, 1948 !
- *edwardsi* Freeman, 1983 !
- *fluviatiliformis* Mohrig & Mamaev, 1987 L
- *longispina* Mohrig & Krivosheina, 1983 L
- *multispina* (Bukowski & Lengersdorf, 1936) !

- *nana* (Winnertz, 1871) !
- *pusilla* (Meigen, 1818) ?
- *vitripennis* (Meigen, 1818) !

(*Xenopygina* Frey, 1948)

- *curvilinea* (Lengersdorf, 1934) !
- *quadrispina* Mohrig & Krivosheina, 1982 L

Schwenckfeldina Frey, 1942

- *carbonaria* (Meigen, 1830) !
  - = *illepida* (Winnertz, 1867)
  - = *indigena* (Winnertz, 1867)

Sciara Meigen, 1803

- *analis* Schiner, 1864 !
- *flavimana* Zetterstedt, 1851 !
- *hebes* (Loew, 1869) L
  - = *marginata* Mohrig & Krivosheina, 1983
  - = *ulrichi* Menzel & Mohrig, 1998
- *helvola* Winnertz, 1867 !
- *hemerobioides* (Scopoli, 1763) !
  - = *thomae* (Linnaeus, 1767)
- *humeralis* Zetterstedt, 1851 !

Scythropochroa Enderlein, 1911

- *radialis* Lengersdorf, 1926 !

Stenacanthella Vilkamaa & Menzel, 2019

- *eflagellata* Tuomikoski, 1960 L

Trichodapus Mohrig & Menzel, 1997

- *rhenanus* (Fritz, 1983) L

Trichosia Meigen, 1803

(*Mouffetina* Frey, 1942)

- *pulchricornis* (Edwards, 1925) L

(*Trichosia* s. str.)

- *acrotricha* Tuomikoski, 1960 !
- *confusa* (Menzel & Mohrig, 1997) L N8
  - = *edwardsi* (Lengersdorf) sensu Frey (1948)
- *flavicoxa* Tuomikoski, 1960 L
- *glabra* (Meigen, 1830) L
- *morio* (Fabricius, 1794) L
  - = *trochanterata* (Zetterstedt, sensu Edwards, 1925)
- *splendens* Winnertz, 1867 L

Xylosciara Tuomikoski, 1957

(*Protoxylosciara* Tuomikoski, 1960)

- *longiforceps* (Bukowski & Lengersdorf, 1936) L

(*Xylosciara* s. str.)

- *heptacantha* Tuomikoski, 1957 L
- *spectabilis* Rudzinski, 1992 !

Zygoneura Meigen, 1830

- *sciarina* Meigen, 1830 !

Notes

N1 *Camptochaeta minutula* was published by Schiegg et al. (1999) as new to the Swiss fauna with the erroneous authorship '(Mohrig & Krivosheina, 1978)', instead of *C. minutula* (Bukowski & Lengersdorf, 1936). However this species was already present in the 1998 Checklist as a synonym of *Corynoptera inundata* Fritz, 1982. It appears however that the name *Corynoptera deserta* Menzel & Heller, 2006 (instead of *C. inundata* Fritz, 1982) must apply in replacement of *C. minutula* (Bukowski & Lengersdorf, 1936), preoccupied (Menzel & Heller 2006).

N2 *Epidapus* (*Epidapus*) *alnicola* (Tuomikoski, 1957) and *E. (E.) lucifugus* (Mohrig, 1970) were considered as of uncertain occurrence in the 1998 Checklist. They have been erroneously recorded again as new to Switzerland under the synonym names *Caenosciara alnicola* Tuomikoski, 1957 and *C. lucifuga* Mohrig, 1970 by Schiegg et al. (1999) and reported as such in Merz et al. (2002).

N3 *Hemineurina algida* (Frey, 1948) was erroneously considered as a synonym of *Sciara globiceps* (Becher. 1886) (Vilkamaa & Menzel 2019: 10) and accordingly is reinstated in the list.

N4 *Trichosia trochanterata* was published by Schiegg et al. (1999) as new to the Swiss fauna and reported as such in Merz et al. (2002). However this species was already present in the 1998 Checklist under the valid name *Leptosciarella trochanterata* (Zetterstedt, 1851).

N5 Although quoted from Austria, one paratype specimen of *Lycoriella acutostylia* was in fact collected in Switzerland. The locality where it was collected 'Österreich: Unterengardien, Ramosch, Barberfalle, 19.8.1981, leg. Thaler' (Menzel et al. 1990: 341) should actually be read 'Unterengadin, Ramosch', which lies in canton Graubünden, Switzerland. Heller et al. (2009: 41) correctly recorded this species as present in Switzerland.

N6 The author was erroneously quoted as *Lycoriella minutula* (Bukowski & Lengersdorf, 1936) in Schiegg et al. (1999) and in Merz et al. (2002). The correct name for this species is *Lycoriella minutula* Mohrig & Krivosheina, 1987.

N7 *Dolichosciara flavipes* (Meigen, 1804) and *D. ornata* (Winnertz, 1864) [and not '(Edwards, 1915)' as wrongly stated in Schiegg et al. 1999]) have been erroneously added as new for Switzerland in Merz et al. (2002). In fact these species were already present in the 1998 Checklist (Menzel 1998), respectively under the names *Phytosciara flavipes* (Meigen, 1804) and *P. ornata* (Winnertz, 1867). According to the authors, *Dolichosciara* is either regarded as a subgenus of *Phytosciara*, or a genus of its own.

N8 *Leptosciarella confusa* was published by Schiegg et al. (1999) as new to the Swiss fauna and reported as such in Merz et al. (2002). However this species was already present in the 1998 Checklist under the valid name *Trichosia confusa* Menzel & Mohrig, 1997.

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Sciaroidea incertae sedis

Peter J. Chandler (1998 Checklist: absent)
Last update: Jul 2024

Diagnosis: Medium sized (4-6 mm), slender bodied, dark-coloured gnats, resembling Sciaridae but without an eye-bridge and with 5-segmented palpi. Head small; three ocelli present; antenna long and slender with 2 + 14 segments. Thorax humpbacked; pleura bare except for propleuron. Wing unmarked, with macrotrichia on membrane; vein Sc ending free; Rs unbranched (R_{2+3} absent), crossvein r-m near its base and extended basad in line with R_{4+5}, and with vein bm-m connected to base of posterior fork (comprising M_4 and CuA), so that fork appears sessile; stem of M_{1+2} shorter than its fork in European species. Coxae elongate; tibiae with apical spurs.

Biology: Larval development is unknown. Adults of *Heterotricha takkae* Chandler, 2002 were collected in Switzerland in submediteranean thermophilous *Quercus pubescens* forest.

Nomenclature and classification: According to Chandler (2002).

Number of species: CH: 1 (1998 Checklist: 0),
AT: 1, BE: 0, CZ: 1, DE: 0, FR: 0, GB: 0, HU: 0, IT: 1, NL: 0, SK: 0, Europe: 2, World: 46.

Level of faunistic knowledge in Switzerland: Moderate. The second European species *Sciarosoma nigriclava* (Strobl, 1898) is recorded from Austria and the Czech Republic, so could also be present. The Swiss species was described subsequent to publication of the checklist, but its existence was mentioned in Note 4 under Mycetophilidae (Chandler 1998).

General references: Chandler (2002) [keys to the then known genera, including descriptions of both European species].

References to the Swiss fauna: Chandler (2002), Merz et al. (2006).

Checklist

Heterotricha Loew, 1850
- *takkae* Chandler, 2002 !

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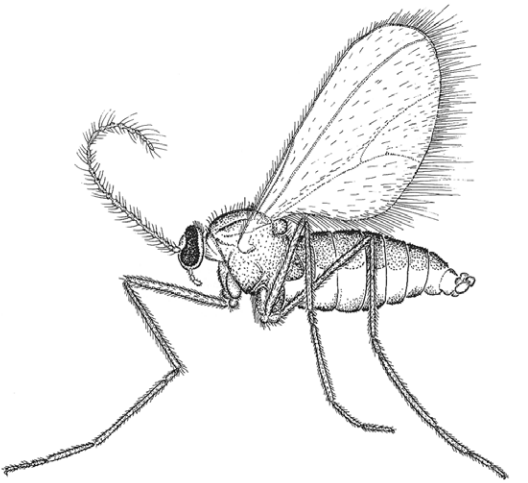
Cecidomyiidae

Marcela Skuhravá, Mathias Jaschhof & Hans Roskam
(1998 Checklist: Marcela Skuhravá)
Last update: Jul 2024

Diagnosis: Small (mostly 0.5-3.0 mm, rarely 8.0 mm) delicate nematocerous flies, with marked sexual dimorphism in antennal and genitalic morphology; females sometimes markedly larger than conspecific males. Body mostly brownish to blackish with brighter, yellowish to orange abdomen. Vestiture composed of setae of various sizes and, not uncommonly, scales. Eyes in both sexes holoptic, with occasional reduction of lateral or dorsal ommatidia. Antenna short to excessively long, 6 to 60+ (often 12 or 14) flagellomeres. Flagellomeres either sessile or with narrow, subcylindical apical portion of sometimes considerable length (called the neck), basal portion (called the node) with various types of sensilla, including setae (often conspicuously long and arranged in girdles) and circumfila (ring- or loop-shaped sensilla confined to Porricondylinae and Cecidomyiinae). Palpus with 1 to 4 setae-bearing segments, the soft, non-setose palpifer not counted. Legs long and fragile, often considerably longer than body. Tibial spurs absent. First tarsomeres of Winnertziinae, Porricondylinae and Cecidomyiinae appreciably shorter than second tarsomeres; most Heteropezini (in Winnertziinae) with fewer than 5 tarsomeres. Wing, except for a few apterous and brachypterous forms, well developed, as long as the body or longer; membrane usually densely setose or scaled; costa with a break at or near the junction of R_5, otherwise venation with considerable intra-familial variation, generally reduced to a transversal vein Rs (which is largely absent in Cecidomyiinae) plus three to six longitudinal veins, both an anterior fork (M_1+M_2) and / or a posterior fork (M_4+CuA) may occur. Larvae white to orange; with characteristic, sclerotised sternal spatula on the ventral prothorax (a structure unique to Cecidomyiidae), which in some groups is lost.

Biology: The ancient feeding mode of cecidomyiid larvae is mycophagy (or sapromycophagy), which is retained in all non-Cecidomyiinae and some Cecidomyiinae. Mycophagous larvae, which pierce and suck fungal hyphae, thrive in plant debris, mostly leaf litter and dead wood, as well as in the topsoil of both wood- and grasslands. Their contribution to decomposition processes, although little studied, should be significant. Issues of host specificity provide a wide subject for future research. A few species were identified as pests in mushroom cultivations. Adults of mycophagous cecidomyiids, which are generally regarded as non-feeding, have a largely inconspicuous way of living. Some species occasionally attract attention by their large mating swarms (*Anarete*, *Micromya*) or by mass hatching (*Bryomyia*, *Campylomyza*, *Divellepidosis*, and others), which may gather thousands of individuals. The flight period in lowland Central Europe is typically from April to October (more than one generation per year may occur), with some specialists (whose biology is unknown) flying during the cold season, even above snow. The Malaise trapping technique has been instrumental in unveiling the true abundance and diversity of mycophagous cecidomyiids. The taxonomy of these nematocerans is still in its infancy, especially outside of Europe. Most extant members of the Cecidomyiinae are either plant eaters (including gall inducers on seed plants and, more rarely, ferns; therefore the vernacular name of the family, gall midges) or predators. Larvae of true gall midges



Cecidomyia pini, male (CMPD2, p. 73).

feed mostly by sucking plant juices, with most species being restricted to one host (monophagy) or a few related hosts (oligophagy); polyphagy, i.e. feeding on several host plants that are not closely related, is rather uncommon. There is an enormous biological variety, particularly regarding strategies to synchronise the cecidomyiid life cycle with that of the plant host(s). The diversity in morphological structures, both larval and adult, is no less immense. The species richness of gall midges, especially in the tropics, is inestimable. This diversity coevolved with the radiation of flowering plants since the Upper Cretaceous, rendering Cecidomyiinae the largest gall-making group among extant arthropods. Larvae of predatory Cecidomyiinae, mostly free-ranging, prey on small insects, mites and other arthropods; adults, particularly of Lestodiplosini, are among the smallest cecidomyiids known. The scientific study of both plant-feeding and predatory Cecidomyiinae happens in close association with host interactions, the consequence being that trap material is of minor interest in taxonomic studies of the group. Several species of phytophagous Cecidomyiinae are serious pests of plants cultivated as grains, fruits, vegetables, and forest trees; some predators are used as biocontrol agents.

Nomenclature and classification: According to *A Catalog of Cecidomyiidae (Diptera) of the World* (Gagné & Jaschhof 2021), which organises the family in six subfamilies (Catotrichinae, Lestremiinae, Micromyinae, Winnertziinae, Porricondylinae and Cecidomyiinae). All subfamilies but the species-poor, relict Catotrichinae occur in Switzerland.

Number of species: CH: 257 (1998 Checklist: 237),
DE: 950 (including 264 non-Cecidomyiinae), SE: ~900 (including 639 non-Cecidomyiinae), Europe: ~2000, World: > 6600.
None of the national faunas in Europe is studied thoroughly enough for all the three major trophic groups (phytophages, mycophages, predators) as to give realistic estimates of species numbers. The European country with the largest number of recorded species

is Germany (950 species see Skuhravá et al. 2014, Jaschhof & Jaschhof 2021a). In Sweden, the mycophagous subfamilies of Cecidomyiidae are represented with more than 800 species, and the predatory Lestodiplosini with more than 70 species (Jaschhof & Jaschhof 2021b). Based on that, the occurrence of close to 2000 different Cecidomyiidae in Sweden seems possible, considering that plant-feeding Cecidomyiinae are poorly surveyed there, and the inventory of fungivores and predators is far from being complete.

Level of faunistic knowledge in Switzerland: Moderate for phytophagous species, very poor for mycophagous and predatory species. A conservative estimate for Switzerland is 1000-1200 species (including 500-600 Cecidomyiinae).

General references: Dorchin et al. (2019) [phylogeny, Cecidomyiinae], Gagné & Jaschhof (2021) [catalogue, world species, classification], Jaschhof (1998) [general, revision, Palaearctic and Nearctic species of Catotrichinae, Lestremiinae and Micromyinae], Jaschhof & Jaschhof (2009) [general, revision and keys, Nordic Lestremiinae and Micromyinae], Jaschhof & Jaschhof (2013) [general, revision and keys, Swedish Winnertziinae and Porricondylinae], Mamaev & Krivosheina (1993) [larvae], Redfern (2011) [biology], Roskam (2019) [keys, plant galls of Europe], Roskam & Carbonnelle (2015) [galls pictures], Shorthouse & Rohfritsch (1992) [biology], Skuhravá (1997) [catalogue, Palaearctic species, outdated for non-Cecidomyiinae], Skuhravá & Skuhravý (2010) [biogeography, European fauna], Skuhravá & Skuhravý (2022) [general, biology, European fauna].

References to the Swiss fauna: Affolter (1990), Antonin (1984), Appel (1891), Bächli et al. (2014), Bachmann (1950), Baggiolini (1960), Bollinger (1968), Bremi (1847), Carl (1978, 1982), Clausen (1950), Corti (1904), Deshusses (1933), Deshusses & Deshusses (1936), Faes & Staehelin (1929), Fischer & Pivot (1992), Forster et al. (2018), Gagné & Jaschhof (2021), Gangolf (1886), Häflinger (1945), Hieronymus (1890), Hofer (1910), Houard (1919), Keller (1989), Kieffer (1898, 1909), Kutter & Winterhalter (1933), Löw (1885), Marty (2021), Merz et al. (2002, 2006), Madziara-Borusiewiecz (1963), Moreillon (1913, 1916, 1922), Nikolei (1958, 1961), Perriraz (1909), Roskam (1977, 1979), Rübsaamen (1892, 1912, 1917), Skuhravá (1998), Skuhravá & Skuhravý (1997a, 1997b), Skuhravá et al. (2006), Thomas (1890, 1892, 1893, 1902), Trotter (1923), Vallot (1827), Valloton (1969), Vogler (1906), Wermelinger et al. (1995), Wermelinger & Skuhravá (2007), Widmann 2024a, b, c) Zogg et al. (1949, 1950, 1951).

Checklist

Cecidomyiinae N1
Acericecis Gagné, 1983
- *vitrina* (Kieffer, 1909) !

Aphidoletes Kieffer, 1904
- *aphidimyza* (Rondani, 1847) !

Arthrocnodax Rübsaamen, 1895
- *coryligallarum* (Targioni-Tozzetti, 1886) !
- *erianeus* (Bremi, 1847) L

Aschistonyx Rübsaamen, 1917
- *carpinicolus* Rübsaamen, 1917 !

Asphondylia Loew, 1850
- *bitensis* Kieffer, 1888 L
- *coronillae* (Vallot, 1829) L
- *echii* H. Loew, 1850 !
- *hornigi* Wachtl, 1880 !
- *ononidis* F. Löw, 1873 !
- *verbasci* (Vallot, 1827) !

Bayeriola Gagné, 1991
- *salicariae* (Kieffer, 1888) !
- *thymicola* (Kieffer, 1888) !

Blastomyia Kieffer, 1913
- *origani* (Tavares, 1902) L

Bremiola Rübsaamen, 1915
- *onobrychidis* (Bremi, 1847) !

Cecidomyia Meigen, 1803 N2
- *bicolora* Kieffer, 1913 L
- *gemini* Bremi, 1847 L N3
- *grisea* Bremi, 1847 L N4
- *limbitorquens* Bremi, 1847 L
- *pilosa* Bremi, 1847 L
- *pini* (De Geer, 1776) !
- *polymorpha* Bremi, 1847 L
- *varicolor* Bremi, 1847 L N5

Clinodiplosis Kieffer, 1894
- *botularia* (Winnertz, 1853) !
- *cilicrus* (Kieffer, 1889) !

Coniophora Nijveldt, 1959
- *graminicola* Nijveldt, 1959 L

Contarinia Rondani, 1860
- *acerplicans* (Kieffer, 1889) !
- *aconitifloris* Stelter, 1962 L
- *aequalis* Kieffer, 1898 !
- *asclepiadis* (Giraud, 1863) !
- *baeri* (Prell, 1931) !
- *barbichei* (Kieffer, 1890) !
- *campanulae* (Kieffer, 1895) !
- *carpini* Kieffer, 1897 !
- *coryli* (Kaltenbach, 1859) !
- *craccae* Kieffer, 1897 L
- *cucubali* Kieffer, 1909 !
- *cybelae* Gagné, 1972 !
- *fagi* Rübsaamen, 1921 !
- *galeobdolontis* Kieffer, 1909 !
- *helianthemi* (Hardy, 1850) L

- *hyperici* Barnes, 1952 !
- *hypochoeridis* (Rübsaamen, 1891) !
- *jaapi* Rübsaamen, 1914 !
- *jacobaeae* (Loew, 1850) !
- *lonicerearum* (F. Löw, 1877) L N6
- *loti* (De Geer, 1776) !
- *lysimachiae* (Rübsaamen, 1893) !
- *medicaginis* Kieffer, 1895 !
- *melanocera* Kieffer, 1904 L
- *nasturtii* (Kieffer, 1888) !
- *onobrychidis* Kieffer, 1895 L
- *petioli* (Kieffer, 1898) !
- *pisi* (Winnertz, 1854) L
- *polygonati* Rübsaamen, 1921 !
- *populi* (Rübsaamen, 1917) !
- *pyrivora* (Riley, 1886) L
- *quercina* (Rübsaamen, 1890) !
- *rubicola* Kieffer, 1909 !
- *schlechtendaliana* (Rübsaamen, 1893) !
- *scrophulariae* Kieffer, 1896 ! N13
- *solani* (Rübsaamen, 1891) !
- *sorbi* (Kieffer, 1894) ! N13
- *steini* (Karsch, 1881) !
- *tiliarum* (Kieffer, 1890) !
- *tritici* (Kirby, 1798) L
- *vincetoxici* Kieffer, 1909 !

Coquillettomyia Felt, 1908
- *lobata* (Felt, 1907) ! N7

Craneiobia Kieffer, 1913
- *corni* (Giraud, 1863) !

Cystiphora Kieffer, 1892
- *leontodontis* (Bremi, 1847) L
- *sanguinea* (Bremi, 1847) !
- *sonchi* (Bremi, 1847) !
- *taraxaci* (Kieffer, 1888) !

Dasineura Rondani, 1840
- *acrophila* (Winnertz, 1853) !
- *affinis* (Kieffer, 1886) !
- *alpestris* (Kieffer, 1909) !
- *aucupariae* Kieffer, 1909 L
- *auritae* (Rübsaamen, 1915) !
- *axillaris* (Kieffer, 1896) L
- *berberidis* (Kieffer, 1909) !
- *bistortae* (Kieffer, 1909) L
- *bupleuri* (Wachtl, 1883) L
- *centaureae* (Kieffer, 1909) L

- *clausilia* (Bremi, 1847) L N8
- *crataegi* (Winnertz, 1853) !
- *cytisi* (Kieffer, 1909) L
- *daphnephila* (Kieffer, 1909) L
- *daphnes* (Kieffer, 1901) L
- *engstfeldi* (Rübsaamen, 1889) !
- *excavans* (Kieffer, 1909) !
- *fastidiosa* Roskam, 1979 !
- *fraxinea* (Kieffer, 1907) !
- *fraxini* (Bremi, 1847) !
- *glechomae* (Kieffer, 1889) !
- *gleditchiae* Osten Sacken, 1866 L
- *hyperici* (Bremi, 1847) !
- *interbracta* Roskam, 1979 !
- *irregularis* (Bremi, 1847) !
- *jaapi* (Rübsaamen, 1914) L
- *kellneri* (Henschel, 1875) !
- *kiefferiana* (Rübsaamen, 1891) L
- *lamiicola* (Mik, 1888) !
- *lathyri* (Kieffer, 1909) !
- *lathyricola* (Rübsaamen, 1890) !
- *lupulinae* (Kieffer, 1891) !
- *mali* (Kieffer, 1904) !
- *medicaginis* (Bremi, 1847) !
- *odoratae* Stelter, 1982 ! N13
- *periclymeni* (Rübsaamen, 1889) !
- *phyteumatis* (F. Löw, 1885) !
- *plicatrix* (H. Loew, 1850) !
- *populeti* (Rübsaamen, 1889) !
- *pseudococcus* (Thomas, 1890) L
- *pteridis* (Müller, 1871) ! N13
- *pustulans* (Rübsaamen, 1889) !
- *pyri* (Bouché, 1847) !
- *ranunculi* (Bremi, 1847) !
- *rhododendri* (Kieffer, 1909) !
- *rosae* (Bremi, 1847) !
  = *rosarum* (Hardy, 1850)
- *rubella* (Kieffer, 1896) !
- *senecionis* (Rübsaamen, 1916) !
- *strumosa* (Bremi, 1847) !
- *subpatula* (Bremi, 1847) L
- *tetensi* (Rübsaamen, 1891) !
- *teucrii* (Tavares, 1903) !
- *thomasi* (Kieffer, 1909) !
- *thomasiana* (Kieffer, 1888) !
- *tiliae* (Schrank, 1803) !

- *tortilis* (Bremi, 1847) !
- *tortrix* (F. Löw, 1877) !
- *trifolii* (F. Löw, 1874) !
- *tympani* (Kieffer, 1909) !
- *ulmaria* (Bremi, 1847) !
- *urticae* (Perris, 1840) !
- *viciae* (Kieffer, 1888) !
- *violae* (F. Löw, 1880) L
- *virgaeaureae* (Liebel, 1889) !
- *xylostei* (Kieffer, 1909) !

Didymomyia Rübsaamen, 1912
- *tiliacea* (Bremi, 1847) !

Drisina Giard, 1893
- *glutinosa* Giard, 1893 !

Dryomyia Kieffer, 1898
- *circinans* (Giraud, 1861) L

Etsuhoa Inouye, 1959
- *sabinae* (Kieffer, 1898) L

Feltiella Rübsaamen, 1910
- *acarisuga* (Vallot, 1827) L

Geocrypta Kieffer, 1913
- *braueri* (Handlirsch, 1884) !
- *galii* (H. Loew, 1850) !
- *trachelii* (Wachtl, 1885) L

Geomyia Skuhravá, 2006
- *alpina* Skuhravá, 2006 !

Gephyraulus Rübsaamen, 1916
- *raphanistri* (Kieffer, 1886) !

Harmandiola Skuhravá, 1997
- *cavernosa* (Rübsaamen, 1899) !
- *globuli* (Rübsaamen, 1989) !
- *populi* Rübsaamen, 1917 !
- *pustulans* Kieffer, 1909 L
- *tremulae* (Winnertz, 1853) L

Hartigiola Rübsaamen, 1912
- *annulipes* (Hartig, 1839) !

Hygrodiplosis Kieffer, 1912
- *vaccinii* (Kieffer, 1897) L

Iteomyia Kieffer, 1913
- *capreae* (Winnertz, 1853) !

Jaapiella Rübsaamen, 1916
- *alpina* (F. Löw, 1885) L
- *bryoniae* (Bouché, 1847) !
- *cirsiicola* Rübsaamen, 1915 !
- *compositarum* (Kieffer, 1888) !
- *floriperda* (F. Löw, 1888) !

- *genisticola* (F. Löw, 1877) L
- *hedickei* Rübsaamen, 1921 !
- *knautiae* Rübsaamen, 1917 !
- *loticola* (Rübsaamen, 1889) !
- *medicaginis* (Rübsaamen, 1912) !
- *schmidti* (Rübsaamen, 1912) !
- *veronicae* (Vallot, 1827) !
- *volvens* Rübsaamen, 1917 !

Janetiella Kieffer, 1898
- *thymi* (Kieffer, 1888) L

Kaltenbachiola Hedicke, 1938
- *strobi* (Winnertz, 1853) !

Kiefferia Mik, 1895
- *pericarpiicola* (Bremi, 1847) !

Lasioptera Meigen, 1818
- *arundinis* Schiner, 1854 !
- *carophila* F. Löw, 1874 !
- *flexuosa* (Winnertz, 1853) L
- *rubi* (Schrank, 1803) !

Lestodiplosis Kieffer, 1894
- *achilleae* Barnes, 1928 ! N9
- *chrysanthemi* Kieffer, 1913 ! N10
- *coni* (Kieffer, 1920) !
- *holstei* Kieffer, 1920 !

Loewiola Kieffer, 1896
- *centaureae* (F. Löw, 1875) L

Macrodiplosis Kieffer, 1895
- *inflexa* (Bremi, 1847) L
- *pustularis* (Bremi, 1847) !
  = *dryobia* (F. Löw, 1877)
- *roboris* (Hardy, 1854) !
  = *volvens* Kieffer, 1895

Macrolabis Kieffer, 1892
- *heraclei* (Kaltenbach, 1862) !
- *hieracii* Rübsaamen, 1917 !
- *hippocrepidis* Kieffer, 1898 L
- *lamii* Rübsaamen, 1915 !
- *luceti* Kieffer, 1899 !
- *podagrariae* Stelter, 1962 !
- *ruebsaameni* Hedicke, 1938 !
- *stellariae* (Liebel, 1889) !

Mayetiola Kieffer, 1896
- *destructor* (Say, 1817) L
- *poae* (Bosc, 1817) L

Mikiola Kieffer, 1896
- *fagi* (Hartig, 1839) !

Mikomya Kieffer, 1912
- *coryli* (Kieffer, 1901) !

Monarthropalpus Rübsaamen, 1892
- *flavus* (Schrank, 1776) !

Mycodiplosis Rübsaamen, 1895
- *melampsorae* (Rübsaamen, 1889) !
- *saundersi* Barnes, 1927 !

Obolodiplosis Felt, 1908
- *robiniae* (Haldeman, 1847) !

Oligotrophus Latreille, 1805
- *juniperinus* (Linnaeus, 1758) !
- *panteli* Kieffer, 1898 !

Ozirhincus Rondani, 1840
- *millefolii* (Wachtl, 1884) !

Parallelodiplosis Rübsaamen, 1910
- *galliperda* (F. Löw, 1889) !

Phegomyia Kieffer, 1913
- *fagicola* (Kieffer, 1901) ! N13

Physemocecis Rübsaamen, 1914
- *hartigi* (Liebel, 1892) !
- *ulmi* (Kieffer, 1909) !

Placochela Rübsaamen, 1916
- *ligustri* (Rübsaamen, 1899) !
- *nigripes* (F. Löw, 1877) !

Planetella Westwood, 1840 N2
- *bremii* (Kieffer, 1898) L
- *brunnea* (Rübsaamen, 1892) L
- *cornuta* (Bremi, 1847) L
- *grandis* (Meigen, 1804) !

Plemeliella Seitner, 1908
- *abietina* Seitner, 1908 L
- *betulicola* (Kieffer, 1889) !

Putoniella Kieffer, 1896
- *pruni* (Kaltenbach, 1872) L

Rabdophaga Westwood, 1847
- *degeerii* (Bremi, 1847) L
- *heterobia* (H. Loew, 1850) L
- *iteobia* (Kieffer, 1890) !
- *marginemtorquens* (Bremi, 1847) !
- *paliumparens* Stelter, 1977 !
- *rosaria* (H. Loew, 1850) !
- *saliciperda* (Dufour, 1841) L
- *salicis* (Schrank, 1803) !
- *strobilina* (Bremi, 1847) !
- *terminalis* (H. Loew, 1850) !

Resseliella Seitner, 1906

- *theobaldi* (Barnes, 1927) L

Rhopalomyia Rübsaamen, 1892
- *artemisiae* (Bouché, 1834) !
- *chrysanthemi* (Ahlberg, 1939) L
- *foliorum* (H. Loew, 1850) !
- *hypogaea* (F. Löw, 1885) !
- *ptarmicae* (Vallot, 1849) L
- *ruebsaameni* Thomas, 1893 L
- *tubifex* (Bouché, 1847) L

Rondaniola Hedicke, 1938
- *bursaria* (Bremi, 1847) !

Sackenomyia Felt, 1908
- *reaumurii* (Bremi, 1847) !

Schizomyia Kieffer, 1889
- *galiorum* Kieffer, 1889 !

Semudobia Kieffer, 1913
- *betulae* (Winnertz, 1853) !
- *skuhravae* Roskam, 1977 !
- *tarda* Roskam, 1977 !

Sitodiplosis Kieffer, 1913
- *mosellana* (Géhin, 1857) L
- *phalaridis* Abbas, 1986 L

Spurgia Gagné, 1990
- *esulae* Gagné, 1990 !
- *euphorbiae* (Vallot, 1827) !
  = *capitigena* (Bremi, 1847)

Taxomyia Rübsaamen, 1912
- *taxi* (Inchbald, 1861) !

Thecodiplosis Kieffer, 1895
- *brachyntera* (Schwägrichen, 1835) !

Tricholaba Rübsaamen, 1917
- *trifolii* Rübsaamen, 1917 !

Wachtliella Rübsaamen, 1916
- *stachydis* (Bremi, 1847) !

Zeuxidiplosis Kieffer, 1904
- *giardi* (Kieffer, 1896) !

Zygiobia Kieffer, 1913
- *carpini* (F. Löw, 1874) L

Lestremiinae

Lestremia Macquart, 1826
- *leucophaea* (Meigen, 1818) !

Micromyinae

Aprionus Kieffer, 1894
- *inquisitor* Mamaev, 1963 !

Campylomyza Meigen, 1818
- *flavipes* Meigen, 1818 !

Porricondylinae

Asynapta Loew, 1850
- *strobi* (Kieffer, 1920) !

Claspettomyia Grover, 1964
- *formosa* (Bremi, 1847) L

Winnertziinae

Heteropeza Winnertz, 1846
- *pygmaea* Winnertz, 1846 L

Miastor Meinert, 1864
- *metraloas* Meinert, 1864 L

Excluded species

Cecidomyia frischii Bremi, 1847 N11
Contarinia sambuci (Kaltenbach, 1873)
Camptomyia fenestralis (Bremi, 1847) N12
Porricondyla flava (Meigen, 1818) N12

Notes

N1 Faunistic data of mostly Cecidomyiinae are discussed in detail by Skuhravá & Skuhravý (1997a, b). These studies treat the history of gall midge investigation in Switzerland, review all faunistic papers and present the results of several collecting trips (56 localities) of the authors between 1993-1996. These faunistic papers are listed below and references to all species marked with « L » (literature data) in the list (that is without precise reference) can be traced in Skuhravá & Skuhravý (1997a), unless otherwise stated.

N2 Bremi (1847) may be regarded as the founder of scientific gall midge study, not only in Switzerland but in all of Europe. He described or named about 40 species and gathered a relatively rich collection of plant galls and dry-pinned gall inducers, which is now deposited in ETHZ. Types were not designated. Unfortunately, the collection is in a bad condition, making it impossible to undertake a revision of his species, which were often rather insufficiently described in catch-all genera, such as *Cecidomyia* and *Planetella*.

N3 *Cecidomyia gemini*: only gall described, material probably lost.

N4 *Cecidomyia grisea*: material probably lost.

N5 *Cecidomyia varicolor*: material probably lost.

N6 *Contarinia lonicerearum*: only recorded on *Lonicera xylosteum* L. in Switzerland (Vogler 1906, Moreillon 1916, Skuhravá & Skuhravý 1997a, Marty 2021), removed from synonymy with *C. sambuci* Kaltenbach, 1873 by Skuhravá & Skuhravý (2009), the latter only occurring on *Sambucus*.

N7 *Coquillettomyia lobata* (Felt, 1907): New record for the Swiss fauna (Widmann 2024a).

N8 *Dasineura clausilia* (Bremi, 1847): mentioned by Moreillon (1916) and Skuhravá & Skuhravý (1997a). Stelter (1993) mentioned that these galls are caused by mites, not by gall midges. The midge larvae noticed by Bremi (1847) in the galls need further study; they are probably inquilines or mite predators (Gagné & Jaschhof 2021).

N9 *Lestodiplosis achilleae* Barnes, 1928: New record for the Swiss fauna (Widmann 2024b).

N10 *Lestodiplosis chrysanthemi* Kieffer, 1913: New record for the Swiss fauna (Widmann 2024c).

N11 *Cecidomyia frischii*: probably identical with a later described species. Material lost, status unclear.

N12 *Cecidomyia fenestralis* Bremi, 1847 (regarded as *Camptomyia* by some authors) and *Cecidomyia flava* Meigen, 1818 (regarded as *Porricondyla* by some authors) recorded by Bremi (1847) are considered as nomina dubia and have been consequently removed from the list.

N13 The following species have been first recorded from Switzerland by Marty (2021): *Contarinia scrophulariae*, *C. sorbi*, *Dasineura odoratae*, *D. pteridis* and *Phegomyia fagicola*.

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Canthyloscelidae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni)
Last update: Jul 2024

Diagnosis: Small to medium-sized (2.5-9.0 mm), relatively stout, usually dark coloured, more or less scatopsid-like nematoceran midges. Eyes large, holoptic and narrowly separated below antennae; ocelli present; palpus four-segmented; antenna relatively short, with 10-14 segmented flagellum. Wing long and slender, without anal lobe, clear or slightly tinged, microtrichose, posterior veins well developed, pigmented in Canthyloscelinae. Costa extending beyond apex of R_{4+5}, and R_1 and R_{2+3} ending separately in the costa (Canthyloscelinae) or fused (Synneurinae), M_1, M_2, CuA_1 and CuA_2 present, A_1 well developed (Canthyloscelinae) or absent (Synneurinae). Legs stout, hind legs modified in Canthyloscelinae with femora clavate and tibia curved. Abdomen long and slender, somewhat dorsoventrally flattened and posteriorly widened.

Biology: All species of this relict family with disjunct distribution are associated with primeval forests, and patches of old-growth forest are considered endangered throughout Europe. The xylosaprophagous larvae live in moist, decaying wood of stumps and fallen tree trunks; adults can be found in the immediate vicinity of the larval breeding sites.

Nomenclature and classification: According to Fauna Europaea (Haenni 2013).

Number of species: CH: 1 (1998 Checklist: 1),
CZ: 2, DE: 1, FI: 3, PL: 1, SK: 3, Europe: 3, World: 14.

Level of faunistic knowledge in Switzerland: Good. One additional species, *Synneuron annulipes* Lundström, 1910, might possibly occur in Switzerland.

General references: Haenni (1998) [general, key to genera] (2013) [Fauna Europaea database], Hutson (1977) [key, World species], Martinovský & Roháček (1993) [biology], Roháček (2006) [biology], Roháček & Barták (2007) [*Hyperoscelis*, key, European species].

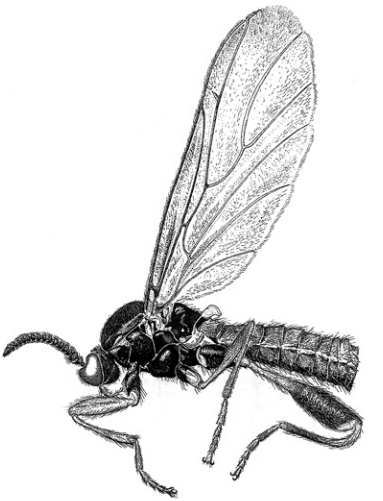
References to the Swiss fauna: Haenni (1998), Haenni & Dufour (1983).

Checklist

Hyperoscelis Hardy & Nagatomi, 1960
- *eximia* (Boheman, 1851) ! N1

Notes

N1 *Hyperoscelis eximia*: there is still only one record of the species in Switzerland (Haenni & Dufour 1983).



Hyperoscelis veternosa,
male, not present in Switzerland (CMPD2, p. 275).

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Scatopsidae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni)
Last update: Jul 2024

Diagnosis: Minute to small (1.5-4 mm), rather stout nematocerous flies, generally dark brownish to black, sometimes more or less marked with yellow. Eyes holoptic in both sexes forming a bridge over antennae, only rarely hardly dichoptic. Antennae short, with 5-10 shortened flagellomeres; palpi one-segmented. Legs generally simple, devoid of bristles or spurs (except in Aspistinae with front tibia ending in a strong swollen spur). Thorax generally laterally compressed, much longer than wide, except in some genera. Postnotal phragma much developed, extending into base of abdomen. Wings usually more or less hyaline or slightly brownish-tinged, with only anterior veins pigmented, hind veins translucent, in some genera hind veins tinged, contrasting with membrane; venation reduced, only two R veins reaching wing margin (R_1 and R_{4+5}), M forked, no pterostigma, no discal cell, a spurious vein present as a fold between M_{1+2} and M_4 in most genera. Abdomen parallel-sided. Identification mostly based upon genitalic structures which are extremely diverse, especially in male sex.

Biology: Adults are unconspicuous, diurnal midges living in various environments, open, semi-open or wooded (*Apiloscatopse*), with wetland favoured by many species. They are quite frequently found on flowers, especially umbels. Aggregations of thousands of specimens can sometimes be observed in species of the genera *Reichertella* and *Apiloscatopse*. All known larvae are saprophagous, developing in a wide variety of decaying material, both vegetal and animal, in rotten wood, under bark of trees, in soil, leaf-litter, dung and fungi. Myrmecophily is observed in some genera.

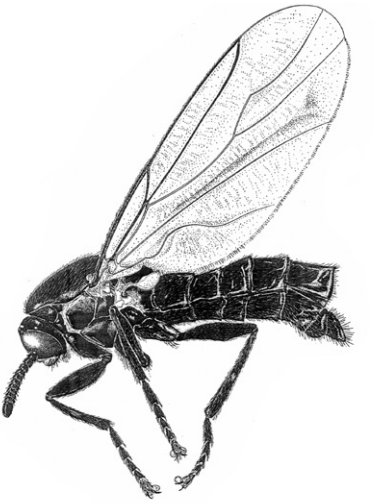
Nomenclature and classification: According to Fauna Europaea (Haenni 2013), with some additions and minor changes.

Number of species: CH: 71 (1998 Checklist: 61),
BE: 27, CZ: 48, DE: 56, FR: 62, GB 46, HU: 29, IT: 36, NL: 33, PL: 28, SK: 46, Europe: ~105, World: ~400.

Level of faunistic knowledge in Switzerland: Good; some additional species may probably occur in Switzerland while 2-3 still undescribed species await description.

General references: Cook (1965a, 1965b, 1969, 1972, 1974) [keys, Palaearctic species], Duda (1928) [keys, Palaearctic species], Freeman (1985) [keys, British species], Haenni (1997 [general, key to genera, adults and larvae], 2013a [*Colobostema*, key, European species], 2013b [Fauna Europaea database]), Krivosheina & Haenni (1986) [catalogue, Palaearctic species], Haenni & Vaillant (1994) [review of larvae, key to genera].

References to the Swiss fauna: Bächli et al. (2014), Haenni (1981, 1984, 1986, 1997a, 1997b, 1998, 2002, 2003, 2008, 2013a, 2020), Haenni & Martinovský (2014), Haenni & Merz (2012), Haenni & Pollini (2015), Haenni & Pollini Paltrinieri (2021), Laštovka & Haenni (1981), Merz et al. (1998, 2002, 2006).



Scatopse notata,
male (CMPD2, p. 257).

Checklist

Aspistinae

Arthria Kirby, 1837
- *analis* Kirby, 1837 !

Aspistes Meigen, 1818
- *berolinensis* Meigen, 1818 !

Ectaetiinae

Ectaetia Enderlein, 1912
- *clavipes* (Loew, 1846) !

Psectrosciarinae

Anapausis Enderlein, 1912
- *albohalterata* Duda, 1928 !
- *annulicauda* Haenni, 1984 !
- *baueri* Fritz, 1983 !
- *conica* Haenni, 1984 !
- *dalmatina* Duda, 1928 !
- *dufourella* Haenni, 1984 !
- *floricola* Chandler, 1999 !
- *foveolata* Duda, 1928 !
- *haemorrhoidalis* Duda, 1928 !
- *helvetica* Haenni, 1984 !
- *inermis* (Ruthé, 1831) !
- *pseudohelvetica* Haenni, 1984 !
- *rectinervis* Duda, 1928 !

- *solmatina* Haenni & Martinovský, 2014 !
- *soluta* (Loew, 1846) !
- *sulcata* Duda, 1928 !
- *talpae* (Verrall, 1912) !

Scatopsinae

Apiloscatopse Cook, 1974
- *bifilata* (Walker, 1856) !
- *flavicollis* (Meigen, 1818) !
- *flavocincta* (Duda, 1928) !
- *gracilis* (Duda, 1928) !
- *handlirschi* (Duda, 1928) !
- *mattheyi* Haenni, 1981 !
- *picea* (Meigen, 1818) !
- *scutellata* (Loew, 1846) !
- *styriaca* (Enderlein, 1926) !
- *subgracilis* Haenni & Greve, 1995 !

Coboldia Melander, 1916
- *fuscipes* (Meigen, 1830) !

Colobostema Enderlein, 1926
- *auberti* Haenni, 2013 !
- *geigeri* Haenni, 2013 !
- *griseinerve* (Duda, 1928) !
- *infumatum* (Haliday, 1833) !
- *lastovkai* Haenni, 2013 !
- *nigripenne* (Meigen, 1830) !
- *obscuritarse* (Strobl, 1898) !
- *schertenleibi* Haenni, 2013 !
- *triste* (Zetterstedt, 1850) !

Cooka Amorim, 2007
- *incisa* (Beekey, 1937) !

Dicrostolis Enderlein, 1936
- *falcinervis* (Duda, 1928) !

Efcookella Haenni, 1998
- *albitarsis* (Zetterstedt, 1850) !

Ferneiella Cook, 1985
- *brevifurca* (Enderlein, 1912) !
- *incompleta* (Verrall, 1886) !

Holoplagia Enderlein, 1912
- *bullata* (Edwards, 1925) !
- *lucifuga* (Loew, 1870) !
- *richardsi* (Edwards, 1934) !
- *transversalis* (Loew, 1846) !

Neorhegmoclemina Cook, 1955
- *catharinae* Haenni, 1997 !

Parascatopse Cook, 1955

- *distorta* Haenni & Pollini, 2015 !

Pharsoreichertella Cook, 1956
- *hamifera* (Strobl, 1909) !
- *simplicinervis* (Duda, 1928) !

Reichertella Enderlein, 1912
- *geniculata* (Zetterstedt, 1850) !
- *nigra* (Meigen, 1804) !

Rhexoza Enderlein, 1936
- *flixella* Haenni, 2001 !
- *richardsi* Freeman, 1985 !
- *subnitens* (Verrall, 1886) !

Scatopse Geoffroy, 1762
- *globulicauda* Laštovka & Haenni, 1981 !
- *notata* (Linnaeus, 1758) !

Swammerdamella Enderlein, 1912
- *acuta* Cook, 1956 !
- *adercotris* Cook, 1972 !
- *brevicornis* (Meigen, 1830) !
- *genypodis* Cook, 1972 !
- *pediculata* (Duda, 1928) !

Thripomorpha Enderlein, 1905
- *bifida* Zilahi-Sebess, 1956 !
  = *collini* Cook, 1969
- *cooki* (Hutson, 1970) !
- *coxendix* (Verrall, 1912) !
- *halteratum* (Meigen, 1838) !
- *paludicola* Enderlein, 1905 !
  = *edwardsi* Collin, 1954
- *verralli* (Edwards, 1934) !

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Anisopodidae (incl. Mycetobiinae)

Jean-Paul Haenni & Peter J. Chandler (1998 Checklist: Jean-Paul Haenni [Anisopodidae], **Peter J. Chandler** [Mycetobiidae])

Last update: Jul 2024

Diagnosis: Medium sized (4-10 mm) nematocerous flies with slender body and legs. Head with antennae longer than head, tapering to apex, flagellum 14-segmented, 3 ocelli, palpi long, 4-5 segmented. Thorax convex, without distinct suture. Wing either with discal cell present, generally with a pattern of dark markings in *Sylvicola*, or discal cell absent, base of M vestigial, membrane without markings in Mycetobiinae. Legs with tibial spurs present, but devoid of strong spines. Abdomen elongate, parallel-sided, with genitalia of males usually visible externally. In both sexes, identification requires examination of genital characters. The systematic position of *Mycetobia* and allied genera has long been disputed and Mycetobiinae are frequently treated as a separate family Mycetobiidae, as it was also the case in the 1998 Checklist.

Biology: Adults of *Sylvicola* are frequent in forests and semi-wooded habitats; some species are widespread and can also be found almost all year long in parks, gardens, etc., including indoors on windows. Mycetobiinae midges are rare inhabitants of wooded areas. Saprophagous larvae of *Sylvicola* species develop in all kinds of decaying or fermenting vegetal tissues, mushrooms, manure, stems of umbelliferous plants, while those of Mycetobiinae are associated with wet dead wood, tree holes and sap runs.

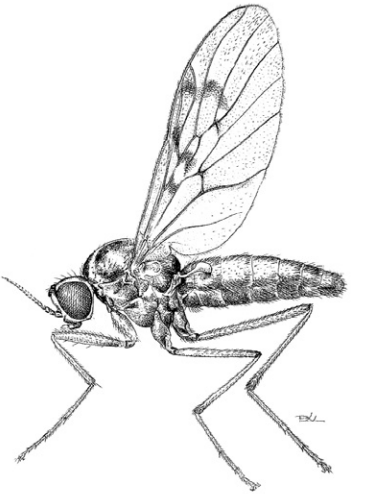
Nomenclature and classification: Based on Fauna Europaea (de Jong 2013, Chandler 2005). Family Mycetobiidae of former checklist included, according to Michelsen (1999) and Hancock (2017).

Number of species: CH: 11 (1998 Checklist: 11 [7+4]),
BE: 7, CZ: 9, DE: 8, FR: 6, GB: 8, HU: 7, IT: 8, NL: 7, SK: 9, Europe: 14, World: ~120.

Level of faunistic knowledge in Switzerland: Very good; one additional species of *Sylvicola* might possibly be found in Switzerland.

General references: Chandler (2005) [Mycetobiinae, Fauna Europaea], Michelsen (1999) [general, taxonomy], Haenni (1997) [*Sylvicola*, key, Central European species], Hancock (2017) [general], Hancock et al. (1996) [Mycetobiinae, key, British species], de Jong (2013) [Anisopodinae, Fauna Europaea], Krivosheina (1986) [catalogue, Palaearctic species], Krivosheina (1997a, 1997b) [general, key to genera], Krivosheina & Menzel (1998) [*Sylvicola*, key, European species], Mamaev (1989) [Mycetobiinae, key, European species], Miller & Schacht (1995) [Mycetobiinae, key, Palaearctic species], Søli & Rindal (2014) [*Sylvicola*, key, Scandinavian species].

References to the Swiss fauna: Chandler (1998), Haenni (1997, 1998), Haenni & Merz (2012).



Sylvicola punctatus,
female (CMPD2, p. 241).

Checklist

Anisopodinae

Sylvicola Harris, 1776 N1
- *baechlii* Haenni, 1997 !
- *cinctus* (Fabricius, 1787) !
- *fenestralis* (Scopoli, 1763) !
- *fuscatus* Fabricius, 1775 ! N2
  = *subfuscatus* Krivosheina & Menzel, 1998
- *limpidus* (Edwards, 1923) !
- *punctatus* (Fabricius, 1787) !
- *zetterstedti* (Edwards, 1923) !

Mycetobiinae N3

Mycetobia Meigen, 1818
- *gemella* Mamaev, 1968 !
- *obscura* Mamaev, 1968 !
- *pallipes* Meigen, 1818 !

Trichomycetobia Mamaev, 1987
- *notabilis* (Mamaev, 1968) !

Notes

N1 Old identifications and published data of *Sylvicola* species based mainly upon colouration characters are unreliable and must be discarded.

N2 Michelsen (1999) demonstrated that the species of the *Sylvicola fuscatus*-group present in Central Europe is the true *S. fuscatus* in Fabricius' sense, with *S. subfuscatus* Krivosheina & Menzel, 1998 considered as a synonym.

N3 There are no published records of subfamily Mycetobiinae from Switzerland. The above records are based on males, from the collections of Karin Schiegg (deposited in ETHZ) and CGB. Several females of the genus *Mycetobia* (ETHZ, MHNN) that have been examined have not yet been identified to species. Identification of females of the three Swiss species of *Mycetobia* is, however, possible from small internal differences in the genitalia figured by Hancock et al. (1996).

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Xylophagidae (incl. Coenomyiinae)

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni [Xylophagidae],
Jean-Paul Haenni & Bernhard Merz [Coenomyiidae])
Last update: Jul 2024

Diagnosis: Medium to large-sized brachycerous flies (7-18 mm), either of long-legged slender habitus (*Xylophagus*), or stout-builded (*Coenomyia*). Body black, sometimes marked with orange, pilose but devoid of setae (*Xylophagus*), or brownish, setose and pilose (*Coenomyia*). Antennae with annulated flagellum, consisting of 7-8 flagellomeres. Palpi 1-2 segmented. Eyes separated in both sexes. Wings variegated with brownish; costa completely surrounding the wing; 3 (*Xylophagus*) or 4 (*Coenomyia*) veins arising from discal cell; anal cell closed just before wing margin (*Xylophagus*), or narrowly open (*Coenomyia*). Legs with tibial spurs present. *Coenomyia* has long been considered as belonging to a separate family Coenomyiidae (as was also the case in the 1998 Checklist).

Biology: Adults are mainly forest dwellers; the predaceous larvae live under bark and in decaying wood (*Xylophagus*) feeding on larvae of various xylophagous insects, or in upper layer of rich forest soils (*Coenomyia*).

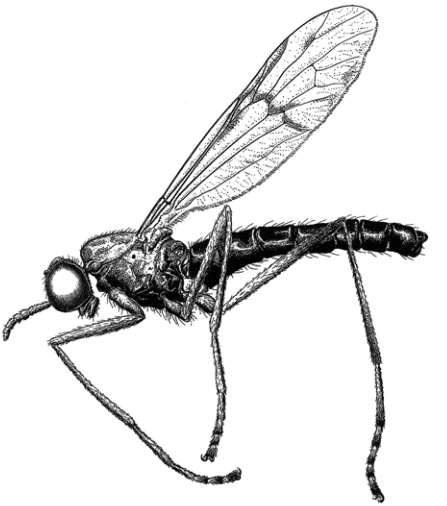
Nomenclature and classification: According to Fauna Europaea (Rozkošný et al. 2013).

Number of species: CH: 4 (1998 Checklist: 4 [3+1]),
BE: 3, CZ: 4, DE: 4, FR: 4, GB: 4, IT: 3, NL: 3, SK: 3, Europe: 6, World: 134.

Level of faunistic knowledge in Switzerland: Good; one additional species present in vicinous countries may probably also occur in Switzerland.

General references: Chandler (1998) [nomenclature], Haenni (1997) [*Xylophagus*, key, Central European species], Rozkošný et al. (2013) [Fauna Europaea, nomenclature], Woodley (2011) [key to genera, catalogue, World species].

References to the Swiss fauna: Blöchlinger (1990), Haenni (1997, 1998, 2019), Haenni & Merz (1998), Jentzsch (2011), Merz (2012).



Xylophagus ater,
male (CMPD2, p. 413).

Checklist

Coenomyiinae

Coenomyia Latreille, 1796
- *ferruginea* (Scopoli, 1763) ! N1

Xylophaginae

Xylophagus Meigen, 1803
- *ater* Meigen, 1804 ! N2
  - = *compeditus* Meigen, 1820
- *cinctus* (De Geer, 1776) !
- *junki* (Szilády, 1932) !

Notes

N1 *Coenomyia ferruginea* was placed in the separate family Coenomyiidae in the 1998 Checklist (Haenni & Merz 1998). Coenomyiinae is now considered a subfamily of Xylophagidae (Woodley 2011).

N2 The species recorded under the name *Xylophagus compeditus* Wiedemann in Meigen, 1820 (Haenni 1997, 1998) is the true *X. ater*, as demonstrated by Chandler (1998).

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Vermileonidae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni)
Last update: Jul 2024

Diagnosis: Medium to large (6-12 mm), slender brachycerous flies, more or less variegated dark and yellow in European species. Eyes broadly separated in both sexes; ocelli present. Antennae with first flagellomere bearing an apical style. Proboscis fleshy and short in *Vermileo*, sclerotised and elongate, curved in *Lampromyia*. Wings elongate, narrow; alula absent; R_5 reaching wing margin well beyond tip of wing; 5 posterior cells. Legs elongate, particularly the hind pair; tibiae with apical spurs. Abdomen long, somewhat petiolate.

Biology: Larvae (ant-worms) are predatory, constructing pitfall traps in sandy or dusty soil; they feed upon ants and other small insects fallen in the trap, a way of life much similar to that of the well-known larvae of ant-lions (Neuroptera). Pits may be found in great number in favourable, sheltered places. Larval development lasts one year. On the contrary, adults are elusive flies that are not frequently observed, even in the vicinity of sites of larval development.

Nomenclature and classification: According to Fauna Europaea (Beuk et al. 2013).

Number of species: CH: 1 (1998 Checklist: 1),
AT: 1, FR: 2, IT: 2, Europe: 9, World: 64.

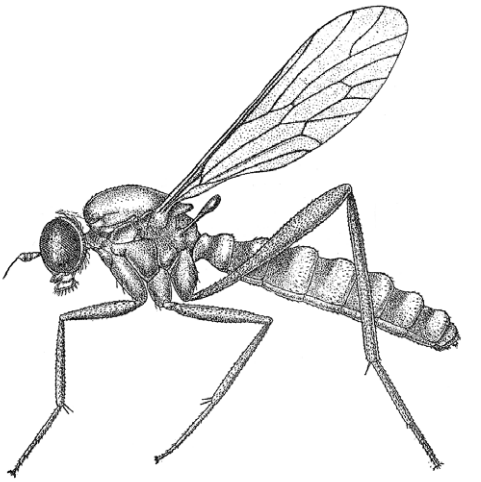
Level of faunistic knowledge in Switzerland: Good.

General references: Bueno et al. (2021) [world catalogue], Nagatomi (1997) [general, key to genera], Beuk et al. (2013) [Fauna Europaea], Stuckenberg (1966, 1998) [keys to European species].

References to the Swiss fauna: Haenni (1998), Marchesi et al. (2005), Merz (2012), Schenk (1958), Schoch (1889), Sierro & Keim (1999).

Checklist

Vermileo Macquart, 1834
- *vermileo* (Linnaeus, 1758) !
  = *degeeri* Macquart, 1834



Vermileo comstocki,
female, not present in Switzerland
(CMPD2, p. 448).

References

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Schenk H. 1958. Der Wurmlöwe, *Vermileo vermileo* Deg. Eine insektenbiologische Studie. Mitteilungen der entomologischen Gesellschaft Basel (Neue Folge) 8(3): 33-39.

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Rhagionidae

Theo Zeegers (1998 Checklist: Josef. M. Majer)
Last update: Jul 2024

Diagnosis: Generally small to large flies (4-18 mm), sometimes very small (*Spania*: 2 mm). Antenna short, with an arista on third segment, usually long. Apex of each tarsus with three lappets. Wing with an elongated discal cell, the fourth branch of radial vein with a strong fork, anal cell long, either open or closed at wing margin. Venation tends to be variable, even within one species. Calypter small. Male with holoptic eyes (or nearly so: *Rhagio latipennis, Chrysopilus flaveolus*), in female eyes broadly separated by a linear or square frons.

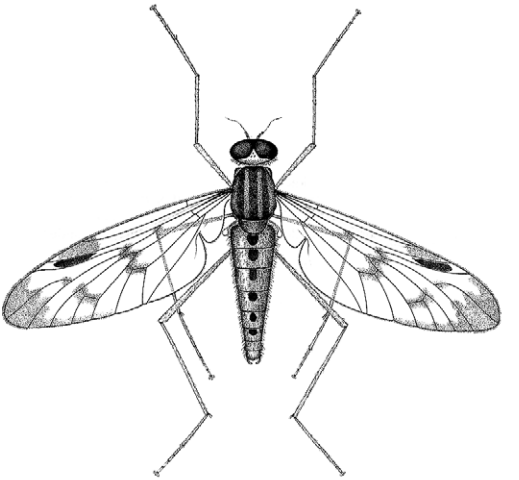
Biology: Rhagionidae are seemingly univoltine, generally with a short period of flight, though some species have an extended period of flight. Many species can be found in the vegetation on leaves. *Rhagio scolopaceus* is well-known for its behaviour to sit on trunks (or similar objects) with the head downwards « down-looker fly ». Small species are generally found on windows, by sweeping with a net or with Malaise traps. Females of non-European species of *Symphoromyia* are known to suck blood. Mating is in « opposite heads » orientation. Larvae are terrestrial, living in moist soil, decaying wood (some *Chrysopilus*), moss (*Ptiolina*) or liverwort (*Spania*). Larvae are predators, though larvae of *Chrysopilus* are said to feed on decaying matter.

Nomenclature and classification: The boundaries of the family have been subject to some debate. It is now generally accepted, that Athericidae should not be included in Rhagionidae, but are the sister group of Tabanidae. Rhagionidae, as currently understood, is the sister of this couple. Discussions on which genera to include or exclude in Rhagionidae is not relevant for the western Palaearctic fauna. The nomenclatorical problems in the genus *Ptiolina* are discussed by Zeegers et al. (2021). Little taxonomical work has been done in Europe over the last fifty years and many old records, including types, need to be reexamined. On the one hand, variability seemed to be underestimated in the past, leading to oversplitting (for instance, in *Chrysopilus*). On the other hand, cryptic species can still be discovered, as shown by Zeegers & Álvarez Fidalgo (2018).

Number of species: CH: 28 (1998 Checklist: 31),
BE: 22, CZ: 24, DE: 25, DK: 19, ES: 15, GB: 15, NL: 21, PT: ~10, FI: 15-16, SK: 26, Europe: ~90, World: ~700.

Level of faunistic knowledge in Switzerland: Good, though some species are still to be expected. Contrary to many neighbouring countries, there is an apparent lack of modern data and records online.

General references: Majer (1997) [general introduction, key to genera], Szilády (1934) [key Palaearctic region], Van der Goot (1985) [key to Northwest Europe], Nartshuk (1969) [key to European part of USSR], Rozkošný & Spitzer (1965) [key Czechoslovakia], Stubbs & Drake (2001) [Great Britain], Zeegers & Álvarez Fidalgo (2018) [review *Rhagio*



Rhagio scolopaceus,
male (CMPD2, p. 434).

scolopaceus-group], Zeegers & Schulten (2022) [photographic guide, northwestern Europe], Krivosheina (2006) [taxonomy *Chrysopilus*], Lindner (1942) [taxonomy *Ptiolina*], Nartshuk (1995) [*Ptiolina*], Zeegers et al. (2021) [key *Chrysopilus luteolus*-group, review types *Chrysopilus* & *Ptiolina*], Schacht (1994) [checklist Bayern], Kahanpää et al. (2014) [checklist Finland].

References to the Swiss fauna: Majer & Bächli (1997), Merz et al. (2002).

Checklist

Chrysopilus Macquart, 1826
- *alpicola* (Pokorny, 1886) !
- *asiliformis* (Preyssler, 1791) !
  = *aureus* (Meigen, 1804)
- *cristatus* (Fabricius, 1775) !
  = *auratus* (Fabricius, 1805)
- *erythrophthalmus* Loew, 1840 !
- *flaveolus* (Meigen, 1820) L
  = *helvolus* auct. nec (Meigen, 1820)
- *laetus* Zetterstedt, 1842 !
- *luteolus* (Fallén, 1814) !
- *nubecula* (Fallén, 1814) !
- *splendidus* (Meigen, 1820) !

Ptiolina Staeger in Zetterstedt, 1842
- *obscura* (Fallén, 1814) !

- *paradoxa* (Jaennicke, 1866) !

Rhagio Fabricius, 1775
- *annulatus* (De Geer, 1776) !
- *cingulatus* (Loew, 1856) !
- *conspicuus* Meigen, 1804 !
- *funebris* Meigen, 1820 !
- *immaculatus* (Meigen, 1804) !
- *latipennis* (Loew, 1856) !
- *lineola* Fabricius, 1794 !
- *maculatus* (De Geer, 1776) !
- *notatus* (Meigen, 1820) !
- *scolopaceus* (Linnaeus, 1758) !
- *strigosus* (Meigen, 1804) !
- *subpilosus* (Becker, 1892) !
- *tringarius* (Linnaeus, 1758) !
- *vitripennis* (Meigen, 1820) !

Spania Meigen, 1830
- *nigra* Meigen, 1830 !

Symphoromyia Frauenfeld, 1867
- *crassicornis* (Panzer, 1806) !
- *immaculata* (Meigen, 1804) !

Excluded species

Chrysopilus helvolus (Meigen, 1820)
Chrysopilus palparis Loew, 1869 N1
Ptiolina cinereofasciata (Schummel, 1837) N2
Rhagio chrysostigma (Loew, 1857) N3
Rhagio perrisi (Gobert, 1877) N4

Notes

N1 *Chrysopilus palparis* is so far only known from Corfu. Other records of this species are misidentifications of *Ch. asiliformis* (Zeegers & Pollet 2023).

N2 *Ptiolina cinereofasciata*: there are no specimens mentioned from Switzerland (Nartshuk 1995) and the genus is known for its misidentifications (Zeegers et al. 2021).

N3 *Rhagio chrysostigma* is a doubtful record, as this species is only known from NE Italy and Slovenia (Dvořák 2021). The species is thus removed from the list.

N4 *Rhagio perrisi* is a doubtful record, as this species is only known from the Pyrenees and Iberia.

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Krivosheina N.P. 2006. The results of studying the types of species of the genus *Chrysopilus* (Diptera, Rhagionidae) from the collection of the Humboldt Natural History Museum (Berlin, Germany): Communication 1. Entomological Review 86: 101-118.

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Athericidae

Jean-Paul Haenni (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Medium sized (7-10 mm), rather strongly built, dark coloured flies. Eyes nearly holoptic in males, widely separated in females, antenna 3-segmented with basal flagellomere reniform and elongate subapical arista; mouth-parts strong, somewhat elongate, directed forward. Thorax broad, wings with more or less visible dark pattern, discal cell present. Legs elongate, with two apical spurs on hind tibia. Larvae apneustic (without functional spiracles), body tapered anteriorly, head retractable in thorax, abdominal segments with 6-7 pairs of prolegs and fleshy pairs of dorsal projections, anal segment with more or less elongate dorsal projections.

Biology: Adults can be found sitting on the vegetation or on rocks near running waters. Females of *Atrichops* are bloodsuckers. Eggs are laid over the water, on the overhanging branches of trees. Females of *Atherix* aggregate to oviposit in large clusters overhanging running water, that eventually contain masses of eggs and up to hundreds of dead females. Larvae are aquatic predators, feeding on larvae of aquatic insects. Pupation takes place in sand, gravel or mosses near stream margin.

Nomenclature and classification: According to Fauna Europaea (Rozkošný 2013).

Number of species: CH: 3 (1998 Checklist: 2),
CZ: 3, DE: 3, ES: 4, FI: 1, FR: 4, GB: 3, IT: 5, SK: 3, Europe: 10, World: ~120.

Level of faunistic knowledge in Switzerland: Good.

General references: Majer (1988) [catalogue, Palaearctic species], Rozkošný (2013) [Fauna Europaea database], Rozkošný & Nagatomi (1997) [general, key to genera], Stuckenberg (1973) [general].

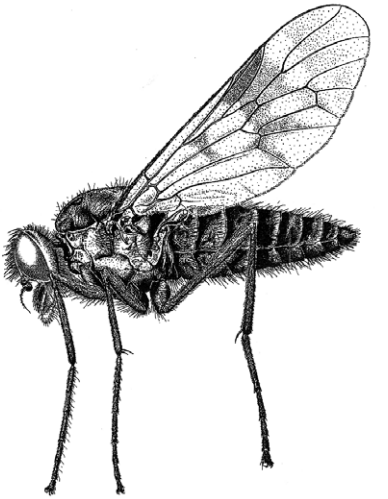
References to the Swiss fauna: Bächli et al. (2014), Ducommun (1986), Keiser (1947), Merz (1998), Oertli (1995), Sartori et al. (2011).

Checklist

Atherix Meigen, 1803
- *ibis* (Fabricius, 1798) !

Atrichops Verrall, 1909
- *crassipes* (Meigen, 1820) !

Ibisia Rondani, 1856
- *marginata* (Fabricius, 1781) !
  = *Atherix marginata* (Fabricius, 1781)



Ibisia marginata,
male (CMPD2, p. 440).

References

Bächli G., Merz B. & Haenni J.-P. 2014. Dritter Nachtrag zur Checkliste der Diptera der Schweiz. Entomo Helvetica 7: 119-140.

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Majer J. 1988. Family Athericidae. In: Soós Á. & Papp L. (ed). Catalogue of Palaearctic Diptera. Vol. 5: 11-13. Akadémiai Kiadó, Budapest, 446 pp.

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Rozkošný R. & Nagatomi A. 1997. Family Athericidae. 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: 439-446. Science Herald, Budapest, 592 pp. .

Oertli B. 1995. Impact de la création d'un biotope sur la conservation de la biodiversité: les macroinvertébrés de l'étang du Bois-Vieux (GE). Bulletin Romand d'Entomologie 13: 11-24.

Sartori M., Lods-Crozet B., Derleth Sartori P., Perfetta J., Stucki P. & Vicentini H. 2011. *Atrichops crassipes* (Meigen, 1820) (Diptera: Athericidae), a species not so new for Switzerland. Mitteilungen der Schweizerischen Entomologischen Gesellschaft 84: 151-154.

Stuckenberg B.R. 1973. The Athericidae, a new family in the lower Brachycera (Diptera). Annals of the Natal Museum 21: 649-673.

Haenni J.-P. 2024. Athericidae (last update: Jul 2024). In: Haenni J.-P., Bächli G., Bernasconi M., Dufour C., Fisler L., Gonseth Y., Lods-Crozet B., Monnerat C. & Pollini Paltrinieri L. (eds.) 2024. Diptera – Checklist. Fauna Helvetica 35: 206-207, info fauna & SEG, Neuchâtel, 590 p.

Tabanidae

Theo Zeegers (1998 Checklist: Wolfgang Schacht)
Last update: Jul 2024

Diagnosis: Adults are medium sized to very large (6-26 mm), robust flies. Antenna generally short and apparently consisting of three segments, at closer look the third is annulated as well; antenna long in *Heptatoma*. Eye bare or hairy, often with striking colouration and/or a number of linear bands (1-3). Colouration of eye is made in most species by the lens and not by the ommatidia itself (exception: *Atylotus*). Scutellum without spines. Apex of each tarsus with three lappets. Wing with an elongated discal cell, the fourth branch of radial vein with a strong fork. Calypter large. Male with holoptic eyes (or nearly so: *Atylotus rufipes*). In many species, the ommatidia on the upper part of the eye are enlarged, sometimes strongly enlarged. In several species, the eye itself is enlarged, making the head broader than the thorax. Female with eyes separated by a linear or square frons, often decorated with dark (generally black) spots, the so called calli. Female easily recognised by their bloodsucking behaviour.

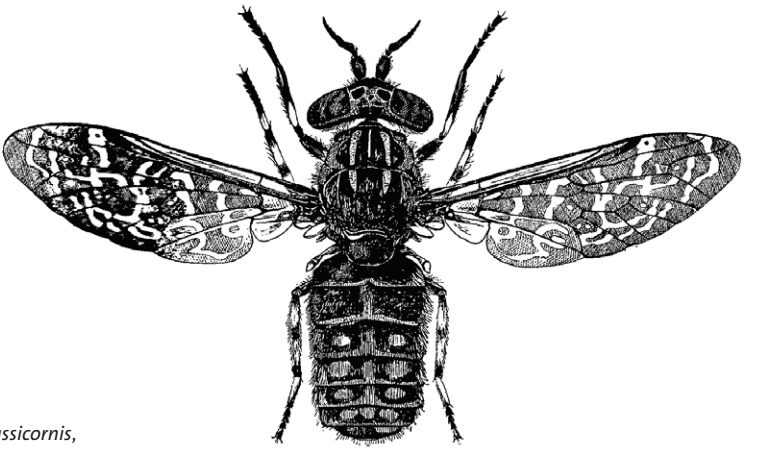
Biology: Tabanidae are generally univoltine, though *Heptatoma* might be bivoltine. Most Tabanidae are on the wing at high temperatures and often at high humidity. Female suck blood on mammals, primarily ungulates but others (including humans) are attacked as well. Some species (some *Atylotus*, *Chrysops rufipes*) do not suck blood. Males, and in some species also females, can be found on flowers, such as *Heracleum*. Males of several species exhibit persistent hovering, as in Syrphidae, but others are never seen hovering. Mating is in « opposite heads » orientation. Eggs are deposited on branches or leaves of trees and herbs above larval habitat in humps in one or a few layers. Most larvae live semi-aquatic, some are more aquatic (streams), some more terrestrial (moss in humid forests). Larvae are predators, though larvae of *Chrysops* are said to feed on decaying matter.

Nomenclature and classification: Nomenclature follows Fauna Europaea, though recent changes have been proposed for some species of *Hybomitra* (Kahanpää et al. 2014, Zeegers 2018, Zeegers & Schulten 2022).

Number of species: CH: 56 (1998 Checklist: 51),
AT: 60, BE: 44, CZ: 54, DE: 58, ES: 95, FR: 83, GB: 29, LU: 13, IT: 83, NL: 37, PL: 46, PT: 53, FI: 38, SK: 48, Europe: ~220, World: ~4400.

Level of faunistic knowledge in Switzerland: Good, at species level, though obviously some species are definitely to be expected (*Hybomitra confiformis*, *Pangonius micans*). Contrary to many neighbouring countries, there is an apparent lack of modern data and records online.

General references: Chvála et al. (1972) [keys, descriptions, Europe], Zeegers & van Haaren (2000) [key, Northwest Europe], Zeegers & Schulten (2022) [photographic guide, Northwest Europe], Stubbs & Drake (2001) [keys, Great Britain], Portillo Rubio (2002) [keys, Iberia], Ježek (1977) [keys larvae], Smit et al. (2019) [distributional patterns, the



Haematopota crassicornis,
female (Oldroyd 1969, p. 123).

Netherlands], Moucha (1976) [checklist, world], Schacht (1994) [checklist Bayern], Mally (1989) [checklist Austria], Chvála (2009) [checklist Czeck republic & Slovakia], Kahanpää et al. (2014) [checklist Finland], Lunau & Knüttel (1995) [colouration of eyes].

References to the Swiss fauna: Aistleitner (2008), Bächli et al. (2014), Merz et al. (2002, 2006), Schacht (1998), Tóth & Rezbanyai-Reser (1999), Zeegers (2006).

Checklist

Atylotus Osten-Sacken, 1876
- *fulvus* (Meigen, 1804) !
  - = *agrestis* auct. nec Wiedemann, 1838
- *loewianus* (Villeneuve, 1920) !
- *plebeius* (Fallén, 1817) !
- *rusticus* (Linnaeus, 1767) L
- *sublunaticornis* (Zetterstedt, 1842) !

Chrysops Meigen, 1803
- *caecutiens* (Linnaeus, 1758) !
  - = *meridionalis* Strobl, 1906
- *divaricatus* Loew, 1858 !
- *melicharii* Mik, 1898 L
- *relictus* Meigen, 1820 !
- *rufipes* Meigen, 1820 !
- *sepulcralis* (Fabricius, 1794) !
- *viduatus* (Fabricius, 1794) !

= *pictus* Meigen, 1820
Dasyrhamphis Enderlein, 1922
- *ater* (Rossi, 1790) !
Haematopota Meigen, 1803
- *crassicornis* Wahlberg, 1848 !
- *grandis* Meigen, 1820 !
- *italica* Meigen, 1804 !
= *nigricornis* Gobert, 1880
- *ocelligera* Kröber, 1922 !
- *pandazisi* (Kröber, 1936) !
- *pluvialis* (Linnaeus, 1758) !
- *scutellata* (Olsufjev, Moucha & Chvála, 1964) !
- *subcylindrica* Pandellé, 1883 !
Heptatoma Meigen, 1803
- *pellucens* (Fabricius, 1776) !
Hybomitra Enderlein, 1922
- *aterrima* (Meigen, 1820) ! N1
= *auripila var. aterrima* (Meigen, 1820)
= *heydenianus* (Jaennicke, 1866)
= *jacobi* (Bouvier, 1945)
= *lugubris* (Zetterstedt, 1838)
- *auripila* (Meigen, 1820) ! N1
= *aterrima var. auripila* (Meigen, 1820)
- *bimaculata* (Macquart, 1826) !
= *bisignata* (Jaennicke, 1866)
= *tropica* auct. nec Linnaeus, 1758
- *caucasica* (Enderlein, 1925) !
= *aterrima* auct. nec Meigen, 1820
= *olsufievina* Philip, 1961
- *distinguenda* (Verrall, 1909) !
- *kaurii* Chvála & Lyneborg, 1970 L
= *borealis* auct. nec Fabricius, 1781
- *lundbecki* Lyneborg, 1959 !
= *fulvicornis* auct. nec Meigen, 1820
- *lurida* (Fallén, 1817) !
- *micans* (Meigen, 1804) !
- *montana* (Meigen, 1820) !
- *muehlfeldi* (Brauer, 1880) !
- *nigricornis* (Zetterstedt, 1842) !
= *engadinensis* (Jaennicke, 1866)
- *solstitialis* (Meigen, 1820) ! N2
= *ciureai* (Séguy, 1937)
Philipomyia Olsufjev, 1964
- *aprica* (Meigen, 1820) !
= *infuscata* (Loew, 1858)
- *graeca* (Fabricius, 1794) !

Silvius Meigen, 1820
- *alpinus* (Scopoli, 1763) !
  = *vituli* (Fabricius, 1805)

Tabanus Linnaeus, 1758
- *autumnalis* Linnaeus, 1760 !
  = *brunnescens* Szilády, 1914
- *bovinus* Linnaeus, 1758 !
- *bromius* Linnaeus, 1758 !
  = *glaucus* Meigen, 1820
- *cordiger* Meigen, 1820 !
- *glaucopis* Meigen, 1820 !
- *hirsutus* (Villers, 1789) L N3
  = *Glaucops hirsutus* (Villers, 1789)
  = *haematopotoides* Jaennicke, 1866
- *maculicornis* Zetterstedt, 1842 !
- *miki* Brauer, 1880 !
- *paradoxus* Jaennicke, 1866 !
- *quatuornotatus* Meigen, 1820 !
- *rectus* Loew, 1858 !
- *rupium* (Brauer, 1880) !
  = *lasios* (Surcouf, 1924)
- *spodopterus* Meigen, 1820 !
- *sudeticus* Zeller, 1842 !
- *tergestinus* Egger, 1859 !
- *unifasciatus* Loew, 1858 !

Therioplectes Zeller, 1842
- *gigas* (Herbst, 1787) !
- *tunicatus* (Szilády, 1927) !

Notes

N1 Based on DNA analysis (CO1), I consider both *Hybomitra aterrima* and *H. auripila* to be valid species (Zeegers & Schulten 2022).

N2 Based on a review of the type, *Hybomitra solstitialis* has proven to be a senior synonym of *H. ciureai* (Zeegers 2018).

N3 Pending a proper phylogenetical analysis based on DNA, I follow Mally (1987) by not accepting *Glaucops* as valid genus, but a synonym of genus *Tabanus*.

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Acroceridae

Raphael Weniger (1998 Checklist: Medeea Weinberg & Gerhard Bächli)
Last update: Jul 2024

Diagnosis: Unique in appearance, due to a small head placed almost beneath a hump-backed thorax, large ear shaped lower calypter and a large abdomen. Very variable in size and colouration, even within species, and a strong sexual dimorphism is common. Body size ranges from 2.5-20 mm. Head is largely occupied by the eyes, holoptic in both sexes. Wings can be clear or clouded, venation variable, some veins occasionally weak or indistinct. Legs are simple, the empodium pulvilliform.

Biology: The larvae are endoparasitoids in true spiders (Aranea), usually one individual per host, rarely two or more. Eggs are produced in large numbers, positioned by the female on twigs or branches. First-instar larvae actively seek for their host, capable of a free-living period over considerable time without feeding. Spider remains uninfluenced until just prior to the end of the fourth instar. At the end of this stage, the spider's opisthosoma is largely eaten, and the larvae pupate outside of the host, often in the web of the host. In common species there is no fixed host-parasitoid relationship at species level. In general, specimens are rarely collected, but might gather in great numbers. Hilltoping has been observed in males.

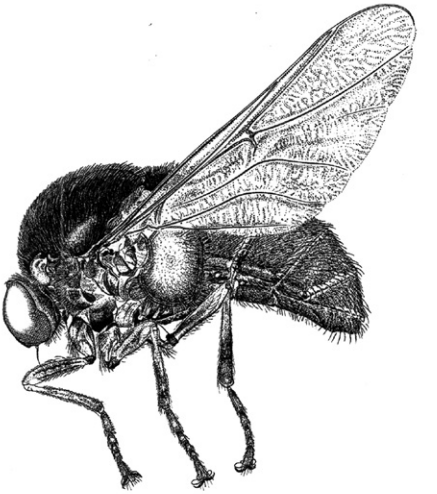
Nomenclature and classification: According to Fauna Europaea (Nartshuk 2013). Taxonomic status of some species, especially within the genus Ogcodes, need to be verified.

Level of faunistic knowledge in Switzerland: Poor, only scattered records

Number of species: CH: 7 (1998 Checklist: 8),
BE 4, CZ/SK: 7, DE: 8, ES: 17, GB: 3, IT: 13, NL: 6, SK: 6.

General references: Chvála (1980) [key to European Ogcodes], de Jong et al. (2000) [The Netherlands], Kehlmaier (2024) [Germany], Nartshuk (1989) [key to species of Eastern Europe], Nartshuk (1997) [key to European genera], Schlinger (1960) [Ogcodes], Weinberg & Bächli (1997) [key to species of Switzerland].

References to the Swiss fauna: Weinberg & Bächli (1984, 1996, 1998).



Ogcodes varius,
male, not present in Switzerland (CMPD2, p. 473).

Checklist

Acrocera Meigen, 1803 N1
(*Acrocera* s.str.)
- *orbicula* (Fabricius, 1787) !

(*Acrocerina* Gil Collado, 1929)
- *sanguinea* Meigen, 1804 !
  = *trigramma* Loew, 1845
- *stelviana* Pokorny, 1886 !

Ogcodes Latreille, 1796
- *fumatus* (Erichson, 1864) ! [1]
- *gibbosus* (Linnaeus, 1758) !
- *pallipes* Latreille, 1812 !
- *zonatus* Erichson, 1840 ! N2

Excluded species

Ogcodes nigripes (Zetterstedt, 1838) N2

Notes

N1 *Paracrocera* is regarded as a synonym of *Acrocera* (Nartshuk 2000).

N2 If there is a separate taxon *Ogcodes nigripes*, it is most likely endemic to northern Finland. *O. nigripes* from Switzerland, as mentioned by Schlinger (1960) and as observed by me, are most likely dark coloured *O. zonatus*, which happen to occur in the Alps, but differ from the potential *O. nigripes* specimens from northern Finland.

Species records

[1] TI, Gordola, 2001, leg. Bernhard Merz (MHNG)

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Hilarimorphidae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni & Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small to medium sized (2-7 mm), stout and dark coloured, pubescent unconspicuous flies, superficially resembling empidids of genus *Hilara* or rhagionids of genus *Ptiolina*. Eyes holoptic in males, broadly separated in females, antenna with flagellar segment flattened and enlarged, bearing a small apical style, mouth-parts short and fleshy. Wing venation distinctive, no discal cell, R_{4+5} and M_{1+2} forked, cubital cell closed just before wing margin. Legs without bristles or spurs.

Biology: Adults are rarely encountered in moist and sandy places, alongside streams or ponds. Immature stages and biology unknown.

Nomenclature and classification: According to Fauna Europaea (Beuk et al. 2013).

Number of species: CH: 1 (1998 Checklist: 2),
AT: 2, DE: 2, SK: 1, Europe: 2, World: ~30.

Level of faunistic knowledge in Switzerland: Good; the second known European species of the family, *H. singularis* Schiner, 1860, may possibly occur in Switzerland.

General references: Majer (1988) [catalogue, Palaearctic species], Beuk et al. (2013) [Fauna Europaea database], Nagatomi (1998) [general, key to genera], Webb (1974) [key, World species].

References to the Swiss fauna: Haenni & Merz (1998), Merz et al. (2006).

Checklist

Hilarimorpha Schiner, 1860
- *tristis* Egger, 1860 ! N1 [1]

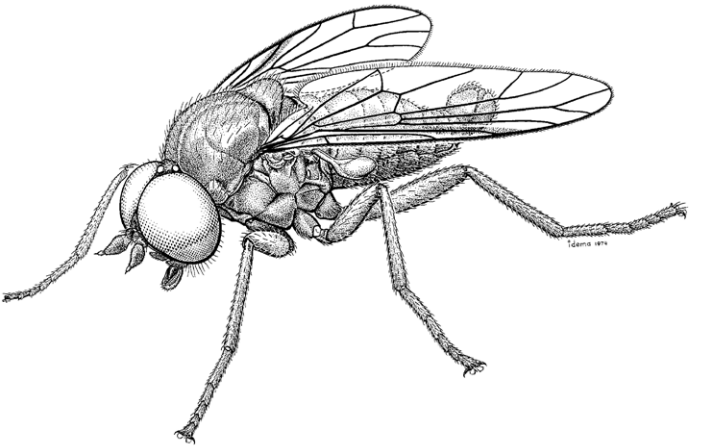
Excluded species

Hilarimorpha singularis Schiner, 1860 N2

Notes

N1 *Hilarimorpha tristis*: this species is still only known from Switzerland by two females collected in Bois de Finges / Pfynwald VS.

N2 *Hilarimorpha singularis* Schiner, 1860 was mentioned in the 1998 Checklist (Merz & Haenni 1998) based on specimens collected by L. Oldenberg and recorded as Swiss by Webb (1974). However it appears that Webb (1974) misunderstood the locality of these specimens, which proved not to be in Switzerland but in Italy. Accordingly, this species was removed from the list (Merz et al. 2006).



Hilarimorpha ditissa,
male, not present in Switzerland (MND1, p. 603).

Species records

[1] VS, Bois de Finges / Pfynwald, 17.6.1997, leg. Jean-Paul Haenni (MHNN)

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Xylomyidae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni)
Last update: Jul 2024

Diagnosis: Medium to large (6.0-10.0 mm) slender or robust brachycerous flies. Body and legs more or less variegated dark and yellow in European species. Antennae elongate, with annulated, 8-segmented flagellum; palpi 1-2 segmented. Wing with 5 posterior cells, 4th posterior and anal cells closed before wing margin; legs with hind femora swollen and armed with rows of ventral spines in *Solva*, simple in *Xylomya*. Eyes broadly separated in both sexes; ocelli present. Abdomen with 7-8 visible segments.

Biology: Adults of Xylomyidae are uncommon inhabitants of forested areas with abundant dead wood and fallen trees. *Xylomya* are very rarely encountered and are considered as threatened members of old forest community. Larvae have been found under bark of fallen deciduous trees.

Nomenclature and classification: According to Fauna Europaea (Rozkošný et al. 2013).

Number of species: CH: 2 (1998 Checklist: 2),
AT: 3, BE: 1, CZ: 3, DE: 3, FR: 3, GB: 1, IT: 3, NL: 2, SK: 2, Europe: 5, World: 138.

Level of faunistic knowledge in Switzerland: Good; an additional species, *Solva varia* (Meigen, 1820) may probably occur in Switzerland, as it has been recorded from all vicinous countries.

General references: Nagatomi & Rozkošný (1997) [general, key to genera], Rozkošný et al. (2013) [Fauna Europaea], Szilády (1932) [key, European species], Woodley (2011) [catalogue, World species].

References to the Swiss fauna: Emmenegger & Lenzin (1988), Haenni (1993, 1998), Kiener (1995), Meier & Sauter (1989), Merz (2012), Tóth (1996), Weinberg & Bächli (1984).

Checklist

Solva Walker, 1860
- *marginata* (Meigen, 1820) !

Xylomya Rondani, 1861
- *maculata* (Meigen, 1804) !

Xylomya maculata,
female (1998 Checklist, p. 157).

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Stratiomyidae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni & Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small to very large (2-20 mm) brachycerous flies, of very diverse habitus, slender, stout or elongate and flattened; colouration often striking, dark brightly marked with conspicuous yellow, white or green pattern, or with metallic reflection. Eyes generally holoptic in males, dichoptic in females. Antennae with annulated flagellum sometimes forming an apical or subapical style. Scutellum in numerous species bearing spines at posterior margin. Wing venation characteristic, small discal cell with 3-4 veins arising from it; R veins joining costa well before the wing tip. Legs simple, devoid of setae. Abdomen short and stout to long and flattened.

Biology: Adults are nectar feeders and are frequently found on vegetation, especially umbels, more frequently alongside water margin. Larvae strongly sclerotised, saprophagous, living in very diverse habitats, terrestrial or aquatic.

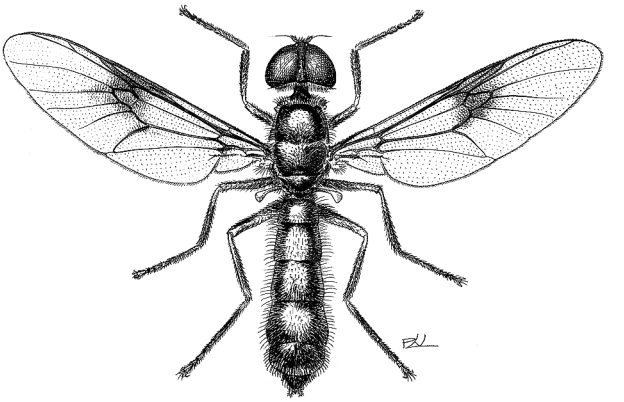
Nomenclature and classification: According to Fauna Europaea (Rozkošný 2013) with some complements.

Number of species: CH: 70 (1998 Checklist: 63),
BE: 48, CZ: 66, DE: 45, FR: 90, GB: 48, IT: 91, NL: 48, SK: 66, Europe: 144, World: ~2800.

Level of faunistic knowledge in Switzerland: Good; some additional species present in neighbouring countries may possibly also occur in Switzerland.

General references: Reemer (2014) [key, Dutch species], Rozkošný (1982, 1983) [morphology, biology, distribution, keys, adults and larvae of European species], Rozkošný (1997) [general, key, Palaearctic genera], Rozkošný (2000) [aquatic species, central Europe], Rozkošný et al. (2013) [Fauna Europaea], Woodley (2001, 2011) [catalogue world species], Zeegers & Schulten (2022) [keys, North-West European species].

References to the Swiss fauna: Blöchlinger (1990), Haenni (1993, 1996a, 1996b, 2019), Haenni & Merz (1998), Keiser (1947), Kiener (1995), Meier & Sauter (1989), Merz (2012), Pétremand & Haenni (2023), Pétremand et al. (2020, 2021), Pétremand & Ston (2024), Ringdahl (1957), Rozkošný (1982, 1983), Sauter (1989), Schoch (1890), Tóth (1996a, 1996b, 1996c).



Sargus cuprarius,
male (CMPD2, p. 389).

Checklist

Beridinae

Actina Meigen, 1804
- *chalybea* Meigen, 1804 !

Allognosta Osten Sacken, 1883
- *vagans* (Loew, 1873) L

Beris Latreille, 1802
- *chalybata* (Forster, 1771) !
- *clavipes* (Linnaeus, 1767) !
- *fuscipes* Meigen, 1820 !
- *geniculata* Curtis, 1830 !
- *morrisii* Dale, 1841 !
- *nigra* Meigen, 1820 ! N1
  - = *hauseri* Stuke, 2004
- *strobli* Dušek & Rozkošný, 1968 !
- *vallata* (Forster, 1771) !

Chorisops Rondani, 1856
- *nagatomii* Rozkošný, 1979 !
- *tibialis* (Meigen, 1820) !

Exodontha Rondani, 1856
- *dubia* (Zetterstedt, 1838) !

Clitellariinae

Clitellaria Meigen, 1803
- *ephippium* (Fabricius, 1775) !

Lasiopa Brulle, 1832

- *calva* (Meigen, 1822) !
- *tsacasi* Dušek & Rozkošný, 1970 !

Nemotelus Geoffroy, 1762
- *nigrinus* Fallén, 1817 !
- *pantherinus* (Linnaeus, 1758) !
- *uliginosus* (Linnaeus, 1767) L

Oxycera Meigen, 1803
- *analis* Meigen, 1822 !
- *dives* Loew, 1845 ? N2
- *fallenii* Staeger, 1844 !
- *germanica* (Szilády, 1932) !
- *leonina* (Panzer, 1798) !
- *locuples* Loew, 1857 !
- *meigenii* Staeger, 1844 !
- *morrisii* Curtis, 1833 !
- *nigricornis* Olivier, 1812 !
- *pardalina* Meigen, 1822 !
- *pseudoamoena* Dušek & Rozkošný, 1974 !
- *pygmaea* (Fallén, 1817) !
- *rara* (Scopoli, 1763) !
- *terminata* Meigen, 1822 !
- *trilineata* (Linnaeus, 1767) !

Vanoyia Villeneuve, 1908
- *tenuicornis* (Macquart, 1834) L N3

Hermetiinae

Hermetia Latreille, 1804
- *illucens* (Linnaeus, 1758) !

Pachygasterinae

Eupachygaster Kertész, 1911
- *tarsalis* (Zetterstedt, 1842) !

Neopachygaster Austen, 1901
- *meromelas* (Dufour, 1841) !
  = *meromelaena* (Dufour, 1841)

Pachygaster Meigen, 1803
- *atra* (Panzer, 1798) !
- *leachii* Curtis, 1824 !

Zabrachia Coquillett, 1901
- *minutissima* (Zetterstedt, 1838) !
- *tenella* (Jaennicke, 1866) !

Sarginae

Chloromyia Duncan, 1837
- *formosa* (Scopoli, 1763) !
- *speciosa* (Macquart, 1834) !

Microchrysa Loew, 1855
- *cyaneiventris* (Zetterstedt, 1842) !
- *flavicornis* (Meigen, 1822) !
- *polita* (Linnaeus, 1758) !

Sargus Fabricius, 1798
- *bipunctatus* (Scopoli, 1763) !
- *cuprarius* (Linnaeus, 1758) !
- *flavipes* Meigen, 1822 !
- *harderseni* Mason & Rozkošný, 2008 ! N4
- *iridatus* (Scopoli, 1763) !
- *rufipes* Wahlberg, 1854 !

Stratiomyinae

Odontomyia Meigen, 1803
- *angulata* (Panzer, 1798) !
- *annulata* (Meigen, 1822) L N5
- *argentata* (Fabricius, 1794) !
- *flavissima* (Rossi, 1790) ? N6
- *hydroleon* (Linnaeus, 1758) !
- *microleon* (Linnaeus, 1758) !
- *ornata* (Meigen, 1822) !
- *tigrina* (Fabricius, 1775) !

Oplodontha Rondani, 1863
- *viridula* (Fabricius, 1775) !

Stratiomys Geoffroy, 1762
- *cenisia* Meigen, 1822 ? N6
- *chamaeleon* (Linnaeus, 1758) !
- *concinna* Meigen, 1822 !
- *equestris* Meigen, 1835 !
- *longicornis* (Scopoli, 1763) !
- *potamida* Meigen, 1822 !
- *ruficornis* (Macquart, 1838) !
- *singularior* (Harris, 1776) !

Notes

N1 *Beris nigra* Meigen, 1820 was recorded from Switzerland under the synonym name *B. hauseri* Stuke, 2004 by Haenni (2019) (synonymy established by Zeegers 2021).

N2 *Ocycera dives* was mentioned from Switzerland in Rozkošný (1983) on the base on old citations. No specimens have been seen in collections but the presence of this species in Switzerland is very likely.

N3 *Vanoyia tenuicornis*: first report from Switzerland by Pétremand & Ston (2024).

N4 *Sargus harderseni*: first report from Switzerland by Pétremand & Haenni (2023).

N5 *Odontomyia annulata*: first report from Switzerland by Pétremand et al. (2020).

N6 *Odontomyia flavissima* (Rossi, 1790) and *Stratiomys cenisia* Meigen, 1822 are mentioned from Switzerland in Rozkošný (1982) only on the base of old citations (Schoch 1890). No specimens have been seen in collections but their presence in Switzerland is nevertheless possible.

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Bombyliidae (excl. Mythicomyiidae)

Hermann Blöchlinger (1998 Checklist: Gabriele Miksch)

Last update: Jul 2024

Diagnosis: Although the different species are built very differently, they can usually be easily as bee flies in the field due to their flight behaviour. The wings are always held horizontally and open at right angles when resting. In many species, they have characteristic black to brown patterns, while in others they are completely transparent. Several genera are barely hairy, others have dense body hair. In addition to genera with a long projecting proboscis, the true bee flies, others have barely developed, short proboscis. All species have an ocellar tubercle with three ocelli. In the males of some genera the eyes meet on the forehead, in others they are separate, but always less widely than in the corresponding females.

Biology: All species of bee flies are parasites; they develop in the brood of other insects. However, the range of hosts can be quite wide. The following hosts are known to date: solitary bees, wasps, parasitic wasps, butterfly caterpillars, tachinid flies, oothecae of grasshoppers and ant lions. In some species, the males show territorial behaviour and engage in aerial fights with other males or pursue the females until copulation is successful. Before and between egg-laying, the females of most species repeatedly visit sandy areas. There, they sweep their abdomen back and forth several times and fill a sand-chamber (a sort of hooked ring at the end of the genitalia), with the finest grains of sand. The eggs that then emerge from the ovipositor must pass through this sand chamber. Some of the grains remain attached. The reason for this function is not yet known. To lay her eggs, the female buzzes a little above the holes of the future host, then repeatedly slams her abdomen downwards and hurls eggs directly against the nest entrances or close to them. The larvae pupate while still on the host. The pupa has a rather hard skin, which is reinforced with strong spines and bristles enabling it to crawl outside of the nest. Depending on the food supply during the larval period, the size of the imago can vary considerably.

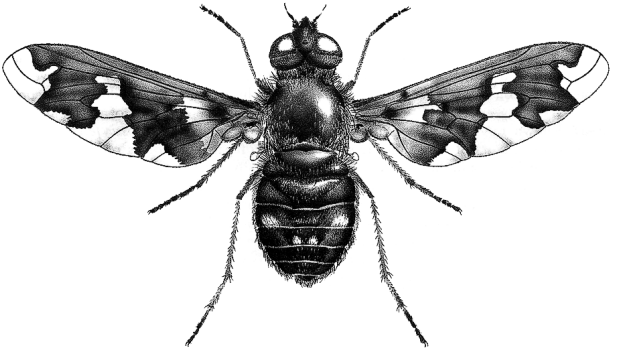
Nomenclature and classification: According to Evenhuis & Greathead (2015), with some adaptations (Blöchlinger 2023).

Number of species: CH: 49 (1998 Checklist: 40 [42-2]),
World: 4542.

Level of faunistic knowledge in Switzerland: medium; the occurrence of additional species present in neighbouring countries is to be expected.

General references: Evenhuis & Greathead (2015), Engel (1932-1937).

References to the Swiss fauna: Blöchlinger (2008, 2013, 2023, 2024), Miksch (1998).



Exoprosopa capucina,
male (CMPD2, p. 487).

Checklist

Anthrax Scopoli, 1763
- *aethiops* (Fabricius, 1781) !
  - = *Spogostylum aethiops* Scopoli, 1763
- *anthrax* (Schrank, 1781) !
- *binotatus* Wiedemann, 1820 !
- *sticticus* Klug, 1832 !
- *trifasciatus* Meigen, 1804 !
  - = *leucogaster* Wiedemann, 1820
- *varius* Fabricius, 1794 !

Bombylella Greathead, 1995
- *atra* (Scopoli, 1763) !
  - = *Bombylius ater* Scopoli, 1763

Bombylisoma Rondani, 1856
- *minimum* (Scopoli, 1771) ?

Bombylius Linnaeus, 1758
- *canescens* Mikan, 1796 !
- *cinerascens* Mikan, 1796 !
- *discolor* Mikan, 1796 !
- *fimbriatus* Meigen, 1820 !
- *major* Linnaeus, 1758 !
- *medius* Linnaeus, 1758 !
- *nubilus* Mikan, 1796 !
- *posticus* Fabricius, 1805 !
  - = *vulpinus* Wiedemann, 1820
- *semifuscus* Meigen, 1820 !

- *venosus* Mikan, 1796 !

Conophorus Meigen, 1803
- *virescens* (Fabricius, 1787) !

Exhyalanthrax Becker, 1916
- *afer* (Fabricius, 1794) !

Exoprosopa Macquart, 1840
- *capucina* (Fabricius, 1781) !
- *cleomene* Egger, 1859 !
- *jacchus* (Fabricius, 1805) ?

Geron Meigen, 1820
- *gibbosus* Olivier, 1789 !

Hemipenthes Loew, 1869
- *maura* (Linnaeus, 1758) !
- *morio* (Linnaeus, 1758) !
- *velutina* (Meigen, 1820) !
- *villeneuvei* François, 1970 !

Lomatia Meigen, 1822
- *belzebul* (Fabricius, 1794) !
- *lachesis* Egger, 1859 ! N1
- *lateralis* (Meigen, 1820) !
- *sabaea* (Fabricius, 1781) !

Micomitra Bowden, 1964
- *stupida* (Rossi, 1790) !

Phthiria Meigen, 1820
- *minuta* (Fabricius, 1805) !

Systoechus Loew, 1855
- *ctenopterus* (Mikan, 1796) !
  = *sulphureus* (Mikan, 1796)
- *gradatus* (Wiedemann, 1820) !

Thyridanthrax Osten Sacken, 1886
- *fenestratus* (Fallén, 1814) !
- *perspicillaris* (Loew, 1869) !

Triplasius Loew, 1855
- *pictus* (Panzer, 1794) !
  = *Bombylius pictus* Panzer, 1794

Villa Lioy, 1864
- *abbadon* (Fabricius, 1794) !
- *cana* (Meigen, 1804) !
  = *quinquefasciata* (Wiedemann, 1820)
- *cingulata* (Meigen, 1804) !
- *fasciata* (Meigen, 1804) !
  = *circumdata* (Meigen, 1820)
- *halteralis* (Kowarz, 1883) !
- *hottentotta* (Linnaeus, 1758) !
- *ixion* (Fabricius, 1794) !
  = *humilis* (Ruthé, 1831)

- *modesta* (Meigen, 1820) !
- *occulta* (Wiedemann, 1820) !
- *panisca* (Rossi, 1790) !

Notes

N1 *Lomatia lachesis*: new species for Switzerland (Blöchlinger 2024).

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Mythicomyiidae

Jean-Paul Haenni (1998 Checklist: Gabriele Miksch [Bombyliidae, part])
Last update: Jul 2024

Diagnosis: Minute to small flies (0.6-5mm), body generally hump-backed, devoid of pilosity, eyes with an indentation on inner margin; proboscis projecting, palps absent or much reduced; wings with R_{4+5} unforked, held flat on the abdomen when at rest.

Biology. Adults are mainly found feeding on flowers. Steppic biotopes and low thermophilous grasslands are the preferred habitats of many species. The immature stages are still very poorly known. Larvae of some genera feed on ootheca of Orthoptera, or on larvae of terricolous Hymenoptera, those of *Glabellula* are ants inquiline in *Formica* nests.

Nomenclature and classification: The mythicomyiid flies have been placed in the past in various families (Empididae, Stratiomyidae, Rhagionidae) until they were considered as a subfamily of Bombyliidae (« microbombyliids »), as was the case in the 1998 Checklist (Miksch 1998). Zaitzev (1992) elevated them to family level, a view that is now generally accepted (Evenhuis 2017).

Number of species: CH: 1 (1998 Checklist: 2 [Bombyliidae, part]),
CZ: 1, ES: 19, FR: 5, NL: 1, PL: 2, SK: 1, Europe: 30, World: ~380.

Level of faunistic knowledge in Switzerland: Good, but additional species might be present.

General references: Anderson 1984 [biology], Cocquempot & Martinez 2022 [general, faunistics], Evenhuis 2002 [world catalogue], 2017 [general], Greathead & Evenhuis 1997 [general, key to Palaearctic genera], Withers et al. 2017 [nomenclature, biology], Zaitzev 1992 [systematics].

References to the Swiss fauna: Miksch (1998).

Checklist

Glabellula Bezzi, 1902
- *arctica* (Zetterstedt, 1838) ! [1]
  = *unicolor* Strobl, 1910 N1

Notes

N1 *Glabellula unicolor*, reported as Swiss in the 1998 Checklist (Miksch 1998) was synonymised with *G. arctica* (Zetterstedt, 1838) by Evenhuis, in Withers et al. (2017).

Species records

[1] TI, Mte. S. Giorgio, ob Meride, 18.5.2006, leg. Bernhard Merz

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Asilidae

Christian Monnerat (1998 Checklist: Medeea Weinberg & Gerhard Bächli)
Last update: Jul 2024

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.

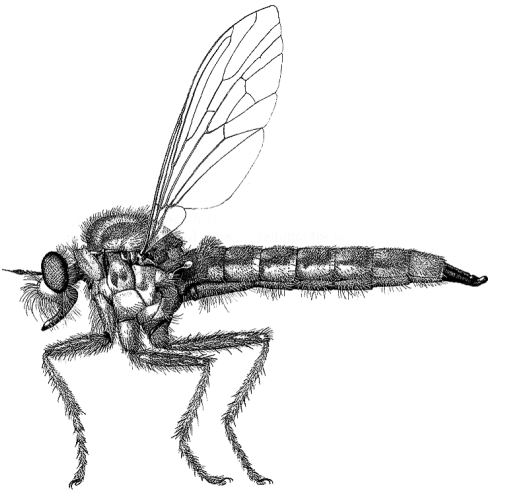
Biology: Most species are univoltine, some semivoltine. The eggs are laid in the soil in sandy or earthy substrates, in herbaceous plants, under bark or in wood. All species are exclusively predatory, both as larvae and adults. Asilids are found mainly in dry, warm open environments or in lowland thermophilous 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, whit 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, northeastern 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) !
- *ignea* (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) !

Dasypogon 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* Jaennicke, 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 Palaearctic 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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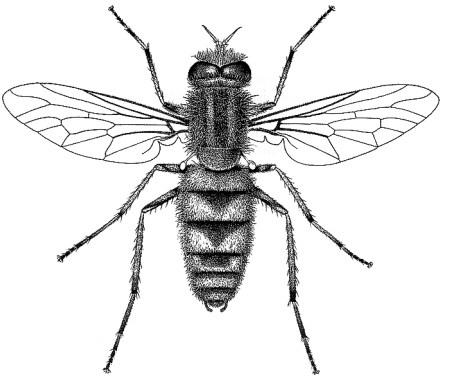
Therevidae

Stephen D. Gaimari (1998 Checklist: Leif Lyneborg)
Last update: Jul 2024

Diagnosis: Slender to moderately thick-bodied; body length, excluding antennae, 3-15 mm. Ground colour light yellow to black, wholly or partly covered with pubescence, and often including bare regions displaying ground colour. Macrosetae usually prominent, black to pale. Eyes usually holoptic in males, dichoptic in females. Wing venation constant: R_4 elongate, sinuous, divergent from R_5, with cell r_4 encompassing the wing apex; cell bm truncate distally and with four corners from which arise four separate veins (M_{1+2}, M_3, CuA_1, and CuA_2); discal (d) cell elongate, with three veins extending from apex (M_1, M_2, M_3); crossvein m-cu present, so base of cell m_3 truncate; cell br extends beyond apex of cell bm; r-m attached to basal half of discal cell; cell cup closed near wing margin. Abdomen in male often covered dorsally with fine silvery or bronzy pubescence, in female pubescence often reduced or lacking to display ground colour. Female terminalia with large conspicuous sternite 8; acanthophorite spines on tergite 10 absent or present posterodorsally and anterolaterally. Internally, female with 2 (in Therevinae and Xestomyzinae) or 3 (in Phycusinae and Agapophytinae) thinly sclerotised spermathecae and a central spermathecal sac (lacking in Phycusinae).

Biology: Adults are diurnal. Although rarely collected at flowers, some likely feed on plant nectar or exudates from trees. Apparently, protein needed for egg development and sperm production is all derived from larval feeding, as they are not known to take proteins as adults. In arid habitats, adults can often be encountered in dry washes with small amounts of standing water or damp soil. Water seems to be a major attractant in these habitats, often concentrating individuals in high numbers along the margins of these sources. In more mesic habitats, adults seem to be less concentrated as the water resources are more readily available, although they can often be found flying through open forest trails. Malaise traps are thus the most effective method for collecting them, as their flight behavior and movement is somewhat predictable, either moving through arid environments in search of water, or moving along forest trails. Some species alight in sunny patches along trails and paths, with males usually waiting for passing females. Resting substrates are often specific for a given species or genus, and include patches of sand, rocks, grasses, leaves, stems, and tree trunks. Certain genera have species in which males form mating swarms (e.g. some *Acrosathe*), or loose mating leks along stretches of open sand (e.g. some *Acrosathe*) or in tree foliage. Larvae apparently have five instars, the last of which, the relatively quiescent prepupal stage, either pupates or goes into diapause, which can persist for up to 2 years (Irwin & Lyneborg 1981). The larvae are voracious subterranean predators, feeding on arthropods they encounter, most frequently root or litter feeding insect larvae. In more arid habitats larvae can be found in loose sand dunes, under vegetation or among the roots of plants in loose friable soil, while in more mesic habitats they can also be found under the forest litter layer.

Nomenclature and classification: Nomenclature follows *Systema Dipterorum* (Evenhuis & Pape 2020), with subfamilial classification according to Webb et al. (2013), with



Thereva nobilitata,
male (CMPD2, p. 520).

family-group name Phycinae emended to Phycusinae by International Commission on Zoological Nomenclature (2015).

Number of species: CH: 24 (1998 Checklist: 19),
AT: 28, BE: 14, CZ: 27, DE: 34, DK: 15, ES: 21, FI: 18, FR: 28, GR: 25, HU: 33, IT: 29, NL: 14, NO: 14, PL: 16, PT: 4, RO: 20, RS: 15, SE: 19, SK: 24, UK: 14, Europe: 89, Palaearctic: 277, World: > 1200.

Level of faunistic knowledge in Switzerland: Good; 1-3 additional species present in vicinous countries might possibly also occur in Switzerland. There are at least 10 species that occur in more than one neighbouring country. Of these, several would be expected to occur in Switzerland given their presence in three of the surrounding countries, including *Thereva cinifera* Meigen and *Thereva praecox* Egger in Austria, France and Germany, and *Thereva marginula* Meigen in Austria, Germany and Italy.

General references: Gaimari & Webb (2009) [general, key to Neotropical genera], Hauser et al. (2017) [general, key to Afrotropical genera], Holston (2004) [*Thereva* names database, world species], Holston (2016) [checklist, Europe (Fauna Europaea)], Irwin & Lyneborg (1981) [general, key to Nearctic genera], Kröber (1924, 1925) [keys, Palaearctic species], Lyneborg (1983) [review, Palaearctic Phycusinae], Lyneborg (1986a) [*Acrosathe*, revision, Old World], Lyneborg (1986b) [*Pandivirilia*, revision, Palaearctic species], Lyneborg (1989) [catalogue, Palaearctic species], Lyneborg & Spitzer (1974) [revision, key, Central European species], Majer (1997) [general, key to Palaearctic genera], Webb et al. (2013) [catalogue, New World species].

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

Checklist

Acrosathe Irwin & Lyneborg, 1981
- *annulata* (Fabricius, 1805) !

Cliorismia Enderlein, 1927
- *ardea* (Fabricius, 1794) !
- *rustica* (Panzer, 1804) !

Dialineura Rondani, 1856
- *anilis* (Linnaeus, 1760) !

Pandivirilia Irwin & Lyneborg, 1981
- *caesia* (Meigen, 1838) !
  - = *fuscipennis* auct. nec Meigen, 1820
- *eximia* (Meigen, 1820) !
- *melaleuca* (Loew, 1847) L

Thereva Latreille, 1796
- *albohirta* Kröber, 1912 L
- *apicalis* Wiedemann, 1821 ? L N1
- *brevicornis* Loew, 1847 !
- *callosa* Kröber, 1912 L N2
- *cincta* Meigen, 1820 !
- *circumscripta* Loew, 1847 !
- *fulva* (Meigen, 1804) !
- *handlirschi* Kröber, 1912 !
- *inornata* Verrall, 1909 !
- *microcephala* Loew, 1847 !
  - = *rondanii* Jaennicke, 1867
  - = *superba* Egger, 1859
- *nobilitata* (Fabricius, 1775) !
- *oculata* Egger, 1859 !
- *plebeja* (Linnaeus, 1758) !
- *strigata* (Fabricius, 1794) !
- *unica* (Harris, 1780) !
- *valida* Loew, 1847 !
  - = *ursina* Wahlberg, 1854
- *ziegleri* Holston, 2008 L

Notes

N1 *Thereva apicalis* was listed as present in Switzerland and other central European countries by Lyneborg (1989), but removed by Lyneborg (1998) in footnote 3 of the 1998 Checklist: [translated] « was accidentally reported in the CPD [Catalogue of Palaearctic Diptera] from Switzerland. But it is a steppic species from Southeastern Europe ». This species is added back to this list because it is reported from Switzerland and central Europe in the Fauna Europaea (Holston 2016) and in the checklists from the countries around Switzerland. This may or may not be a residual reference to the original Lyneborg (1989) reference.

N2 Kröber (1912) described *Thereva callosa* from the western Austrian state of Tyrol, but the holotype is actually from St. Moritz, Switzerland, which is not in Tyrol, but close by. Although Holston (2016) records this species as being solely from Austria, and it likely does occur in Austria (given its proximity to the type locality), there is no verified record from that country.

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Scenopinidae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni)
Last update: Jul 2024

Diagnosis: [central European species] Small to medium sized (3-7 mm), stout, dark coloured brachycerous flies; head and body devoid of bristles; head holoptic in male, usually dichoptic in female; antennae elbowed on frons, three-segmented, with first flagellar segment bearing a minute peg-like apical style. Wings with R_{2+3} unforked, parallel to R_1; fork of R_{4+5} not extending over wing tip; M_1 converging towards R_5 and reaching wing margin before wing-tip; anal cell closed well before wing margin. Legs simple, tibiae devoid of apical spurs; abdomen somewhat flattened dorso-ventrally.

Biology: Adults are not frequently seen, except for two species which are often found indoors on windows. Larvae living in various dry substrates (soil, dust, bird nests, in galleries of xylobiont beetles, bark of dead trees, etc.), predaceous, feeding on various small invertebrates (especially mites and beetles).

Nomenclature and classification: According to Fauna Europaea (Carles-Tolrá 2013).

Number of species: CH: 3 (1998 Checklist: 3),
BE: 4, CZ: 3, DE: 2, FR: 2, GB: 2, IT: 4, NL: 1, PL: 5, SK: 3, Europe: 17, World: ~350.

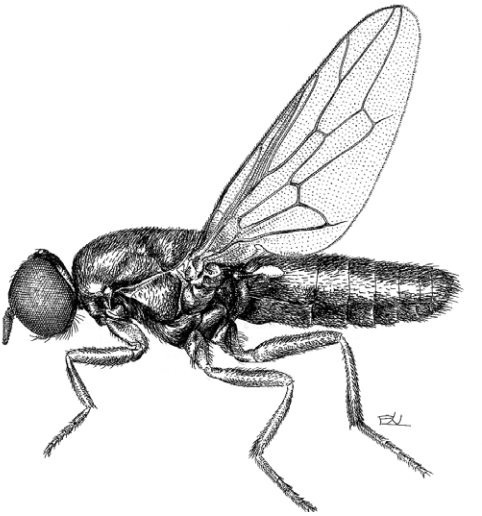
Level of faunistic knowledge in Switzerland: Good; 2 additional rare species, *S. griseus* (Kröber, 1913) and *S. vitripennis* Meigen, 1824, may possibly occur in Switzerland.

General references: Carles-Tolrá (2013) [Fauna Europaea database], Kelsey (1969) [keys, World species], Krivosheina (1997) [general, key to genera], Pohjoismäki & Haarto (2021) [taxonomy, key, European species], Trojan (1956) [taxonomy].

References to the Swiss fauna: Haenni (1998), Merz (2012).

Checklist

Scenopinus Latreille, 1802
- *fenestralis* (Linnaeus, 1758) !
- *glabrifrons* Meigen, 1824 !
- *niger* (De Geer, 1776) !



Scenopinus fenestralis, female (CMPD2, p. 531).

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Atelestidae

Jean-Paul Haenni (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Minute to small (1.5-3.5 mm) empidoid flies. Mouthparts short, directed forward, antenna with third segment bearing an elongate apical arista, wing with pterostigma present, unbranched R_{4+5}, discal cell present (*Meghyperus*) or absent (*Atelestus*), alula and large anal lobe present.

Biology: Little is known of the life-habits of Atelestidae. Adults are found in wooded areas, more often near water. The immature stages are unknown.

Nomenclature and classification: The family was erected for including the species of the two genera *Atelestus* and *Meghyperus* (Chvála, 1983) previously placed in Empididae. For its separation from other groups of Empidoidea, see identification key in Sinclair & Cumming (2006) who included the unplaced genus *Nemedina* in Atelestidae (Sinclair & Cumming 2006).

Number of species: CH: 3 (1998 Checklist: 2),
BE: 2, CZ: 3, DE: 3, GB: 2, NL: 3, SK: 3, Europe: 6, World: 13.

Level of faunistic knowledge in Switzerland: Good; the occurrence of additional species might however be possible.

General references: Carles-Tolrá (2008) [key], Chvála (1983) [general, key], Chvála (1989) [catalogue; Palaearctic species], Grootaert & Kahanpää (2023) [key], Kanalová et al. (2020) [key], Sinclair & Cumming (2006) [general, key].

References to the Swiss fauna: Bächli et al. (2014), Merz (1998a, 1998b, 2012).

Checklist

Atelestus Walker, 1837
- *dissonans* Collin, 1961 !
- *pulicarius* (Fallén, 1816) !

Meghyperus Loew, 1850
- *sudeticus* Loew, 1850 !

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Hybotidae

Lucia Pollini Paltrinieri (1998 Checklist: Bernhard Merz, Milan Chvála, Patrick Grootaert & Andreas Stark)
Last update: Jul 2024

Diagnosis: Minute to small-sized files (1-6 mm), rarely larger. Often dark, but colour can vary from black to yellow. Eyes relatively large, with a V shaped incision at the level of antennae. Antennae short or with elongate third segment; first antennal segment without bristles; mouthpart varying among subfamilies: short to elongate, when elongate projecting forwards to downwards. Thorax rectangular, sometimes considerably extended in Tachydromiinae or greatly arched upward in Hybotinae. Prosternum small, separated from lateral plates by a membrane. Wing clear or infuscate, sometimes with markings; radial sector originating distal of humeral cross vein, R_{4+5} not forked; basal cells relatively large; discal cell either present or absent. Legs long and slender, often raptorial. Male genitalia asymmetrical and rotated.

Biology: The adults are predators of small insects or other arthropods and hunt while running on the ground, on tree trunks, and other similar places, or, less frequently, in flight. Only few species visit flowers to feed on nectar and pollen. Swarming has been observed in the Ocydromiinae. Larvae are poorly known; they live in the soil or decaying organic matter and prey on small invertebrates.

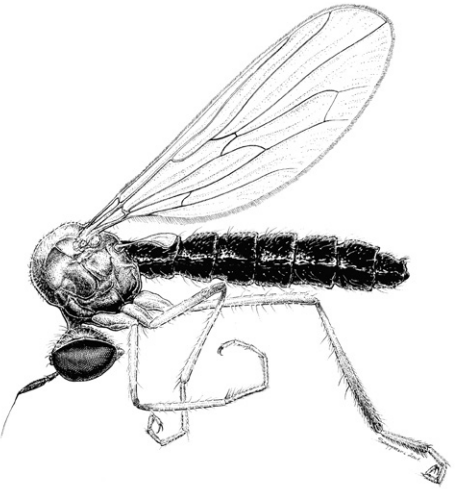
Nomenclature and classification: According to Fauna Europaea (Chvála 2013), with minor changes.

Number of species: CH: 199 (1998 Checklist: 184),
CZ: 207, DE: 124, GB: 182, 180, FI: 144, NL: 132, SK: 170, Europe: ~440, World: ~1970.

Level of faunistic knowledge in Switzerland: Medium. Additional species certainly occur in Switzerland. The present list is largely based upon the one published in the preceding checklist (Merz et al. 1998), complemented by the species added in the first, second and third published supplements (Merz et al. 2002, 2006, Bächli et al. 2014). Some changes concerning the Swiss fauna may have been overlooked or misinterpreted by the compiler of the present list – not a specialist of the family – who is responsible for any change from the initial 1998 Checklist.

General references: Chvála (1975 [key Tachydromiinae], 1983 [key Hybotinae], 1989 [key *Platypalpus*]), Collin (1961) [key British Isles], van der Goot (1991) [key *Hybos* Benelux], Gorodkov & Kovalev (1989) [key former USSR], Papp & Földvári (2001), Sinclair & Cumming (2006) [classification, key to families and groups].

References to the Swiss fauna: Merz et al. (1998, 2002, 2006), Merz et al. (2012), Keiser (1947), Meier & Sauter (1989), Merz (2004), Ringdahl (1957), Schiegg et al. (1999), Stark & Doczkal (2017), Volkart (1991).



Chvalaea sopianae,
female (Papp & Földvári 2001).

Checklist

Ocydromiinae

Allanthalia Melander, 1928
- *pallida* (Zetterstedt, 1838) !

Anthalia Zetterstedt, 1838
- *beatricella* Chandler, 1992 !
- *schoenherri* Zetterstedt, 1838 !

Bicellaria Macquart, 1823
- *albopilosa* Chvála, 1991 !
- *alpina* Bezzi, 1918 !
- *austriaca* Tuomikoski, 1955 !
- *intermedia* Lundbeck, 1910 !
- *longisetosa* Chvála, 1991 !
- *nigra* (Meigen, 1824) !
- *nigrita* Collin, 1926 !
- *pilosa* Lundbeck, 1910 !
- *simplicipes* (Zetterstedt, 1842) !
- *spuria* (Fallén, 1816) !
- *sulcata* (Zetterstedt, 1842) L
- *vana* Collin, 1926 !

Euthyneura Macquart, 1836
- *albipennis* (Zetterstedt, 1842) !
- *gyllenhali* (Zetterstedt, 1838) !
- *halidayi* Collin, 1926 !
- *myrtilli* Macquart, 1836 !

Hybos Meigen, 1803
- *culiciformis* (Fabricius, 1775) !
- *femoratus* (Müller, 1776) !

- *grossipes* (Linnaeus, 1767) !

Leptopeza Macquart, 1827
- *borealis* Zetterstedt, 1842 !
- *flavipes* (Meigen, 1820) !

Ocydromia Meigen, 1820
- *glabricula* (Fallén, 1816) !
- *melanopleura* Loew, 1840 !

Oedalea Meigen, 1820
- *austroholmgreni* Chvála, 1981 !
- *flavipes* Zetterstedt, 1842 !
- *holmgreni* Zetterstedt, 1852 !
- *hybotina* (Fallén, 1816) !
- *montana* Chvála, 1981 !
- *oriunda* Collin, 1961 !
- *stigmatella* Zetterstedt, 1842 !
- *tibialis* Macquart, 1827 !
- *tristis* Scholtz, 1851 !
- *zetterstedti* Collin, 1926 !

Oropezella Collin, 1926
- *sphenoptera* (Loew, 1873) !

Syndyas Loew, 1857
- *nigripes* (Zetterstedt, 1842) !

Syneches Walker, 1852
- *muscarius* (Fabricius, 1794) !

Trichina Meigen, 1830
- *bilobata* Collin, 1926 !
- *elongata* Haliday, 1833 !
- *opaca* Loew, 1864 !

Trichinomyia Tuomikoski, 1959
- *flavipes* (Meigen, 1830) !
- *fuscipes* (Zetterstedt, 1838) !

Tachydromiinae

Crossopalpus Bigot, 1857
- *aeneus* (Walker, 1871) !
- *flexuosus* (Loew, 1840) !
- *humilis* (Frey, 1913) !
- *minimus* (Meigen, 1838) !
- *nigritellus* (Zetterstedt, 1842) !
- *setiger* (Loew, 1859) !

Drapetis Meigen, 1822
- *arcuata* Loew, 1859 !
- *assimilis* (Fallén, 1815) !
- *completa* Kovalev, 1972 !
- *exilis* Meigen, 1822 !
- *flavipes* Macquart, 1834 !

- *fumipennis* Strobl, 1906 !
- *parilis* Collin, 1926 !
- *pusilla* Loew, 1859 !
- *simulans* Collin, 1961 !

Elaphropeza Macquart, 1827
- *ephippiata* (Fallén, 1815) !

Platypalpus Macquart, 1827
- *agilis* (Meigen, 1822) !
- *albicornis* (Zetterstedt, 1842) !
- *albifacies* (Collin, 1926) !
- *albiseta* (Panzer, 1806) !
- *albocapillatus* (Fallén, 1815) L
- *aliterolamellatus* Kovalev, 1971 !
- *alpigenus* (Strobl, 1893) !
- *alpinus* Chvála, 1971 !
- *analis* (Meigen, 1830) !
- *annulatus* (Fallén, 1815) !
- *annulipes* (Meigen, 1822) !
- *annulitarsis* Kovalev, 1978 !
- *aristatus* (Collin, 1926) !
- *articulatoides* (Frey, 1918) !
- *articulatus* Macquart, 1827 !
- *aurantiacus* (Collin, 1926) !
- *australominutus* Grootaert, 1989 !
- *baldensis* (Strobl, 1899) !
- *balticus* Kovalev, 1971 L
- *biapicalis* Wéber, 1972 !
- *bilobatus* Wéber, 1972 !
- *boreoalpinus* Frey, 1943 !
- *brachystylus* (Bezzi, 1892) !
- *brevicornis* (Zetterstedt, 1842) !
- *calceatus* (Meigen, 1822) !
- *candicans* (Fallén, 1815) !
- *caroli* Grootaert, 1987 !
- *celer* (Meigen, 1822) !
- *ciliaris* (Fallén, 1816) !
- *cilitarsis* Frey, 1943 !
- *commutatus* (Strobl, 1893) !
- *confiformis* Chvála, 1971 !
- *cothurnatus* Macquart, 1827 !
- *cruralis* (Collin, 1961) !
- *cryptospina* (Frey, 1909) !
- *cursitans* (Fabricius, 1775) !
  = *bicolor* Meigen, 1804
- *dilatatovittatus* (Strobl, 1910) !
- *ecalceatus* (Zetterstedt, 1838) !

- *engadinicus* (Mik, 1896) !
  = *testaceus* Becker, 1887
- *excavatus* Yang & Yao, 2007 !
  = *excisus* (Becker, 1907)
- *exilis* (Meigen, 1822) !
- *eximius* (Oldenberg, 1924) !
- *flavicornis* (Meigen, 1822) !
- *flaviseta* Chvála, 1973 L
- *fuscicornis* (Zetterstedt, 1842) !
- *incertus* (Collin, 1926) !
- *infectus* (Collin, 1926) !
- *insperatus* Kovalev, 1971 !
- *interstinctus* (Collin, 1926) !
- *kirtlingensis* Grootaert, 1986 !
- *kovalevi* Chvála, 1988 !
- *laticinctus* Walker, 1851 !
- *leucocephalus* (von Roser, 1840) !
- *leucothrix* (Strobl, 1910) !
- *longicornis* (Meigen, 1822) !
- *longimanus* (Corti, 1907) !
- *longiseta* (Zetterstedt, 1842) !
- *luteicornis* (Meigen, 1838) !
- *luteipes* Zusková, 1966 !
- *luteolus* (Collin, 1926) !
- *luteus* (Meigen, 1804) !
- *macula* (Zetterstedt, 1842) !
- *maculimanus* (Zetterstedt, 1842) !
- *maculipes* (Meigen, 1822) !
- *major* (Zetterstedt, 1842) !
- *melancholicus* (Collin, 1961) !
- *mikii* (Becker, 1890) !
- *minutus* (Meigen, 1804) !
- *nigellus* (Collin, 1969) !
- *niger* (Meigen, 1804) !
- *nigricolor* Merz & Chvála, 1998 !
- *nigricoxa* (Mik, 1884) !
- *nigrimanus* Strobl, 1880 !
- *nigrinus* (Meigen, 1822) !
  = *montanus* Becker, 1887
- *nigritarsis* (Fallén, 1816) !
- *nigrosetosus* (Strobl, 1893) !
- *niveiseta* (Zetterstedt, 1842) !
- *niveisetoides* Chvála, 1973 !
- *notatus* (Meigen, 1822) !
- *obscurus* (von Roser, 1840) !
- *ochrocera* (Collin, 1961) !

- *optivus* (Collin, 1926) !
- *pallidicornis* (Collin, 1926) !
- *pallidiseta* Kovalev, 1978 !
- *pallidiventris* (Meigen, 1822) !
  = *flavipes* Fabricius, 1794
- *pallipes* (Fallén, 1815) !
- *pectoralis* (Fallén, 1815) !
- *praecinctus* (Collin, 1926) !
- *pseudociliaris* (Strobl, 1910) !
- *pseudofulvipes* (Frey, 1909) !
- *pseudorapidus* Kovalev, 1971 !
- *pulicarius* (Meigen, 1830) !
- *pygialis* Chvála, 1973 !
- *rapidoides* Chvála, 1975 !
- *rapidus* (Meigen, 1822) !
- *ringdahli* Chvála, 1975 !
- *riojaensis* Chvála, 1981 !
- *ruficornis* (von Roser, 1840) !
- *scandinavicus* Chvála, 1972 !
- *smirnovi* Kovalev, 1978 !
- *stabilis* (Collin, 1961) !
- *stackelbergi* Kovalev, 1971 !
- *stigma* (Collin, 1926) !
- *stigmatelloides* Grootaert & Chvála, 1988 !
- *stigmatellus* (Zetterstedt, 1842) !
  = *lateralis* Becker, 1887
- *stroblii* (Mik, 1900) !
- *subbrevis* (Frey, 1913) !
- *subtilis* (Collin, 1926) !
- *sylvicola* (Collin, 1926) !
- *tonsus* (Collin, 1961) !
- *tuomikoskii* Chvála, 1972 !
- *vegrandis* Frey, 1943 !

Stilpon Loew, 1859
- *graminum* (Fallén, 1815) !
- *nubilus* Collin, 1926 !

Symballophthalmus Becker, 1889
- *dissimilis* (Fallén, 1815) !
- *fuscitarsis* (Zetterstedt, 1859) !
- *pictipes* (Becker, 1889) !

Tachydromia Meigen, 1803
- *aemula* (Loew, 1864) !
- *annulimana* Meigen, 1822 !
- *arrogans* (Linnaeus, 1760) !
- *calcanea* (Meigen, 1838) !
- *carpathica* Chvála, 1966 !

- *catalonica* (Strobl, 1906) !
- *connexa* Meigen, 1822 !
- *interrupta* (Loew, 1864) !
- *obsoleta* Strobl, 1910 !
- *parva* Chvála, 1970 !
- *productipes* (Strobl, 1910) !
- *rhyacophila* Chvála, 1994 !
- *styriaca* (Strobl, 1893) !
  = *barbata* Oldenberg, 1920
- *tuberculata* (Loew, 1864) !
- *umbrarum* Haliday, 1833 !
- *velocipes* Frey, 1943 L
- *wendti* Stark & Doczkal, 2017 L
- *woodi* (Collin, 1926) !

Tachypeza Meigen, 1830
- *fennica* Tuomikoski, 1932 !
- *fuscipennis* (Fallén, 1815) !
- *nubila* (Meigen, 1804) !
- *truncorum* (Fallén, 1815) L

Excluded species

Bicellaria dispar Oldenberg, 1920
Trichina clavipes Meigen, 1830

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Empididae (excl. Brachystomatidae, excl. Empidoidea *incertae sedis*)

Jean-Paul Haenni (1998 Checklist: Milan Chvála, Miroslav Barták, Paul. L. Th. Beuk, Bernhard Merz & Rüdiger Wagner)

Last update: Jul 2024

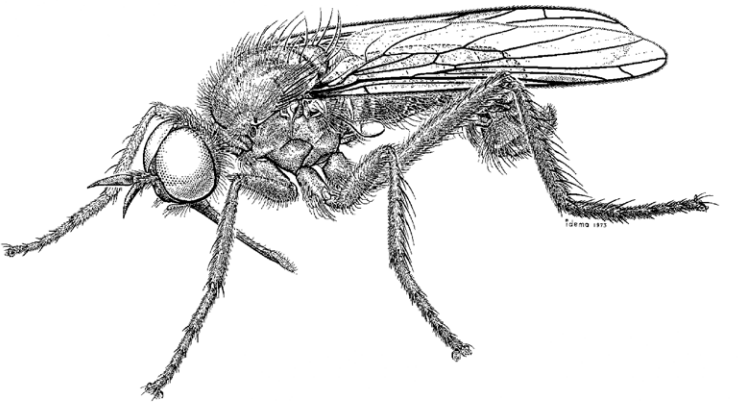
Diagnosis: Minute to medium flies (2-12 mm) of very diverse appearance; mouth-parts a more or less elongate, strong piercing rostrum, eyes large, antenna 3-segmented, with flagellum prolonged into an apical style. Thorax narrow, prosternum enlarged, forming a precoxal bridge; legs generally elongate, strong, sometimes modified for raptorial use; wings often with a well-developed discal cell, R_{4+5} forked or not. Genitalia much diversified, asymmetrical in some genera, with useful characters for identification. Larvae acephalous, head with a pair of buccal hooks used for killing preys, body generally white, abdominal segments with creeping welts. Terrestrial forms amphipneustic, anal segment with a single median lobe. Aquatic forms apneustic (without functional spiracles), abdominal segments with paired prolegs, anal segment with elongate caudal lobes.

Biology: Adult empidids are predacious, feeding on various insects, especially Diptera, that they catch actively. They can be found in all kinds of habitats, but are more diverse and numerous in moist, wooded or open environments. Aerial swarms can be observed in numerous species, with extremely diversified courtship behaviour involving gift of a present by the male to the female. The nuptial present is generally an insect killed by the male, which in some species can be then wrapped in a silk envelope, but it can also be a symbolic gift, e.g. a silken balloon containing no prey or a shiny white petal of flower in some species. The adults of some species can also be observed feeding on flowers (frequently on Apiaceae inflorescences). The known larvae are predacious, preying on various insects, especially diptera larvae; they are terrestrial (subfamilies Empidinae, Ragadinae), living in the soil, in leaf-litter, rotten wood, or semi-aquatic or aquatic (subfamilies Clinocerinae and Hemerodromiinae), mainly living in hygropetric habitats.

Nomenclature and classification: The family is understood here in the restricted sense of Sinclair & Cumming (2006), that is excluding some genera now assigned to Brachystomatidae (*Gloma*, *Heleodromia*, *Pseudoheleodromia*, *Trichopeza*) and to Empidoidea *incertae sedis* (*Anthepiscopus*, *Iteaphila*). Nomenclature according to Fauna Europaea (Chvála 2013).

Number of species: CH: 315 (1998 Checklist: 246 [255-5-4]),
CZ: 295, DE: 172, GB 207, NL: 173, SK: 276, Europe: ~820, World: ~2500.

Level of faunistic knowledge in Switzerland: Poor to good, according to the subfamilies; additional species certainly occur in Switzerland, especially in Clinocerinae. The present list is largely based upon the one published in the preceding checklist (Chvála et al. 1998), complemented by the species added in the first, second and third published supplements (Merz et al. 2002, 2006, Bächli et al. 2014). Some changes concerning the Swiss fauna may have been overlooked or misinterpreted by the compiler of the present list - not a specialist of the family - who is responsible for any change from the initial 1998 list.



Empis browni,
male, not present in Switzerland (MND1, p. 607).

General references: Barták (1981, 1982, 1985, 2006, 2007a, 2007b), Barták & Kubík (2008, 2012) [all *Rhamphomyia*, identification keys], Barták & Kubík (2013) [*Bicellaria*], Chvála (1994) [*Empis*, identification keys, Fennoscandia], Chvála (1997a) [*Hilara*, identification key], Chvála (2012) [*Empis*, identification keys], Chvála (2013) [Fauna Europaea database], Chvála & Merz (2009) [*Hilara*], Chvála & Wagner (1989) [catalogue], Collin (1961) [identification keys, Britain], Engel & Frey (1938-56) [identification keys], Sinclair & Cumming (2006) [classification, key to families and groups], Shamshev (2016) [checklist, Russia], Wagner (1997) [general, identification key to aquatic genera].

References to the Swiss fauna: Artmann-Graf et al. (2003), Bächli et al. (2014), Chvála & Merz (2009), Merz et al. (2002, 2006, 2012), Vaillant & Vinçon (1998).

Checklist

Clinocerinae

Clinocera Meigen, 1803

- *appendiculata* (Zetterstedt, 1838) L
- *dimidiata* Loew, 1869 !
- *fontinalis* (Haliday, 1833) !
- *frigida* (Vaillant, 1964) L N1
- *nigra* Meigen, 1804 !
- *nudipes* Loew, 1858 ?
- *schremmeri* (Vaillant, 1964) !
- *stagnalis* (Haliday, 1833) !
- *tibiella* Mik, 1880 !

- *trinotata* Mik, 1869 !
- *wesmaeli* (Macquart, 1835) !

Dolichocephala Macquart, 1823
- *austriaca* Vaillant, 1968 !
- *engeli* Vaillant, 1978 !
- *guttata* (Haliday, 1833) !
- *irrorata* (Fallén, 1816) !
- *ocellata* (Costa, 1854) !

Kowarzia Mik, 1881
- *barbatula* Mik, 1880 !
- *bipunctata* (Haliday, 1833) L
- *madicola* (Vaillant, 1964) !
- *tenella* (Wahlberg, 1844) !

Wiedemannia Zetterstedt, 1838
(*Chamaedipsia* Bezzi, 1899)
- *beckeri* (Mik, 1889) L

(*Eucelidia* Mik, 1881)
- *zetterstedti* (Fallén, 1826) !

(*Philolutra* Mik, 1881)
- *bohemani* (Zetterstedt, 1838) !
- *fallaciosa* (Loew, 1873) !
- *hygrobia* (Loew, 1858) !

(*Wiedemannia* s.str.)
- *bistigma* (Curtis, 1834) L
- *brevilamellata* Wagner, 1985 !
- *oxystoma* (Bezzi, 1905) L
  = *bilobata* Oldenberg, 1910

Empidinae

Empis Linnaeus, 1758
(*Anacrostichus* Bezzi, 1909)
- *bistortae* Meigen, 1822 !
- *lucida* Zetterstedt, 1838 !
- *monticola* Loew, 1868 !
- *nitida* Meigen, 1804 !

(*Coptophlebia* Bezzi, 1909)
- *abbreviata* Loew, 1869 !
- *albinervis* Meigen, 1822 !
- *hyalipennis* Fallén, 1816 !
- *impennis* Strobl, 1902 !
- *leptomorion* Bezzi, 1909 !

(*Empis* s.str.)
- *acinerea* Chvála, 1985 !
- *aestiva* Loew, 1867 !
- *alampra* Loew, 1873 !
- *albohirta* Collin, 1926 ! N2

- *albopilosa* de Meijere, 1935 !
- *alpicola* Strobl, 1893 !
- *anfractuosa* Mik, 1884 !
- *atrosimulium* Chvála & Pont, 2016 L
- *bicuspidata* Collin, 1927 !
- *bohemica* Chvála & Syrovatka, 1989 !
- *brunohubli* Chvála & Pont, 2016 L
- *caudatula* Loew, 1867 !
- *chioptera* Meigen, 1804 !
- *ciliatopennata* Strobl, 1893 !
- *corvina* Loew, 1869 L
- *eupterota* Loew, 1873 ! N2
- *florisomna* Loew, 1856 L
- *galactoptera* Strobl, 1893 ! N2
- *genualis* Strobl, 1893 !
- *gymnopoda* Bezzi, 1908 L
- *hirta* Loew, 1865 L
- *hubli* Chvála & Pont, 2016 L
- *lepidopus* Meigen, 1822 !
- *levis* Loew, 1873 !
- *longipes* (Meigen, 1804) ! N2
- *maerens* Loew, 1867 L
- *malleola* Becker, 1887 !
- *nigricoma* Loew, 1867 !
- *nigripes* Fabricius, 1794 !
- *nuntia* Meigen, 1838 !
- *pennipes* Linnaeus, 1758 !
- *planetica* Collin, 1927 !
- *protarsalis* Collin, 1927 L
- *provincialis* Chvála, 2012 !
- *pseudomalleola* Strobl, 1893 ?
- *pseudonuntia* Syrovátka, 1991 !
- *pseudoprodromus* Collin, 1969 !
- *pusio* Egger, 1860 !
- *rufiventris* Meigen, 1838 !
- *scaura* Loew, 1867 L
- *simulium* (Nowicki, 1868) !
- *syrovatkai* Chvála, 1985 !
- *tanysphyra* Loew, 1873 L
- *umbripes* Becker, 1887 ! N2
- *woodi* Collin, 1927 !

(*Euempis* Frey, 1953)

- *ciliata* Fabricius, 1787 !
- *sericans* Brullé, 1832 !
- *tessellata* Fabricius, 1794 !

(*Kritempis* Collin, 1926)

- *livida* Linnaeus, 1758 !

(*Leptempis* Collin, 1926)

- *alpina* Loew, 1867 L
- *cognata* Egger, 1860 !
- *confusa* Loew, 1865 !
- *dimidiata* Meigen, 1835 !
- *discolor* Loew, 1856 !
- *flavitarsis* von Roser, 1840 L
- *grisea* Fallén, 1816 !
- *nigricans* Meigen, 1804 !
- *rustica* Fallén, 1816 !
- *variegata* Meigen, 1804 !

(*Lissempis* Bezzi, 1909)

- *nigritarsis* Meigen, 1804 !

(*Pachymeria* Stephens, 1829)

- *femorata* Fabricius, 1798 !
- *mediterranea* (Loew, 1864) !
- *scotica* Curtis, 1835 !

(*Platyptera* Meigen, 1803)

- *borealis* Linnaeus, 1758 L

(*Polyblepharis* Bezzi, 1909) N3

- *crassa* Nowicki, 1868 !

(*Xanthempis* Bezzi, 1909)

- *aemula* Loew, 1873 !
- *aequalis* Loew, 1867 !
- *concolor* Verrall, 1872 !
- *digramma* Meigen, 1835 L
- *laetabilis* Collin, 1926 L
- *lagoensis* Chvála, 1996 !
- *lutea* Meigen, 1804 !
- *matilei* Daugeron & Charbonnel, 2000 !
- *punctata* Meigen, 1804 L
- *scutellata* Curtis, 1835 !
- *semicinerea* Loew, 1867 !
- *stercorea* Linnaeus, 1760 !
- *trigramma* Wiedemann in Meigen, 1822 !
- *unistriata* Becker, 1887 L

Hilara Meigen, 1822

- *aartseni* Chvála, 1997 !
- *aeronetha* Mik, 1892 !
- *albipennis* von Roser, 1840 !
- *albitarsis* von Roser, 1840 !
- *albiventris* von Roser, 1840 !
- *allogastra* Chvála, 2001 !
- *alpicola* Chvála, 2001 !
- *andermattensis* Strobl, 1892 !

- *anglodanica* Lundbeck, 1913 !
- *angustifrons* Strobl, 1892 !
- *barbipes* Frey, 1908 !
- *beckeri* Strobl, 1892 !
- *biseta* Collin, 1927 !
- *bohemica* Straka, 1976 !
- *borealis* Oldenberg, 1916 !
- *brevistriata* Chvála & Merz, 2009 !
- *brevistyla* Collin, 1927 !
- *brevivittata* Macquart, 1827 !
- *caerulescens* Oldenberg, 1916 !
  = *chvalai* Straka, 1976
- *calinota* Collin, 1969 !
- *campinosensis* Niesiolowski, 1986 !
- *canescens* Zetterstedt, 1849 !
- *chorica* (Fallén, 1816) !
- *cilipes* Meigen, 1822 !
- *clavipes* (Harris, 1776) !
  = *spinimana* (Zetterstedt, 1838)
- *clypeata* Meigen, 1822 L
- *coracina* Oldenberg, 1916 !
- *cornicula* Loew, 1873 !
- *crossleyi* Chvála & Merz, 2009 !
- *cuneata* Loew, 1873 !
  = *strobliana* Bezzi, 1899
- *curtisi* Collin, 1927 !
- *dimidiata* Strobl, 1892 !
- *discalis* Chvála, 1997 !
- *discoidalis* Lundbeck, 1910 !
- *discolor* Strobl, 1892 !
- *diversipes* Strobl, 1892 !
- *eviana* Straka, 1976 !
- *femorella* Zetterstedt, 1842 !
- *fuscipes* (Fabricius, 1794) !
- *galactoptera* Strobl, 1910 !
- *gallica* (Meigen, 1804) !
- *goetzei* Chvála, 2005 !
- *griseifrons* Collin, 1927 !
- *griseola* Zetterstedt, 1838 !
- *helvetica* Chvála, 1999 !
- *heterogastra* Nowicki, 1868 !
- *hirta* Strobl, 1892 !
- *hirtipes* Collin, 1927 !
- *hybrida* Collin, 1961 !
- *hystrix* Strobl, 1892 !
- *implicata* Collin, 1927 !

- *intermedia* (Fallén, 1816) !
- *interstincta* (Fallén, 1816) !
- *lasiochira* Strobl, 1892 !
- *lasiopa* Strobl, 1892 !
- *leukensis* Chvála & Merz, 2009 !
- *litorea* (Fallén, 1816) !
- *longifurca* Strobl, 1892 !
  = *monedula* Collin, 1927
- *longivittata* Zetterstedt, 1842 !
- *lugubris* (Zetterstedt, 1819) !
- *lurida* (Fallén, 1816) !
- *luteihalterata* Chvála & Merz, 2009 !
- *maior* Strobl, 1910 !
- *manicata* Meigen, 1822 !
- *maura* (Fabricius, 1776) !
- *media* Collin, 1927 !
- *merula* Collin, 1927 !
- *merzi* Chvála, 1999 !
- *morata* Collin, 1927 !
- *morenae* Strobl, 1899 !
- *nigrita* Chvála, 2005 !
- *nigrocincta* de Meijere, 1935 !
- *nigrohirta* Collin, 1927 !
- *nitidorella* Chvála, 1997 !
- *nitidula* Zetterstedt, 1838 !
- *parvimaior* Chvála & Merz, 2009 !
- *pilosopectinata* Strobl, 1892 !
  = *longesetosa* Strobl, 1910
- *planti* Chvála & Merz, 2009 !
- *platyura* Loew, 1873 !
- *ponti* Chvála, 1981 !
- *pruinosa* Wiedemann in Meigen, 1822 !
- *pseudochorica* Strobl, 1892 !
  = *woodi* Collin, 1927
- *pseudosartrix* Strobl, 1892 !
- *quadrifaria* Strobl, 1892 !
- *quadrula* Chvála, 2002 !
- *sartor* Becker, 1888 !
- *scrobiculata* Loew, 1873 !
- *splendida* Straka, 1976 !
- *strakai* Chvála, 1981 !
- *sturmii* Meigen, 1822 !
- *styriaca* Strobl, 1910 !
- *sulcitarsis* Strobl, 1982 !
- *tenella* (Fallén, 1816) !
- *ternovensis* Strobl, 1898 !

- *tetragramma* Loew, 1873 !
- *thoracica* Macquart, 1827 !
- *tiefii* Strobl, 1892 !
- *triseta* Chvála, 2005 !
- *zermattensis* Chvála, 1999 !

Rhamphomyia Meigen, 1822
(*Amydroneura* Collin, 1926)
- *claripennis* Oldenberg, 1922 !
- *crassicauda* Strobl, 1893 !
- *erythrophthalma* Meigen, 1830 !
- *gibba* (Fallén, 1816) !
- *hirsutipes* Collin, 1926 !
- *rampazzii* Barták, 2006 !

(*Holoclera* Schiner, 1860)
- *bistriata* Strobl, 1910 !
- *bohemica* Barták & Kubík, 2012 !
- *caliginosa* Collin, 1926 !
- *culicina* (Fallén, 1816) !
- *flava* (Fallén, 1816) !
- *flaviventris* Macquart, 1827 !
- *helvetica* Barták & Kubík, 2012 !
- *heterochroma* Bezzi, 1898 !
- *lamellata* Colllin, 1926 !
- *nigripennis* (Fabricius, 1794) !
- *sciarina* (Fallén, 1816) !
- *trigemina* Oldenberg, 1927 !
- *umbripennis* Meigen, 1822 !

(*Lundstroemiella* Frey, 1922)
- *aterrima* Frey, 1922 !
- *australis* Frey, 1922 !
- *dudai* Oldenberg, 1927 !
- *hybotina* (Zetterstedt, 1838) !
- *magellensis* Bezzi in Frey, 1922 !
- *rupestris* Oldenberg, 1927 !
- *strobli* Barták, 1985 !

(*Megacyttarus* Bigot, 1880) N3
- *crassirostris* (Fallén, 1816) !
- *poissoni* (Trehen, 1966) !

(*Pararhamphomyia* Frey, 1922)
- *amoena* Loew, 1840 !
- *anfractuosa* Bezzi, 1904 !
- *atra* Meigen, 1822 !
- *barbata* Macquart, 1823 !
- *caudata* (Zetterstedt, 1838) !
  = *aethiops* Zetterstedt, 1838
- *curvula* Frey, 1913 !

- *dentata* Oldenberg, 1910 !
- *geniculata* Meigen, 1830 !
- *marginata* (Fabricius, 1787) !
- *micropyga* Collin, 1926 !
- *modesta* Wahlberg, 1844 !
- *obscura* (Zetterstedt, 1838) !
- *obscuripennis* Meigen, 1830 !
- *pilifer* Meigen, 1838 !
- *praestans* Frey, 1913 !
- *tibiella* Zetterstedt, 1842 !
- *tipularia* (Fallén, 1816) !
- *unguiculata* Frey, 1913 !

(*Rhamphomyia* s.str.) N3

- *albosegmentata* Zetterstedt, 1838 !
- *anthracina* Meigen, 1822 !
- *argentata* von Röder, 1887 !
- *aucta* Oldenberg, 1917 !
- *brevipila* Oldenberg, 1922 !
- *chionoptera* Bezzi, 1904 !
- *cinerascens* (Meigen, 1804) !
- *crassimana* Strobl, 1898 !
- *crinita* Becker, 1887 !
- *curvinervis* Oldenberg, 1915 !
- *discoidalis* Becker, 1889 !
- *hercynica* Oldenberg, 1927 !
- *hirtimana* Oldenberg, 1922 !
- *hungarica* (Wéber, 1969) !
- *janovensis* Barták, 1981 !
- *laevipes* (Fallén, 1816) !
- *loewi* Nowicki, 1868 !
- *luridipennis* Nowicki, 1868 !
- *melania* Becker, 1887 !
- *montana* Oldenberg, 1915 !
- *nigromaculata* von Roser, 1840 !
- *nitidula* Zetterstedt, 1842 !
- *nubigena* Bezzi, 1904 !
- *parvicellulata* Frey, 1922 !
- *plumipes* (Meigen, 1804) !
- *sanctimauritii* Becker, 1887 !
- *sellacrinita* Barták, 2007 !
- *serpentata* Loew, 1856 !
- *siebecki* Strobl, 1898 !
- *spinipes* (Fallén, 1816) !
- *stigmosa* Macquart, 1827 !
- *sulcanda* Barták & Kubík, 2008 !
- *sulcata* (Meigen, 1804) !

- *sulcatella* Collin, 1926 !
- *tibialis* Meigen, 1822 !
- *trilineata* Zetterstedt, 1859 !
  = *sulcatina* Collin, 1926
- *tristriolata* Nowicki, 1868 !
- *vesiculosa* (Fallén, 1816) !

Hemerodromiinae

Chelifera Macquart, 1823
- *concinnicauda* Collin, 1927 !
- *flavella* (Zetterstedt, 1838) !
- *precabunda* Collin, 1961 !
- *precatoria* (Fallén, 1816) !
- *pyrenaica* Vaillant, 1981 !
- *serraticauda* Engel, 1939 L
- *stigmatica* (Schiner, 1862) !
- *trapezina* (Zetterstedt, 1838) !

Chelipoda Macquart, 1823
- *vocatoria* (Fallén, 1816) !

Hemerodromia Meigen, 1822
- *oratoria* (Fallén, 1816) !
- *raptoria* Meigen, 1830 !
- *unilineata* Zetterstedt, 1842 !

Phyllodromia Zetterstedt, 1837
- *melanocephala* (Fabricius, 1794) !

Ragadinae

Ragas Walker, 1837
- *unica* Walker, 1837 !

incertae sedis

Dryodromia Rondani, 1856
- *testacea* Rondani, 1856 !

Oreogeton Schiner, 1860
- *basalis* (Loew, 1856) !

Excluded species

Empis albiventris Meigen, 1822
Hilara abdominalis (Zetterstedt, 1842)
Hilara quadrivittata Meigen, 1822

Notes

N1 *Clinocera frigida* (Vaillant, 1964) was recorded from Switzerland (as *Bergenstammia frigida* Vaillant, 1964) by Vaillant & Vinçon (1998).

N2 The species previously placed in subgenus *Aclonempis* of genus *Rhamphomyia* are placed now in *Empis* (*Empis* s.str.) according to Chvála & Pont (2015, 2016).

N3 *Empis* (*Polyblepharis*) *gravipes* (Loew, 1856), *Rhamphomyia* (*Megacyttarus*) *maculipennis* Zetterstedt, 1842 and *Rhamphomyia* (*Rhamphomyia*) *pokornyi* Bezzi, 1904 have been cited from Switzerland by Shamshev (2016) but no Swiss record or literature reference was found for these species.

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Empidoidea *incertae sedis*

Jean-Paul Haenni (1998 Checklist: Milan Chvála [Empididae, part])
Last update: Jul 2024

Diagnosis: See Empididae.

Biology: See Empididae.

Nomenclature and classification: Some genera of Empididae previously placed in subfamilies Oreogetoninae and Hemerodromiinae have been assigned to Empidoidea *incertae sedis* by Sinclair & Cumming (2006) pending further studies.

Number of species: CH: 5 (1998 Checklist:4 [Empididae, part]).

Level of faunistic knowledge in Switzerland: Good, the presence of one additional species may be expected.

General references: Sinclair & Cumming (2006) [systematics]

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

Checklist

Anthepiscopus Becker, 1891
- *caelebs* Becker, 1891 L
- *ribesii* Becker, 1891 !
- *zontaki* (Nowicki, 1870) !

Iteaphila Zetterstedt, 1838
- *furcata* (Zetterstedt, 1842) !
- *macquarti* (Zetterstedt, 1838) L

Excluded species

Iteaphila nitidula (Zetterstedt, 1838) N1

Notes

N1 *Iteaphila nitidula*: the record of this species (Merz et al. 2006) was based upon an erroneous identification (Bächli et al. 2014).

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Brachystomatidae

Jean-Paul Haenni (1998 Checklist: Rüdiger Wagner [Empididae, part])
Last update: Jul 2024

Diagnosis: See Empididae.

Biology: See Empididae.

Nomenclature and classification: The former subfamily Brachystomatinae of Empididae was elevated at family level by Sinclair & Cumming (2006). It currently includes three subfamilies, one of which, the Trichopezinae is represented in the Swiss fauna.

Number of species: CH: 5 (1998 Checklist: 5 [Empididae, part]),
GB: 4, NL: 3, World: > 150.

Level of faunistic knowledge in Switzerland: Good; the occurrence of additional species present in neighbouring countries is possible.

General references: Chvála & Wagner (1989), Sinclair & Cumming (2006).

References to the Swiss fauna: Merz et al. (2002, 2012), Wagner (1998, 2001).

Checklist

Trichopezinae

Gloma Meigen, 1822
- *fuscipennis* Meigen, 1822 !

Heleodromia Haliday, 1833
- *immaculata* Haliday, 1833 !
- *irwini* Wagner, 1985 !

Pseudoheleodromia Wagner, 2001
- *helvetica* Wagner, 2001 !

Trichopeza Rondani, 1856
- *longicornis* (Meigen, 1822) !

Excluded species

Brachystoma vesiculosum (Fabricius, 1794) N1

Notes

N1 As mentioned by Merz et al. (2002), the inclusion of *Brachystoma vesiculosum* (Fabricius, 1794) in the 1998 Checklist was based on the erroneous mention in Chvála & Wagner (1989), resulting from an error of locality.

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Dolichopodidae (incl. Microphorinae)

Lucia Pollini Paltrinieri & Marc Pollet (1998 Checklist: Lucia Pollini & Marc Pollet [Dolichopodidae], **Bernhard Merz & Milan Chvála** [Microphoridae])

Last update: Jul 2024

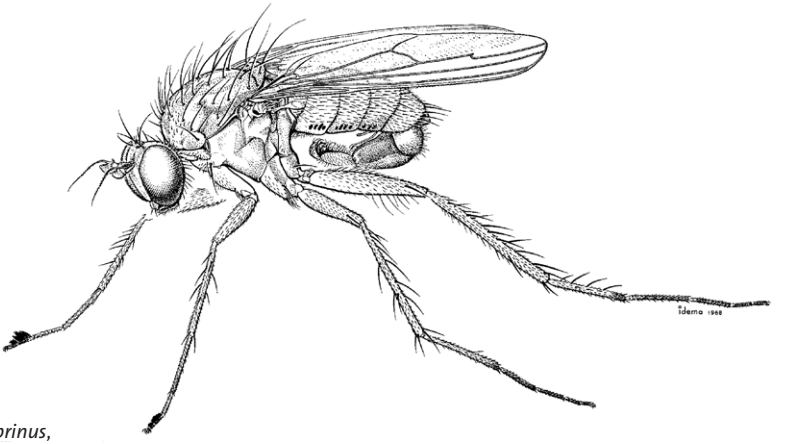
Diagnosis: Minute to medium-sized brachycerous flies (1-10 mm), mostly with long and slender legs, conspicuously ornamented in males of multiple species. Body generally laterally flattened; body colour usually metallic green, but sometimes also mainly yellow or non-metallic brown to black. Face usually long, with short but protruding mouthparts. Antenna inserted on the upper part of the head, with distinct scape, pedicel and postpedicel; arista-like stylus bare, pubescent, plumose, or with an apical flag in only a few Palaearctic species (*Sybistroma*). Hypopygium twisted (rotated and flexed) 180°, small and largely enclosed into the abdomen in some species, and, large, conspicuous, pedunculate and folded underneath the abdomen in other species. Wing venation similar throughout the family, reduced with small basal cells and large discal cell, delimited by crossvein dm-m. Vein M_2 mostly absent, except for representatives of the subfamily Sciapodinae and present as stubvein in some Dolichopodinae (see Pollet & Brooks 2008). Species of *Microphor*, *Schistostoma* and *Microphorella* have long been considered as representatives of a separate family, Microphoridae, also in the 1998 Checklist. The first two genera are currently assigned to Microphorinae and the third to Parathalassiinae, two subfamilies that have been added to Dolichopodidae (Sinclair & Cumming 2006; Pollet & Brooks 2008).

Biology: Adults and larvae are predaceous, and feed on small invertebrates (Ulrich 2004); only the larvae of *Thrypticus* are leaf-miners of monocotyledons (Dyte 1959). The immature stages live in moist substrates (mud, decaying vegetation, under tree bark). Adults can be found in almost all terrestrial habitats, but most species prefer humid biotopes. Some lineages such as *Medetera*, *Neurigona* and *Sciapus* are often found on vertical substrates such as tree trunks and walls (Pollet 2000).

Nomenclature and classification: According to Yang et al. (2006), as implemented in Fauna Europaea (Pollet 2011).

Number of species: CH: 300 (1998 Checklist: 187 [180 +7]),
BE: 295, CZ: 324, DE: 424, DK: 297, ES: 207, FI: 260, HR: 94, IE: 160, IT: 292, NL: 264, PT: 200, SE: 345, SK: 238, UK: 308, Balkan Peninsula: 288, Europe: 791, World: > 8'000.
(BE: Pollet 2000, CZ: Pollet & Suvák 2009, DE: Meyer & Stark 2015, DK: Pollet & Petersen 2001, ES: Ventura et al. 2002, FI: Kahanpää 2014, HR: Pollet & Ivkovic 2018, IE: Chandler 2022, IT: Pesarini et al. 1995, NL: Pollet & Meuffels 2023, PT: Pollet et al. 2019, SE: Persson et al. 2019, SK: Pollet & Suvák 2009, UK: Chandler 2022, Balkan Peninsula: Kechev et al. 2020, Europe: Pollet 2011, World: Grichanov 2017)

Level of faunistic knowledge in Switzerland: Good; additional species recorded from adjacent countries probably also occur in Switzerland and a few new species await to be described.



Dolichopus cuprinus,
male, not present in Switzerland
(MND1, p. 625).

General references: Four comprehensive works: Parent (1938) [key continental Europe], d'Assis-Fonseca (1978) [key UK], the series by Stackelberg (1930, 1933, 1934, 1941), Negrobov & Stackelberg (1972, 1974a, b), and Negrobov (1977, 1978, 1979a, b) in Die Fliegen der palaearktischen Region [key (not all genera) Palaeartic region], Chvála (1983) [key Microphorinae]; and multiple papers dealing with separate genera like Pollet (1990) [key *Gymnopternus*], Pollet (1996) [key *Achalcus*], Pollet & Kechev (2007) [key *Teuchophorus*], Chandler & Negrobov (2008) [key *Xanthochlorus*], Pollet (2011) [Fauna Europaea, nomenclature], Grichanov et al. (2012) [key *Teuchophorus*], Grichanov & Negrobov (2014) [key *Sciapus*], Negrobov & Naglis (2016) [key *Medetera*].

References to the Swiss fauna: Ringdahl (1957), Basset (1985, 1986), Gonseth et al. (1985), Naglis (1997, 1998, 1999, 2009a, b, 2010, 2012a, 2012b, 2013a, b, 2014, 2015a, b), Naglis & Bernasconi (2014), Naglis & Negrobov (2014a, b), Artmann et al. (2003), Rampazzi (2002), Germann et al. (2009), German & Bernasconi (2010), Merz et al. (2012), Pollini Paltrinieri (2013).

Checklist

Achalcinae

Achalcus Loew, 1857

- *cinereus* (Haliday, 1851) !
- *flavicollis* (Meigen, 1824) !
- *nigropunctatus* Pollet & Brunhes, 1996 !
- *vaillanti* Brunhes, 1987 !

Diaphorinae

Argyra Macquart, 1834
- *argentina* (Meigen, 1824) L
- *argyria* (Meigen, 1824) !
- *atriceps* Loew, 1857 !
- *auricollis* (Meigen, 1824) L
- *diaphana* (Fabricius, 1775) !
- *discedens* Becker, 1907 !
- *elongata* (Zetterstedt, 1843) ! [1]
- *grata* Loew, 1857 !
- *hoffmeisteri* (Loew, 1850) ! [2]
- *ilonae* Gosseries, 1988 ! [3]
  - = *confinis* (Zetterstedt, 1849)
- *leucocephala* (Meigen, 1824) !
- *perplexa* Becker, 1918 !
- *vestita* (Wiedemann, 1817) !

Asyndetus Loew, 1869
- *latifrons* (Loew, 1857) !
- *varus* Loew, 1869 !

Chrysotus Meigen, 1824
- *alpicola* Strobl, 1893 ? N1
- *angulicornis* Kowarz, 1874 L
- *blepharosceles* Kowarz, 1874 !
- *cilipes* Meigen, 1824 !
- *collini* Parent, 1923 ! [4]
- *cupreus* (Macquart, 1827) !
- *dischmaensis* Naglis, 2010 !
- *femoratus* Zetterstedt, 1843 !
- *gramineus* (Fallén, 1823) !
  - = *microcerus* Kowarz, 1875
  - = *varians* Kowarz, 1875
- *laesus* (Wiedemann, 1817) !
- *monochaetus* Kowarz, 1874 !
- *neglectus* (Wiedemann, 1817) !
- *obscuripes* Zetterstedt, 1838 !
  - = *kowarzi* Lundbeck, 1912
- *pulchellus* Kowarz, 1874 !
- *suavis* Loew, 1857 !

Diaphorus Meigen, 1824
- *disjunctus* Loew, 1857 L
- *exunguiculatus* Parent, 1925 !
- *gredleri* Mik, 1881 !
- *halteralis* Loew, 1869 !
- *hoffmannseggi* Meigen, 1830 !
- *nigricans* Meigen, 1824 !
- *nigrotibia* Strobl, 1893 !

= *oldenbergi* Parent, 1925
- *oculatus* (Fallén, 1823) !
- *vitripennis* Loew, 1859 ? N1
- *winthemi* Meigen, 1824 !

Melanostolus Kowarz, 1884
- *melancholicus* (Loew, 1869) !

Dolichopodinae

Dolichopus Latreille, 1796
- *agilis* Meigen, 1824 ? N1
- *arbustorum* Stannius, 1831 !
- *argyrotarsis* Wahlberg, 1850 !
- *atratus* Meigen, 1824 !
- *atripes* Meigen, 1824 !
- *campestris* Meigen, 1824 ! [5]
- *claviger* Stannius, 1831 ! [6]
- *excisus* Loew, 1859 !
- *festivus* Haliday, 1832 !
- *flavipes* Stannius, 1831 ? N1
- *genicupallidus* Becker, 1889 !
- *griseipennis* Stannius, 1831 !
- *latilimbatus* Macquart, 1827 !
- *lepidus* Staeger, 1842 !
  = *cruralis* Wahlberg, 1850
- *linearis* Meigen, 1824 !
- *longicornis* Stannius, 1831 ! [7]
- *longitarsis* Sannius, 1831 !
- *melanopus* Meigen, 1824 !
- *nigricornis* Meigen, 1824 !
  = *discifer* Stannius, 1831
- *nitidus* Fallén, 1823 !
- *notatus* Staeger, 1842 ! [8]
- *nubilus* Meigen, 1824 !
- *pennatus* Meigen, 1824 !
- *picipes* Meigen, 1824 !
- *planitarsis* Fallén, 1823 !
- *plumipes* (Scopoli, 1763) !
- *plumitarsis* Fallén, 1823 ! [9]
- *popularis* Wiedemann, 1817 !
- *rupestris* Haliday, 1833 !
- *signatus* Meigen, 1824 ! [10]
- *signifer* Haliday, 1838 !
- *simplex* Meigen, 1824 !
- *stenhammari* Zetterstedt, 1843 !
  = *annulipes* Zetterstedt, 1838
- *subpennatus* d'Assis Fonseca, 1976 ! [11]

- *tanythrix* Loew, 1869 !
- *trivialis* Haliday, 1832 !
- *ungulatus* (Linnaeus, 1758) !
- *urbanus* Meigen, 1824 !
- *vitripennis* Meigen, 1824 !
- *wahlbergi* Zetterstedt, 1843 ! [12]

Ethiromyia Brooks, 2005
- *chalybea* (Wiedemann, 1817) !
  = *Hercostomus chalybeus* (Wiedemann, 1817)

Gymnopternus Loew, 1857
- *aerosus* (Fallén, 1823) !
  = *Hercostomus aerosus* (Fallén, 1823)
- *angustifrons* (Staeger, 1842) !
  = *Hercostomus angustifrons* (Staeger, 1842)
- *assimilis* (Staeger, 1842) ! [13]
  = *Hercostomus assimilis* (Staeger, 1842)
- *blankaartensis* (Pollet, 1990) !
  = *Hercostomus blankaartensis* Pollet, 1990
- *brevicornis* (Staeger, 1842) !
  = *Hercostomus brevicornis* (Staeger, 1842)
- *celer* (Meigen, 1824) !
  = *Hercostomus celer* (Meigen, 1824)
- *cupreus* (Fallén, 1823) !
  = *Hercostomus cupreus* (Fallén, 1823)
- *helveticus* Pollet & Rampazzi, 2004 !
- *metallicus* (Stannius, 1831) !
  = *Hercostomus metallicus* (Stannius, 1831)
- *silvestris* (Pollet, 1990) !
  = *Hercostomus silvestris* Pollet, 1990

Hercostomus Loew, 1857
- *argentifrons* Oldenberg, 1916 !
- *chaerophylli* (Meigen, 1824) !
  = *conformis* (Loew, 1857)
- *chetifer* (Walker, 1849) !
- *exarticulatus* (Loew, 1857) !
- *fugax* (Loew, 1857) !
- *fulvicaudis* (Walker, 1851) !
- *germanus* (Wiedemann, 1817) !
- *gracilis* (Stannius, 1831) !
  = *bicolor* Macquart, 1827
- *labiatus* (Loew, 1871) !
- *longiventris* (Loew, 1857) ? N1
- *nanus* (Macquart, 1827) !
- *nigrilamellatus* (Macquart, 1827) !
- *nigriplantis* (Stannius, 1831) !
- *plagiatus* (Loew, 1857) !

- *pokornyi* Mik, 1889 !
- *rogenhoferi* (Mik, 1878) !
- *rothi* (Zetterstedt, 1859) !
  = *praeceps* Loew, 1869
- *rusticus* (Meigen, 1824) !
- *sahlbergi* (Zetterstedt, 1838) !
- *vivax* (Loew, 1857) !
- *vockerothi* d'Assis Fonseca, 1976 !

Poecilobothrus Mik, 1878
- *chrysozygos* (Wiedemann, 1817) !
- *nobilitatus* (Linnaeus, 1767) !

Sybistroma Meigen, 1824
- *crinipes* Staeger, 1842 ! [14]
- *discipes* (Germar, 1817) L
- *inornatus* (Loew, 1857) !
  = *Hercostomus inornatus* (Loew, 1857)
- *nodicornis* Meigen, 1824 !
- *obscurellus* (Fallén, 1823) ! [15]
- *sphenopternus* (Loew, 1859) ! [16]

Tachytrechus Haliday, 1851
- *eucerus* Loew, 1869 !
- *genualis* Loew, 1857 !
- *notatus* (Stannius, 1831) L
- *ocior* Loew, 1869 !
- *transitorius* Becker, 1917 !

Hydrophorinae

Coracocephalus Mik, 1892
- *stroblii* Mik, 1892 !

Diostracus Loew, 1861
- *argyrostomus* (Mik, 1874) !
  = *Sphyrotarsus argyrostomus* Mik, 1874
- *hervebazini* (Parent, 1914) L
  = *Sphyrotarsus herzebazini* Parent, 1914
- *hygrophilus* (Becker, 1891) ? N1
  = *Sphyrotarsus hygrophilus* Becker, 1891
- *leucostomus* (Loew, 1861) ? N1

Eucoryphus Mik, 1869
- *brunneri* Mik, 1869 !
- *coeruleus* Becker, 1889 !

Hydrophorus Fallén, 1823
- *albiceps* Frey, 1915 !
- *balticus* (Meigen, 1824) ! [17]
- *bipunctatus* (Lehmann, 1822) L
- *borealis* Loew, 1857 !
- *nebulosus* Fallén, 1823 L

- *praecox* (Lehmann, 1822) !
- *rogenhoferi* Mik, 1874 !

Liancalus Loew, 1857
- *virens* (Scopoli, 1763) !

Peodes Loew, 1857
- *forcipatus* Loew, 1857 !

Medeterinae

Dolichophorus Lichtwardt, 1902
- *kerteszi* Lichtwardt, 1902 !

Medetera Fischer von Waldheim, 1819
- *abstrusa* Thuneberg, 1955 !
- *acanthura* Negrobov & Thuneberg, 1970 !
- *adjaniae* Gosseries, 1988 L
  = *breviseta* Parent, 1927
- *alpicola* Naglis & Negrobov, 2014 !
- *ambigua* (Zetterstedt, 1843) !
- *arrogans* (Parent, 1927) !
- *betulae* Ringdahl, 1949 ? N2
- *brevitarsa* Parent, 1927 ! [18]
- *caeruleifacies* Naglis & Negrobov, 2014 !
- *campestris* Naglis & Negrobov, 2014 !
- *curvipyga* Naglis & Negrobov, 2014 !
- *cuspidata* Collin, 1941 !
- *excellens* Frey, 1909 !
- *fasciata* Frey, 1915 ! [19]
- *glauca* Loew, 1869 !
- *gracilicauda* Parent, 1927 !
- *helvetica* Naglis & Negrobov, 2014 !
- *impigra* Collin, 1941 !
- *infumata* Loew, 1857 !
- *inspissata* Collin, 1952 !
- *jacula* (Fallén, 1823) !
- *jugalis* Collin, 1941 !
- *kerzhneri* Negrobov, 1966 !
- *kowarzi* Negrobov, 1974 !
- *lorea* Negrobov, 1967 !
- *melancholica* Lundbeck, 1912 ? N3
- *micacea* Loew, 1857 !
- *mixta* Negrobov, 1967 !
- *muralis* Meigen, 1824 !
- *nitida* (Macquart, 1834) !
- *pallipes* (Zetterstedt, 1843) !
- *parenti* Stackelberg, 1925 !
- *peloria* Negrobov, 1967 ! N4
- *petrophila* Kowarz, 1877 !

- *petrophiloides* Parent, 1925 !
- *pinicola* Kowarz, 1877 !
- *plumbella* Meigen, 1824 !
- *polonica* Negrobov & Capecki, 1977 !
- *prjachinae* Negrobov, 1974 ! [20]
- *saxatilis* Collin, 1941 ? N3
- *seguyi* Parent, 1926 ! [21]
- *setiventris* Thuneberg, 1955 ! [22]
- *signaticornis* Loew, 1857 !
- *takagii* Negrobov, 1970 ! [23]
- *thunebergi* Negrobov, 1967 !
- *ticinensis* Naglis & Negrobov, 2014 !
- *tristis* (Zetterstedt, 1838) !
- *truncorum* Meigen, 1824 !
- *unisetosa* Collin, 1941 !
- *vagans* Becker, 1917 ? N3
- *valaisensis* Naglis & Negrobov, 2014 !

Systenus Loew, 1857
- *leucurus* Loew, 1859 !
- *pallipes* (von Roser, 1840) !
- *tener* Loew, 1859 !

Thrypticus Gerstaecker, 1864
- *atomus* Frey, 1915 !
- *bellus* Loew, 1969 !
- *intercedens* Negrobov, 1967 !
- *smaragdinus* Gerstäcker, 1864 !

Microphorinae

Microphor Macquart, 1827
- *anomalus* (Meigen, 1824) !
- *crassipes* Macquart, 1827 !
- *holosericeus* (Meigen, 1804) !
  = *velutinus* Macquart, 1827
- *intermedius* (Collin, 1961) !
- *strobli* Chvála, 1986 !

Microphorella Becker, 1909
- *praecox* (Loew, 1864) !
- *similis* Brooks & Ulrich, 2012 !

Schistostoma Becker, 1902
- *truncatum* (Loew, 1864) !

Neurigoninae

Neurigona Rondani, 1856
- *abdominalis* (Fallén, 1823) !
- *cilipes* (Oldenberg, 1904) !
- *erichsoni* (Zetterstedt, 1843) !

- *pallida* (Fallén, 1823) !
- *quadrifasciata* (Fabricius, 1781) !
- *suturalis* (Fallén, 1823) !

Oncopygius Mik, 1866
- *distans* (Loew, 1857) !

Peloropeodinae

Acropsilus Mik, 1878
- *niger* (Loew, 1869) !

Chrysotimus Loew, 1857
- *flaviventris* (von Roser, 1840) !
- *molliculus* (Fallén, 1823) !

Micromorphus Mik, 1878
- *albipes* (Zetterstedt, 1843) ?
- *claripennis* (Strobl, 1899) !

Rhaphiinae

Nematoproctus Loew, 1857
- *distendens* (Meigen, 1824) !
- *praesectus* Loew, 1869 ! [24]

Rhaphium Meigen, 1803
- *albifrons* Zetterstedt, 1843 !
  = *breviseta* (Becker, 1891)
- *albomaculatum* (Becker, 1891) !
- *appendiculatum* Zetterstedt, 1849 !
  = *macrocerum* sensu Parent, 1938 nec Meigen, 1824
- *auctum* Loew, 1857 !
- *brevicorne* Curtis, 1835 !
- *caliginosum* Meigen, 1824 !
  = *zetterstedti* (Parent, 1925)
- *commune* (Meigen, 1824) !
- *crassipes* (Meigen, 1824) !
- *ensicorne* Meigen, 1824 !
- *fasciatum* Meigen, 1824 !
- *fissum* Loew, 1850 !
- *fractum* Loew, 1850 !
- *gravipes* Haliday, 1851 ? N5
- *longicorne* (Fallén, 1823) !
- *micans* (Meigen, 1824) !
- *monotrichum* Loew, 1850 !
- *penicillatum* Loew, 1850 !
- *quadrispinosum* (Strobl, 1898) !
- *riparium* (Meigen, 1824) !
  = *praerosum* Loew, 1850
- *rivale* (Loew, 1869) !
- *suave* (Loew, 1859) !

- *xiphias* Meigen, 1824 !

Sciapodinae

Sciapus Zeller, 1842
- *albifrons* (Meigen, 1830) !
- *basilicus* Meuffels & Grootaert, 1990 !
- *bellus* (Loew, 1873) !
- *evanidus* Bezzi, 1898 !
- *frater* (Parent, 1927) ?
- *gracilipes* (Loew, 1871) ! N6
- *heteropygus* Parent, 1926 !
- *longulus* (Fallén, 1823) !
- *nervosus* (Lehmann, 1822) !
- *pallens* Wiedemann, 1830 !
- *platypterus* (Fabricius, 1805) !
- *spiniger* (Zetterstedt, 1859) !
- *venetus* Meuffels, 1976 ! [25]
- *wiedemanni* (Fallén, 1823) !
- *zonatulus* (Zetterstedt, 1843) !

Sympycninae

Anepsiomyia Bezzi, 1902
- *flaviventris* (Meigen, 1824) !

Campsicnemus Haliday, 1851
- *alpinus* (Haliday, 1833) !
- *compeditus* Loew, 1857 !
- *curvipes* (Fallén, 1823) !
- *loripes* (Haliday, 1832) !
- *lumbatus* Loew, 1857 !
- *mamillatus* Mik, 1869 !
- *marginatus* Loew, 1857 !
- *scambus* (Fallén, 1823) !
- *simplicissimus* Strobl, 1906 !
- *umbripennis* Loew, 1856 !
- *varipes* Loew, 1859 !

Lamprochromus Mik, 1878
- *bifasciatus* (Macquart, 1827) !

Sympycnus Loew, 1857
- *aeneicoxa* (Meigen, 1824) !
- *brevimanus* Loew, 1857 L
- *cirripes* (Haliday, 1851) !
  - = *cirrhipes* auct.
- *kowarzi* Parent, 1925 !
- *pulicarius* Fallén, 1823 !
  - = *annulipes* (Meigen, 1824)
  - = *desoutteri* Parent, 1925

- *spiculatus* Gerstäcker, 1864 !
- *strobli* Parent, 1927 !

Syntormon Loew, 1857
- *bicolorellum* (Zetterstedt, 1843) !
- *denticulatum* (Zetterstedt, 1843) !
- *macula* Oldenberg, 1927 ! [26]
- *metathesis* (Loew, 1850) !
  = *dobrogicus* Pârvu, 1985
- *monile* (Haliday in Walker, 1851) ? N7
- *pallipes* (Fabricius, 1794) !
- *sulcipes* (Meigen, 1824) !
- *zelleri* (Loew, 1850) L

Teuchophorus Loew, 1857
- *calcaratus* (Macquart, 1827) !
- *monacanthus* Loew, 1859 !
- *nigricosta* (von Roser, 1840) !
  = *signatus* (Zetterstedt, 1849)
- *simplex* Mik, 1880 !
- *spinigerellus* (Zetterstedt, 1843) !

Xanthochlorinae

Xanthochlorus Loew, 1857
- *galbanus* Chandler & Negrobov, 2008 !
- *ornatus* (Haliday, 1832) !
- *tenellus* (Wiedemann, 1817) ? N8

Notes

N1 *Chrysotus alpicola*, *Diaphorus vitripennis*, *Dolichopous agilis*, *Dolichopus flavipes*, *Hercostomus longiventris*, *Diostracus hygrophilus*, *Diostracus leucostomus*: doubtful presence as only mentioned in the Catalogue of Palaearctic Diptera (Negrobov 1991).

N2 *Medetera betulae*: doubtful presence. Naglis (2015) states: « The record of *M. betulae* from Switzerland (Basset, 1985) probably refers to *M. campestris* Naglis & Negrobov, 2014 ».

N3 *Medetera melancholica*, *M. saxatilis*, *M. vagans*: presence doubtful until confirmed by specimens.

N4 Naglis (2015) believed that the reported individuals of *Medetera peloria* belonged in reality to *M. muralis*, as records of the former species were only known from Russia. We can confirm that Naglis' assumption was incorrect based on new material that unequivocally belongs to *M. peloria*.

N5 *Rhaphium gravipes*: doubtful species; the only specimen seen was a female doubtfully considered as *R. gravipes*; this species needs to be confirmed with male specimens in the future.

N6 *Sciapus gracilipes*: the record from Switzerland (Bächli et al. 2014) is doubtful, since it is based on a female; this species needs to be confirmed with male specimens in the future.

N7 Naglis (1999) recorded *Syntormon monile* from Switzerland for the first time. As this is a species that is mainly encountered in coastal areas (Drake 2021, Pollet & Grootaert 2023), the Swiss records might rather refer to the related *S. submonilis* Negrobov, 1975. Moreover, both in the UK (Drake 2021) and Belgium (Pollet & Grootaert 2023), the latter species is considerably more common than *S. monile*. Unfortunately, Swiss material of this species has not been available for study thus far.

N8 *Xanthochlorus tenellus*: doubtful species until a specimen is checked on the basis of the identification key in Chandler & Negrobov (2008).

Species records

[1] 8M, 3F, FR, Châbles, Rive sud Lac de Neuchâtel, 31.5.1997, 430 m., leg. Association de la Grande Cariçaie (MCSN)
[2] 2M, FR, Châbles, Rive sud Lac de Neuchâtel, 15-17.5.1997, 430 m., leg. Association de la Grande Cariçaie (MCSN)
[3] 1F, JU, Courendlin, Le Tayment, Brise, 12.8.1988, 420 m., leg. Yves Gonseth (MHNN)
[4] 12M, GE, Chêne-Bourg, « Grojean », Campo di cavolfiori, 14.7.1997, 420 m., leg. Agroscope, Changins-Wädenswil,
[5] 1M, 1F, TI, Prugiasco, 7.6.2000, 561 m., leg. Anne-Sophie Genini (-Gamboni) (MCSN)
[6] 4M, 2F, TI, Prugiasco, 20.5.2000, 561 m., leg. Anne-Sophie Genini (-Gamboni) (MCSN)
[7] 1M, 1F, TI, Biasca Visnon, 6.5.2009, 306 m., leg. Valeria Trivellone (MCSN)
[8] 1M, NE, Les Bayards, 7.1871, leg. Edouard Piaget (MHNN)
[9] 2M, NE, Les Bayards, 7.1871, leg. Edouard Piaget (MHNN)
[10] 1F, NE, Les Ponts-de-Martel, 13.6.1981, leg. Jean-Paul Haenni (MHNN)
[11] 1M, AI, Weissbad, 11.7.1874, leg. Moritz Isenschmid (NMBE)
[12] 1M, JU, Chevenez, La Genevroie, 28.6.1988, 530 m., leg. Yves Gonseth (MHNN)
[13] 2M, FR, Châbles, Rive sud Lac de Neuchâtel, 31.5.1997, 430 m., leg. Association de la Grande Cariçaie (MCSN)
[14] 7M, FR, Châbles, Rive sud Lac de Neuchâtel, 31.5.1997, 430 m., leg. Association de la Grande Cariçaie (MCSN)
[15] 1M, TI, Lottigna, 24.6.2000, 561 m., leg. Anne-Sophie Genini (-Gamboni) (MCSN)
[16] 1F, TI, Bodio, 2.8.1988, leg. Jean-Paul Haenni (MHNN)
[17] 2F, NE, Les Verrières, 8.1872, leg. Edouard Piaget (MHNN)
[18] 2M, 1F, ZH, Steg, Tössstock, 16.5.2002, 1000 m., leg. Christian Epper (WSL)
[19] 3M, 1F, VS, Stalden, 23.4.2004, 900 m., leg. WSL (WSL)
[20] 2M, LU, Rothenburg, 30.4.2003, leg. Christian Epper (WSL)
[21] ZH, Sihlwald, 1996, leg. Karin Schiegg (WSL)
[22] 1M, 3F, ZH, Steg, Tössstock, 23.5.2002, 1000 m., leg. Christian Epper (WSL)
[23] 12M, 11F, GL, Schwanden, 16.6.1999, leg. Beat Wermelinger (WSL)
[24] 1M, BE, Burgdorf, 14.5., leg. Rudolf Ludwig Meyer-Dür (NMBE)
[25] 1M, TI, Prugiasco, progetto Deflussi minimi, Prateria xerica, 16.7.2000, 561 m., leg. Anne-Sophie Genini (-Gamboni) (MCSN)
[26] 1F, VD, Cheseaux-Noréaz, Rive sud Lac de Neuchâtel, 17-22.4.1997, 430 m., leg. Association de la Grande Cariçaie (MCSN)

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Lonchopteridae

Jean-Paul Haenni (1998 Checklist: Jean-Paul Haenni)
Last update: Jul 2024

Diagnosis: Small (2.0-5.0 mm) yellow to brownish black, often yellowish brown with darker pattern, strongly bristled flies; wings distinctive, elongate and apically pointed, with transverse veins only in basal part. Head with broadly separated eyes in both sexes and antennae with rather long arista; two pairs of fronto-orbital, one pair of ocellar, two pairs of vertical setae. Male genitalia large, folded under the abdomen. Identification is mainly based upon male genitalia and vestiture of legs.

Biology: Adults are common in moist places, alongside streams or ponds, in deciduous forests, swamps and damp meadows, but two common species may also occur in drier biotopes. They may be encountered practically all year long. One species (*Lonchoptera bifurcata* (Fallén, 1810)) is strictly parthenogenetic in Central Europe while the others are bisexual. Larvae edaphic, saprophagous or microphagous, in leaf litter, among plant debris and under pebbles along stony streams.

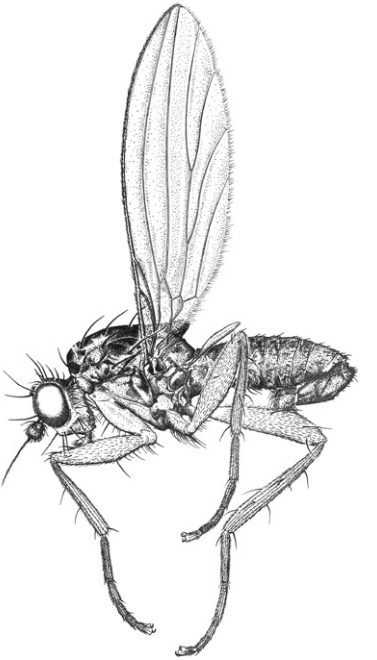
Nomenclature and classification: According to Fauna Europaea (Barták 2013), with an addition.

Number of species: CH: 9 (1998 Checklist: 7),
AT: 7, BE: 7, CZ: 9, DE: 7, FR: 8, GB: 7, HU: 5, IT: 7, NL: 7, SK: 9, Europe: 14, World: 68.

Level of faunistic knowledge in Switzerland: Good; 1-2 additional rare species may possibly occur in Switzerland. Lonchopteridae have been studied more thoroughly only in cantons Vaud – even if not for a faunistical survey – (Baud 1973), and Geneva (Merz 2012).

General references: Andersson (1991) [catalogue, Palaearctic species], Bährmann & Bellstedt (1988) [key, Central European species], Barták (1986) [key, European species], Barták (1998) [general, key to genera], Baud (1973) [biology], Barták (2009) [checklist CZ/SK], Barták (2013) [Fauna Europaea database], Beuk (2022) [key, European species], Drake (2002) [biology, ecology], Vaillant (1989) [general, taxonomy], Whittington & Beuk (2022) [key, European species].

References to the Swiss fauna: Baud (1973), Haenni (1989, 1998), Merz (2004, 2012), Merz et al. (2006), Zwick (2004). Old bibliographical records from 19th century are unreliable due to confusion in identifications before the use of male genital morphology for the recognition of species.



Lonchoptera bifurcata,
male (CMPD3, p. 14).

Checklist

Lonchoptera Meigen, 1803
- *bifurcata* (Fallén, 1810) !
  = *furcata* Fallén, 1823
- *fallax* de Meijere, 1906 !
- *lutea* Panzer, 1809 !
- *meijerei* Collin, 1938 L
- *pictipennis* Bezzi, 1899 !
- *scutellata* Stein, 1890 !
- *strobli* de Meijere, 1906 !
- *tristis* Meigen, 1824 !
- *vaillanti* Zwick, 2004 L N1

Notes

N1 The validity of the species *Lonchoptera vaillanti* is questioned by Barták (2009).

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Phoridae

Jean-Paul Haenni (1998 Checklist: Sabine Prescher)
Last update: Jul 2024

Diagnosis: 0.5-6 mm long flies, mostly dark coloured and of stout appearance, with characteristic wing venation (shortened costa, radial veins crowded to the costal margin, other veins thin, partly unattached basally). Head bearing conspicuous bristles, often shaggy, antenna with enlarged third segment and elongate arista, palpus one-segmented, eyes normally developed. Thorax often arched, legs strong, femora stout, hind metatarsus generally with hair palisades. Abdomen of generally 6 tergites before the genitalia, sternites absent. Male hypopygium variously modified. Females of some genera have reduced eyes and wings in relation with a parasitic way of life. Larvae are very variable in shape, according to their life-habits, with generally 12-segmented body, the segments bearing numerous projections.

Biology: Phorids are probably the most diverse Diptera family in terms of life-histories. Adults are frequently seen in many terrestrial habitats, where they feed on nectar, on fluids exuding from carrion and dung, etc. Larvae feed on decaying organic matter, dung, carrion, fungi, but some are phytophagous, some live on mycelium, and other are predators or parasites on various groups of invertebrates, including insect larvae and pupae, spiders, centipedes, millipedes, molluscs, earthworms, etc.

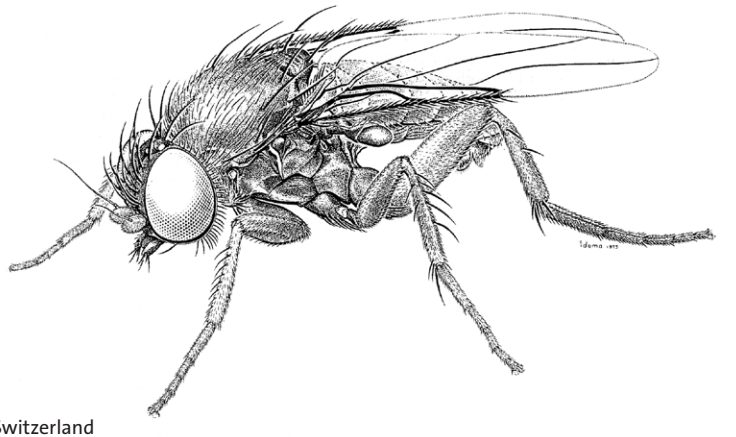
Nomenclature and classification: According to Disney (1983, 1989, 1991, 1994, 1998, 1999).

Number of species: CH: 216 (1998 Checklist: 184),
CZ: 230, DE: 259, GB: 341, NL: 260, FI: ~230, SK: 208, Europe: > 650, World: > 4100.

Level of faunistic knowledge in Switzerland: Poor; only limited study of the Swiss fauna has been undertaken until now and the occurrence of very numerous additional species is expected. The present list is largely based upon the one published in the preceding checklist (Prescher 1998), completed by the species added in the first, second and third published supplements (Merz et al. 2002, 2006, Bächli et al. 2014). Some changes concerning the Swiss fauna may have been overlooked or misinterpreted by the compiler of the present list – not a specialist of the family – who is responsible for any change from the initial 1998 list.

General references: Disney (1983, 1989) [identification keys, Britain], Disney (1991) [catalogue of Palaearctic species], Disney (1994) [general, key to world genera], Disney (1998) [general, key to Palaearctic genera], Schmitz (1938-1958), Schmitz &Beyer (1965-1974), Schmitz & Delage (1974-1981) [identification keys, Palaearctic region].

References to the Swiss fauna: Bächli et al. (2014), Disney (2001), Basset (1985), Disney & Prescher (2015), Haenni & Delarze (2010), Merz et al. (2002, 2006), Prescher (1998), Prescher & Haenni (2001), Prescher & Wermelinger (2001), Prescher et al. (2000, 2002), Schiegg et al. (1999), Schmitz (1926).



Phora occidentata,
male, not present in Switzerland
(MND2, p. 689).

Checklist

Aenigmatias Meinert, 1890
- *dorni* (Enderlein, 1908) !
- *franzi* Schmitz, 1950 !
- *lubbockii* (Verrall, 1877) !

Anevrina Lioy, 1864
- *curvinervis* (Becker, 1901) !
- *thoracica* (Meigen, 1804) !
- *unispinosa* (Zetterstedt, 1860) !
- *urbana* (Meigen, 1830) !

Borophaga Enderlein, 1924
- *agilis* (Meigen, 1830) !
- *carinifrons* (Zetterstedt, 1848) L
- *femorata* (Meigen, 1830) !
- *incrassata* (Meigen, 1830) !
- *irregularis* (Wood, 1912) !
- *subsultans* (Linnaeus, 1767) !

Chaetopleurophora Schmitz, 1922
- *erythronota* (Strobl, 1892) !
- *spinosissima* (Strobl, 1892) !

Conicera Meigen, 1830
- *dauci* (Meigen, 1830) !
- *floricola* Schmitz, 1938 !
- *schnittmanni* Schmitz, 1926 L
- *similis* (Haliday, 1833) !
- *tarsalis* Schmitz, 1920 !

- *tibialis* Schmitz, 1925 !

Diplonevra Lioy, 1864
- *abbreviata* (von Roser, 1840) !
- *concinna* (Meigen, 1830) L
- *crassicornis* (Meigen, 1830) !
- *florea* (Fabricius, 1794) !
- *funebris* (Meigen, 1830) !
- *glabra* (Schmitz, 1927) !
- *nitidula* (Meigen, 1830) !
- *pilosella* (Schmitz, 1927) !
- *sesquicornis* (Schmitz, 1927) !

Dohrniphora Dahl, 1898
- *cornuta* (Bigot in de la Sagra, 1857) !

Gymnophora Macquart, 1835
- *arcuata* (Meigen, 1830) !
- *integralis* Schmitz, 1920 !
- *nigripennis* Schmitz, 1926 L

Hypocera Lioy, 1864
- *mordellaria* (Fallén, 1823) !

Megaselia Rondani, 1856
- *abdita* Schmitz, 1959 !
- *aculeata* (Schmitz, 1919) !
- *aequalis* (Wood, 1909) !
- *affinis* (Wood, 1909) !
- *albicans* (Wood, 1908) !
- *albiclava* Schmitz, 1926 L
- *albocingulata* (Strobl, 1906) !
- *alpina* Schmitz, 1965 L
- *alticolella* (Wood, 1909) L
- *altifrons* (Wood, 1909) !
- *angusta* (Wood, 1909) L N1
  = *dimidia* Schmitz, 1926
- *annulipes* (Schmitz, 1921) !
- *aristica* (Schmitz, 1920) !
- *armata* (Wood, 1909) !
- *basseti* Disney, 2001 !
- *beckeri* (Wood, 1909) L
- *berndseni* (Schmitz, 1919) !
- *bifida* Disney, 1983 !
- *bovista* (Gimmerthal, 1848) L
- *brevicostalis* (Wood, 1910) !
- *breviseta* (Wood, 1912) L
- *breviterga* (Lundbeck, 1920) L
- *ciliata* (Zetterstedt, 1848) !
- *cinereifrons* (Strobl, 1910) L
- *clemonsi* Disney, 1984 !

- *consetigera* (Schmitz, 1925) L
- *costalis* (von Roser, 1840) ! N1
- *crassilla* Schmitz, 1926 L
- *crassipes* (Wood, 1909) L
- *curvicapilla* Schmitz, 1947 !
- *dahli* (Becker, 1901) !
- *densior* Schmitz, 1927 !
- *differens* Schmitz, 1948 !
  = *beyeri* Schmitz, 1965
- *discreta* (Wood, 1909) L
- *diversa* (Wood, 1909) !
- *drakei* Disney, 1984 !
- *errata* (Wood, 1912) !
- *flava* (Fallén, 1823) !
- *flavescens* (Wood, 1909) L
- *flavicans* Schmitz, 1935 !
- *flavicoxa* (Zetterstedt, 1848) !
- *frameata* Schmitz, 1927 !
- *fungivora* (Wood, 1909) L
- *furva* Schmitz, 1929 !
- *fusca* (Wood, 1909) L
- *fuscinervis* (Wood, 1908) !
- *fuscovariana* Schmitz, 1933 !
- *giraudii* (Egger, 1862) !
- *glabrifrons* (Wood, 1909) !
- *gregaria* (Wood, 1910) L
- *hirsuta* (Wood, 1910) !
- *hirticrus* (Schmitz, 1918) !
- *hirtiventris* (Wood, 1909) !
- *hortensis* (Wood, 1909) !
- *humeralis* (Zetterstedt, 1838) L
- *hyalipennis* (Wood, 1912) L
- *insons* (Lundbeck, 1920) !
- *intergeriva* Schmitz, 1948 !
- *involuta* (Wood, 1910) !
- *lata* (Wood, 1910) L
- *latifemorata* (Becker, 1901) !
- *latifrons* (Wood, 1910) L
- *latior* Schmitz, 1936 !
- *latipalpis* (Schmitz, 1921) !
- *limpachensis* Disney & Prescher, 2015 !
- *longipalpis* (Wood, 1910) L
- *lucifrons* (Schmitz, 1918) !
- *lutea* (Meigen, 1830) !
- *luteipes* (Schmitz, 1918) !
- *lutescens* (Wood, 1910) L

- *mallochi* (Wood, 1909) !
- *manicata* (Wood, 1910) !
- *manualis* (Schmitz, 1919) !
- *meconicera* (Speiser, 1925) !
- *meigeni* (Becker, 1901) L
- *melanocephala* (von Roser, 1840) !
- *minor* (Zetterstedt, 1848) !
- *nasoni* (Malloch, 1914) L
- *nectergata* Disney, 1989 !
- *nigra* (Meigen, 1830) !
- *nigriceps* (Loew, 1866) !
- *obscuripennis* (Wood, 1909) L
- *offuscata* (Schmitz, 1921) L
- *pallidizona* (Lundbeck, 1920) L
- *palmeni* (Becker, 1901) L
- *paludosa* (Wood, 1908) L
- *parva* (Wood, 1909) !
- *pectinifera* Schmitz, 1926 L
- *pectoralis* (Wood, 1910) L
- *pedatella* (Schmitz, 1926) L
- *perdistans* (Schmitz, 1924) !
- *picta* (Lehmann, 1822) L
- *pleuralis* (Wood, 1909) !
- *plurispinulosa* (Zetterstedt, 1860) !
- *posticata* (Strobl, 1898) !
- *praeacuta* (Schmitz, 1919) !
- *propinqua* (Wood, 1909) !
- *protarsalis* Schmitz, 1927 L
- *pseudogiraudii* (Schmitz, 1920) !
- *pulicaria* (Fallén, 1823) L N1
- *pumila* (Meigen, 1830) !
- *pusilla* (Meigen, 1830) !
- *pygmaea* (Zetterstedt, 1848) L
- *raruvesiculae* Buck & Disney, 2001 !
- *rochefortensis* Disney & Prescher, 2015 !
- *rubella* (Schmitz, 1920) !
- *rufa* (Wood, 1908) !
- *ruficornis* (Meigen, 1830) !
- *rufifrons* (Wood, 1910) !
- *rufipes* (Meigen, 1804) !
- *scalaris* (Loew, 1866) !
- *scutellaris* (Wood, 1909) !
- *setulipalpis* Schmitz, 1938 L
- *sihlwaldensis* Disney & Prescher, 2015 !
- *sordida* (Zetterstedt, 1838) !
- *spinicincta* (Wood, 1910) !

- *spinigera* (Wood, 1908) !
- *stigmatica* (Schmitz, 1920) !
- *subcarpalis* (Lundbeck, 1920) L
- *subfraudulenta* Schmitz, 1933 !
- *subnudipennis* (Schmitz, 1919) !
- *subpleuralis* (Wood, 1909) !
- *subtumida* (Wood, 1909) L
- *sulphuripes* (Meigen, 1830) L
- *superciliata* (Wood, 1910) L
- *surdifrons* (Wood, 1909) L
- *sylvatica* (Wood, 1910) !
- *tamilnaduensis* Disney, 1996 !
- *tarsalis* (Wood, 1910) L
- *tarsicia* Schmitz, 1926 L
- *tumida* (Wood, 1909) L N1
- *unguicularis* (Wood, 1909) !
- *variana* Schmitz, 1926 L
- *verna* Schmitz, 1932 L
- *verralli* (Wood, 1910) !
- *woodi* (Lundbeck, 1922) !
- *xanthozona* (Strobl, 1892) !

Menozziola Schmitz, 1927
- *schmitzi* (Menozzi, 1921) !

Metopina Macquart, 1835
- *braueri* (Strobl, 1880) !
- *crassinervis* Schmitz, 1920 !
- *galeata* (Haliday, 1833) !
- *heselhausi* Schmitz, 1914 !
- *oligoneura* (Mik, 1867) !
- *perpusilla* (Six, 1878) !
- *pileata* Schmitz, 1936 !
- *trochanteralis* Schmitz, 1953 L

Phalacrotophora Enderlein, 1912
- *berolinensis* Schmitz, 1920 !
- *fasciata* (Fallén, 1823) !

Phora Latreille, 1796
- *atra* (Meigen, 1804) L
- *dubia* (Zetterstedt, 1848) !
- *holosericea* Schmitz, 1920 !
- *horrida* Schmitz, 1920 L
- *pubipes* Schmitz, 1920 L
- *stictica* Meigen, 1830 !
- *tincta* Schmitz, 1920 !

Plectanocnema Schmitz, 1926
- *nudipes* (Becker, 1901) !

Pseudacteon Coquillett, 1907

- *brevicauda* Schmitz, 1925 !
- *formicarum* (Verrall, 1877) !

Spiniphora Malloch, 1909
- *bergenstammi* (Mik, 1864) !
- *dorsalis* (Becker, 1901) !
- *jugorum* (Schmitz, 1924) !
- *maculata* (Meigen, 1830) !

Triphleba Rondani, 1856
- *antricola* (Schmitz, 1918) L
- *aprilina* (Schmitz, 1918) !
- *aptina* (Schiner, 1853) L
- *autumnalis* (Becker, 1901) !
- *bicornuta* (Strobl, 1910) !
- *citreiformis* (Becker, 1901) L
- *dentata* Schmitz, 1943 L
- *distinguenda* (Strobl, 1892) !
- *dudai* (Schmitz, 1918) !
- *excisa* (Lundbeck, 1921) L
- *forfex* Schmitz, 1943 !
- *hentrichi* Schmitz, 1943 !
- *hyalinata* (Meigen, 1830) !
- *intermedia* (Malloch, 1908) !
- *nudipalpis* (Becker, 1901) !
- *papillata* (Wingate, 1906) !
- *trinervis* (Becker, 1901) !
- *tumidula* (Schmitz, 1918) !

Xenotriphleba Buck, 1997
- *dentistylata* Buck, 1997 !

Notes

N1 The species *Megaselia angusta* (Wood, 1909), *M. dimidia* (Schmitz, 1926), *M. pulicaria* (Fallén, 1823) and *M. tumida* (Wood, 1909), recorded from Switzerland according to the Catalogue of Palaearctic Diptera (Disney 1991), together with *M. costalis* (von Roser, 1840), recorded by Prescher et al. (2000) according to Merz et al. (2002), belong to the difficult *Megaselia pulicaria agg*. complex of species revised by Disney (1999). The Swiss material has not been re-examined after Disney's revision.

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Opetiidae

Peter J. Chandler (1998 Checklist: Peter J. Chandler)
Last update: Jul 2024

Diagnosis: Small slender bodied, all dark flies (2-5 mm), belonging to single genus *Opetia* formerly placed within family Platypezidae. Eyes holoptic in males, widely separated in females, antenna erect, with two-segmented arista. Wing venation characteristic, with very long narrow M_{1+2} fork, crossvein dm-m absent, no discal cell, cell cup short, tapered apically, anal lobe well developed in male, absent in female. Legs with unmodified tarsi. Immature stages unknown.

Biology: Adults are generally found in wooded habitats and aerial swarms of males have been observed. The only rearing report was from rotten birch wood (Speight et al. 1990).

Nomenclature and classification: According to Chandler (2001).

Number of species: CH: 1 (1998 Checklist: 1),
CZ: 1, DE: 1, ES: 1, FR: 1, GB: 1, IT: 1, FI: 1, SK: 1, Europe: 1, World: 5.

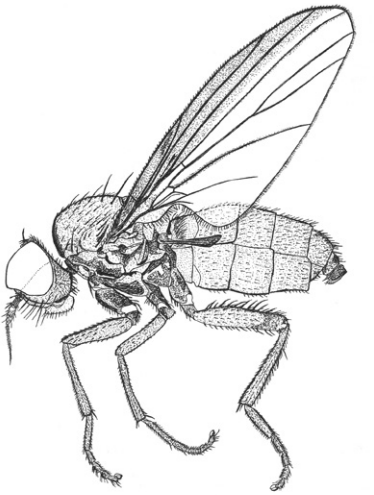
Level of faunistic knowledge in Switzerland: Good.

General references: Chandler (1991) [catalogue, Palaearctic species], Chandler (1997) [general], Chandler (2001) [general], Chandler (2005) [Fauna Europaea database].

References to the Swiss fauna: Chandler (1998), Merz (2012).

Checklist

Opetia Meigen, 1830
- *nigra* Meigen, 1830 !



Opetia nigra,
male (CMPD3, p. 18).

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Platypezidae

Peter J. Chandler (1998 Checklist: Peter J. Chandler)
Last update: Jul 2024

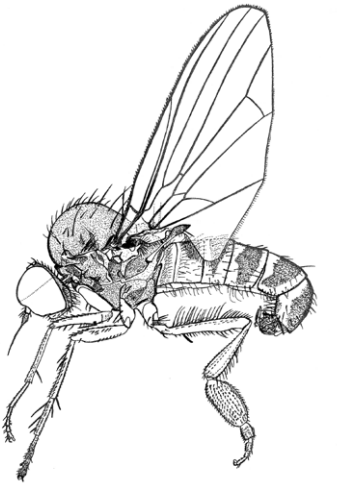
Diagnosis: Minute to medium sized (1.5-6 mm), slender to stout flies. Either entirely dark coloured in both sexes (*Microsania*, *Bolopus*, *Paraplatypeza atra* (Meigen, 1804)), or with male and female differing in colour, the male usually all black with the female lighter grey dusted (*Seri*, *Platypezina*) or often more brightly coloured than the male; one or both sexes with yellow, orange, grey or silvery markings, or entirely orange yellow in both sexes (*Agathomyia wankowiczii* (Schnabl, 1884)). Eyes holoptic in the male, dichoptic in female; antenna with third segment bearing a long, terminal arista with two basal aristomeres. Thorax with well-developed dorsocentral bristles; acrostichals uniserial or absent (Platypezinae); pleura except for propleuron bare. Wings clear or more or less darkened, a pterostigma present (*Microsania*, *Platypezina*) or only the costal margin between veins Sc and R_1 darkened; vein M_{1+2} forked (except in *Callomyia* and *Agathomyia*), with fork beyond crossvein dm-m, which is present except in *Microsania* where crossvein r-m is also lacking; cell cua ending in an acute angle, often elongate, vein beyond cell cua (CuA+CuP) reaching the wing margin; a conspicuous anal lobe present in both sexes. Legs relatively short, stout; first tarsomere of hind leg in *Microsania* and Callomyiinae long and cylindrical, sometimes swollen in the male, slender in the female, the subsequent tarsomeres cylindrical; in Platypezinae hind tarsus laterally compressed, especially in the female, with the third tarsomere the longest (except in *Protoclythia*). Female hind tarsi of Callomyiinae and Platypezinae with membranous soles.

Biology: The larval development of *Microsaniinae* is unknown. Probably all larvae of other subfamilies are mycophagous, developing in fungi. Most have saproxylic fungus hosts, except for *Lindneromyia* species, which develop in field mushrooms *Agaricus* spp. In Callomyiinae, *Callomyia* larvae develop on the surface of encrusting fungi, while *Agathomyia* develop internally in polypores. Some genera of Platypezinae (*Bolopus*, *Polyporivora*, *Seri*) also develop in polypores, while the larvae of other genera feed between the gills of agarics. Most species are monophagous or oligophagous. The adults are mainly found in woodland, running about on leaves of trees and shrubs where they feed on honeydew and other organic matter on the leaf surface. The males form epigamic aerial swarms; those of *Microsania* are known as « smoke flies » since they swarm in the smoke of forest fires (and other fires as well).

Nomenclature and classification: According to Chandler (2001).

Number of species: CH: 32 (1998 Checklist: 28),
AT: 16, BE: 20, CZ: 32, DE: 32, FR: 26, GB: 35, HU: 26, IT: 18, NL: 36, SK: 31, Europe: 52, World: ~250.

Level of faunistic knowledge in Switzerland: Good. A few other widely distributed species are expected to occur and the total Swiss fauna might be around 40 species.



Agathomyia falleni,
male (CMPD3, p. 28).

General references: Chandler (2001) [keys to European species], Chandler & Shatalkin (1998) [general account and keys to genera of adults and larvae], Reemer & de Jong (2016) [keys to Dutch and other western European species], Rotheray et al. (2004) [descriptions of larvae and puparia], Ståhls et al. (2014) [revision of *Agathomyia elegantula* group].

References to the Swiss fauna: Chandler (1998), Merz et al. (2002).

Checklist

Callomyiinae

Agathomyia Verrall, 1901
- *antennata* (Zetterstedt, 1819) !
- *boreella* (Zetterstedt, 1838) ! N1
- *cinerea* (Zetterstedt, 1852) !
- *collini* Verrall, 1901 !
- *falleni* (Zetterstedt, 1819) !
- *sexmaculata* (von Roser, 1840) !
- *unicolor* Oldenberg, 1928 !
- *vernalis* Shatalkin, 1981 !
- *viduella* (Zetterstedt, 1838) !
- *wankowiczii* (Schnabl, 1884) !

Callomyia Meigen, 1804
- *amoena* Meigen, 1824 ! N2
- *dives* (Zetterstedt, 1838) !

- *elegans* Meigen, 1804 !
- *speciosa* Meigen, 1824 !

Microsaniinae

Microsania Zetterstedt, 1837
- *pectipennis* (Meigen, 1830) !
- *straeleni* Collart, 1954 !
- *vrydaghi* Collart, 1954 !

Platypezinae

Bolopus Enderlein, 1932
- *furcatus* (Fallén, 1826) !

Lindneromyia Kessel, 1965
- *dorsalis* (Meigen, 1804) !
- *hungarica* Chandler, 2001 L

Paraplatypeza Kessel & Maggioncalda, 1968
- *atra* (Meigen, 1824) !
- *bicincta* (Szilády, 1941) !

Platypeza Meigen, 1803
- *aterrima* Walker, 1836 !
- *consobrina* Zetterstedt, 1844 !
- *fasciata* Meigen, 1804 !
- *hirticeps* Verrall, 1901 !

Polyporivora Kessel & Maggioncalda, 1968
- *boletina* (Fallén, 1815) !
- *ornata* (Meigen, 1838) !
- *picta* (Meigen, 1830) !

Protoclythia Kessel, 1949
- *modesta* (Zetterstedt, 1844) !
- *rufa* (Meigen, 1830) !

Seri Kessel & Kessel, 1966
- *obscuripennis* (Oldenberg, 1916) L

Excluded species

Agathomyia elegantula (Fallén, 1815)

Notes

N1 The Swiss record of *Agathomyia elegantula* cited in the 1998 Checklist (Chandler 1998) was based on a specimen in MNHN; following the revision of this species group by Ståhls et al. (2014), this specimen has now been re-identified as *A. boreella* (Zetterstedt, 1838).

N2 *Callomyia amoena*, as interpreted by Chandler (2001), comprises two widespread species, one of them yet to be described, and both of which are probably present in Switzerland (Ståhls & Chandler in preparation).

References

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Rotheray G.E., Chandler P.J. & Gilbert F. 2004. Final stage larvae and puparia of Platypezidae (Diptera). Insect Systematics & Evolution 35: 79-105.

Ståhls G., Miettinen O. & Rättel E. 2014. mtDNA COI in efficient use: clarifying taxonomy, linking morphologically discordant sexes and identifying the immature stages of *Agathomyia* Verrall flat-footed flies (Diptera: Platypezidae). Journal of Zoological Systematics and Evolutionary Research 53(2015) (3): 219-238.

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Syrphidae

Lisa Fisler (1998 Checklist: Alain Maibach, Pierre Goeldlin de Tiefenau & Henri G. Dirickx)
Last update: Jul 2024

Diagnosis: Adult Syrphidae are very diverse in terms of size, shapes and colours. They have large eyes in relation to the size of the head, and rather short antennae (with exceptions, e.g. *Chrysotoxum, Sphiximorpha,* which have very long antennae). They rarely have bristles (coarse long hairs) but can be covered with long and dense soft-looking hairs or appear rather hairless. They can be distinguished from other Diptera by the wing veins: in almost all species a false vein, the vena spuria, is present, as well as a false border (two outer cross-veins) along the posterior edge of the wing. Colours vary greatly. Many species mimic Hymenoptera (bumblebees, various wasps, bees) and can have striking yellow and black or large orange patterns, while others are more discrete and may be entirely black or brown or metallic green. In addition to their colours, the mimics often behave like Hymenoptera or pretend to have long antennae by waving their black forelegs under their heads.

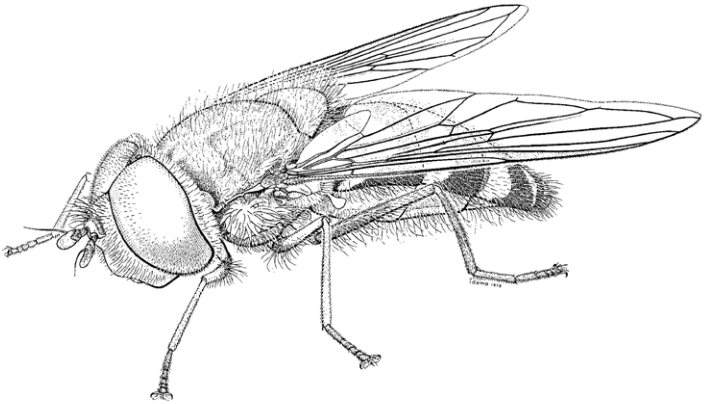
Biology: Adult Syrphidae, also called flower flies or hoverflies, are known for their characteristic hovering flight. They are mostly generalists and feed mainly on flower nectar and pollen, participating in the pollination process. The larvae, on the other hand, are very diversified in their needs and are more specialised. Some species are predatory (feeding on aphids and other soft-bodied insects), thus helping with biological control in crops, others are phytophagous (feeding on stems, bulbs, roots, leaves, etc.), or saprophagous (participating in the decomposition process, such as rotting wood or the accumulation of organic matter) or develop in fungi. Some species develop in the nests of social insects (ants, bumblebees or social wasps) and feed either on their waste, or directly on their brood. Many species are linked to very specific niches in all kinds of habitats, such as forests, meadows, marshes, gardens. It is because of this great diversity and specialisation in larval ecology that Syrphidae are often used as bioindicators of environmental quality.

Number of species: CH: 495 (1998 Checklist: 453),
AT: 430, BE: 341, CZ: 412, DE: 467, FR: 596, GB: 289, IT: 513, NL: 341, SI: 358, SK: 389,
Europe: > 900, World: ~6000

Nomenclature and classification: Adapted from different sources: Syrph the Net (Speight 2020), TAXREF (2024), Systema Dipterorum (Evenhuis & Pape 2022), Reverté et al. (2023). Microdontinae is considered here as a subfamily of Syrphidae. All genera are sorted alphabetically without reference to tribes or subfamilies for easier read.

Level of faunistic knowledge in Switzerland: Good.

General references: Bot & Van de Meuter (2019, 2023) [keys, species accounts, northwestern Europe], Bartsch et al. (2009a, 2009b) [key, species accounts, northern Europe], Láska & Bičík (2013) [larvae], Mengual et al. (2008, 2018), Moran et al. (2021), Rotheray & Gilbert 1989 [phylogeny, systematics], Speight (2020) [keys, species accounts, Europe]



Syrphus torvus,
male (MND2, p. 713).

References to the Swiss fauna: Bächli et al. (2014), Goeldlin de Tiefenau (1974), Goeldlin de Tiefenau & Speight (1997), Maibach et al. (1992, 1998), Merz et al. (2002), Merz et al. (2006), Pétremand et al. (2021, 2022), Schoch (1889).

Checklist

Anasimyia Schiner, 1864
- *contracta* Claussen & Torp, 1980 !
- *interpuncta* (Harris, 1778) ? N1
- *lunulata* (Meigen, 1822) !
- *transfuga* (Linnaeus, 1758) !

Baccha Fabricius, 1805
- *elongata* (Fabricius, 1775) !
  = *obscuripennis* Meigen, 1822 N2

Blera Billberg, 1820
- *fallax* (Linnaeus, 1758) !

Brachyopa Meigen, 1822
- *bicolor* (Fallén, 1817) !
- *bimaculosa* Doczkal & Dziock, 2004 ! N3
- *dorsata* Zetterstedt, 1837 !
- *grunewaldensis* Kassebeer, 2000 !
- *insensilis* Collin, 1939 !
- *obscura* Thompson & Torp, 1982 ! N4
- *panzeri* Goffe, 1945 !
- *pilosa* Collin, 1939 !

- *plena* Collin, 1939 ? N5
- *scutellaris* Robineau-Desvoidy, 1843 !
- *testacea* (Fallén, 1817) !
- *vittata* Zetterstedt, 1843 !

Brachypalpoides Hippa, 1978
- *lentus* (Meigen, 1822) !

Brachypalpus Macquart, 1834
- *chrysites* Egger, 1859 !
- *laphriformis* (Fallén, 1816) !
  = *meigeni* Schiner, 1857 N6
- *valgus* (Panzer, 1798) !

Caliprobola Rondani, 1845
- *speciosa* (Rossi, 1790) !

Callicera Panzer, 1809
- *aenea* (Fabricius, 1777) !
- *aurata* (Rossi, 1790) !
- *macquarti* Rondani, 1844 ! N7
- *spinolae* Rondani, 1844 ! N7

Ceriana Rafinesque, 1815
- *conopsoides* (Linnaeus, 1758) !

Chalcosyrphus Curran, 1925
- *eunotus* (Loew, 1873) !
- *femoratus* (Linnaeus, 1758) !
  = *curvipes* (Loew, 1854) N8
- *nemorum* (Fabricius, 1805) !
- *piger* (Fabricius, 1794) !
- *valgus* (Gmelin, 1790) !

Cheilosia Meigen, 1822
- *aerea* Dufour, 1848 !
  = *correcta* Becker, 1894
  = *gemina* Becker, 1894
  = *zetterstedti* Becker, 1894
- *ahenea* (von Roser, 1840) !
- *alba* Vujić & Claussen, 2000 ! N9
- *albipila* Meigen, 1838 !
- *albitarsis* (Meigen, 1822) !
- *alpestris* Becker, 1894 !
- *antiqua* (Meigen, 1822) !
- *aristata* Barkalov & Ståhls, 1997 !
- *barbata* Loew, 1857 !
  = *honesta* Rondani, 1868
- *bergenstammi* Becker, 1894 !
- *brachysoma* Egger, 1860 !
- *bracusi* Vujić & Claussen, 1994 !
- *caerulescens* (Meigen, 1822) !
- *canicularis* (Panzer, 1801) !

- *carbonaria* Egger, 1860 !
- *chloris* (Meigen, 1822) !
- *chrysocoma* (Meigen, 1822) !
- *clama* Claussen & Vujić, 1995 !
- *crassiseta* Loew, 1859 !
- *cynocephala* Loew, 1840 !
- *derasa* Loew, 1857 !
- *fasciata* Schiner & Egger, 1853 !
- *faucis* Becker, 1894 !
- *flavipes* (Panzer, 1798) !
- *fraterna* (Meigen, 1830) !
- *frontalis* Loew, 1857 !
- *gagatea* Loew, 1857 !
- *gigantea* (Zetterstedt, 1838) !
- *griseiventris* Loew, 1857 ! N10
- *grisella* Becker, 1894 !
- *grossa* (Fallén, 1817) !
- *hercyniae* Loew, 1857 !
- *himantopus* (Panzer, 1798) !
- *hypena* Becker, 1894 !
- *illustrata* (Harris, 1780) !
- *impressa* Loew, 1840 !
- *impudens* Becker, 1894 !
- *insignis* Loew, 1857 !
- *laeviseta* Claussen, 1987 !
- *laeviventris* Loew, 1857 !
- *lasiopa* Kowarz, 1885 !
- *laticornis* Rondani, 1857 !
  = *latifacies* Loew, 1857
- *latifrons* (Zetterstedt, 1843) !
- *lenis* Becker, 1894 !
  = *angustipennis* Becker, 1894
- *lenta* Becker, 1894 !
- *loewi* Becker, 1894 !
- *longula* (Zetterstedt, 1838) !
- *luteicornis* (Zetterstedt, 1838) ! N11 [1]
- *marginata* Becker, 1894 !
- *melanopa* (Zetterstedt, 1843) !
- *melanura* Becker, 1894 !
- *montana* Egger, 1860 !
  = *braueri* Becker, 1894
- *morio* (Zetterstedt, 1838) ! N11
  = *scanica* (Ringdahl, 1937) N11
- *mutabilis* (Fallén, 1817) !
  = *ruralis* (Meigen, 1822)
- *nebulosa* Verrall, 1871 !

- *nigripes* (Meigen, 1822) !
- *nivalis* Becker, 1894 !
- *orthotricha* Vujić & Claussen, 1994 !
- *pagana* (Meigen, 1822) !
- *pascuorum* Becker, 1894 !
- *pedemontana* Rondani, 1857 !
- *pedestris* Becker, 1894 L
- *personata* Loew, 1857 !
- *pictipennis* Egger, 1860 !
- *pilifer* Becker, 1894 !
- *proxima* (Zetterstedt, 1843) !
- *psilophthalma* Becker, 1894 !
- *pubera* (Zetterstedt, 1838) !
- *ranunculi* Doczkal, 2000 !
- *rhodiolae* Schmid, 2000 ? L N12
- *rhynchops* Egger, 1860 !
- *rufimana* Becker, 1894 !
- *sahlbergi* Becker, 1894 !
- *scutellata* (Fallén, 1817) !
- *semifasciata* Becker, 1894 !
- *soror* (Zetterstedt, 1843) !
  = *rufipes* auct. nec Preyssler, 1793 N13
- *subpictipennis* Claussen, 1998 !
- *tonsa* Sack, 1938 !
- *urbana* (Meigen, 1822) !
  = *praecox* (Zetterstedt, 1843)
- *uviformis* Becker, 1894 !
- *vangaveri* Timon-David, 1937 !
- *variabilis* (Panzer, 1798) !
- *velutina* Loew, 1840 !
- *venosa* Loew, 1857 !
- *vernalis* (Fallén, 1817) !
  = *rotundiventris* Becker, 1894 N14
  = *ruficollis* Becker, 1894 N14
- *vicina* (Zetterstedt, 1849) !
  = *nasutula* Becker, 1894
- *vujici* Claussen & Doczkal, 1998 !
- *vulpina* (Meigen, 1822) !

Chrysogaster Meigen, 1803
- *basalis* Loew, 1857 !
- *rondanii* Maibach & Goeldlin, 1995 !
- *solstitialis* (Fallén, 1817) !
- *virescens* Loew, 1854 !

Chrysotoxum Meigen, 1803
- *arcuatum* (Linnaeus, 1758) ! N15
  = *fasciatum* (Müller, 1764) N15

- *bicinctum* (Linnaeus, 1758) !
- *cautum* (Harris, 1778) !
- *elegans* Loew, 1841 !
- *fasciolatum* (De Geer, 1776) !
- *festivum* (Linnaeus, 1758) ! N15
  = *arcuatum* auct. nec Linnaeus, 1758
- *intermedium* Meigen, 1822 ! N16
- *lessonae* Giglio-Tos, 1890 ! N16
- *montanum* Nedeljković & Vujić, in Nedeljković et al., 2015 ! N3
- *octomaculatum* Curtis, 1837 !
- *vernale* Loew, 1841 !
- *verralli* Collin, 1940 !

Criorhina Meigen, 1822
- *asilica* (Fallén, 1816) !
- *floccosa* (Meigen, 1822) !
  = *Brachymyia floccosa* (Meigen, 1822)
- *pachymera* (Egger, 1858) !
- *ranunculi* (Panzer, 1804) !

Dasysyrphus Enderlein, 1938
- *albostriatus* (Fallén, 1817) !
- *eggeri* (Schiner, 1862) !
- *friuliensis* (van der Goot, 1960) !
- *hilaris* (Zetterstedt, 1843) !
- *lenensis* Bagatshanova, 1980 !
- *neovenustus* Soszyński & Mielczarek, 2013 ! N3
- *pauxillus* (Williston, 1887) !
- *pinastri* (De Geer, 1776) ! N17
  = *lunulatus* auct. nec Meigen, 1822 N18
- *postclaviger* (Stys & Moucha, 1962) ! N19
- *tricinctus* (Fallén, 1817) !
- *venustus* (Meigen, 1822) !
  = *lunulatus* (Meigen, 1822) N18

Didea Macquart, 1834
- *alneti* (Fallén, 1817) !
- *fasciata* Macquart, 1834 !
- *intermedia* Loew, 1854 !

Doros Meigen, 1803
- *profuges* (Harris, 1780) !
  = *conopseus* (Fabricius, 1775) N20

Epistrophe Walker, 1852
- *cryptica* Doczkal & Schmid, 1994 !
- *diaphana* (Zetterstedt, 1843) !
- *eligans* (Harris, 1780) !
- *flava* Doczkal & Schmid, 1994 !
  = *melanostomoides* auct. nec Strobl, 1880
- *grossulariae* (Meigen, 1822) !

- *leiophthalma* (Schiner & Egger, 1853) !
- *melanostoma* (Zetterstedt, 1843) !
  = *melanostomoides* (Strobl, 1880) N21
- *nitidicollis* (Meigen, 1822) !
- *obscuripes* (Strobl, 1910) ! N3
- *olgae* Mutin, 1993 !

Epistrophella Dušek & Láska, 1967
- *euchroma* (Kowarz, 1885) !
  = *Epistrophe euchroma* (Kowarz, 1885) N22
  = *Meligramma euchroma* (Kowarz, 1885)

Episyrphus Matsumura & Adachi, 1917
- *balteatus* (De Geer, 1776) !

Eriozona Schiner, 1860
- *syrphoides* (Fallén, 1817) !

Eristalinus Rondani, 1845
- *aeneus* (Scopoli, 1763) !
- *sepulchralis* (Linnaeus, 1758) !
- *taeniops* (Wiedemann, 1818) ! N23

Eristalis Latreille, 1804
- *alpina* (Panzer, 1798) !
- *arbustorum* (Linnaeus, 1758) !
- *cryptarum* (Fabricius, 1794) !
- *horticola* (De Geer, 1776) !
  = *lineata* (Harris, 1776) N24
- *intricaria* (Linnaeus, 1758) !
- *jugorum* Egger, 1858 !
- *nemorum* (Linnaeus, 1758) !
  = *interrupta* (Poda, 1761) N25
- *pertinax* (Scopoli, 1763) !
- *picea* (Fallén, 1817) !
- *rupium* Fabricius, 1805 !
  = *vitripennis* Strobl, 1893 N26
- *similis* (Fallén, 1817) !
  = *pratorum* Meigen, 1822 N27
- *tenax* (Linnaeus, 1758) !

Eumerus Meigen, 1822
- *alpinus* Rondani, 1857 !
  = *olivaceus* auct. nec Loew, 1848 N28
- *amoenus* Loew, 1848 !
- *arctus* van Steenis, 2021 ! N29
- *argyropus* Loew, 1848 !
- *clavatus* Becker, 1921 !
- *consimilis* Simić & Vujić, 1996 ! N3
- *emarginatus* Loew, 1848 ? N30
- *flavitarsis* Zetterstedt, 1843 !
- *funeralis* Meigen, 1822 !

= *tuberculatus* Rondani, 1857 N31
- *grandis* Meigen, 1822 !
- *hungaricus* Szilády, 1940 !
= *elaverensis* Séguy, 1961 N32
- *ornatus* Meigen, 1822 !
- *ovatus* Loew, 1848 !
- *pulchellus* Loew, 1848 !
- *sabulonum* (Fallén, 1817) ? N33
- *sinuatus* Loew, 1855 ! N34
- *sogdianus* Stackelberg, 1952 !
- *strigatus* (Fallén, 1817) !
- *tarsalis* Loew, 1848 !
- *tricolor* (Fabricius, 1798) !
- *uncipes* Rondani, 1850 !

Eupeodes Osten-Sacken, 1877
- *abiskoensis* (Dušek & Láska, 1973) ? N35
- *bucculatus* (Rondani, 1857) ! N36
= *latilunulatus* (Collin, 1931) N37
- *corollae* (Fabricius, 1794) !
- *flaviceps* (Rondani, 1857) !
- *goeldlini* Mazánek, Láska & Bičik, 1999 !
- *latifasciatus* (Macquart, 1829) !
- *lucasi* (Marcos-García & Láska, 1983) !
- *luniger* (Meigen, 1822) !
- *nielseni* (Dušek & Láska, 1976) !
- *nitens* (Zetterstedt, 1843) !
- *nuba* (Wiedemann, 1830) !
- *tirolensis* (Dušek & Láska, 1973) !

Eurimyia Bigot, 1883
- *lineata* (Fabricius, 1787) !
= *Anasimyia lineata* (Fabricius, 1787) N38

Fagisyrphus Dušek & Láska, 1967
- *cinctus* (Fallén, 1817) !
= *Melangyna cincta* (Fallén, 1817)
= *Meligramma cincta* (Fallén, 1817) N39

Ferdinandea Rondani, 1844
- *cuprea* (Scopoli, 1763) !
- *ruficornis* (Fabricius, 1775) !

Hammerschmidtia Schummel, 1834
- *ferruginea* (Fallén, 1817) !

Helophilus Meigen, 1822
- *affinis* Wahlberg, 1844 !
- *hybridus* Loew, 1846 !
- *pendulus* (Linnaeus, 1758) !
- *trivittatus* (Fabricius, 1805) !
= *parallelus* (Harris, 1776) N40

Heringia Rondani, 1856
- *heringi* (Zetterstedt, 1843) ! N41
  = *senilis* Sack, 1938 N41

Ischyroptera Pokorny, 1887
- *bipilosa* Pokorny, 1887 !

Lapposyrphus Dušek & Láska, 1967
- *lapponicus* (Zetterstedt, 1838) !
  = *Eupeodes lapponicus* (Zetterstedt, 1838) N42

Lejogaster Rondani, 1857
- *metallina* (Fabricius, 1777) !
- *tarsata* (Megerle in Meigen, 1822) !

Lejops Rondani, 1857
- *vittatus* (Meigen, 1822) L N43

Lejota Rondani, 1857
- *ruficornis* (Zetterstedt, 1843) !

Leucozona Schiner, 1860
- *glaucia* (Linnaeus, 1758) !
  = *Ischyrosyrphus glaucius* (Linnaeus, 1758) N44
- *inopinata* Doczkal, 2000 !
- *laternaria* (Müller, 1776) !
  = *Ischyrosyrphus laternarius* (Müller, 1776) N44
- *lucorum* (Linnaeus, 1758) !

Mallota Meigen, 1822
- *cimbiciformis* (Fallén, 1817) !
- *fuciformis* (Fabricius, 1794) !

Matsumyia Shiraki, 1949
- *berberina* (Fabricius, 1805) ! N45
  = *Brachymyia berberina* (Fabricius, 1805)
  = *Criorhina berberina* (Fabricius, 1805)

Megasyrphus Dušek & Láska, 1967
- *erraticus* (Linnaeus, 1758) ! N46
  = *Didea erratica* (Linnaeus, 1758)
  = *Eriozona erratica* (Linnaeus, 1758)
  = *Megasyrphus annulipes* (Zetterstedt, 1838)

Melangyna Verrall, 1901
- *arctica* (Zetterstedt, 1838) !
- *barbifrons* (Fallén, 1817) !
- *compositarum* (Verrall, 1873) ! N47
- *ericarum* (Collin, 1946) !
- *labiatarum* (Verrall, 1901) ! N47
- *lasiophthalma* (Zetterstedt, 1843) !
- *pavlovskyi* (Violovitsh, 1956) ! N48
- *quadrimaculata* (Verrall, 1873) ! N49
- *umbellatarum* (Fabricius, 1794) !

Melanogaster Rondani, 1857
- *aerosa* (Loew, 1843) !

- *hirtella* (Loew, 1843) !
- *nuda* (Macquart, 1829) !
- *parumplicata* (Loew, 1840) !

Melanostoma Schiner, 1860
- *certum* (Haarto & Ståhls, 2014) !
  = *dubium* auct. nec Zetterstedt, 1837 N50
- *mellarium* (Meigen, 1822) ! N51
- *mellinum* (Linnaeus, 1758) ! N50
  = *dubium* Zetterstedt, 1837
  = *pumicatum* (Meigen, 1838) N52
- *scalare* (Fabricius, 1794) !

Meligramma Frey, 1946 N53
- *cingulata* (Egger, 1860) !
- *guttata* (Fallén, 1817) !
- *triangulifera* (Zetterstedt, 1843) !

Meliscaeva Frey, 1946
- *auricollis* (Meigen, 1822) !
- *cinctella* (Zetterstedt, 1843) !

Merodon Meigen, 1803
- *aberrans* Egger, 1860 !
- *albifrons* Meigen, 1822 !
- *analis* Meigen, 1822 ! N54
  = *haemorrhoidalis* Sack, 1913
- *armipes* Rondani, 1843 !
- *atratus* (Oldenberg, 1919) ! N55
- *aureus* Fabricius, 1805 !
  = *aeneus* Meigen, 1822 N56
- *auripes* Sack, 1913 L N57
- *avidus* (Rossi, 1790) !
  = *spinipes* (Fabricius, 1794)
- *cinereus* (Fabricius, 1794) !
- *clavipes* (Fabricius, 1781) !
- *clunipes* Sack, 1913 ? L N58
- *equestris* (Fabricius, 1794) !
- *flavus* Sack, 1913 !
- *funestus* (Fabricius, 1794) !
- *gallicus* Vujić & Radenković in Vujić et al., 2012 ! N59
  = *crymensis* auct. nec Paramonov, 1925 N60
- *geniculatus* Strobl, 1909 L N61
- *loewi* van der Goot, 1964 !
- *moenium* Wiedemann in Meigen, 1822 ! N62
- *nigritarsis* Rondani, 1845 !
- *ruficornis* Meigen, 1822 !
- *rufus* Meigen, 1838 !

Mesembrius Rondani, 1857
- *peregrinus* (Loew, 1846) !

Microdon Meigen, 1803 N63
- *analis* (Macquart, 1842) !
  = *eggeri* Mik, 1897 N64
- *devius* (Linnaeus, 1761) !
- *miki* Doczkal & Schmid, 1999 !
- *mutabilis* (Linnaeus, 1758) ! N65
- *myrmicae* Schönrogge et al., 2002 ! N65

Milesia Latreille, 1804
- *crabroniformis* (Fabricius, 1775) !
- *semiluctifera* (Villers, 1789) !

Myathropa Rondani, 1845
- *florea* (Linnaeus, 1758) !

Myolepta Newman, 1838
- *dubia* (Fabricius, 1805) !
  = *luteola* (Gmelin, 1790)
- *obscura* Becher, 1882 !
- *vara* (Panzer, 1798) !
  = *helvetica* (Wainwright, 1911) N66

Neoascia Williston, 1886
- *annexa* (Müller, 1776) !
- *interrupta* (Meigen, 1822) !
- *meticulosa* (Scopoli, 1763) !
- *obliqua* Coe, 1940 !
- *podagrica* (Fabricius, 1775) !
- *tenur* (Harris, 1780) !
- *unifasciata* (Strobl, 1898) !

Neocnemodon Goffe, 1944
- *brevidens* (Egger, 1865) !
- *fulvimanus* (Zetterstedt, 1843) !
- *latitarsis* (Egger, 1865) !
- *pubescens* (Delucchi & Pschorn-Walcher, 1955) ! N67
- *vitripennis* (Meigen, 1822) !

Orthonevra Macquart, 1829
- *atlantica* Żóralski & Van de Meutter, 2024 ! N68
- *brevicornis* (Loew, 1843) ! N68
- *elegans* (Meigen, 1822) !
- *frontalis* (Loew, 1843) !
- *geniculata* (Meigen, 1830) !
- *intermedia* Lundbeck, 1916 !
- *nobilis* (Fallén, 1817) !
- *onytes* (Séguy, 1961) ! N69
- *plumbago* (Loew, 1840) ! N70

Paragus Latreille, 1804
- *absidatus* Goeldlin, 1971 !
- *albifrons* (Fallén, 1817) !
- *bicolor* (Fabricius, 1794) !

= *romanicus* Stănescu, 1992 N72
- *constrictus* Šimić, 1986 !
- *finitimus* Goeldlin, 1971 !
- *flammeus* Goeldlin, 1971 !
- *haemorrhous* Meigen, 1822 !
- *majoranae* Rondani, 1857 ! N71
- *pecchiolii* Rondani, 1857 !
= *Paragus majoranae* auct. nec Rondani, 1857 N71
- *punctulatus* Zetterstedt, 1838 !
- *quadrifasciatus* Meigen, 1822 !
- *testaceus* Meigen, 1822 !
= *romanicus* auct. nec Stănescu, 1992 N72
- *tibialis* (Fallén, 1817) !

Parasyrphus Matsumura, 1917
- *annulatus* (Zetterstedt, 1838) !
- *kirgizorum* (Peck, 1969) ! N73
- *lineola* (Zetterstedt, 1843) !
- *macularis* (Zetterstedt, 1843) !
- *malinellus* (Collin, 1952) !
- *nigritarsis* (Zetterstedt, 1843) !
- *punctulatus* (Verrall, 1873) !
- *tarsatus* (Zetterstedt, 1838) ! N73
- *vittiger* (Zetterstedt, 1843) ! N74

Parhelophilus Girschner, 1897
- *consimilis* (Malm, 1863) !
- *frutetorum* (Fabricius, 1775) !
- *versicolor* (Fabricius, 1794) !

Pelecocera Meigen, 1822
- *scaevoides* (Fallén, 1817) !
= *Chamaesyrphus scaevoides* (Fallén, 1817) N75
- *tricincta* Meigen, 1822 !

Pipiza Fallén, 1810
- *accola* Violovitsh, 1985 ! N19
- *austriaca* Meigen, 1822 !
- *carbonaria* Meigen, 1822 !
- *fasciata* Meigen, 1822 !
= *fenestrata* auct. nec Meigen, 1822 N76
- *festiva* Meigen, 1822 !
- *lugubris* (Fabricius, 1775) !
= *signata* Meigen, 1822 N77
- *luteitarsis* Zetterstedt, 1843 !
- *noctiluca* (Linnaeus, 1758) !
- *notata* Meigen, 1822 !
= *bimaculata* Meigen, 1822 N78
- *quadrimaculata* (Panzer, 1802) !

Pipizella Rondani, 1856

- *annulata* (Macquart, 1829) !
- *bispina* Šimić, 1987 !
- *divicoi* (Goeldlin, 1974) !
- *maculipennis* (Meigen, 1822) !
- *nigriana* (Séguy, 1961) !
- *pennina* (Goeldlin, 1974) !
- *speighti* Verlinden, 1999 L
- *viduata* (Linnaeus, 1758) !
- *virens* (Fabricius, 1805) !
- *zeneggenensis* (Goeldlin, 1974) !

Platycheirus Lepeletier & Serville, 1828
- *abruzzensis* (van der Goot, 1969) !
- *albimanus* (Fabricius, 1781) !
- *altomontis* Merlin & Nielsen in Nielsen, 2004 ! N19
- *ambiguus* (Fallén, 1817) !
- *amplus* Curran, 1927 !
- *angustatus* (Zetterstedt, 1843) !
- *angustipes* Goeldlin, 1974 !
- *aurolateralis* Stubbs, 2002 !
- *brunnifrons* Nielsen, 2004 !
- *caesius* Nielsen & Stuke in Nielsen, 2004 !
- *chilosia* (Curran, 1922) ! N19
- *clausseni* Nielsen, 2004 !
- *clypeatus* (Meigen, 1822) !
- *complicatus* (Becker, 1889) !
- *discimanus* Loew, 1871 !
- *europaeus* Goeldlin, Maibach & Speight, 1990 !
- *fasciculatus* Loew, 1856 !
- *fulviventris* (Macquart, 1829) !
- *goeldlini* Nielsen, 2004 !
- *immaculatus* Ôhara, 1980 !
- *jaerensis* Nielsen, 1971 !
- *manicatus* (Meigen, 1822) !
- *melanopsis* Loew, 1856 !
- *nielseni* Vockeroth, 1990 !
- *occultus* Goeldlin, Maibach & Speight, 1990 !
- *parmatus* Rondani, 1857 !
- *peltatus* (Meigen, 1822) !
- *perpallidus* Verrall, 1901 !
- *podagratus* (Zetterstedt, 1838) !
- *scambus* (Staeger, 1843) !
- *scutatus* (Meigen, 1822) !
- *speighti* Doczkal, Stuke & Goeldlin, 2002 !
- *splendidus* Rotheray, 1998 !
- *tarsalis* (Schummel, 1836) !
- *tatricus* Dušek & Láska, 1982 !

- *transfugus* (Harris, 1780) L N3

Pocota Lepeletier & Serville, 1828
- *personata* (Harris, 1780) ! N62

Portevinia Goffe, 1944
- *maculata* (Fallén, 1817) !

Psarus Latreille, 1804
- *abdominalis* (Fabricius, 1794) !

Pseudopelecocera Vujić & Radenković, 2018
- *latifrons* Loew, 1856 ? N79
  = *Pelecocera latifrons* Loew, 1856

Psilota Meigen, 1822
- *anthracina* Meigen, 1822 ? N80
- *atra* (Fallén, 1817) ! N81
- *exilistyla* Smit & Vujić, 2008 ! N3

Pyrophaena Schiner, 1860
- *granditarsa* (Forster, 1771) !
- *rosarum* (Fabricius, 1787) !

Rhingia Scopoli, 1763
- *borealis* Ringdahl, 1928 !
- *campestris* Meigen, 1822 !
- *rostrata* (Linnaeus, 1758) !

Riponnensia Maibach, Goeldlin de Tiefenau & Speight, 1994
- *splendens* (Meigen, 1822) !

Rohdendorfia Smirnov, 1924
- *alpina* Sack, 1938 !

Scaeva Fabricius, 1805
- *albomaculata* (Macquart, 1842) ! N82
- *dignota* (Rondani, 1857) !
- *mecogramma* (Bigot, 1860) !
- *pyrastri* (Linnaeus, 1758) !
- *selenitica* (Meigen, 1822) !

Sericomyia Meigen, 1803
- *bombiformis* (Fallén, 1810) !
  = *Arctophila bombiforme* (Fallén, 1810) N83
- *lappona* (Linnaeus, 1758) !
- *silentis* (Harris, 1778) !
- *superbiens* (Müller, 1776) !
  = *Arctophila superbiens* (Müller, 1776) N85

Spazigaster Rondani, 1843
- *ambulans* (Fabricius, 1798) !

Sphaerophoria Lepeletier & Serville, 1828
- *bankowskae* Goeldlin, 1989 !
- *batava* Goeldlin, 1974 !
- *boreoalpina* Goeldlin, 1989 !
- *chongjini* Bankowska, 1964 !
- *estebani* Goeldlin, 1991 !

- *fatarum* Goeldlin, 1989 !
- *infuscata* Goeldlin, 1974 !
- *interrupta* (Fabricius, 1805) !
- *laurae* Goeldlin, 1989 !
- *loewi* Zetterstedt, 1843 !
- *philanthus* (Meigen, 1822) !
- *rueppelli* (Wiedemann, 1830) !
- *scripta* (Linnaeus, 1758) !
- *shirchan* Violovitsh, 1957 !
- *taeniata* (Meigen, 1822) !
- *virgata* Goeldlin, 1974 !

Sphegina Meigen, 1822
- *clavata* (Scopoli, 1763) !
- *clunipes* (Fallén, 1816) !
- *cornifera* Becker, 1921 !
- *elegans* Schummel, 1843 !
- *latifrons* Egger, 1865 !
- *montana* Becker, 1921 !
- *platychira* Szilády, 1937 !
- *sibirica* Stackelberg, 1953 !
- *spheginea* (Zetterstedt, 1838) !
- *verecunda* Collin, 1937 !

Sphiximorpha Rondani, 1850
- *subsessilis* (Illiger in Rossi, 1807) !

Spilomyia Meigen, 1803
- *digitata* (Rondani, 1865) !
- *diophthalma* (Linnaeus, 1758) !
- *manicata* (Rondani, 1865) !
- *saltuum* (Fabricius, 1794) !

Syritta Lepeletier & Serville, 1828
- *flaviventris* Macquart, 1842 ! N5
- *pipiens* (Linnaeus, 1758) !

Syrphocheilosia Stackelberg, 1964
- *claviventris* (Strobl, 1910) !

Syrphus Fabricius, 1775
- *auberti* Goeldlin, 1996 !
- *nitidifrons* Becker, 1921 !
- *rectus bretoletensis* Goeldlin, 1996 ! N85
- *ribesii* (Linnaeus, 1758) !
- *torvus* Osten Sacken, 1875 !
- *vitripennis* Meigen, 1822 !

Temnostoma Lepeletier & Serville, 1828
- *apiforme* (Fabricius, 1794) !
- *bombylans* (Fabricius, 1805) !
- *meridionale* Krivosheina & Mamayev, 1962 ! N3
- *vespiforme* (Linnaeus, 1758) !

Trichopsomyia Williston, 1888
- *flavitarsis* (Meigen, 1822) !
- *joratensis* Goeldlin, 1997 !
- *lucida* (Meigen, 1822) !

Triglyphus Loew, 1840
- *primus* Loew, 1840 !

Tropidia Meigen, 1822
- *scita* (Harris, 1780) !

Volucella Geoffroy, 1762
- *bombylans* (Linnaeus, 1758) !
- *inanis* (Linnaeus, 1758) !
- *inflata* (Fabricius, 1794) !
- *pellucens* (Linnaeus, 1758) !
- *zonaria* (Poda, 1761) !

Xanthandrus Verrall, 1901
- *comtus* (Harris, 1780) !

Xanthogramma Schiner, 1860 N86
- *citrofasciatum* (De Geer, 1776) !
  = *festivum* (Linnaeus, 1758) N87
- *dives* (Rondani, 1857) !
- *laetum* (Fabricius, 1794) !
- *pedissequum* (Harris, 1778) !
- *stackelbergi* Violovitsh, 1975 !

Xylota Meigen, 1822
- *abiens* Meigen, 1822 !
  = *semulatra* (Harris, 1780) N88
- *caeruleiventris* Zetterstedt, 1838 ! N89
- *florum* (Fabricius, 1805) !
- *ignava* (Panzer, 1798) !
- *jakutorum* Bagatshanova, 1980 ! N89
  = *Xylota caeruleiventris* auct. nec Zetterstedt, 1838
- *meigeniana* Stackelberg, 1964 ! N3
- *segnis* (Linnaeus, 1758) !
- *sylvarum* (Linnaeus, 1758) !
- *tarda* Meigen, 1822 !
- *triangularis* Zetterstedt, 1838 !
- *xanthocnema* Collin, 1939 !

Excluded species

Cheilosia brachiptera Palma, 1863
Cheilosia brevipennis Becker, 1894
Cheilosia dombressonensis Becker in De Rougemont, 1898
Cheilosia imperfecta Becker, 1921
Cheilosia parvicornis Becker, 1894
Cheilosia plumbella Becker, 1894
Cheilosia rotundicornis Hellén, 1914

Cheilosia signaticornis Becker, 1894
Cheilosia varians Becker, 1889
Merodon annulatus (Fabricius, 1794) N90
Platycheirus sticticus (Meigen, 1822) L N91

Notes

N1 Tóth (1994b) mentions *Anasimyia interpuncta* in canton Luzern. The species is however out of its usual range and the record could not be confirmed yet.

N2 *Baccha obscuripennis* is synonymised with *Baccha elongata*, following Reemer et al. (2004).

N3 *Brachyopa bimaculosa*, *Chrysotoxum montanum*, *Dasysyrphus neovenustus*, *Eumerus consimilis*, *Epistrophe obscuripes*, *Platycheirus transfugus*, *Psilota exilistyla*, *Temnostoma meridionale*, *Xylota meigeniana* were published as new for Switzerland by Fisler et al. (2023).

N4 *Brachyopa obscura* was published as new for Switzerland by Pétremand et al. (2020).

N5 Presence of *Brachyopa plena* in Switzerland still to be confirmed. There is no other record since the putative ones in the 1998 Checklist.

N6 *Brachypalpus meigeni* is widely treated as a colour variation of *B. laphriformis*, following Speight (2020).

N7 *Callicera macquarti* and *Callicera spinolae* were published as new for Switzerland by Plichta & Fisler (2021).

N8 *Chalcosyrphus curvipes* is synonymised with *C. femoratus*, following Schmid (1995).

N9 *Cheilosia alba*: there are a couple of unpublished records from Switzerland, and Tissot et al. (2019) mention the species in France, a few km away from the Swiss border.

N10 Speight (2020) argues that *Cheilosia griseiventris* may or may not be a variant of *C. latifrons*. However, Bot & van de Meutter (2019) say the consensus is growing to consider it a separate species. It is therefore kept in the Checklist until further studies.

N11 *Cheilosia morio* (Zetterstedt, 1838) is meant sensu Barkalov: confusion remains in this complex concerning the validity of the species *Cheilosia scanica* and its separation from *C. morio*. *C. scanica* is here considered as a synonym, until further clarification. Yet the name *C. morio* was long thought to involve two taxa, and Bot & Van de Meutter (2023) now use the name *C. luteicornis* for the species often reffered to as « *C. morio* B », i.e. the one with the « bare face ». Both are present in Switzerland.

N12 *Cheilosia rhodiolae*: only the markings that the larvae left in the plant *Rhodiola rosea* are reported in Switzerland (Schmid 2007), but the species is confirmed from adjacent countries. However, Lair et al. (2021) now suggest the species is not genetically different from *C. semifasciata* which could lead to synonymy in the future.

N13 *Cheilosia rufipes* is synonymised with *C. soror*, following Speight & Sarthou (2006). However, in some recent works the name *ruffipes* with two « f » is used as the valid name for this species (e.g. Reverté et al. 2023).

N14 *Cheilosia rotundiventris* and *Cheilosia ruficollis* are synonymised with *C. vernalis*, following Ståhls et al. (2008).

N15 According to the International Code of Zoological Nomenclature, the name *Chrysotoxum arcuatum* should be the name in use for *Chrysotoxum fasciatum* (junior synonym of *C. arcuatum*). However, for a long time, the name *C. arcuatum* of authors was wrongly used for another species (*Chrysotoxum festivum*). To avoid confusion, some authors (including Speight 2020) keep the name *C. fasciatum* instead of using the name *C. arcuatum* sensu Linnaeus. We decide to follow the greater consensus and use *C. arcuatum*, bearing this confusion in mind.

N16 Two forms of *Chrysotoxum intermedium* were known. One form is now widely considered a species and called *C. lessonae* (Speight & Lebard 2022). Both species are confirmed in Switzerland. Records of *C. intermedium* from before 2022 should be considered with care.

N17 *Dasysyrphus pinastri* is here meant sensu Locke & Skevington (2013).

N18 *Dasysyrphus lunulatus* of authors nec Meigen has been synonymised with *D. pinastri*. *Dasysyrphus lunulatus* sensu Meigen has been synonymised with *D. venustus* (Locke & Skevington 2013). The name was also sometimes used for other difficult to identify species, namly *D. lenensis* and *D. pauxillus*.

N19 *Dasysyrphus postclaviger*, *Pipiza accola*, *Platycheirus altomontis* and *Platycheirus chilosia* were published as new for Switzerland by Fisler & Speight (2020).

N20 *Doros conopseus* is synonymised with *D. profuges*, following Chandler & McCullough (2004).

N21 *Epistrophe melanostomoides* is synonymised with *E. melanostoma*, following Doczkal & Schmid (1994).

N22 *Meligramma euchroma* (or *Epistrophe euchroma*) is here considered in the genus *Epistrophella*, following Rotheray & Gilbert (1989) and recent works (Mengual et al. 2023).
N23 *Eristalinus taeniops* was published as new for Switzerland by Dutto & Maistrello (2017) and Pollini et al. (2021).
N24 *Eristalis lineata* is here synonymised with *E. horticola* (and not the other way around), following Chandler & McCullough (2004).
N25 *Eristalis interrupta* is synonymised with *E. nemorum*, following Chandler & McCullough (2004).
N26 *Eristalis vitripennis* is synonymised with *E. rupium*, following Hippa et al. (2001).
N27 *Eristalis pratorum* is synonymised with *E similis*, following Nielsen (1999).
N28 *Eumerus olivaceus* of authors was synonymised with *E. alpinus*. The real *E. olivaceus* sensu Loew is endemic to Sicily (Grković et al. 2015).
N29 *Eumerus arctus* was published as new for Switzerland by Grković et al. (2021).
N30 *Eumerus emarginatus*: the specimen reported by Goeldlin (1974) from les Dévens could not be found and there were issues with the identification of this species in the past.
N31 *Eumerus tuberculatus* is synonymised with *E. funeralis*, following Speight (2020).
N32 *Eumerus elaverensis* is synonymised with *E. hungaricus*, following Ricarte et al. (2017).
N33 Presence of *Eumerus sabulonum* in Switzerland still to be confirmed. It was reported a few times in Switzerland, but the records which could be verified all turned out to be males of *E. tarsalis*, or females – which are not morphologically distinguishable from *E. tarsalis*.
N34 *Eumerus sinuatus* was published as new for Switzerland by Vujić & Šimić (1995) without reference to specific data and did not appear in the 1998 Checklist. Its presence was later confirmed by Fisler et al. (2023).
N35 Presence of *Eupeodes abiskoensis* in Switzerland still to be confirmed. *E. abiskoensis* is a normally nordic or nearctic species, and there are identification issues with this species (Speight 2020).
N36 *Eupeodes bucculatus* is called *E. frequens* in some recent works (e.g. Reverté et al. 2023).
N37 *Eupeodes latilunulatus* is synonymised with *E. bucculatus*, following Mazánek et al. (1998).
N38 The species *Anasimyia lineata* was placed in the genus *Eurimyia* by Skevington et al. (2019).
N39 *Fagisyrphus cinctus*: Following molecular analyses (Mengual 2008), we use the genus *Fagisyrphus* for this species sometimes placed in *Meligramma* or *Melangyna*.
N40 *Helophilus parallelus* is synonymised with *H. trivittatus*, following Vujić et al. (2002).
N41 Validity of taxonomic distinction between *Heringia senilis* and *H. heringi* unresolved (Claussen et al. 1994). According to the very few and inconsistent differences between the two species, we consider *H. senilis* a synonym of *H. heringi*, as already done by several authors including Van Veen (2010), until further studies.
N42 *Eupeodes lapponicus* is synonymised with *Lapposyrphus lapponicus*, following Mengual et al. (2018).
N43 *Lejops vittatus* is a species easily recognisable, but the specimen mentioned by Tóth (1994a) could not be found and there are no other records of this species.
N44 The genus *Ischyrosyrphus* is synonymised with *Leucozona*, following Álvarez Fidalgo et al. (2018).
N45 *Criorhina berberina* was recently placed in the new genus *Matsumyia* by Moran et al. (2021).
N46 *Megasyrphus erraticus* is sometimes placed in the genus *Eriozona*.
N47 Validity of taxonomic distinction between *Melangyna labiatarum* and *M. compositarum* unresolved (Bygebjerg 2011). They might be synonyms, but *M. labiatarum* is kept in the checklist until further studies.
N48 *Melangyna pavlovskyi* was published as new for Switzerland by Bisschop & Fisler (2022).
N49 *Meligramma quadrimaculata* was wrongly assigned to the genus *Meligramma* in the 1998 Checklist.
N50 In northern Europe, *Melanostoma dubium* sensu Zetterstedt was synonymised with *M. mellinum* while *M. dubium* of authors was synonymised with *M. certum* (Haarto & Ståhls 2014). However, it was not certain whether the central European *M. dubium* of authors also is a synonym of *M. certum* (Speight 2020). Analysis of swiss material now suggest they are probably the same species (Gunilla Ståhls pers. com. 2023).
N51 *Melanostoma mellarium* was published as new for Switzerland by Speight et al. (2015).
N52 *Melanostoma pumicatum* is considered a synonym of *M. mellinum*, but is taxonomically problematic (Speight et al. 2015).
N53 The species of *Meligramma* were sometimes included in the genus *Melangyna*.
N54 Differentiating between *Merodon constans* Widemann, 1822 and *M. analis* is only possible with the male genitalia (Vujić 2020a), but these structures proved variable in the specimens found in Switzerland. *M. analis* is added to the list until further studies.
N55 *Merodon atratus* was published as new for Switzerland by Šašić et al. (2016).

N56 *Merodon aeneus* is synonymised with *M. aureus*, following Vujić et al. (2020b).
N57 *Merodon auripes* was published as new for Switzerland by Vujić et al. (2012).
N58 There is only one mention of a male *Merodon clunipes* from Switzerland in Hurkmans (1993). The record could not be verified and is slightly out of its Mediterranean range. There is only one unlocalised record in France (Speight 2020).
N59 *Merodon gallicus* was published as new for Switzerland by Pétremand et al. (2021) and Pollini et al. (2021).
N60 *Merodon crymensis* is a synonym of *M. trebevicensis*, following Radenković et al. (2002). However, all specimens previously identified as *M. crymensis* so far turned out to be another closely related species, *M. gallicus*, described in 2012. *M. gallicus* has thus been confirmed for Switzerland, but not yet *M. trebevicensis*.
N61 *Merodon geniculatus*: recorded in Ticino by Tóth and Rezbanyai-Reser (2002). This Mediterranean species is also present in the south of France.
N62 *Merodon moenium* and *Pocota personata* were published as new for Switzerland by Speight et al. (2019).
N63 The subfamily Microdontinae is considered as another family « Microdontidae » by recent works (i.e. Speight 2020).
N64 *Microdon eggeri* is synonymised with *Microdon analis*, following Doczkal & Schmid (1999).
N65 *Microdon myrmicae* was confirmed by Speight & Sommaggio (2010). This cryptic species was described in 2002 by Schönrogge et al. (2002) and is not distinguishable from *M. mutabilis* at the adult stage. Records prior to 2002 should be considered with care. *Microdon mutabilis* was in turn confirmed by Speight et al. (2019).
N66 *Myolepta helvetica* is synonymised with *M. vara*, following Reemer et al. (2004).
N67 Another species, *Neocnemodon larusi* Vujić, 1999, is morphologically very similar to *N. pubescens*. It is not yet clear if *N. larusi* is also present in Switzerland.
N68 *Orthonevra brevicornis* is in fact two widespread species (*O. brevicornis* and *O. atlantica*), both of which occur in Switzerland (Żóralski & Van de Meutter 2024). All swiss specimens should be revised.
N69 *Orthonevra onytes* is possibly a synonym of *O. tristis* or *O. montana* (Speight 2020).
N70 *Orthonevra plumbago* was first cited by Goeldlin (1974), and more recently in la Grande Cariçaie (Fisler et al. 2021). However, upon second examination, the latter specimens could be *O. arcana*, a newly described species (Ricarte et al. 2022). Until further examination of these specimens as well as the first records, *O. plumbago* is kept in the list.
N71 The name *Paragus majoranae* has long been wrongly applied to the species now known as *P. pecchiolii* (*P. majoranae* of authors = *P. pecchiolii*). On top of that, *P. gorgus* was described in 1999, but was established as a junior synonym of *P. majoranae*, so there was – and still is – a lot of confusion with these species names (Sommaggio 2002). Both *P. pecchiolii* (= *majoranae* of authors) and *P. majoranae* (= *P. gorgus*) are present in Switzerland.
N72 *Paragus bicolor* and close species are in need of revision (Tot et al. 2018). Recent findings point towards a synonymy of *Paragus romanicus* with *P. bicolor*, and of *P. romanicus* of authors with *P. testaceus* (Kočić 2023), both of which occur in Switzerland (pers. comm. Tamara Tot).
N73 *Parasyrphus kirgizorum* is closely related to *Parasyrphus tarsatus*. The former was confirmed for Switzerland by Fisler et al. (2023) and closer examination of the male genitalia revealed both species found in Switzerland to correspond with the two species found in other parts of Europe (pers. comm. Libor Mazánek).
N74 *Parasyrphus vittiger* is called *P. relictus* in some recent works (Reverté et al. 2023).
N75 *Chamaesyrphus scaevoides* is synonymised with *Pelecocera scaevoides*, following Speight & Sarthou (2006).
N76 *Pipiza fenestrata* sensu Meigen is a junior synonym of *P. noctiluca*. *P. fenestrata* of recent authors however is a junior synonym of *P. fasciata* (Vujić et al. 2013).
N77 *Pipiza signata* was synonymised by Vujić et al. (2013) with *Pipiza lugubris*, but was previously mixed up with *Pipiza noctiluca/notata*-group.
N78 *Pipiza bimaculata* was synonymised by Vujić et al. (2013) with *Pipiza notata* but the name was also often wrongly attributed to *Pipiza noctiluca*.
N79 *Pseudopelecocera latifrons* was added in the 1998 Checklist by Tóth (1994b) under the name *Pelecocera latifrons*. Its presence in Switzerland could not be confirmed yet and there is no other record in Switzerland.
N80 The presence of *Psilota anthracina* in Switzerland needs confirmation, since the records found so far in the museums turned out to be either *P. atra* or *P. exilistyla*.

N81 *Psilota atra* was published as new for Switzerland by Pétremand et al. (2021).
N82 *Scaeva albomaculata* is a highly migratory species (Speight 2020).
N83 *Arctophila* is now considered a subgenus of Sericomyia, according to Skevington & Thompson (2012).
N84 *Syritta flaviventris* was published as new for Switzerland by Pollini et al. (2021).
N85 *Syrphus rectus bretolensis*: The status of this taxon needs further clarification. It is possibly only a variant of *Syrphus vitripennis* Meigen, 1822 (Ssymank & Lair 2014).
N86 The genus *Xanthogramma* is considered a synonym of *Philhelius* in some recent works (e.g. Reverté et al. 2023).
N87 *Xanthogramma festivum* is synonymised with *Xanthogramma citrofasciatum*, following Speight & Sarthou (2006).
N88 *Xylota semulatra* is synonymised with *X. abiens*, following Schmid (1995).
N89 The name *Xylota caeruleiventris* or « *X. coeruleiventris* » was often wrongly used for the species presently named *Xylota jakutorum* (Doczkal 2004). Both species are however present in Switzerland (Fisler et al. 2023).
N90 The type material of *Merodon annulatus* is lost and the description is not sufficient to know exactly what this species is (Speight et al. 2018).
N91 *Platycheirus sticticus* was wrongly identified by Goeldlin de Tiefenau & Speight (1997) (see 1998 Checklist comment N14) and there has been no proof of the presence of this species subsequently.

Species records

[1] 1F, VD, St-Livres, 17.3.2012, 680 m., leg. Jean-Louis Simon

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Pipunculidae

Jocelyn Claude (1998 Checklist: Marc De Meyer & Milan Kozánek)
Last update: Jul 2024

Diagnosis: Among the Diptera Brachycera, the family Pipunculidae is characterised by its large compound eyes, occupying almost the entire globular head. Their small size (2-12 mm), uniform dark appearance and rather cryptic behaviour allow Pipunculidae to remain unnoticed.

Biology: Adults are non-flower visitors and can be found in a wide variety of habitats (wetlands, forests, meadows, lawns...). In the larval stage, Pipunculidae are almost exclusively endoparasitoids of Auchenorrhyncha, notably of the families Cixiidae, Cercopidae, Flatidae, Fulgoridae, Delphacidae and Membracidae (Freytag 1985, Ferrar 1987, Kapoor et al. 1987, Skevington & Marshall 1997). This highly specialised developmental strategy is unique to this family of Diptera. The overdevelopment of the eyes by the enlarged ommatidia occupying the whole face of the head, as well as the ovipositor of females, strongly sclerotised like a sting, are a direct consequence of their behaviour. Only representatives of the genus *Nephrocerus* Zetterstedt, 1838, an exception in the Pipunculidae, parasitise the Diptera Tipulidae (Koenig & Young 2007, Kehlmaier & Floren 2010).

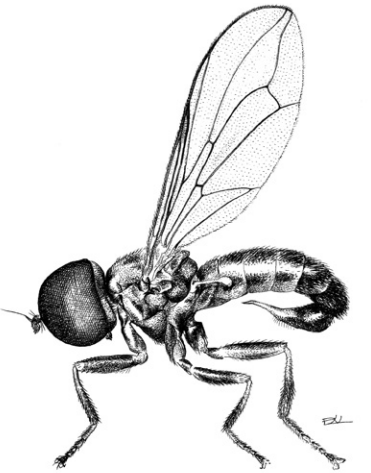
Nomenclature and classification: According to Motamedinia et al. (2021). Currently, 1484 species of Pipunculidae are known worldwide (Skevington 2021), divided into four subfamilies and 25 genera (and 3 fossils in Motamedinia et al. 2021), but the fauna is still considered poorly known and an estimate of over 2000 species is given by Skevington & Yeates (2001).

Number of species: CH: 110 (1998 Checklist: 83),
Europe: 215, World: 1484.
(Europe: Kehlmaier 2014, Kehlmaier et al. 2019, Kozánek et al. 2021, Withers & Claude 2021).

Level of faunistic knowledge in Switzerland: Medium.

General references: Ackland (1993), Albrecht (1990), De Meyer (1989, 1997), Dunk & Lauterer (1998), Földvári & De Meyer (2000), Grootaert & De Meyer (1986), Kehlmaier & Andrade (2016), Kehlmaier & Assmann (2008), Kehlmaier & De Meyer (2005), Kehlmaier (2005, 2006, 2008a, 2008b, 2010a, 2010b), Kuznetzov (1990, 1992), Withers & Claude (2021).

References to the Swiss fauna: De Meyer & Kozánek (1998), De Meyer et al. (2006), Dempewolf & Schiegg (1998), Földvári & De Meyer (2000), Merz et al. (2002, 2006), Kehlmaier (2005), Dirickx & Merz (2012), Claude et al. (2021), Claude et al. (in prep.).



Pipunculus aggr. *campestris*, female (CMPD3, p. 142).

Checklist

Chalarinae

Chalarus Walker, 1834
- *basalis* Loew, 1873 L
- *brevicaudis* Jervis, 1992 L
- *decorus* Jervis, 1992 !
- *elegantulus* Jervis, 1992 !
- *fimbriatus* Coe, 1966 !
- *holosericeus* (Meigen, 1824) !
  - = *perplexus* Jervis, 1992
- *indistinctus* Jervis, 1992 L
- *juliae* Jervis, 1992 !
- *leticiae* Kehlmaier, 2003 !
- *longicaudis* Jervis, 1992 !
- *proprius* Jervis, 1992 !
- *pughi* Coe, 1966 !
- *spurius* (Fallén, 1816) !

Verrallia Mik, 1899 N1
- *aucta* (Fallén, 1817) !
  - = *helvetica* Kuznetzov, 1992
- *beatricis* (Coe, 1966) !
- *fasciata* (Roser, 1840) !
  - = *setosa* (Verrall, 1901)
- *pilosa* (Zetterstedt, 1838) !
- *villosa* (von Roser, 1840) !

Nephrocerinae

Nephrocerus Zetterstedt, 1838
- *flavicornis* Zetterstedt, 1844 !
- *lapponicus* Zetterstedt, 1838 !
- *scutellatus* (Macquart, 1834) !

Pipunculinae

Beckerias Aczél, 1939
- *pannonicus* (Aczél, 1939) !

Cephalops Fallén, 1810
- *aeneus* Fallén, 1810 !
- *obtusinervis* (Zetterstedt, 1844) !
- *perspicuus* (de Meijere, 1907) !
- *signatus* (Becker, 1900) ? N2
- *varipes* (Meigen, 1824) !
  - = *Pipunculus varipes* Meigen, 1824
  - = *semifumosus* (Kowarz, 1887)
- *varius* (Cresson, 1911) !
- *vittipes* (Zetterstedt, 1844) !

Cephalosphaera Enderlein, 1936
- *furcata* (Egger, 1860) !

Claraeola Aczél, 1940
- *clavata* (Becker, 1897) L
- *halterata* (Meigen, 1838) L
- *melanostola* (Becker, 1897) L

Clistoabdominalis Skevington, 2001
- *dilatatus* (De Meyer, 1997) L
- *electus* (Hardy, 1947) L
- *fusculus* (Zetterstedt, 1844) !
- *tumidus* (De Meyer, 1997) L

Dasydorylas Skevington, 2001
- *holosericeus* (Becker, 1897) L
- *roseri* (Becker, 1897) L

Dorylomorpha Aczél, 1939

(*Dorylomorpha* s.str.)
- *confusa* (Verrall, 1901) !
- *extricata* (Collin, 1937) !
- *imparata* (Collin, 1937) !
- *rufipes* (Meigen, 1824) !

(*Dorylomyia* Albrecht, 1990)
- *beckeri* (Aczél, 1939) !
- *xanthocera* (Kowarz, 1887) !

(*Dorylomyza* Albrecht, 1990)
- *albitarsis* (Zetterstedt, 1844) L
- *anderssoni* Albrecht, 1979 !
- *haemorrhoidalis* (Zetterstedt, 1838) !

- *hungarica* (Aczél, 1939) !
- *lautereri* Albrecht, 1990 !
- *platystylis* Albrecht, 1979 !
- *stelviana* Kehlmaier, 2008 !

(*Pipunculina* Albrecht, 1990)

- *borealis* (Wahlgren, 1910) !
- *maculata* (Walker, 1834) !

Eudorylas Aczél, 1940

- *angustimembranus* Kozánek & Kwon, 1991 L
  = *kozaneki* De Meyer, 1993
- *arcanus* Coe, 1966 !
- *bermeri* Kehlmaier, 2005 L
- *coei* Kehlmaier, 2005 L
- *coloratus* (Becker, 1897) L
- *elephas* (Becker, 1898) !
- *furvulus* Collin, 1956 !
- *fuscipes* (Zetterstedt, 1844) !
- *gemellus* Kehlmaier, 2005 L
- *horridus* (Becker, 1898) !
- *inferus* Collin, 1956 !
- *jenkinsoni* Coe, 1966 !
- *kowarzi* (Becker, 1897) L
- *longifrons* Coe, 1966 !
- *montium* (Becker, 1898) !
- *nemoralis* Kozánek, 1993 L
- *obliquus* Coe, 1966 !
- *obscurus* Coe, 1966 !
- *pannonicus* (Becker, 1897) L
- *restrictus* Coe, 1966 !
- *ruralis* (Meigen, 1824) !
- *slovacus* Kozánek, 1993 !
- *subfascipes* Collin, 1956 !
- *subterminalis* Collin, 1956 !
- *terminalis* (Thomson, 1870) !
- *unicolor* (Zetterstedt, 1844) !
- *vonderdunki* Dempewolf, 1998 L
- *zermattensis* (Becker, 1898) !
- *zonatus* (Zetterstedt, 1849) !
- *zonellus* Collin, 1956 !

Microcephalops De Meyer, 1989

- *opacus* (Fallén, 1816) !
  = *vestitus* (Becker, 1900)

Pipunculus Latreille, 1802

- *calceatus* von Roser, 1840 !
- *campestris* Latreille, 1802 !
  = *spinipes* Meigen, 1830

= *thomsoni* Becker, 1898
- *elegans* Egger, 1860 ! [1]
- *fonsecai* Coe, 1966 ?
- *lenis* Kuznetzov, 1991 !
- *oldenbergi* Collin, 1956 !
- *omissinervis* Becker, 1889 L
- *tenuirostris* Kozánek, 1981 !
- *zugmayeriae* Kowarz, 1887 !

Semicephalops De Meyer, 1994
- *carinatus* (Verrall, 1901) !
- *straminipes* (Becker, 1900) !
- *subultimus* Collin, 1956 !
- *ultimus* (Becker, 1900) !

Tomosvaryella Aczél, 1939
- *cilifemorata* (Becker, 1907) !
- *cilitarsis* (Strobl, 1910) !
- *coquilletti* (Kertész, 1907) !
- *estebani* Withers & Claude, 2021 ! [2]
- *freidbergi* De Meyer, 1995 L
- *geniculata* (Meigen, 1824) !
- *kuthyi* Aczél, 1944 !
- *minima* (Becker, 1898) !
- *minuscula* (Collin, 1956) L
  = *magyarica* Földvari & De Meyer, 1999
- *mutata* (Becker, 1898) ! [3]
- *palliditarsis* (Collin, 1931) !
- *sylvatica* (Meigen, 1824) !

Excluded species

Eudorylas bartaki (Kozánek, 1993) N3
Eudorylas fascipes (Zetterstedt, 1844) N4

Notes

N1 The genus *Jassidophaga* is now considered a synonym of genus *Verrallia* (Motamedinia et al. 2021).
N2 De Meyer & Kozánek (1998) report the presence of *Cephalops signatus* (Becker, 1900) with a question mark in the 1998 Checklist; this species has yet to be confirmed in Switzerland.
N3 *Eudorylas bartaki* Kozánek, 1993 was withdrawn from the Swiss list, the two specimens identified by De Meyer et al. (1996) actually being *E. vonderdunki* Dempewolf, 1998 (Kehlmaier 2005, Merz et al. 2006).
N4 *Eudorylas fascipes* (Zetterstedt 1844) was withdrawn from the Swiss list, the specimen identifiied by De Meyer & Kozánek (1998) actually being *E. coloratus* (Becker, 1897) (Kehlmaier 2005, Merz et al. 2006).

Species records

[1] 1M, GE, Moulin de la Grave, 26.v.2005, Malaise Trap, leg. H. Boillat (MHNG)
[2] 1M, VS, 620 m, Leuk-Plantten, 30.5.2002, leg. B. Merz (MHNG)
[3] 1M, VS, 1900-2200 m, Visperterminen Gibidumsee, 28.viii.2001, leg. B. Merz & Landry (MHNG)

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Pseudopomyzidae

Gerhard Bächli (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small (about 2 mm) flies with mainly dark body and contrastingly yellow parts on head and legs. Head with three reclinate fronto-orbital setae and distinct vibrissae. First antennal flagellomere almost circular, arista dorsal, long and pubescent. Mesonotum with 1+3 dorsocentral setae. Scutellum with two pairs of scutellar setae. Wing hyaline, with two breaks in the costa. Male genitalia with epandrium elongate, trough-like. Female postabdomen with a cone-like ovipositor formed by fused sclerites of 7th segment.

Biology: The larvae of the only European species probably develop in rotting logs or under bark. Adults can be found attracted to the freshly cut and sappy stumps or logs of deciduous trees.

Nomenclature and classification: Merz (2007).

Number of species: CH: 1 (1998 Checklist: 1),
BE: 1, CZ: 1, DE: 1, IT: 1, NL: 1, UK: 1, Europe: 1, World: 19

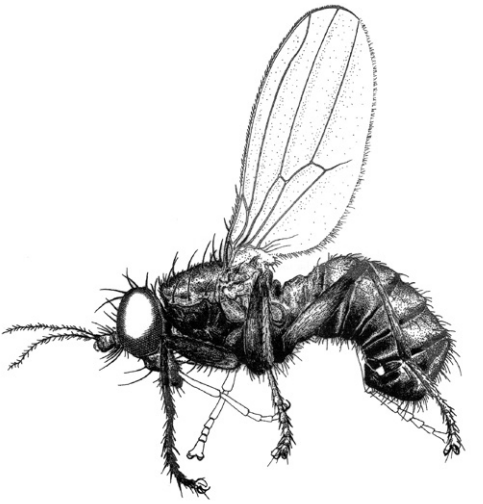
Level of faunistic knowledge in Switzerland: Excellent.

General references: Shatalkin (1995) [key], McAlpine & Shatalkin (1998) [general], Roháček (2012) [biology].

References to the Swiss fauna: Merz (1998).

Checklist

Pseudopomyza Strobl, 1893
- *atrimana* (Meigen, 1830) !



Pseudopomyza atrimana,
male (CMPD3, p. 156).

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Micropezidae

Gerhard Bächli (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small to large flies (3.0-16 mm) with narrow wing and slender long legs. Head small, round to elongate; antennae small, arista bare or pubescent; vibrissae and ocellar setae absent. Thorax narrow and somewhat flattened; postpronotal and anepisternal setae absent. Wing narrow and membrane clear or smoky; C without breaks; Sc complete and reaching C; R_{4+5} and M convergent; legs thin and long; preapical setae on tibiae absent. Male abdomen with sternal claspers, female with distinct ovipositor.

Biology: Biology is poorly known. Adults can be found in wet places, on flowers along water or on tree trunks. Larvae develop in decaying vegetable matter, in root nodules of various leguminous plants, in mushrooms or under the bark of decaying wood.

Nomenclature and classification: According to Ozerov (2007).

Number of species: CH: 10 (1998 Checklist: 10),
BE: 10, CZ: 12, DE: 9, IT: 9, NL: 9, UK: 10, Europe: 22, World: > 470.

Level of faunistic knowledge in Switzerland: Medium.

General references: Andersson (1989) [systematics, key], Ozerov (1991) [systematics, generic key], Roháček & Barták (1990) [key].

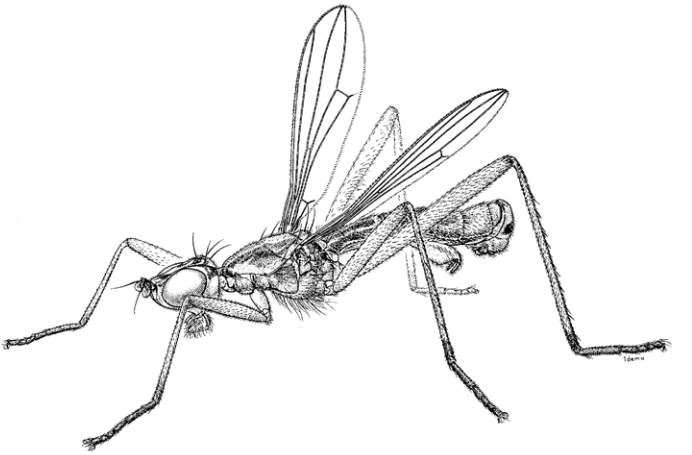
References to the Swiss fauna: Merz (1997, 1998).

Checklist

Calobatinae
Calobata Meigen, 1803
- *petronella* (Linnaeus, 1760) !

Cnodacophora Czerny, 1930
- *sellata* (Meigen, 1826) !

Neria Robineau-Desvoidy, 1830
- *cibaria* (Linnaeus, 1760) !
- *commutata* (Czerny, 1930) !
  = *nigricornis* auct. nec Zetterstedt, 1838
- *ephippium* (Fabricius, 1794) !
- *femoralis* (Meigen, 1826) !



Micropeza lineata,
male, not present in Switzerland (MND 2, p. 761).

Micropezinae

Micropeza Meigen, 1803
- *brevipennis* von Roser, 1840 !
- *corrigiolata* (Linnaeus, 1767) !
- *grallatrix* Loew, 1868 !

Taeniapterinae

Rainieria Rondani, 1843
- *calceata* (Fallén, 1820) !

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Tanypezidae

Gerhard Bächli (1998 Checklist: Gerhard Bächli)
Last update: Jul 2024

Diagnosis: Medium-sized (5.0-8.0 mm), slender, shining black flies; with silvery microtomentose patches on head and sides of thorax. Head rounded-hemispherical, frons narrow, in male distinctly narrower than in female, antenna small, arista pubescent, interfrontal setulae and vibrissa absent. Legs long and slender. Wing narrow, hyaline, unspotted; C with a weak subcostal break; Sc complete; R_1 setulose, R_{4+5} recurved distally and ending close to M, cells bm and cup present, the latter closed by a knee-like bent.

Biology: The larvae are saprophagous and probably develop in rotting wood or other decaying plant material. Adults can be found on low vegetation in wet deciduous forests, usually on the banks of rivers and brooks.

Nomenclature and classification: According to Roháček (2007).

Number of species: CH: 1 (1998 Checklist: 1),
BE: 1, CZ: 1, DE: 1, IT: 1, NL: 1, UK: 1, Europe: 1, World: 28.

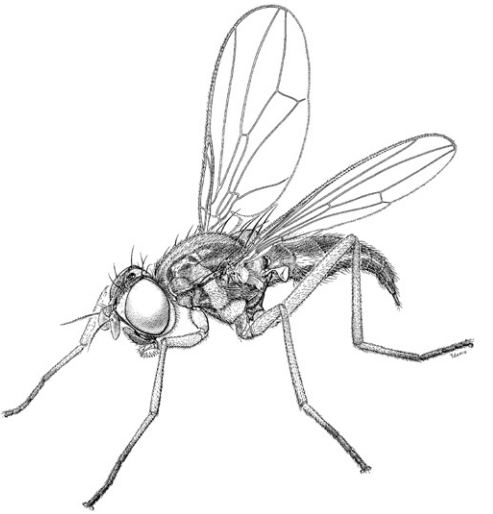
Level of faunistic knowledge in Switzerland: Excellent.

General references: Foote (1970), Roháček (1998, 2007).

References to the Swiss fauna: Bächli (1997, 1998).

Checklist

Tanypeza Fallén, 1820
- *longimana* Fallén, 1820 !



Tanypeza longimana,
female (MND2, p. 773).

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Strongylophthalmyiidae

Gerhard Bächli (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small (3.5-5.5 mm), slender blackish flies with yellowish legs and somewhat flattened thorax and abdomen. Head rounded, frons rather wide, occiput swollen. Arista short-pubescent, ocelli present; ocellar setae developed, postvertical (postocellar) setae divergent, two fronto-orbital setae; interfrontal setulae and vibrissae absent. Wing hyaline, often with diffuse and somewhat darkened spots. C with a subcostal break; Sc incomplete, not reaching C. Tibiae without dorsal preapical setae.

Biology: The larvae are xylosaprophagous and have been reared from under the bark of rotting logs from deciduous trees; puparia are formed in the bast under dead bark. The adults occur on low vegetation in wet deciduous forests near the breeding sites of the larvae.

Nomenclature and classification: According to Iwasa (1998).

Number of species: CH: 1 (1998 Checklist: 1),
CZ: 1, NL: 1, Europe: 2, World: 3

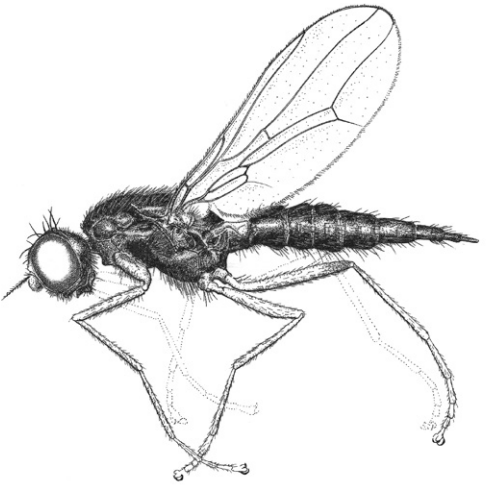
Level of faunistic knowledge in Switzerland: Good.

General references: Steyskal (1971) [key], Iwasa (1998) [general], Papp (2006).

References to the Swiss fauna: Merz (1998a, 1998b).

Checklist

Strongylophthalmyia Heller, 1902
- *ustulata* (Zetterstedt, 1847) !



Strongylophthalmyia ustulata,
female (CMPD3, p. 172).

References

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Merz B. 1998a. Die Megamerinidae, Strongylophthalmyiidae, Pseudopomyzidae, Chyromyidae und Camillidae der Schweiz (Diptera, Acalyptrata). Mitteilungen der Entomologischen Gesellschaft Basel 47(1997): 130-138.

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Megamerinidae

Gerhard Bächli (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Medium-sized (6.0-9.0 mm), elongate, shining black flies with reddish to yellow femora. Head relatively small, rounded; ocelli present; arista short-pubescent; ptilinal suture H-shaped; ocellar, postvertical (postocellar) and interfrontal setae absent, 0-1 fronto-orbital seta. Anterior part of thorax without setae. Wing narrowed basally, unicolourous, unmarked. Costa continuous, subcosta complete, reaching wing margin. Hind femur swollen and ventrally spinose. Abdomen narrowly attached to thorax.

Biology: Larvae live as predators under tree bark. Adults are usually found on or near logs or tree trunks.

Nomenclature and classification: According to Krivosheina et al. (1996).

Number of species: CH: 1 (1998 Checklist: 1),
BE: 1, CZ: 1, DE: 1, IT: 1, NL: 1, UK: 1, Europe: 1, World: 13.

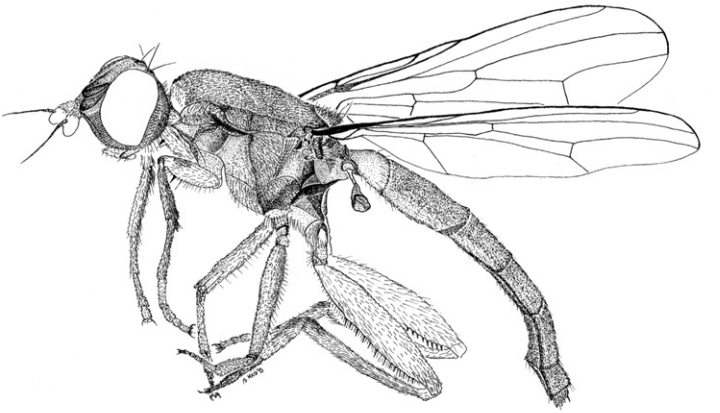
Level of faunistic knowledge in Switzerland: Good.

General references: Chandler (1977) [general], Krivosheina et al. (1996) [key].

References to the Swiss fauna: Merz (1998a, 1998b).

Checklist

Megamerina Rondani, 1861
- *dolium* (Fabricius, 1805) !



Megamerina dolium,
female (1998 Checklist, p. 233).

References

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Merz B. 1998b. 55. Megamerinidae. In: Merz B., Bächli G., Haenni J.-P. & Gonseth Y. (eds). Diptera - Checklist. Fauna Helvetica 1: 235. CSCF / SEG, Neuchâtel, 369 pp.

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Psilidae

Anatole I. Shatalkin (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

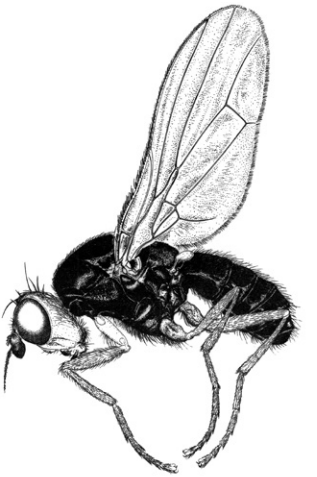
Diagnosis: Small- to medium-sized acalyptrate flies, body length 2.5-13 mm, black or yellow in body colour, wings clear or infuscated in some parts, rarely spotted along the longitudinal veins (Chinese species), frequently with slender and elongate body; head in lateral view triangular with receding face in Psilinae. Vibrissae absent, 0-1 notopleural setae; humeral, posthumeral and usually acrostichal setae absent, pleura without differentiated setae, only with setulae; tibiae without dorsal preapical seta. For more information on the morphology of flies, see Iwasa (1998), Merz & Haenni (2000), Buck (2010), Shatalkin & Merz (2010), Shatalkin (2021a). Well diagnosed externally on wing venation (vein C with a break at the distal end of the subcosta which is incomplete, and vein *CuA,* closing distal margin of cell *cua,* straight) and narrow wavy flexion line extending from subcostal break to posterior end of basal medial cell in base of wing. For egg morphology see Iwasa (1998) and Buck (2010).

Biology: The larvae are phytophagous, maggot-like, slender and smooth (Iwasa 1998). They are burrowing in stems, rootstocks and tubers, or live under the bark of trees. The carrot (rust) fly, *Chamaepsila rosae* (Fabricius) is a well-known pest of various umbelliferous and cruciferous plants including carrot, celery, parsnips, parsley, turnips and cabbage.

Nomenclature and classification: The family is usually included in the superfamily Diopsoidea (Nothyboidea), but its relationship with other families, as well as the composition of the superfamily, are debated. Traditionally, Psilidae were divided into two subfamilies: the plesiomorphic Chylizinae, with the only genus *Chyliza* and the derived Psilinae with species that are easily recognisable externally and which are difficult to confuse with representatives of other families. Shatalkin (2002) recently described a new relict genus *Belobackenbardia* with three species from South Africa. A fourth species of this genus was later described (Shatalkin 2021b). The genus was included in Psilidae as the third subfamily Belobackenbardiinae.

Number of species: CH: 36 (1998 Checklist: 31),
BE: 22, CZ: 38, DE: 22, FI: 27, FR: 38, IT: 20, NL: 25, UK: 27, Europe: 58, World: 340.
(BE: Claude & Beuk 2023, CZ; Barták & Carles-Tolrá 2009, DE: Roháček et al. 2016, FI: Kahanpää & Stuke 2014, FR: Whiters & Claude 2021, 2022, IT: Checklist Italiana Diptera 2005, NL: Van der Goot 1996, Beuk & van der Goot 2002, UK: Chandler 1998, 2019, World: Shatalkin 2021a).

Level of faunistic knowledge in Switzerland: Good. The Swiss list of expected species comprises *Chamaepsila andreji* (Shatalkin, 1996) and *Ch. rozkosnyi* Carles-Tolrá, 1993. These species were recently discovered in Northern Italy less than 50 km from the Swiss border (Shatalkin & Merz, 2010). Three more species recorded in neighbouring countries could be found in the fauna of Switzerland.



Chamaepsila nigricornis, male (CMPD3, p. 178).

General references: Iwasa (1998) [survey with key to Palaearctic genera], Merz & Haenni (2000) [dipterous morphological terms], Pape (2007) [Fauna Europaea], Buck (2010) [comprehensive survey of Psilidae], Shatalkin & Merz (2010) [survey of Swiss Psilidae].

References to the Swiss fauna: Merz (1998), Merz et al. (2002, 2006), Shatalkin & Merz (2010), Bächli et al. (2014).

Checklist

Chamaepsila Hendel, 1917 N1
- *atra* (Meigen, 1826) !
- *bicolor* (Meigen, 1826) !
- *buccata* (Fallén, 1826) !
  = *gracilis* Meigen, 1826
- *confusa* Shatalkin & Merz, 2010 ! N2
- *humeralis* (Zetterstedt, 1847) !
- *limbatella* (Zetterstedt, 1847) !
- *morio* (Zetterstedt, 1835) !
- *nigra* (Fallén, 1820) !
- *nigricornis* (Meigen, 1826) !
- *pallida* (Fallén, 1820) !
- *pectoralis* (Meigen, 1826) !
- *persimilis* (Wakerley, 1959) !
- *quadrilineata* (Strobl, 1898) !
- *rosae* (Fabricius, 1794) !

- *sardoa* (Rondani, 1876) !
- *unilineata* (Zetterstedt, 1847) !
- *villosula* (Meigen, 1826) !

(*Tetrapsila* Frey, 1925)

- *obscuritarsis* (Loew, 1856) !

Chyliza Fallén, 1820

- *annulipes* Macquart, 1835 !
- *leptogaster* (Panzer, 1798) !
  = *scutellata* Fabricius, 1798
- *nova* Collin, 1944 !
- *vittata* Meigen, 1826 !

(*Dasyna* Robineau-Desvoidy, 1830)

- *extenuata* (Rossi, 1790) ! N3

Imantimyia R.K. Frey, 1925 N4

- *albiseta* (Schrank, 1803) !
- *fulviventris* Meigen, 1826 !
- *nigrifrons* Macquart, 1835 !
- *sylvatica* Meigen, 1826 !

Loxocera Meigen, 1803 N4

- *aristata* (Panzer, 1801) !
  = *elongata* Meigen, 1826
  = *ichneumonea* sensu Hennig, 1941 nec Linnaeus, 1760
- *maculata* Rondani, 1876 !

(*Platystyla* Macquart, 1835)

- *hoffmannseggi* Meigen, 1826 !

Psila Meigen, 1803

- *fimetaria* (Linnaeus, 1760) !
- *helvetica* Shatalkin & Merz, 2010 !
- *merdaria* (Collin, 1944) !

(*Oxypsila* Frey, 1925)

- *abdominalis* (Schummel, 1844) !

Psilosoma Zetterstedt, 1860

- *audouini* (Zetterstedt, 1835) !
- *lefebvrei* (Zetterstedt, 1835) !

Notes

N1 Based on data on known taxa described inside *Psila* s.l. (see Shatalkin & Merz 2010 Tab. 1, p. 781), the group *Psila* s.str. + *Chamaepsila*, often considered in traditional classifications as a monophyletic taxon, is a polyphyletic association. To exclude polyphyly from the classification, Shatalkin & Merz (2010) proposed, following European tradition, to consider *Chamaepsila* as a taxon of the generic rank.

N2 Shatalkin & Merz (2010) described *Chamaepsila confusa* based on material from Switzerland and France. Later, Roháček et al. (2016) recorded this species from the Czech Republic (both Bohemia and Moravia), and a little earlier from Slovakia (Muránska planina Mts).

N3 A second species of the subgenus *Dasyna* was recently described from northern Iran: *Chyliza* (*Dasyna*) *qaradaghi* Khaghaninia & Gharajedaghi, 2014.

N4 Buck & Marshall (2006) proved that in the traditional classification of *Loxocera s.l.* ((*Loxocera* + *Imantimyia*) + *Platystyla*), the first group has a paraphyletic status. When included in the classification of *Tropeopsila* Shatalkin, 1983, *Loxocera* + *Imantimyia* become a polyphyletic group. To exclude

paraphyly and polyphyly from the classification, Shatalkin & Merz (2010) proposed increasing the rank of *Imantimyia* to the generic level. The new classification of *Loxocera s.l.* is as follows: ((*Loxocera* + *Platystyla*) + *Imantimyia*). Here *Platystyla* is considered a subgenus.

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Conopidae

Christian Monnerat & Jens-Hermann Stuke (1998 Checklist: Bernhard Merz & David K. Clements)

Last update: Jul 2024

Diagnosis: Small to large (3-20 mm) but usually 5-15 mm, slender to stout flies, often lustrous with a black and yellow (or golden, orange, reddish) pattern and wasp-like shape (e.g. *Conops*, *Leopoldius*, *Physocephala*) or more typical flies with reddish brown, grey or blackish colouration (e.g. *Myopa*, *Sicus, Thecophora*). Proboscis typically sclerotised and slender, bent once at base and often also in the middle, usually elongated and often longer than head (except *Abrachyglossum*, *Leopoldius*). Head with ocelli (Myopinae, Zodioninae, Dalmanninae) or ocelli absent (Conopinae), setation reduced in most species. Antenna sometimes elongated, with bare arista. Wing generally hyaline to slightly infuscated, or with distinct markings (*Myopa*, *Physocephala*). Venation characterised by a continuous costa, complete vein Sc, presence of crossvein BM-Cu and closed cell cup. Tibiae with dorsal preapical bristle in Myopinae. Sexual dimorphism mainly concerns shape and colouration of the abdomen (see e.g. *Conops, Leopoldius, Physocephala*), female abdomen of many species characterised by a peculiar ventral structure, the theca. Three subfamilies present in Switzerland, i.e. all those represented in Europe.

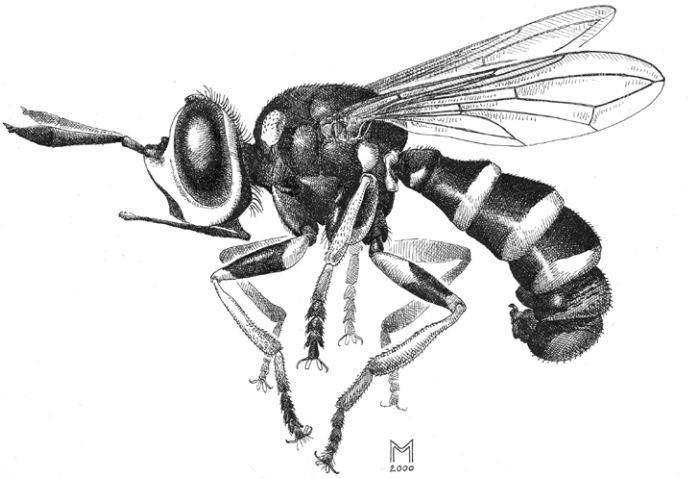
Biology: Conopidae develop as endoparasitoids, chiefly of adult bumblebees, bees and wasps. The female conopid deposits a single egg into the host's abdominal cavity using the special structures of her abdomen, including the theca, where present. The larva develops inside the host's body, to the detriment of the host, pupating when the host dies. Adult conopids feed on nectar and frequently visit flowers (for mating purposes as well). Species with very long mouthparts can exploit flowers with deep-lying nectar, such as Caprifoliaceae, Lamiaceae. Adults of most species prefer sunlit, warm and dry areas and can be found flying amongst flowers that are visited by their hosts, such as Asteraceae, Ericaceae, Salicaceae… Many Conopinae show a striking resemblance to bees, wasps and their allies, and are likely to be mimetic. Conopid adults are active from March to October, with different species peaking at differing times.

Nomenclature and classification: According to World Catalogue (Stuke 2017), with some minor changes.

Number of species: CH: 48 (1998 Checklist: 44),
BE: 40, CZ: 54, DE: 52, FR: 58, GB: 23, HU: 40, IT: 62, NL: 38, SK: 48, Europe: ~83, World: ~780.

Level of faunistic knowledge in Switzerland: Good.

General references: Chvála (1961, 1965) [keys, Czech and Slovak Republics], Martinez (2022a, 2022b, 2023) [keys, France], Stuke (2006) [keys, genera *Thecophora*], Stuke (2016) [key, genera *Physocephala*], Stuke (2017) [world catalogue], Stuke & Clements (2008) [key, genera *Myopa*].



Conops flavipes,
male (Maurizio Mei)

References to the Swiss fauna: Am Stein (1857), Bächli et al. (2014), Becker (1922), Blöchlinger (1990), Durrer & Schmid-Hempel (1995), Hüttinger (1978), Kröber (1915a, 1915b, 1915c, 1915d, 1915e, 1916a, 1916b, 1927, 1939), Meier & Suter (1989) Merz et al. (2002, 2006), Merz & Clements (1998), Merz & Monnerat (2012), Monnerat (2009), Müller & Schmid-Hempel (1992), Ringdahl (1957), Schmid-Hempel & Schmid-Hempel (1989, 1990), Schmid-Hempel & Stauffer (1998), Schoch (1889), Stuke (2016, 2017), Stuke & Clements (2008), Stuke & van Ecke (2009), Stuke & Kehlmaier (2008), Stuke et al. (2006), Tóth (1995, 1996a, 1996b), Tóth & Rezbanyai-Reser (1997, 1999, 2000, 2003, 2004), Tournier (1890), Villeneuve (1909), Warncke et al. (1993), Zimina (1975).

Checklist

Conopinae

Abrachyglossum Kröber, 1919
- *capitatum* (Loew, 1847) !

Conops Linnaeus, 1758
(*Conops* s.str.)
- *ceriaeformis* Meigen, 1824 !
- *flavipes* Linnaeus, 1758 !
- *quadrifasciatus* De Geer, 1776 !
- *scutellatus* Meigen, 1804 !
- *strigatus* Wiedemann in Meigen, 1824 !
- *vesicularis* Linnaeus, 1761 !

Leopoldius Rondani, 1843
- *brevirostris* (Germar, 1827) !

- *calceatus* (Rondani, 1857) !
- *coronatus* (Rondani, 1857) !
- *diadematus* Rondani, 1845 !
- *signatus* (Wiedemann in Meigen, 1824) !
- *valvatus* (Kröber, 1914) !

Physocephala Schiner, 1861
- *chrysorrhoea* (Meigen, 1824) !
- *nigra* (De Geer, 1776) !
- *pusilla* (Meigen, 1804) !
  = *lacera* (Meigen, 1824)
- *rufipes* (Fabricius, 1781) !
  = *laticincta* (Brullé, 1832)
- *vittata* (Fabricius, 1794) !
  = *fraterna* (Loew, 1847)

Dalmanniinae

Dalmannia Robineau-Desvoidy, 1830
- *aculeata* (Linnaeus, 1761) !
- *dorsalis* (Fabricius, 1794) !
- *marginata* (Meigen, 1824) !
- *punctata* (Fabricius, 1794) !

Myopinae

Melanosoma Robineau-Desvoidy, 1853
- *bicolor* (Meigen, 1824) !

Myopa Fabricius, 1775
- *buccata* (Linnaeus, 1758) !
- *dorsalis* Fabricius, 1794 !
- *fasciata* Meigen, 1804 !
- *hirsuta* Stuke & Clements, 2008 !
  = *strandi* auct. nec Duda, 1940
- *morio* Meigen, 1804 !
- *occulta* Wiedemann in Meigen, 1824 !
- *pellucida* Robineau-Desvoidy, 1830 !
  = *extricata* Collin, 1960
- *picta* Panzer, 1798 !
- *polystigma* Rondani, 1857 !
- *stigma* Meigen, 1824 !
- *tessellatipennis* Motschulsky, 1859 !
- *testacea* (Linnaeus, 1767) !
- *variegata* Meigen, 1804 !
- *vicaria* Walker, 1849 !

Myopotta Zimina, 1969
- *rubripes* (Villeneuve, 1909) !

Sicus Scopoli, 1763
- *abdominalis* Kröber, 1915 !

- *ferrugineus* (Linnaeus, 1760) !
- *nigritarsis* Zimina, 1975 !

Thecophora Rondani, 1845
- *atra* (Fabricius, 1775) !
- *bimaculata* (Preyssler, 1791) !
- *cinerascens* (Meigen, 1804) !
  = *pusilla* (Meigen, 1824)
- *distincta* (Wiedemann in Meigen, 1824) !
  = *melanopa* Rondani, 1857
- *fulvipes* (Robineau-Desvoidy, 1830) !

Zodion Latreille, 1796
- *cinereum* (Fabricius, 1794) !
  = *notatum* (Meigen, 1804)
- *kroeberi* Szilády, 1926 !
  = *carceli* auct. nec Robineau-Desvoidy, 1830

Excluded species

Conops silaceus Wiedemann in Meigen, 1824 N1
Physocephala truncata (Loew, 1847) N2
Physocephala variegata (Meigen, 1824) N3

Notes

N1 *Conops silaceus* was mentioned by Escher-Kündig from Promontogno in Val Bregaglia (Schoch 1889). In the absence of a reference specimen, this species has not been included in the list pending confirmation.

N2 *Physocephala truncata* was mentioned by Frey-Gessner from Valais [Wallis] and by Killias from Flims (Schoch 1889). In the absence of a reference specimen, this species has not been included in the list pending confirmation.

N3 *Physocephala variegata* was mentioned by Frey-Gessner from Geneva [Genf] (Schoch 1889). In the absence of a reference specimen, this species has not been included in the list pending confirmation.

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Lonchaeidae

Iain MacGowan (1998 Checklist: Bernhard Merz & Gerhard Bächli)
Last update: Jul 2024

Diagnosis: European Lonchaeidae are small, stout-bodied, setulose acalyptrate flies (body length: 3-6 mm) with broad wings, body usually shiny blue-black; head wide and high; thorax broad; abdomen broad and flat; tibiae without strong setae; wing usually hyaline, occasionally slightly fumose but never patterned; halter invariably black. The single European species in the genus *Lamprolonchaea* Bezzi, 1920 (not yet recorded from Switzerland) has a metallic blue-green body colour. Lonchaeidae always have black halteres and lack setae on the shaft of tibiae, they superficially resemble some small Muscidae but are separable by the absence of a complete transverse suture on the mesonotum. They are sometimes also confused with Agromyzidae, but differ in having a longer cell *dm* (shorter than distal section of vein *M* in Agromyzidae) and with black, shiny species of Lauxaniidae but these have 2 pairs of lateral setae on the head and usually white halteres. Female Lonchaeidae with their sclerotized telescopic ovipositor have given rise to the vernacular name of the family « lance flies ».

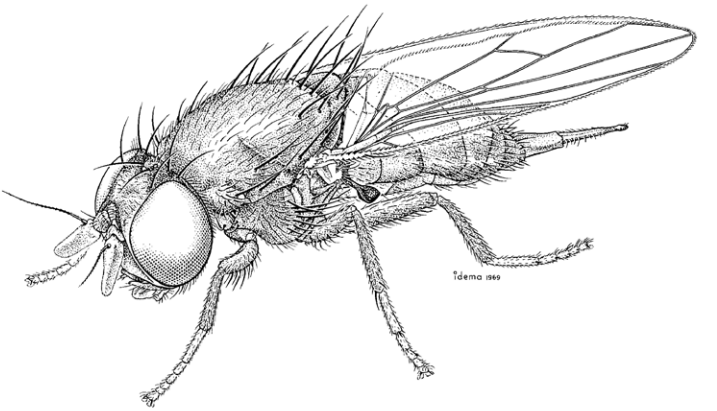
Biology: Adults of *Lonchaea* Fallén, 1820 are predominantly associated with woodland environments where the larvae are almost exclusively saproxylic, developing under the bark or in the decaying heartwood of fallen trees. Many *Dasiops* Rondani, 1856 species also develop in this dead wood habitat but others develop in plant stems or form galls on grasses. The larvae of several *Earomyia* Zetterstedt, 1842 species feed on the seeds within conifer cones whilst another group is associated with flower heads and stems of herbaceous plants. *Priscoearomyia* Morge, 1963 and *Chaetolonchaea* Czerny, 1934 adults are mainly associated with meadows and grasslands where the larvae utilise plant stems or bulbs. Of the two European *Silba* Macquart, 1851 species, *S. fumosa* breeds in a wide variety of decaying plant material, while *S. adipata* (the black fig-fly) is a pest of cultivated figs.

Adult lonchaeids are unusual amongst acalyptrates in that they form aerial mating swarms and such behaviour has been observed in all European genera. The large eyes and broad thorax, containing large flight muscles, are an adaptation for this form of mating behaviour. Otherwise, lonchaeids are often relatively slow-moving, females usually being observed, or captured, at their preferred oviposition sites, males being less frequently encountered, unless obtained from reared material.

Nomenclature and classification: Nomenclature and classification follow MacGowan (2023). The ten genera of Lonchaeidae are classified in two subfamilies. In Europe, the following genera are present: Dasiopinae – *Dasiops*. Lonchaeinae – *Priscoearomyia*, *Chaetolonchaea*, *Earomyia*, *Lamprolonchaea*, *Lonchaea* and *Silba*.

Number of species: CH: 49 (1998 Checklist: 31),
BE: 46, CZ: 61, DE: 34, FR: 52, IT: 23, NL: 34, UK: 51, Europe: 107, World: 611.

Level of faunistic knowledge in Switzerland: Good.



Lonchaea polita,
female, not present in Switzerland (MND2, p. 791).

General references: Morge (1963) [key], MacGowan & Rotheray (2008), MacGowan (2019), MacGowan (2023).

References to the Swiss fauna: Merz & Bächli (1998), Merz et al. (2006), MacGowan et al. (2007), Bächli et al. (2014), MacGowan & Bächli (2016).

Checklist

Dasiopinae

Dasiops Rondani, 1856
- *appendiculus* Morge, 1959 !
- *calvus* Morge, 1959 !
- *facialis* (Collin, 1953) !
- *latifrons* (Meigen, 1826) !
- *mucronatus* Morge, 1959 !
- *solivagus* Morge, 1959 !

Lonchaeinae

Chaetolonchaea Czerny, 1934
- *dasyops* (Meigen, 1826) !
- *pallipennis* (Zetterstedt, 1855) !

Earomyia Zetterstedt, 1842
- *crystallophila* (Becker, 1895) L N1
- *impossibile* Morge, 1959 !
- *lonchaeoides* Zetterstedt, 1848 !

- *schistopyga* Collin, 1953 !
- *viridana* (Meigen, 1826) !

Lonchaea Fallén, 1820
- *affinis* Malloch, 1920 !
- *albitarsis* Zetterstedt, 1837 !
- *bruggeri* Morge, 1967 !
- *bukowskii* Czerny, 1934 ! N2
- *caledonica* MacGowan & Rotheray, 2000 !
- *carpathica* Kovalev, 1974 !
- *caucasica* Kovalev, 1974 !
- *chorea* (Fabricius, 1781) !
- *collini* Hackman, 1956 !
- *contigua* Collin, 1953 !
- *contraria* Czerny, 1934 !
- *deutschi* Zetterstedt, 1837 !
- *fugax* Becker, 1895 !
- *helvetica* MacGowan, 2002 !
- *hirticeps* Zetterstedt, 1837 !
- *hyalipennis* Zetterstedt, 1847 !
- *lateralis* MacGowan, 2016 !
- *mallochi* MacGowan & Rotheray, 2000 !
- *nitens* (Bigot, 1885) !
- *nitidissima* Kovalev, 1978 !
- *palposa* Zetterstedt, 1847 !
- *patens* Collin, 1953 !
- *peregrina* Becker, 1895 !
- *postica* Collin, 1953 !
- *scutellaris* Rondani, 1874 !
- *seitneri* Hendel, 1928 !
- *spicata* MacGowan, 2008 !
- *sylvatica* Beling, 1873 !
- *tarsata* Fallén, 1820 !
- *tenuicornis* Kovalev, 1978 ! N2
- *zetterstedti* Becker, 1902 !

Priscoearomyia Morge, 1963 N3
- *greciana* (McAlpine, 1983) ! N2
- *nigra* (Meigen, 1826) !
- *withersi* (MacGowan, 2014) !

Silba Macquart, 1851
- *adipata* McAlpine, 1956 ! N2
- *fumosa* (Egger, 1862) ! N4

Excluded species

Lonchaea laxa Collin, 1953 N5
Lonchaea sororcula Hackman, 1956 N5
Lonchaea stackelbergi Czerny, 1934 N5
Lonchaea stigmatica Czerny, 1934 N5

Notes

N1 *Earomyia crystallophila* recorded in Switzerland according to Catalogue of Palaearctic Diptera, Vol. 9, p. 251. Not recorded again.
N2 *Lonchaea bukowskii*, *L. tenuicornis*, *Priscoearomyia greciana*, *Silba adipata*: specimens seen but not published yet.
N3 *Protearomyia* McAlpine replaced by *Priscoearomyia* Morge with subsequent changes to species (MacGowan 2023).
N4 *Silba fumosa*: revised by MacGowan & Okamoto (2013).
N5 *Lonchaea laxa*, *L. sororcula*, *L. stackelbergi*, *L. stigmatica*: removed from the Swiss list by MacGowan & Bächli (2016).

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Merz B., Bächli G. & Haenni J.-P. 2006. Zweiter Nachtrag zur Checkliste der Schweiz. Mitteilungen der Entomologischen Gesellschaft Basel 56(4):135-165.
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Pallopteridae

Andrey L. Ozerov (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small to medium-sized (2.5-7.0 mm) varying in colour from yellow to black acalyptrate flies, almost all with dark markings on the wings. Head with one pair of reclinate orbital setae, postocellar setae parallel or slightly divergent; vibrissae absent. Costal vein with subcostal break, subcostal vein is complete. Females with very much elongated and sword-shaped ovipositor, varying from narrow to very broad. The complete characteristic of the family is given by Merz (1998).

Biology: Adults live in or close to shady environments and may be found in forests, often on fallen tree trunks. The known larvae are very similar to those of Lonchaeidae. They are cylindrical for most of their length, gradually tapering forwards and bluntly rounded posteriorly, rather smooth, with only a few ventral creeping spines. Cephalopharyngeal skeleton with paired simple or ventrally serrated mandibles, large pharyngeal sclerites; dental sclerite present. Anterior spiracles fan-shaped. Posterior spiracles set on separate short tubercles. The posterior spiracles of some species, for example *Palloptera saltuum* have a spine-like extension of the peritrema. Larvae of some species live in flower heads of Asteraceae or in stems of Umbelliferae, Graminae and Juncaceae and are considered to be phytophagous. Others have been found under the bark of fallen coniferous and deciduous trees infested with longicorn (Cerambycidae) or bark beetles (Curculionidae). Morge (1956) saw *Palloptera usta* and *P. ustulata* larvae attacking and feeding on beetle and fly larvae respectively. From his observations these pallopterid larvae undoubtedly seem predaceous. However many pallopterid larvae follow other insects and some authors think that the larvae may utilize their tunnels or feed on fungal mycelia growing there (Niblett 1946, Morge 1956). The final conclusion in the question of predation of pallopterid larvae was made by Rotheray (2014), who conducted a series of feeding tests and found that necrophagy can occur in larvae in species living in galleries of other insects, and predation and cannibalism are accidental.

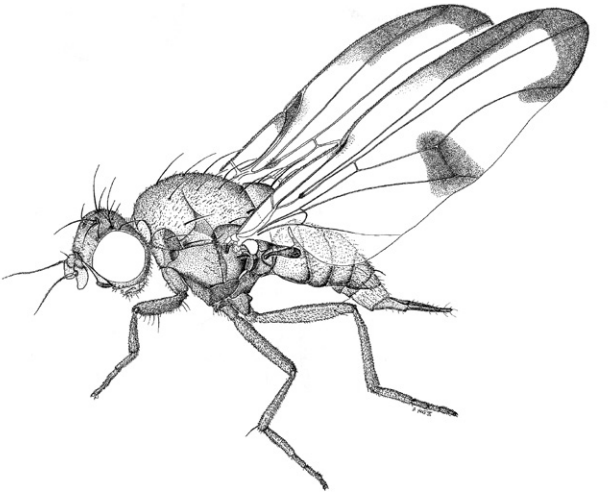
Nomenclature and classification: According to Merz (1998a), Ozerov (2009).

Number of species: CH:15 (1998 Checklist: 15),
BE: 13, CZ: 15, DE: 11, IT: 13, NL: 11, UK: 7, Europe: 23, World: 60.

Level of faunistic knowledge in Switzerland: Good.

General references: Niblett (1946), Morge (1967) [key], Merz (1998a, 2007), Ozerov (2009) [key].

References to the Swiss fauna: Merz (1997, 1998b, 1998c).



Toxoneura venusta,
female (CMPD3, p. 201).

Checklist

Eurygnathomyiinae

Eurygnathomyia Czerny, 1904
- *bicolor* (Zetterstedt, 1837) !

Pallopterinae

Palloptera Fallén, 1820
- *flava* Oldenberg, 1910 !
- *marginata* (Meigen, 1826) !
- *umbellatarum* (Fabricius, 1775) !
- *ustulata* Fallén, 1820 !

Toxoneura Macquart, 1835 N1
- *ambusta* (Meigen, 1826) !
- *ephippium* (Zetterstedt, 1860) !
  = *kloiberi* (Morge, 1967)
- *laetabilis* (Loew, 1873) !
- *modesta* (Meigen, 1830) !
- *muliebris* (Harris, 1780) !
- *quinquemaculata* (Macquart, 1835) !
- *saltuum* (Linnaeus, 1758) !
- *trimacula* (Meigen, 1826) !
- *usta* (Meigen, 1826) !
- *venusta* (Loew, 1858) !

Notes

N1 *Temnosira*, used by Merz in the 1998 Checklist, is a synonym of *Toxoneura* Macquart, 1835 (Ozerov 2009).

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Piophilidae

Gerhard Bächli (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Adults are small to medium-sized flies, with body lengths from 2.5 to 6.0 mm. Body colour very variable, from yellow to black, often shining black with yellow markings on head and legs. Diverging postocellars, ocellars, outer verticals and inner verticals present as well as vibrissae. Wings clear (usually) to dark patterned, vein C with subcostal break, Sc complete, alula well developed. Tibiae without dorsal preapical bristle.

Biology: Larvae live on (rotting) animal matter like bodies, carrion, bones, and other rotting, protein-rich organic matter; *Neottiophilum* larvae develop in birds' nests as ectoparasites on nestlings. Many larvae probably have the ability of jumping. Adults can be found on substrates for oviposition or on tree trunks and logs, possibly for mating.

Nomenclature and classification: According to Ozerov (2004).

Number of species: CH: 17 (1998 Checklist: 14),
BE: 14, CZ: 17, DE: 10, IT: 8, NL: 10, UK: 9, Europe: 29, World: ~70.

Level of faunistic knowledge in Switzerland: Good.

General references: McAlpine (1977) [world revision, keys], Merz (1996) [key], Ozerov (2004) [systematics].

References to the Swiss fauna: Merz (1996, 1998), Merz et al. (2002).

Checklist

Actenoptera Czerny, 1904
- *hilarella* (Zetterstedt, 1847) !

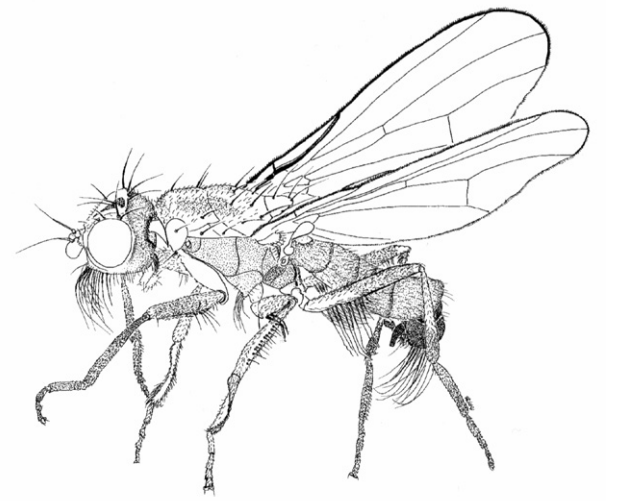
Allopiophila Hendel, 1917
- *luteata* (Haliday, 1833) !

Amphipogon Wahlberg, 1845
- *flavum* (Zetterstedt, 1838) !

Liopiophila Duda, 1924
- *varipes* (Meigen, 1830) !

Mycetaulus Loew, 1845
- *bipunctatus* (Fallén, 1823) !
- *hispanicus* Duda, 1927 !
- *latipennis* Ozerov & Barták, 1993 !

Neottiophilum Frauenfeld, 1868
- *praeustrum* (Meigen, 1826) !



Amphipogon flavum,
male (1998 Checklist, p. 261).

Parapiophila McAlpine, 1977
- *baechlii* Merz, 1996 !
- *pectiniventris* (Duda, 1924) !
- *vulgaris* (Fallén, 1820) !

Piophila Fallén, 1810
- *casei* (Linnaeus, 1758) !

Prochyliza Walker, 1849
- *nigricornis* (Meigen, 1826) !
- *nigrimana* (Meigen, 1826) !

Protopiophila Duda, 1924
- *latipes* (Meigen, 1838) !

Pseudoseps Becker, 1902
- *signata* (Fallén, 1820) !

Stearibia Lioy, 1864
- *nigriceps* (Meigen, 1826) !

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Ulidiidae

Elena P. Kameneva (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: European species medium-sized to large (body length: 3.0-12.0 mm) matt grey or shining black to brown (sometimes with greenish sheen) flies having dark banded or spotted wings, frontal setae lacking, wing with vein Sc straight to apex, posteroapical corner of cell cua with or without short triangular lobe, mesonotum: presutural supra-alar and anepimeral setae usually absent, abdomen with sternites 1 and 2 separate; male tergite 6 lacking, medial surstyli with 2-30 prensisetae, phallus, long, bare or spinulose, with or without apical glans, coiled in rest in a pocket at latero-ventral side of abdomen, right to sternite 5; females with short or, rarely, long, flattened trapezoid tergosternite 7 (oviscape); aculeus blunt, with the cercal unit separated from tergite 8 and bearing numerous hair-like sensilla; 3 spermathecae, of them, 2 on Y- or T-shape bifurcated common duct (Kameneva & Korneyev 2010; Kameneva & Barraclough 2020).

Biology: Larvae mainly saprophagous, feeding under the bark of fallen trees, rotting stems, roots, bulbs or onions, tips of palms or other monocots, developing in tissues damaged by other insects; rarely in live tissues; synopses of known biological data were presented by Allen & Foote (1967), Kabos & van Aartsen (1984), Ferrar (1987), Kameneva & Korneyev (2016), and Kameneva & Barraclough (2020), but the larval habits of the majority of species remain unknown.

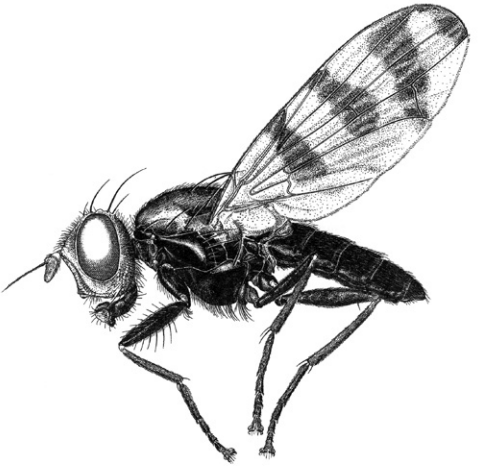
Nomenclature and classification: Kameneva & Korneyev (1994) showed the priority of family name Ulidiidae over Otitidae, which is universally accepted now. Later, Kameneva & Korneyev (2006) proposed subdivision into 6 tribes distributed in the subfamilies Ulidiinae and Otitinae. Recent molecular phylogenetic studies (Han & Ro 2016) support the lineages corresponding to these tribes but suggest they may be rearranged into three subfamilies rather than two (Kameneva & Korneyev, in prep.).

Number of species: CH: 29 (1998 Checklist: 26),
AT 36, BE: 20, CZ: 27, ES: 40, DE: 39, FR 45, IT: 63, NL: 17, UA 33, UK: 20, Europe: 113, World: ~720. (Europe: Kameneva & Greve Jensen 2013 [with additions], World: Kameneva & Korneyev [unpublished data].

Level of faunistic knowledge in Switzerland: Good; 1-2 species are expected to be found.

General references: Hennig (1939, 1940) [keys to genera and most European species], Merz (1996a, 1996b) [keys to Swiss species of *Herina* and *Otites*], Merz (2002), Kameneva (2007), Morgulis et al. (2013) [keys to European and World *Herina*], Kameneva & Korneyev (2006) [general classification, review of genera worldwide, keys to Myennidini], Kameneva & Korneyev (2015) [updated key to species of *Homalocephala*], Kameneva & Korneyev (2016) [revision of *Physiphora*].

References to the Swiss fauna: Merz (1996a, 1996b, 2002, 2012), Merz et al. (1998), Kameneva (2007), Bächli et al. (2014).



***Ceroxys urticae*,**
male (CMPD3, p. 186).

Checklist

Otitinae

Callopistromyia Hendel, 1907
- *annulipes* (Macquart, 1855) !

Cephalia Meigen, 1826
- *rufipes* Meigen, 1826 !

Ceroxys Macquart, 1835
- *urticae* (Linnaeus, 1758) !

Herina Robineau-Desvoidy, 1830
- *frondescentiae* (Linnaeus, 1758) !
- *merzi* Kameneva, 2007 !
- *nigrina* (Meigen, 1826) ! N1
  = *germinationis* (Rossi, 1790)
- *oscillans* (Meigen, 1826) !
- *paludum* (Fallén, 1820) !
- *palustris* (Meigen, 1826) !
- *parva* (Loew, 1864) !
- *pseudoluctuosa* Hennig, 1939 !
- *rivosecchii* Merz, 2002 ! N2
  = *lugubris* sensu Hennig, 1939 nec Meigen, 1826

Melieria Robineau-Desvoidy, 1830
(*Hypochra* Loew, 1868) N3
- *parmensis* (Rondani, 1869) !
- *subapennina* (Rondani, 1869) !

(*Melieria* s.str.)
- *crassipennis* (Fabricius, 1794) !

- *omissa* (Meigen, 1826) !

(*Phaeosoma* Becker, 1907) N3

- *atricornis* (Mik, 1885) !

Myennis Robineau-Desvoidy, 1830

- *octopunctata* (Coquebert, 1798) !

Otites Latreille, 1804

- *centralis* (Fabricius, 1805) !
- *guttata* (Meigen, 1830) !
- *lamed* (Schrank, 1781) !
- *ornata* (Meigen, 1826) ! N4

  = *bacescui* Gheorghiu, 1984
- *porcus* Latreille, 1804 ! N4

  = *formosa jucunda* (Robineau-Desvoidy, 1830)

Seioptera Kirby, 1817

- *vibrans* (Linnaeus, 1758) !

Tetanops Fallén, 1820

(*Tetanops* s.str.)

- *flavescens* Macquart, 1835 !

Ulidiinae

Euxesta Loew, 1868

- *notata* (Wiedemann, 1830) !
- *pechumani* Curran, 1938 !

Physiphora Fallén, 1810

- *alceae* (Preyssler, 1791) !

  = *demandata* (Fabricius, 1798)

Ulidia Meigen, 1826

- *erythrophthalma* Meigen, 1826 !

Notes

N1 Since homonymy of *Musca germinationis* Rossi, 1890 was shown (Thompson & Pont 1993), its junior synonym *Otites nigrina* is used as replacement name (Kameneva & Greve Jensen 2013).

N2 According to Merz (2002), *H. lugubris* (Meigen, 1826) was misinterpreted by Hennig (1939), followed by all subsequent authors, including Merz (1996, 1998 [1998 Checklist]). The species present in Switzerland is *H. rivosecchii* Merz, 2002, as confirmed by Merz (2012).

N3 The names *Hypochra* and *Phaeosoma* are considered subgenera of *Melieria* (Kameneva 1997, Kameneva & Greve Jensen 2013).

N4 See Kameneva & Korneyev (2019) for nomenclature changes due to neotype designation of *Otites porcus* Latreille and revision of the *Ortalis ornata* Meigen type.

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Pyrgotidae

Valery A. Korneyev (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: [European species] Medium-sized (body length: 4.5-6 mm) reddish yellow flies; wing with brownish grey apical spot and four short brownish crossbands; frontal setae and ocelli lacking. Wing with vein Sc without rectangular bow before apex, posteroapical corner of cell cua with short triangular lobe. Abdomen with sternites 1 and 2 fused. Male tergite 6 lacking, medial surstyli without prensisetae, phallus in rest coiled in a pocket underneath tergite 5, with simple, poorly sclerotised apical glans of distiphallus. Females with long, conical tergosternite 7 (oviscape); aculeus dagger-like, narrow and acute, with the cercal unit entirely fused with tergite 8; 3 spermathecae on entirely separated ducts (Korneyev 2020).

Biology: Some species of Pyrgotidae are known to be parasitoids within the bodies of adult Coleoptera (i.e. Scarabaeidae: Melolonthinae, Rutelinae and Cetoniinae). Adult Pyrgotidae are most frequently collected at mercury vapour lights along with their hosts; European species have also been collected on flowers during daytime (see Korneyev 2020).

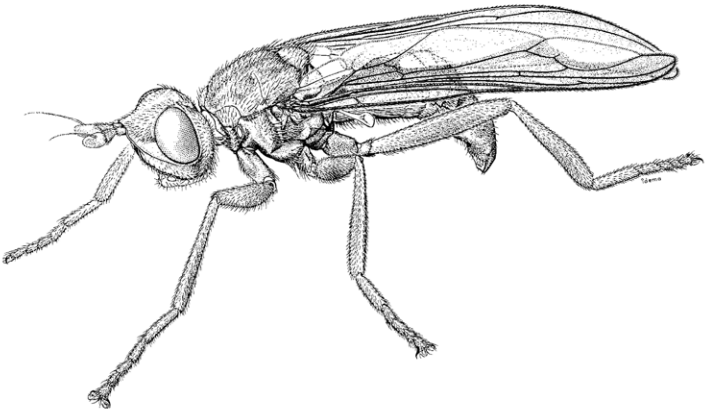
Nomenclature and classification: Pyrgotidae are closely related to Tephritidae (including Tachiniscinae), sharing at least one synapomorphy: 3 separated spermathecal ducts (in other Tephritoidea, 1 of the 2 spermathecal ducts is Y- or T-shaped and bifurcated at its apex). Two subfamilies, Teretrurinae and Pyrgotinae, are currently recognised (McAlpine 1979), but a few archaic South American and Australian monotypic genera apparently deserve additional subfamilies (Korneyev 2020).

Number of species: CH: 1 (1998 Checklist: 1),
IT: 1, Europe: 1-2, World: 340.
Fauna of the continental European countries contain only one species; the second species described from Madeira (Korneyev & Norrbom 2006) is believed to be either mislabelled or extinct.

Level of faunistic knowledge in Switzerland: The only species record was based on a single female collected c. 130 years ago (Merz 1996), until Korneyev (2009) mentioned specimens collected in 2008 by B. Merz (personal communication).

General references: Séguy (1934) [key].

References to the Swiss fauna: Merz (1996, 1998), Korneyev (2009).



Pyrgota undata,
female, not present in Switzerland (MND2, p. 813).

Checklist

Adapsilia Waga, 1842
- *coarctata* Waga, 1842 !

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Platystomatidae

Gerhard Bächli (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small to medium-sized flies (3.0-6.0 mm). Head round to somewhat flattened; antennae short; no vibrissae. Thorax broad, subquadrate; thorax weakly pruinose (*Rivellia*) to strongly pruinose and patterned (*Platystoma*). Wing membrane with transverse bands (*Rivellia*) or darkened with pattern of pale markings (*Platystoma*); C only with humeral break; R_1 with series of short setulae; cell cup without extension at posterodistal corner. Legs without conspicuous setae.

Biology: The larvae are either saprophagous in rotting vegetation or are associated with root nodules in leguminous plants (*Rivellia*). Adults occur in meadows and grassland swamps with legumes (*Rivellia*) or in warm steppe to forest-steppe habitats (*Platystoma*).

Nomenclature and classification: Korneyev (2007).

Number of species: CH: 4 (1998 Checklist: 4),
BE: 2, CZ: 6, DE: 2, IT: 9, NL: 2, UK: 2, Europe: 20, World: ~1100.

Level of faunistic knowledge in Switzerland: Good.

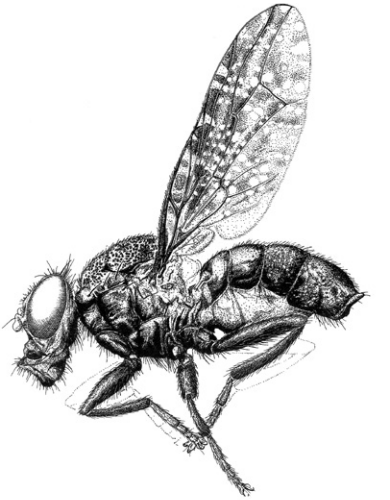
General references: Clements (1990) [key], McAlpine (1998) [general, key to genera], Korneyev (2001).

References to the Swiss fauna: Merz (1996, 1998).

Checklist

Platystoma Meigen, 1803
- *gemmationis* (Rondani, 1869) !
- *lugubre* (Robineau-Desvoidy, 1830) !
- *seminationis* (Fabricius, 1775) !

Rivellia Robineau-Desvoidy, 1830
- *syngenesiae* (Fabricius, 1781) !



Platystoma lugubre,
male (CMPD3, p. 194).

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Tephritidae

Valery A. Korneyev (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: European species medium-sized to large (body length: 2.5-9.0 mm) subshining or matt grey, yellow to black, often whitish microtrichose flies with dark banded, reticulate or spotted wing patterns; frons with 1-6 frontal and 1-3 orbital setae; wing with vein Sc straight to apex; posteroapical corner of cell cua with or without short triangular lobe. Mesonotum: presutural supra-alar and anepimeral setae usually present, abdomen with sternites 1 and 2 separate; male tergite 6 lacking, medial surstyli with 2 prensisetae, phallus long, bare, with apical glans, coiled in rest in a pocket at dorsal side of abdomen; females with short or, rarely, long, flattened trapezoid tergosternite 7 (oviscape). In European species aculeus acute, with the cercal unit fused with tergite 8 and bearing only a few short sensilla; 2-3 spermathecae on separate ducts (Korneyev 1999, Korneyev & Ovchinnikova 2004).

Biology: Larvae of European species phytophagous, feeding on fleshy fruits, mining leaves and stems, boring flower heads, flowers or seeds of Asteraceae and Lamiaceae (often inducing galls in achenes, on stems or rhyzomes) or in galls induced by other insects (Merz 1994).

Nomenclature and classification: Five to six subfamilies are currently recognised (Korneyev 1999); bulk of European species belong to the subfamily Tephritinae, minor part of them, mainly fruit feeders and leaf miners, belong to Trypetinae and Dacinae.

Number of species: CH: 124 (1998 Checklist: 118),
BE: 82, CZ: 113, DE: 117, ES: 127, FR: 151, IT: 155, NL: 77, SK: 105, UA: 133, UK: 67, Europe: 274, World: ~5000.
(Europe: Merz & Korneyev, 2013, with recent additions).

Level of faunistic knowledge in Switzerland: Very good; 1-3 additional species can be expected.

General references. Hendel (1927) [general overview of Palaearctic species], Freidberg & Kugler (1989) [key to the Near East species], White & Korneyev (1989), Korneyev & White (1999) [keys to *Urophora*], Korneyev & Evstigneev (2013) [key to *Oxyna*], Korneyev et al. (2017) [keys to *Carpomya* and *Rhagoletis*].

References to the Swiss fauna: Merz (1994, 1997, 1998), Freidberg & Merz (1994), Merz et al. (2002, 2006).

Tephritis angustipennis,
female (MND2, p. 817).

Checklist

Dacinae

Bactrocera Macquart, 1835
- *dorsalis* (Hendel, 1912) ! N9
- *kandiensis* Drew & Hancock, 1994 ! N9

(*Daculus* Speiser, 1924)
- *oleae* (Gmelin, 1790) !

Ceratitis MacLeay, 1829
- *capitata* (Wiedemann, 1824) !

Tephritinae

Acanthiophilus Becker, 1908
- *helianthi* (Rossi, 1794) !

Acinia Robineau-Desvoidy, 1830
- *corniculata* (Zetterstedt, 1819) !

Campiglossa Rondani, 1870
- *absinthii* (Fabricius, 1805) !
- *achyrophori* (Loew, 1869) !
- *bidentis* (Robineau-Desvoidy, 1830) ! N1
- *difficilis* (Hendel, 1927) !
- *grandinata* (Rondani, 1870) !
- *guttella* (Rondani, 1870) !
- *irrorata* (Fallén, 1814) !
- *loewiana* (Hendel, 1927) !
- *malaris* (Séguy, 1934) !
- *misella* (Loew, 1869) !

- *producta* (Loew, 1844) !
- *punctella* (Fallén, 1814) !
- *solidaginis* (White, 1986) !

Chaetorellia Hendel, 1927
- *acrolophi* White & Marquart, 1989 !
- *jaceae* (Robineau-Desvoidy, 1830) !
- *loricata* (Rondani, 1870) !

Chaetostomella Hendel, 1927
- *cylindrica* (Robineau-Desvoidy, 1830) !

Craspedoxantha Bezzi, 1913
- *marginalis* (Wiedemann, 1818) ! N9

Dithryca Rondani, 1856
- *guttularis* (Meigen, 1826) !

Ensina Robineau-Desvoidy, 1830
- *sonchi* (Linnaeus, 1767) !

Ictericodes Hering, 1942
- *zelleri* (Loew, 1844) !

Inuromaesa Korneyev & White, 1991
- *maura* (Frauenfeld, 1857) ! N2

Merzomyia Korneyev, 1995
- *westermanni* Meigen, 1826 !

Myopites Blot, 1827
- *apicatus* Freidberg, 1980 !
- *inulaedyssentericae* Blot, 1827 !

Noeeta Robineau-Desvoidy, 1830
- *bisetosa* Merz, 1992 !
- *pupillata* (Fallén, 1814) !

Orellia Robineau-Desvoidy, 1830
- *falcata* (Scopoli, 1763) !
- *scorzonerae* (Robineau-Desvoidy, 1830) ! N3
  - = *distans* (Loew, 1847) N3

Oxyna Robineau-Desvoidy, 1830
- *flavipennis* (Loew, 1844) !
- *nebulosa* (Wiedemann, 1817) !
- *parietina* (Linnaeus, 1758) !

Paracarphotricha Hendel, 1927
- *alpestris* (Pokorny, 1887) !

Sphenella Robineau-Desvoidy, 1830
- *marginata* (Fallén, 1814) !

Tephritis Latreille, 1804
- *angustipennis* (Loew, 1844) !
- *arnicae* (Linnaeus, 1758) !
- *bardanae* (Schrank, 1803) !
- *carmen* Hering, 1937 !
- *cometa* (Loew, 1840) !
- *conura* (Loew, 1844) !

- *conyzifoliae* Merz, 1992 !
- *crepidis* Hendel, 1927 !
- *dilacerata* (Loew, 1846) !
- *dioscurea* (Loew, 1856) !
- *divisa* Rondani, 1871 !
- *dudichi* Aczél, 1939 !
- *fallax* (Loew, 1844) !
- *formosa* (Loew, 1844) !
- *heliophila* Hendel, 1927 !
- *hendeliana* Hering, 1944 !
- *hyoscyami* (Linnaeus, 1758) !
- *leontodontis* (De Geer, 1776) !
- *mariannae* Merz, 1992 !
- *matricariae* (Loew, 1844) !
- *mutabilis* Merz, 1992 !
- *neesii* (Meigen, 1830) !
- *nigricauda* (Loew, 1856) !
- *praecox* (Loew, 1844) !
- *ruralis* (Loew, 1844) !
- *sauterina* Merz, 1994 !
  = *sauteri* Merz, 1992
- *separata* Rondani, 1871 !
- *tanaceti* (Hering, 1956) !
- *truncata* (Loew, 1844) !
- *vespertina* (Loew, 1844) !
- *zernyi* Hendel, 1927 !

Terellia Robineau-Desvoidy, 1830
(*Cerajocera* Rondani, 1856)
- *ceratocera* (Hendel, 1913) !
- *gynaecochroma* (Hering, 1937) ! N4
- *plagiata* (Dahlbom, 1850) !
- *rhapontici* Merz, 1991 !
- *tussilaginis* (Fabricius, 1775) !
  = *lappae* (Cederhjelm, 1798) N4

(*Terellia* s.str.)
- *colon* (Meigen, 1826) !
- *longicauda* (Meigen, 1826) !
- *ruficauda* (Fabricius, 1794) !
- *serratulae* (Linnaeus, 1758) !
- *virens* (Loew, 1846) !
- *winthemi* (Meigen, 1830) !

Trupanea Schrank, 1795
- *amoena* (Frauenfeld, 1857) !
- *stellata* (Fuessly, 1775) !

Urophora Robineau-Desvoidy, 1830
- *affinis* (Frauenfeld, 1857) !

- *aprica* (Fallén, 1820) !
- *cardui* (Linnaeus, 1758) !
- *cuspidata* (Meigen, 1826) !
- *jaceana* (Hering, 1935) !
- *quadrifasciata* (Meigen, 1826) !
- *solstitialis* (Linnaeus, 1758) !
- *stylata* (Fabricius, 1775) !
- *terebrans* (Loew, 1850) !

Xyphosia Robineau-Desvoidy, 1830
- *laticauda* (Meigen, 1826) !
- *miliaria* (Schrank, 1781) !

Trypetinae

Acidia Robineau-Desvoidy, 1830
- *cognata* (Wiedemann, 1817) !

Anomoia Walker, 1835
- *purmunda* (Harris, 1780) !

Carpomya Costa, 1854
- *schineri* (Loew, 1856) !
- *wiedemanni* (Meigen, 1826) ! N5

Chetostoma Rondani, 1856
- *curvinerve* Rondani, 1856 !
- *stackelbergi* (Rohdendorf, 1955) !

Euleia Walker, 1835
- *heraclei* (Linnaeus, 1758) !
- *rotundiventris* (Fallén, 1814) ! N6

Euphranta Loew, 1862
(*Euphranta* s.str.)
- *connexa* (Fabricius, 1794) !

(*Rhacochlaena* Loew, 1862)
- *toxoneura* (Loew, 1846) !

Hemilea Loew, 1862
- *pulchella* (Fabricius, 1794) !

Myoleja Rondani, 1856
- *lucida* (Fallén, 1826) !

Philophylla Rondani, 1870
- *caesio* (Harris, 1780) !

Platyparea Loew, 1862
- *discoidea* (Fabricius, 1787) !

Plioreocepta Korneyev, 1987
- *poeciloptera* (Schrank, 1776) !

Rhagoletis Loew, 1862
- *alternata* (Fallén, 1814) !
- *batava* Hering, 1958 L N7
- *berberidis* Jermy, 1961 !
- *cerasi* (Linnaeus, 1758) !

- *cingulata* (Loew, 1862) ! N8
- *completa* Cresson, 1929 !
- *meigenii* (Loew, 1844) !
- *merzi* S. Korneyev et al., 2022 L N7

Stemonocera Rondani, 1870
- *cornuta* (Scopoli, 1772) !
- *spinifrons* (Schroeder, 1913) !
- *spinulosa* (Hering, 1936) !

Trypeta Meigen, 1803
- *artemisiae* (Fabricius, 1794) !
- *immaculata* (Macquart, 1835) !
- *zoe* Meigen, 1826 !

Excluded species

Rhagoletis flavigenualis Hering, 1958 N7
Rhagoletis indifferens Curran, 1932 N8

Notes

N1 *Campiglossa bidentis* was recorded in the 1998 Checklist as *Dioxyna bidentis*. We follow Han & Ro (1999) considering *Dioxyna* to be a junior synonym of *Campiglossa*.

N2 *Inuromaesa maura* was recorded in the 1998 Checklist as *Urophora maura*. We follow Freidberg & Norrbom (1999) considering *Inuromaesa* Korneyev & White, 1991 as genus.

N3 Synonymy of *Sitarea scorzonerae* with *Orellia scorzonerae* established in Norrbom et al. (1999) and accepted by Merz & Korneyev (2013).

N4 Loew (1862) misapplied the name *Trypeta lappae* attributed to Cederhjelm to a species associated with *Onopordum* thistles in Central and Southern Europe. *Musca lappae* Cederhjelm, 1798 was shown to be a junior synonym of *Terellia tussilaginis* (Fabricius, 1775) (Norrbom et al. 1999). The name *Terellia* (*Cerajocera*) *gynaecochroma* (Hering, 1937) was originally applied explicitly to a « form » (infrasubspecific name). Foote (1984: 106) used it as a subspecific name. According to the Article 45.6.4.1 (ICZN 1999) « a name that is infrasubspecific under Article 45.6.4 is nevertheless deemed to be subspecific from its original publication if, before 1985, it was adopted as the valid name of a species or subspecies ». Norrbom et al. (1999) and Korneyev (2003) used it as a valid species name for *Terellia lappae* sensu Merz (1994) and the 1999 Checklist (Merz 1998).

N5 *Carpomyia wedemanni* was recorded in the 1998 Checklist as *Goniglossum wiedemanni*. Here, we follow Norrbom et al. (1999) considering *Goniglossum* to be a junior synonym of *Carpomya*.

N6 *Euleia rotundiventris* was recorded in the 1998 Checklist as *Cryptaciura rotundiventris*. We follow Norrbom et al. (1999) considering *Cryptaciura* to be a junior synonym of *Euleia*.

N7 Most Swiss specimens identified as *Rhagoletis batava* by Merz (1996) except one male from Mesocco were re-examined later and identified as *R. flavigenualis* (Merz, 2006), but that was another misidentification; currently, molecular studies has shown them to belong to a newly described species (*R. merzi*, Korneyev et al. 2022). Identity of the specimen from Mesocco remains uncertain, and we leave *R. batava* as a doubtful unconfirmed record. *Rhagoletis flavigenualis* does not occur in Switzerland and must be removed from the list.

N8 *Rhagoletis cingulata* was recorded in 1983 from Switzerland by Merz (1991) as *R. indifferens*, but was later correctly identified as *R. cingulata* (Boller & Mani, 1994).

N9 The following non indigenous species were not part of the species count in the 1998 Checklist: *Bactrocera dorsalis*, *B. kandiensis*, *Craspedoxantha marginalis*. They are now part of the count, even though they still do not form populations in Switzerland. An unknown species of *Anastrepha* sp. was also listed in the 1998 Checklist, but is not considered here because it was not identified to species level.

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Lauxaniidae

Anatole I. Shatalkin (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small- to medium-sized acalyptrate 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.

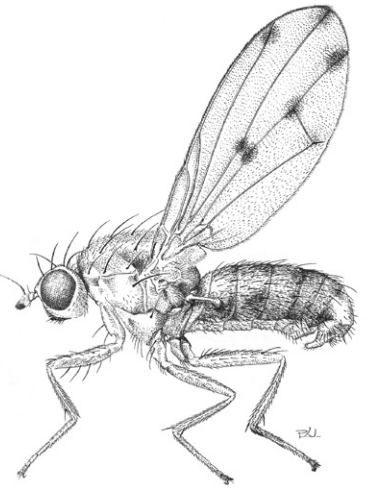
Nomenclature and classification: Traditionally, the family was divided into two subfamilies, Homoneurinae (with one genus Homoneura in the fauna of Switzerland) and Lauxaniinae. More recently, Gaimari & Silva (2010b) included neotropical broad-headed flies (Eurychoromyiidae) in Lauxaniidae as the third 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-Tolrá, 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), *Cnemacantha 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. decempuctata*, *M. decipiens*, *M. illota*, *M. laeta*, *M. mihalyii*, *M. plattycephala*, *M. rorida*, *M. subfasciata* were recorded in the 1998 Checklist (Merz 1998 [p. 254]) as *Lyciella* Collin, 1948.

N7 *Minettia rivosa* (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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Chamaemyiidae (incl. Cremifaniinae)

Stephen D. Gaimari (1998 Checklist: Lázsló Papp & Venelin L. Beschovski [Chamaemyiidae], Lázsló Papp [Cremifaniidae])

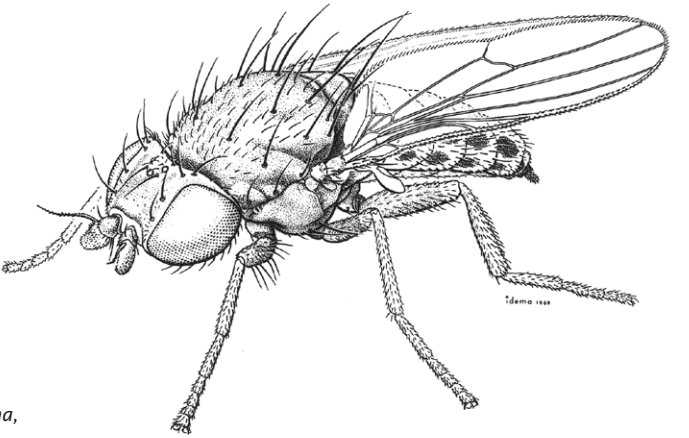
Last update: Jul 2024

Diagnosis: Small compact-bodied or elongate flies (body length 1-5 mm); usually densely silvery-gray pruinose, occasionally brown or polished black; often with brown to goldish vittae on scutum and/or brown to black pruinose spots or bands on abdominal tergites. Head either compact, shorter than high and rounded anteriorly to subequal or longer than high and rounded or pointed anteriorly; postocellar setae convergent or absent; ocellar setae normal-sized and proclinate, reduced and reclinate, or absent; fronto-orbital setae absent or with two (rarely one or three) reclinate setae, either distributed evenly on frontal orbits or placed posteriorly; lunule small, narrowly exposed and bare (Chamaemyiini) to large, broadly exposed and setulose (Leucopini); vibrissa absent; antenna short. Thorax with 1-4 (rarely five) dorsocentral setae, either all postsutural (usually 1-3) and crowded posteriorly, or with one presutural and spacing even; prescutellum usually present (absent in *Anchioleucopis* and *Lipoleucopis)*. Wing with costa unbroken and extending to vein M (to vein R_{4+5} in *Lipoleucopis)*, subcosta complete with costal cell often darkened or cloudy, cell cup closed. Legs with each tibia lacking dorsal preapical seta. For further information see McLean (1998), Papp (1998b), Tanasijtshuk (1986), Gaimari (2010, 2021).

Biology: The larvae are predators of sternorrhynchous Hemiptera (adelgids, aphids, scales, mealybugs) living on a wide range of trees and herbs. As a group, they display a spectrum of feeding strategies from active predation within free-living prey colonies to completely sessile predation on eggs within a single coccoid egg sac. At the genus level, *Leucopis* utilised the entire variety of potential feeding habits, with some species being polyphagous and others more specialised. Other genera seem to be specialised on only a certain prey type, such as the mealybugs in leaf sheaths of grasses attacked by species of *Chamaemyia* and *Parochthiphila*, adelgids on gymosperms attacked by species of *Neoleucopis*, *Anchioleucopis* and *Cremifania*, or on eggs within the ovisacs of coccoids by species of *Leucopomyia*. Chamaemyiid adults occur in various grassland habitats, in reeds, in mixed or deciduous forests, in lowlands, but also in montane habitats – that is, wherever their prey groups occur. Some are effective as biological control agents and have been introduced as such. A detailed review of biology was given in Gaimari (2010, 2021). For further information see McAlpine (1971), Tanasijtshuk et al. (1976), Papp (1979), Tanasijtshuk (1986), Havill et al. (2018), Gaimari & Havill (2021).

Nomenclature and classification: Nomenclature follows *Systema Dipterorum* (Evenhuis & Pape 2020), with subfamilial and tribal classification according to Gaimari (2010, 2021).

Number of species: CH: 37 (1998 Checklist: 33 [32+1]);
AT: 18, CZ: 27, DE: 38, ES: 28, FI: 28, FR: 32, GB: 32, HU: 43, IR: 8, IT: 41, LI: 0, LT: 12, NL: 22, SK: 25, TR: 40, Europe: 110, Palaearctic: 176, World: 345.



Chamaemyia polystigma, female (MND2, p. 965).

Level of faunistic knowledge in Switzerland: Medium. Although the numbers of described species for Switzerland is consistent with its neighbouring countries (noting that no chamaemyiid species are recorded from Liechtenstein), the chamaemyiid fauna of these countries together (Austria, France, Germany, Italy and Switzerland) is 78 species, with only 27 overlapping between Switzerland and any other(s). Several other species would be expected to be found in Switzerland, perhaps 13 or more. This includes *Leucopis griseola* (Fallén, 1823) which is found in all surrounding countries. Five additional species are found in some combination of three of these countries (*Chamaemyia flavicornis* (Strobl, 1902), *C. flavipalpis* (Haliday, 1838), *Leucopis nigricornis* Egger, 1862 (note, although recorded from various countries through literature, the identity of this species is not known except that known misidentifications have often pointed to *Leucopomyia silesiaca* (Egger)), *L. palumbii* Rondani, 1872, *L. steinbergi* Tanasijtshuk, 1965), and another seven in two (*Acrometopia wahlbergi* (Zetterstedt, 1846), *Leucopis gloriae* Raspi, 1985, *L. interruptovittata* Aczél, 1937, *L. revisenda* Tanasijtshuk, 1970, *Leucopomyia palliditarsis* (Rondani, 1875) (note, commonly known as *Leucopomyia alticeps* (Czerny, 1936), its junior synonym), *Parochthiphila* (*Euestelia*) *frontella* (Rondani, 1875), *Parochthiphila* (*Euestelia*) *nigripes* (Strobl, 1900)).

General references: Papp (1979) [keys to genera and species, in Hungarian], Tanasijtshuk (1986) [keys to genera and species, in Russian], McAlpine (1987) [genera key, Nearctic], Tanasijtshuk (1992) [key to genera, general morphology], Beschovski (1995) [key for *Chamaemyia*], McLean (1998) [key to Palaearctic genera, general information], Gaimari (2007) [European species], Gaimari (2010) [Neotropical genera, general information], Papp (2010) [key to *Cremifania* species], Ebejer (2016) [key to species of *Parochthiphila*], Gaimari (2021) [Afrotropical genera, general information].

References to the Swiss fauna: Delucchi & Pschorn-Walcher (1954), McAlpine (1971), Beschovski & Merz (1998), Merz et al. (2006), Merz (2012), Papp (1998a), Papp & Beschovski (1998), Raspi (2013), Bächli et al. (2014).

Checklist

Chamaemyiinae

Anchioleucopis Tanasijtshuk, 1997
- *geniculata* (Zetterstedt, 1855) ! N1
  - = *latifrons* Beschovski & Merz, 1998 N1

Chamaemyia Meigen, 1803
- *aestiva* Tanasijtshuk, 1970 !
- *aridella* (Fallén, 1823) !
- *elegans* (Panzer, 1809) !
- *emiliae* Tanasijtshuk, 1970 !
- *geniculata* (Zetterstedt, 1838) !
- *juncorum* (Fallén, 1823) !
- *nataliae* Tanasijtshuk, 1986 !
- *polystigma* (Meigen, 1830) !
- *submontana* Beschovski, 1994 !
- *sylvatica* Collin, 1966 !

Leucopis Meigen, 1830
(*Leucopis* s.str.)
- *annulipes* Zetterstedt, 1848 !
- *aphidiperda* Rondani, 1847 !
- *argentata* Heeger, 1848 !
- *atritarsis* Tanasijtshuk, 1958 !
- *celsa* Tanasijtshuk, 1979 !
- *glyphinivora* Tanasijtshuk, 1958 !
- *grandis* Tanasijtshuk, 1959 !
- *hennigrata* McAlpine, 1978 !
- *impunctata* von Roser, 1840 !
- *melanopus* Tanasijtshuk, 1959 !
- *monticola* Tanasijtshuk, 1961 !
- *ninae* Tanasijtshuk, 1966 !
- *pallidolineata* Tanasijtshuk, 1961 !
- *pseudomelanopus* Tanasijtshuk, 1961 !
- *rufithorax* Tanasijtshuk, 1958 !
- *splendida* Tanasijtshuk, 1986 !

Leucopomyia Malloch, 1921 N2
- *silesiaca* Egger, 1862 !

Lipoleucopis de Meijere, 1928
- *praecox* de Meijere, 1928 !

Neoleucopis Malloch, 1921 N2
- *atratula* (Ratzeburg, 1844) !
- *freyi* McAlpine, 1971 L
- *obscura* (Haliday, 1833) L N3
- *tapiae* Blanchard, 1964 !

Parochthiphila Czerny, 1904
(*Euestelia* Enderlein, 1927)
- *coronata* (Loew, 1858) !

(*Parochthiphila* s.str.)
- *nigrolineata* Beschovski & Merz, 1998 !
- *spectabilis* (Loew, 1858) !

Cremifaniinae

Cremifania Czerny, 1904 N4
- *nigrocellulata* Czerny, 1904 ! N4

Notes

N1 Synonymy of *Anchioleucopis latifrons* with *A. geniculata* established by Tanasijtshuk (2001).

N2 *Leucopomyia* and *Neoleucopis* have full generic status (Tanasijtshuk 1992).

N3 *Neoleucopis obscura* was overlooked in the 1998 Checklist by Papp & Beschovski (1998: 257) but is referred to as being from Switzerland by Delucchi & Pschorn-Walcher (1954).

N4 *Cremifania* and *C. nigrocellulata*: this genus and species were treated in the 1998 Checklist by Papp (1998: 259) and others as belonging to the separate family Cremifaniidae.

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Dryomyzidae

Gerhard Bächli (1998 Checklist: Gerhard Bächli)
Last update: Jul 2024

Diagnosis: Medium-sized to large (5.0-18.0 mm) flies; head without vibrissae; postocellar setae divergent. Wings hyaline to weakly infuscated, C without breaks. Tibiae with dorsal preapical setae. Body shining yellow to brown in colour. Postvertical setae parallel to diverging, vibrissae absent, and dorsal preapical setae on tibiae present. Wing venation complete.

Biology: Adults are commonly found in forests in shady humid places with low vegetation, usually on putrefying matter, including carrion, decaying fungi, excrement, and flowing sap. Larvae of *Dryomyza anilis* are saprophagous, developing in rotting fungi, human faeces, dead insects, molluscs, and vertebrate animals.

Nomenclature and classification: According to Mathis & Sueyoshi (2011).

Number of species: CH: 3 (1998 Checklist: 3),
BE: 3, CZ: 3, DE: 3, IT: 2, NL: 3, UK: 3, Europe: 4, World: 9.

Level of faunistic knowledge in Switzerland: Excellent.

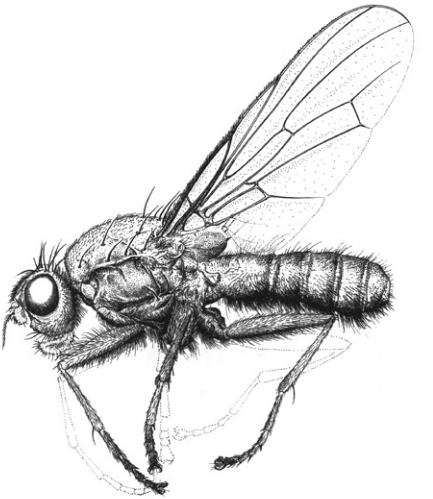
General references: Ozerov (1998) [general, key], Martinek & Barták (2001), Falk (2005), Mathis & Sueyoshi (2011) [world catalogue].

References to the Swiss fauna: Bächli (1997, 1998).

Checklist

Dryomyza Fallén, 1820
- *anilis* Fallén, 1820 !

Dryope Robineau-Desvoidy, 1830
- *decrepita* Zetterstedt, 1838 !
- *flaveola* (Fabricius, 1794) !



Dryomyza flaveola,
male (CMPD3, p. 349).

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Sciomyzidae

Jean-Claude Vala (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Adults (2,0-14 mm body length) can be mainly distinguished by the associated characters: lunula present; porrect antenna (3 articles), arista bare or plumose on dorsal of segment 3 (postpedicel) but sub-apical in *Tetanura* genus; no oral vibrissae; frons with 1-2 fronto-orbital setae; wing with muscoid venation type; small calypteres; female without ovipositor. (See Vala 1989: 37 and Knutson & Vala 2011: 199-212, and figs. 15.2, 15.3 for more details).

Biology: The Sciomyzidae were called snail-killing flies by Berg (1953) following his first developmental experiments showing that the larvae attacked and consumed specifically small aquatic freshwater snails. Subsequently, larval cycles were discovered at the expense of small terrestrial molluscs, diplopodes (by *Pelidnoptera nigripennis*), and small freshwater oligochaetes (some African *Sepedon*).

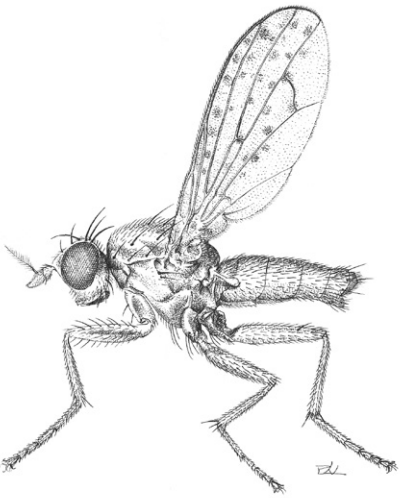
Oviposition takes place on inert substrates, leaves, low plants, sometimes directly on the shell of non-operculated gastropod molluscs (majority of species), on some freshwater shoreline bivalves, on slugs (as for *Euthycera chaerophilli*), on terrestrial Succinidae molluscs (as *Colobaea bifasciella* and *Salticella fasciata*). These preyed upon molluscs are easily attacked and eaten by the hatched larva. Exceptionally, larvae attack small freshwater oligochaetes, as observed in Benin for 3 species, such as *Sepedon knutsoni*. One or more preys can be consumed by one single larva. The larval cycle has 3 distinct stages and ends by a characteristic pupa from which the adult emerges. The feeding behavior is strictly predatory or parasitoid, sometimes successively. The species are uni- or multivoltine. Knutson & Vala (2011) develop all these behavioral aspects and indicate that the biology is known for 240 species (but 2 Afrotropical species are to be added), of the 541 species of Sciomyzidae referenced in the world.

Nomenclature and classification: Among the 61 described Sciomyzidae genera, the Swiss fauna is distributed according to the 3 subfamilies and the 2 following tribes:

(• Salticellinae: 1 world genus which is not present in Switzerland).
- Sciomyzinae: subdivided in 2 tribes:
  - Sciomyzini: 13 world genera, 5 in Switzerland with 31 species.
  - Tetanocerini: world genera, 17 in Switzerland with 44 species.
- Phaeomyiinae: 2 world genera, only 1 genus in Switzerland with 3 species; this subfamily is treated as a separate family by certain authors.

Number of species: CH: 78 (1998 Checklist: 75),
BE: 69, CZ: 78, DE: 82, FR: 84, NL: 65, UK: 66, Europe: 120, Palaearctic: 184, World: ~541.

Level of faunistic knowledge in Switzerland: The estimation of species of sciomyzids in Switzerland is good compared to those of neighbouring countries. In the future, we estimate that it will be possible to add about 2-5 new species to the Swiss fauna.



Psacadina verbekei,
female (CMPD3, p. 357).

General references: Knutson & Vala (2011), Vala et al. (2012) and Murphy et al. (2012) [world nomenclature, classification, taxonomy, distribution], Rozkošný (1987a, 1987b), Vala (1989) and Rivosecchi (1992) [keys, Palaearctic, particularly west Palaearctic and Mediterranean].

References to the Swiss fauna: Merz (1995, 1998, 2004, 2012), Merz et al. (2002, 2006)

Checklist

Phaeomyiinae

Pelidnoptera Rondani, 1856
- *fuscipennis* (Meigen, 1830) !
- *leptiformis* (Schiner, 1864) !
- *nigripennis* (Fabricius, 1794) !

Sciomyzinae

Anticheta Haliday, 1838
- *atriseta* (Loew, 1849) !
- *brevipennis* (Zetterstedt, 1846) !

Colobaea Zetterstedt, 1837
- *beckeri* (Hendel, 1902) !
- *bifasciella* (Fallén, 1820) !
- *distincta* (Meigen, 1830) !
- *pectoralis* (Zetterstedt, 1847) !
- *punctata* (Lundbeck, 1923) !

Coremacera Rondani, 1856
- *catenata* (Loew, 1847) !
- *fabricii* Rozkošný, 1981 !
- *halensis* (Loew, 1864) !
- *marginata* (Fabricius, 1775) !

Dichetophora Rondani, 1868
- *finlandica* Verbeke, 1964 !
- *obliterata* (Fabricius, 1805) !

Dictya Meigen, 1803
- *umbrarum* (Linnaeus, 1758) !

Ditaeniella Sack, 1939
- *grisescens* (Meigen, 1830) !

Ectinocera Zetterstedt, 1838
- *borealis* Zetterstedt, 1838 !

Elgiva Meigen, 1838
- *cucularia* (Linnaeus, 1767) !
- *solicita* (Harris, 1780) !

Euthycera Latreille, 1829
- *chaerophylli* (Fabricius, 1798) !
- *fumigata* (Scopoli, 1763) !
- *stichospila* (Czerny, 1909) ! N1 [1]

Hydromya Robineau-Desvoidy, 1830
- *dorsalis* (Fabricius, 1775) !

Ilione Haliday, 1837
(*Ilione* s.str.)
- *lineata* (Fallén, 1820) !

(*Knutsonia* Verbeke, 1964)
- *albiseta* (Scopoli, 1763) !
- *trifaria* (Loew, 1847) !

Limnia Robineau-Desvoidy, 1830
- *paludicola* Elberg, 1965 !
- *unguicornis* (Scopoli, 1763) !

Pherbellia Robineau-Desvoidy, 1830
- *albocostata* (Fallén, 1820) !
- *annulipes* (Zetterstedt, 1846) !
- *argyra* Verbeke, 1967 !
- *austera* (Meigen, 1830) !
- *brunnipes* (Meigen, 1838) !
- *cinerella* (Fallén, 1820) !
- *dentata* Merz & Rozkošný, 1995 !
- *dorsata* (Zetterstedt, 1846) !
- *dubia* (Fallén, 1820) !
- *griseola* (Fallén, 1820) !
- *knutsoni* Verbeke, 1967 !
- *limbata* (Meigen, 1830) !
- *nana* (Fallén, 1820) !

- *pallidicarpa* (Rondani, 1869) !
- *pallidiventris* (Fallén, 1820) !
- *rozkosnyi* Verbeke, 1967 !
- *schoenherri* (Fallén, 1826) !
- *scutellaris* (von Roser, 1840) !
- *silana* Rivosecchi, 1989 !
- *sordida* (Hendel, 1902) L
- *steyskali* Rozkošný & Zuska, 1965 !
- *ventralis* (Fallén, 1820) !

Pherbina Robineau-Desvoidy, 1830
- *coryleti* (Scopoli, 1763) !
- *intermedia* Verbeke, 1948 !

Psacadina Enderlein, 1939
- *verbekei* Rozkošný, 1975 !
- *vittigera* (Schiner, 1864) !
- *zernyi* (Mayer, 1953) !

Pteromicra Lioy, 1864
- *angustipennis* (Staeger, 1845) !
- *glabricula* (Fallén, 1820) !
- *leucopeza* (Meigen, 1838) !

Renocera Hendel, 1900
- *pallida* (Fallén, 1820) !
- *striata* (Meigen, 1830) !
- *stroblii* Hendel, 1900 !

Sciomyza Fallén, 1820
- *simplex* Fallén, 1820 !
- *testacea* Macquart, 1835 L

Sepedon Latreille, 1804
- *sphegea* (Fabricius, 1775) !
- *spinipes* (Scopoli, 1763) !

Tetanocera Duméril, 1800
- *arrogans* Meigen, 1830 !
- *elata* (Fabricius, 1781) !
- *ferruginea* Fallén, 1820 !
- *fuscinervis* (Zetterstedt, 1838) !
- *hyalipennis* von Roser, 1840 !
- *phyllophora* Melander, 1920 !
- *punctifrons* Rondani, 1868 !
- *robusta* Loew, 1847 !
- *silvatica* Meigen, 1830 !

Tetanura Fallén, 1820
- *pallidiventris* Fallén, 1820 !

Trypetoptera Hendel, 1900
- *punctulata* (Scopoli, 1763) !

Notes

N1 Presently, we add one new species to the Swiss fauna: *Euthycera stichospila* (Czerny, 1909). The life cycle has been resolved by Vala & Caillet (1985) under the name *E. leclercqi* Vala & Reidenbach (1982), later synonymised by Rozkošný (1987).

Species records

[1] VS, Lourtier, 22.7.1981, 1100 m, leg. J.-M. Reidenbach

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Sepsidae

Patrick T. Rohner (1998 Checklist: Jean-Paul Haenni)
Last update: Jul 2024

Diagnosis: Small and slender ant-like appearance (2.5-6.5 mm). Most species are black, some show bright orange colour morphs in large males. Thorax without strong acrostichal setae, pleura often with distinct pattern of silver pruinosity. One or more bristles present at the posteroventral margin of the thoracic posterior spiracle. Wings without costal breaks. All native species of *Sepsis* have a dark spot on the tip of vein R_{2+3}, while wing spots are strongly reduced (*Nemopoda*) or entirely absent (*Saltella*, *Meroplius* and *Themira*). Males of all native species (except the small *Sepsis duplicata*) have modifications of their fore femur and tibia that are used during copulation or courtship. Male hind tibia often with osmeterium consisting of glandular hairs.

Biology: Larvae of Sepsidae are generally coprophagous (*Meroplius*, *Saltella*, *Sepsis*, some *Themira*) or associated to decomposing organic matter (*Nemopoda* from rotting snails, fungi and compost; *Themira* from waterfowl droppings, organic mud and sewage waste). Adults are mainly found in open to semi-enclosed habitats, like meadows, pastures, riparian vegetation, along wood edges and at clearings. Sepsids are likely to hibernate as adults, although there are records of juvenile stages that successfully overwinter (Zeender et al 2019; Pont & Meier 2002). *S. fulgens* is known to occasionally form large aggregations of thousands of individuals that emit a distinct fruity smell (Pont 1987). Most species have elaborate male-limited secondary sexual traits that play a role in courtship or mating. Copulatory behaviour is often complex and strongly differs even between closely related species. Often being associated with livestock and agriculture, sepsids are probably not of direct conservation concern. However, it is known that veterinary medicines can have severe negative effects on natural populations (see e.g. Conforti et al 2018). Some species are of relevance to forensic entomologists.

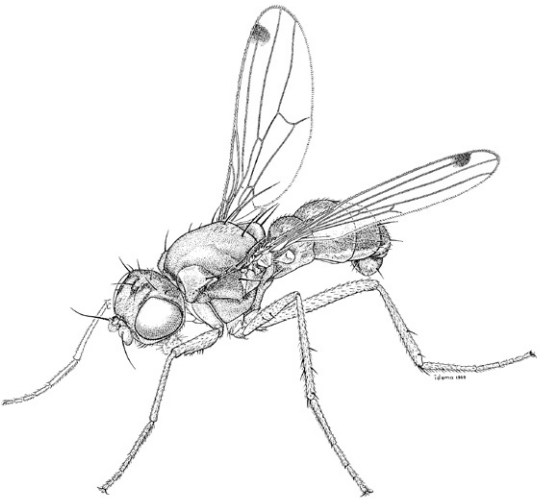
Nomenclature and classification: According to Pont & Meier (2002).

Number of species: CH: 29 (1998 Checklist: 24),
BE: 27, CZ: 30, DE: 24, IT: 32, NL: 27, UK: 22, Europe: 44, World: 320.

Level of faunistic knowledge in Switzerland: Good.

General references: Pont & Meier (2002) [key].

References to the Swiss fauna: Haenni (1997, 1998), Merz et al. (2002), Merz (2012), Bächli et al. (2014), Rohner (2015), Rohner & Bächli (2016).



Sepsis punctum,
male (MND2, p. 945).

Checklist

Meroplius Rondani, 1874
- *fukuharai* (Iwasa, 1984) !
- *minutus* (Wiedemann, 1830) !

Nemopoda Robineau-Desvoidy, 1830
- *nitidula* (Fallén, 1820) !
- *pectinulata* Loew, 1873 !
- *speiseri* (Duda, 1926) !

Saltella Robineau-Desvoidy, 1830
- *nigripes* Robineau-Desvoidy, 1830 !
- *sphondylii* (Schrank, 1803) !

Sepsis Fallén, 1810
- *biflexuosa* Strobl, 1893 !
- *cynipsea* (Linnaeus, 1758) !
- *duplicata* Haliday, 1838 !
- *flavimana* Meigen, 1826 !
- *fulgens* Meigen, 1826 !
- *luteipes* Melander & Spuler, 1917 !
  = *helvetica* Munari, 1985 N1
- *neocynipsea* Melander & Spuler, 1917 !
- *nigripes* Meigen, 1826 !
- *orthocnemis* Frey, 1908 !
- *punctum* (Fabricius, 1794) !
- *setulosa* (Duda, 1926) ! N2
- *thoracica* (Robineau-Desvoidy, 1830) !
- *violacea* Meigen, 1826 !

Themira Robineau-Desvoidy, 1830
- *annulipes* (Meigen, 1826) !
- *germanica* Duda, 1926 !
- *gracilis* (Zetterstedt, 1847) !
- *leachi* (Meigen, 1826) !
- *lucida* (Staeger, 1844) !
- *minor* (Haliday, 1833) !
- *nigricornis* (Meigen, 1826) !
- *putris* (Linnaeus, 1758) !
- *superba* (Haliday, 1833) !

Notes

N1 *Sepsis helvetica* Munari, reported in the 1998 Checklist, is a synonym of *S. luteipes* Melander & Spuler, according to Ozerov (1999).

N2 There are only two specimens of *Sepsis setulosa* ever recorded: the holotype in Germany and an additional specimen in Geneva (Merz 2012). Pont and Meier (2002) suspect that the holotype (which they studied) represents a dwarf form of *Sepsis flavimana*, a species with high morphological plasticity. Considering the high morphological plasticity in sepsids and without further (e.g. molecular, ecological or behavioral) data, the taxonomic validity of *Sepsis setulosa* remains questionable (Rohner 2015).

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Clusiidae

Gerhard Bächli (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small flies (3-6 mm). Body slender, yellow, reddish yellow with dark brown to black and occasionally some whitish markings. Head small; antennae with short scape, pedicel laterally with short angular extension, third antennal segment short; vibrissae present; postocellar setae present or absent. Thorax long and narrow. Wings rather narrow; costa with subcostal break only, Sc complete, anal vein not reaching wing margin; usually the anterodistal part is darkly infuscate. Legs, especially in males, with setose fore femora; tibiae with preapical dorsal setae at least on mid tibiae. Abdomen narrow.

Biology: Clusiidae are typical inhabitants of forests with a rich supply of dead wood. The xylosaprophagous larvae develop in the decaying wood of fallen trunks and stumps, pupariate inside the rotten wood and overwinter in the pupal stage. The adult flies can best be observed sitting or walking on dead tree trunks; they fly away only when disturbed, but soon return to the same or the nearest convenient log.

Nomenclature and classification: According to Lonsdale (2017).

Number of species: CH: 10 (1998 Checklist: 8),
BE: 10, CZ: 12, DE: 7, IT: 3, NL: 7, UK: 7, Europe: 14, World: 636.

Level of faunistic knowledge in Switzerland: Good.

General references: Sasakawa (1998), Lonsdale & Marshall (2007), Lonsdale (2017).

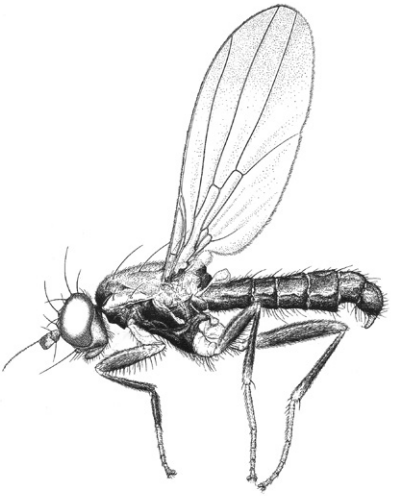
References to the Swiss fauna: Merz (1998), Merz et al. (2002). Bächli & Merz (2008).

Checklist

Clusia Haliday, 1839
- *flava* (Meigen, 1830) !

Clusiodes Coquillett, 1904
- *albimanus* (Meigen, 1830) !
- *caledonicus* (Collin, 1912) !
- *gentilis* (Collin, 1912) !
- *geomyzinus* (Fallén, 1823) !
- *ruficollis* (Meigen, 1830) !
- *verticalis* (Collin, 1912) !

Hendelia Czerny, 1903
- *beckeri* Czerny, 1903 !



***Clusiodes albimanus*,**
male (CMPD3, p. 219).

Heteromeringia Czerny, 1903
- *nigrimana* (Loew, 1864) !

Paraclusia Czerny, 1903
- *tigrina* (Fallén, 1820) !

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Acartophthalmidae

Gerhard Bächli (1998 Checklist: Gerhard Bächli)
Last update: Jul 2024

Diagnosis: Minute to small (1.0-2.5 mm), dark flies characterised by only a humeral break on C, complete Sc, orbital setae reclinate and lateroclinate (never inclinate), divergent postocellar setae, and absence of true vibrissae. Tibiae without dorsal preapical setae.

Biology: Adults are often collected near fungi, decaying wood and other decomposing organic matter. Males have been found to display territorial behaviour on carrion; females visit carrion for feeding, mating and oviposition.

Nomenclature and classification: According to Ozerov (1986, 2007).

Number of species: CH: 3 (1998 Checklist: 2),
BE: 2, CZ: 3, DE: 2, IT: 1, NL: 2, UK: 1, Europe: 3, World: 3.

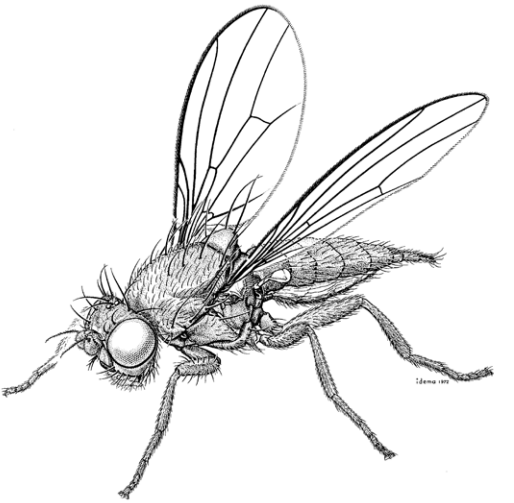
Level of faunistic knowledge in Switzerland: Excellent.

General references: Frey (1947) [key], Ozerov (1986) [key], Ozerov (1987) [pre-adult stages], Papp & Ozerov (1998) [general], Winkler et al. (2010) [phylogeny].

References to the Swiss fauna: Bächli (1997, 1998), Merz et al. (2002).

Checklist

Acartophthalmus Czerny, 1902
- *bicolor* Oldenberg, 1910 !
- *nigrinus* (Zetterstedt, 1848) !
- *pusio* Frey, 1947 !



Acartophthalmus nigrinus,
female (MND2, p. 859).

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Odiniidae

Stephen D. Gaimari (1998 Checklist: László Papp)
Last update: Jul 2024

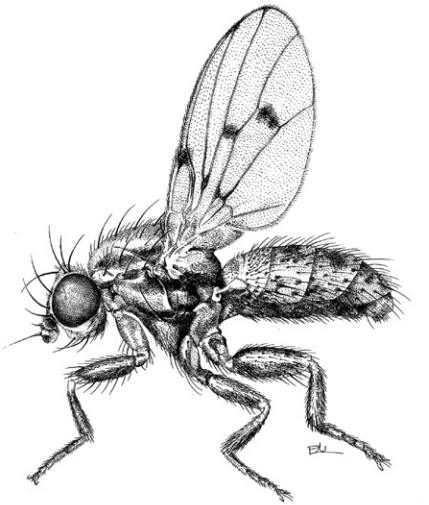
Diagnosis: [European Genera] Small to moderately large, compact-bodied, strongly bristled flies; length 2.5-5.5 mm. Body pruinose silvery to dull grey and variously mottled, striped or marked with brownish. Head higher than long; inner and outer vertical setae strong; postocellar setae divergent, strong or reduced (in *Neoalticomerus*); ocellar setae well developed, proclinate; with 3 pairs of fronto-orbital setae, posterior 2 reclinate, anterior 1 inclinate; frons flat or slightly depressed; frons at distinct angle with face; lunule bare, broadly exposed; gena broad, often with upturned genal seta; vibrissa strong; antennae short, with first antennal flagellomere about as high as long, arista pubescent. Mesonotum with 1 presutural and 3-4 postsutural dorsocentral setae; 1 prescutellar acrostichal seta present; prescutellum present; scutellar disc bare; anepisternum with 1-2 posterior marginal setae (in *Neoalticomerus*) or bare. Legs stout; femora often enlarged (especially hind femur of males); often with tibial bands; preapical dorsal tibial setae present. Wing with dark spots on crossveins, and sometimes distally on radial veins; costa with subcostal break only; subcosta incomplete. Abdomen relatively short and broad, usually patterned with gray and/or brown pruinescence.

Biology: A detailed review of odiniid biology was published by Gaimari & Mathis (2011) and Gaimari (2021). Odiniids are most commonly found in forested ecosystems, with their biology closely associated with trees, often with adults occurring on tree trunks, often near sap flows. Some species feed on or are attracted to polypore or bracket fungi (Chandler 2010, Máca et al. 2005; MacGowan & Rotheray 2002). Those species found on trees are often associated with galleries of wood-boring beetles, with several larval life history possibilities from saprophagy to predation. This association has been demonstrated for tunneling beetles in various families (e.g. Krivosheina & Krivosheina 1996, Krivosheina 1981, Lewis 1979, Zubkov & Kovalev 1975, Sabrosky 1959). Yang (1984) and Pulkkinen & Yang (1984) demonstrated that the larvae of *Odinia xanthocera* Collin develop on frass within these tunnels, ultimately reaching, attacking and consuming the beetle pupa at the end.

Nomenclature and classification: A detailed review of odiniid classification was published by Gaimari & Mathis (2011), including a full catalogue dealing with many nomenclatural issues. For further information, see Gaimari (2021). All Swiss species belong to the subfamily Odiniinae.

Number of species: CH: 8 (1998 Checklist: 8),
AT: 5, BE: 1, BG: 2, CZ: 7, DK: 3, ES: 6, FI: 5, FR: 6, GB: 8, GE: 8, GR: 4, HU: 9, IE: 2, IT: 5, LT: 2, LV: 1, NL: 6, NO: 1, PL: 5, RO: 1, RU (European part): 6, SE: 4, SK: 7, UA: 2, Europe: 15, World: 81.

Level of faunistic knowledge in Switzerland: The faunistic knowledge of Swiss odiniids is generally good, with an expectation that at least one or a few of the other European species may yet be found, such as: *Neoalticomerus fabricius* Withers & Papp, 2012, most closely found in the bordering country of France and in Hungary; and *Odinia hendeli*



Odinia maculata,
male (CMPD3, p. 233).

Collin, 1952, most closely found in the bordering countries of Germany and Austria. Slightly farther away, but still possible are three species yet found only in Hungary, *Odinia photophila* Papp, 1977, *Turanodinia nigripalpis* Papp, 2002, and *Turanodinia tisciae* Papp, 1987, as well as the species *Odinia trifida* Carles-Tolrá, 1996, found in northern Spain (Gaimari & Mathis 2011)

General references: Papp (1998a) [genera key, Palaearctic, incl. non-European Traginopinae], Schacht & Heuck (2010) [*Neoalticomerus*, *Odinia*], Withers & Papp (2012) [*Neoalticomerus*], Gaimari & Mathis (2011) [conspectus, key world genera], McAlpine (1987) [genera key, Nearctic], Gaimari (2010) [genera key, Neotropics], Gaimari (2021) [genera key, Afrotropics].

References to the Swiss fauna: Merz et al. (1998), Papp (1998b), Tschirnhaus (2008), Gaimari & Mathis (2011), Bächli et al. (2014).

Checklist

Neoalticomerus Hendel, 1903
- *formosus* (Loew, 1844) !

Odinia Robineau-Desvoidy, 1830
- *boletina* (Zetterstedt, 1848) !
- *czernyi* Collin, 1952 !
- *meijerei* Collin, 1952 !
- *ornata* (Zetterstedt, 1838) L

- *pomona* Cogan, 1969 !
- *trinotata* Robineau-Desvoidy, 1830 ! N1
  = *loewi* Collin, 1952
  = *maculata* (Meigen, 1830)
- *xanthocera* Collin, 1952 !

Notes

N1 *Odinia loewi* was synonymised with *O. maculata* by Tschirnhaus (2008), both of which were subsequently synonymised under *O. trinotata* by Gaimari & Mathis (2011).

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Agromyzidae

Miloš Černý (1998 Checklist: Michel Martinez)
Last update: Jul 2024

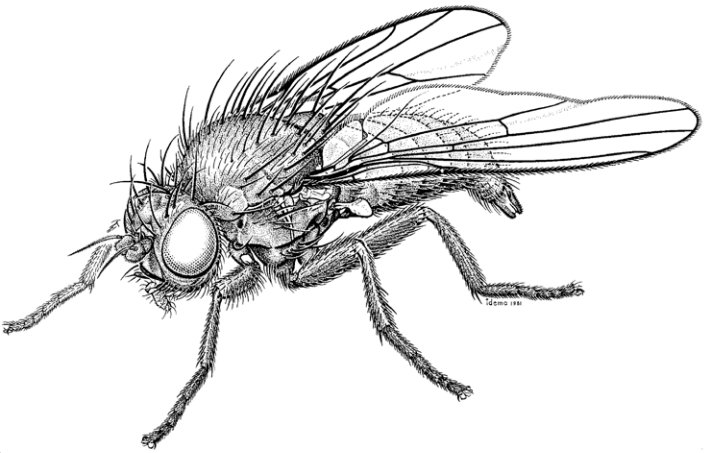
Diagnosis: The acalyptrate Diptera from the family Agromyzidae (leaf miner flies) are very small to small flies with a wing length between 0.9 mm and 6.5 mm, but usually 2-3 mm. Body often yellow or black, brown, or grey, sometimes with a metallic greenish, bluish, or coppery tinge (*Melanagromyza* spp.). Antenna with first flagellomere small, short, rounded or elongated, or with anterodorsal projection or spine and with well-developed dorsobasal arista. Eyes are broadly separated in both sexes, entirely bare, or conspicuously pilose. Vertical, ocellar and orbital setae are strong, postocellar setae divergent. Orbital setulae arranged in one or more rows, usually reclinate, or sometimes proclinate, upright or absent. Genae with a narrow cheek, rarely as deep as 0.75 of eye height, vibrissa well developed, some males in the genus *Ophiomyia* with vibrissal fasciculus. Thorax is robust, somewhat arched, scutum usually with 2-5 dorsocentral setae, acrostichal setulae present in 2-10 rows or missing entirely. Wing hyaline, with costa ending at the tip of R_{4+5} or M_{1+2}, subcosta fused with R_1 (Agromyzinae) or reduced as a separate and free-ending fold (Phytomyzinae), posterior crossvein present or sometimes absent. Abdomen tapered, composed of six visible segments, female 7th abdominal tergite and sternite fused and chitinised to form a non-retractile sheath of the ovipositor.

Biology: Larvae of all species of Agromyzidae are phytophagous and many species are leaf miners, but a relatively numerous group mine the surface or even deeper tissue layers of stems of different plants, including bushes. Some larvae develop in seeds and fruits, and several species specialise on roots or form galls on branches. Most species are monophagous or oligophagous, and only rarely polyphagous (Hering 1957, Spencer 1990, Benavent-Corai et al. 2005). Some species are known as economically important pests (Spencer 1973) but on the other hand, several species are used as biological agents for the control of certain plants.

Nomenclature and classification: The nomenclature used in the present checklist follows Fauna Europaea (Martinez 2013). The basic characteristics of the family were recently given by Papp & Černý (2015, 2016, 2017, 2020), including keys of most European species.

Number of species: CH: 406 (1998 Checklist: 140),
AT: 410, CZ: 506, DE: 588, DK: 289, ES: 299, FL: 10, FR: 389, GB: 428, HU: 477, IT: 308, NL: 266, PL: 485, PT: 127, SK: 379, Europe: 984, World: 3246.

Level of faunistic knowledge in Switzerland: The Swiss fauna of Agromyzidae is relatively well known at the present time. The potential number of species is probably much higher, probably around 500 species.



Agromyza albipennis,
female (MND2, p. 869).

General references: Benavent-Corai et al. (2005), Griffiths (1980), Hendel (1931-36), Hering (1957), Nowakowski (1973), Papp & Černý (2015, 2016, 2017, 2020), Spencer (1964, 1966b, 1973, 1976, 1990), Zlobin (1994, 1995, 2003a, 2003b, 2008).

References to the Swiss fauna: Bächli et al. (2014), Černý (2005, 2009, 2013, 2018), Černý & Bächli (2007, 2018), Černý & Merz (2005, 2006, 2007, 2012), Černý et al. (2020), Griffiths (1963, 1967, 1972, 1973, 1974, 1976a, 1976b), Hering (1932), Martinez (1998), Merz et al. (2006), Spencer (1963, 1966a). Additional references to the Swiss fauna are marked with an asterisk (*) in the « References » section below.

Checklist

Agromyzinae

Agromyza Fallén, 1810

- *abdita* L. Papp in Papp & Černý 2015 ! N1 [1]
- *abiens* Zetterstedt, 1848 !
- *albipennis* Meigen, 1830 !
- *albitarsis* Meigen, 1830 !
- *alnibetulae* Hendel, 1931 L
- *ambigua* Fallén, 1823 !
- *anderssoni* Spencer, 1976 !
- *anthracina* Meigen, 1830 !
- *audcenti* Gibbs, 2004 !
- *bicaudata* (Hendel, 1920) !
- *bromi* Spencer, 1966 !

- *cinerascens* Macquart, 1835 !
- *conjuncta* Spencer, 1966 !
- *drepanura* (Mamonov, 1929) !
- *erythrocephala* Hendel, 1920 !
- *filipendulae* Spencer, 1976 !
- *flaviceps* Fallén, 1823 !
- *frontella* (Rondani, 1875) !
- *hendeli* Griffiths, 1963 !
- *idaeiana* Hardy, 1853 !
- *igniceps* Hendel, 1920 ! N2 [2]
- *longiphallus* L. Papp in Papp & Černý 2015 !
- *lucida* Hendel, 1920 !
- *luteitarsis* (Rondani, 1875) !
- *marionae* Griffiths, 1963 !
- *mobilis* Meigen, 1830 !
- *myosotidis* Kaltenbach, 1864 !
- *nana* Meigen, 1830 !
- *nigrella* (Rondani, 1875) !
- *nigrescens* Hendel, 1920 !
  = *heringi* de Meijere, 1925
- *nigripes* Meigen, 1830 !
- *nigrociliata* Hendel, 1931 !
- *orobi* Hendel, 1920 L
- *phragmitidis* Hendel, 1922 ! N3 [3]
- *polygoni* Hering, 1941 !
- *prespana* Spencer, 1957 !
- *pseudoreptans* Nowakowski, 1967 !
- *pseudorufipes* Nowakowski, 1964 !
- *reptans* Fallén, 1823 !
- *rondensis* Strobl, 1900 !
- *seticercus* L. Papp in Papp & Černý 2015 !
- *spenceri* Griffiths, 1963 !
- *spiraeoidearum* Hering, 1954 !
- *sulfuriceps* Strobl, 1898 !
- *viciae* Kaltenbach, 1872 !
  = *quadriseta* Zlobin, 2001
- *vicifoliae* Hering, 1932 !
- *woerzi* Groschke & Hering, 1957 !

Hexomyza Enderlein, 1936
- *cecidogena* (Hering, 1927) !
- *simplicoides* (Hendel, 1920) L

Melanagromyza Hendel, 1920
- *aenea* (Meigen, 1830) L
- *aeneoventris* (Fallén, 1823) !
- *albocilia* Hendel, 1931 !
- *astragali* Spencer, 1976 !

- *cunctans* (Meigen, 1830) !
- *eriolepidis* Spencer, 1961 !
- *eupatorii* Spencer, 1957 !
- *lappae* (Loew, 1850) !
- *nibletti* Spencer, 1957 !
- *pubescens* Hendel, 1923 !
- *sativae* Spencer, 1957 !
- *symphyti* Griffiths, 1963 ! N4 [4]
- *tripolii* Spencer, 1957 !
- *zlobini* Pakalniškis, 1996 !

Ophiomyia Braschnikov, 1897
- *aeneonitens* (Strobl, 1893) !
- *alliariae* Hering, 1954 !
- *beckeri* (Hendel, 1923) !
- *campanularum* Starý, 1930 !
- *cichorii* Hering, 1949 !
- *collini* Spencer, 1971 !
- *crispa* Guglya, 2013 ! N5
  = *hungarica* Černý in Papp & Černý 2015
- *cunctata* (Hendel, 1920) !
- *curvipalpis* (Zetterstedt, 1848) !
- *eucodonus* Hering, 1960 !
- *galii* Hering, 1937 !
- *heracleivora* Spencer, 1957 !
- *heringi* Starý, 1930 !
- *inaequabilis* (Hendel, 1931) !
- *labiatarum* Hering, 1937 !
- *longilingua* (Hendel, 1920) L
- *maura* (Meigen, 1838) !
- *melandricaulis* Hering, 1943 !
- *melandryi* de Meijere, 1924 !
- *mohelensis* Černý, 1994 !
- *moravica* Černý, 1994 !
- *nasuta* (Melander, 1913) !
- *orbiculata* (Hendel, 1931) !
- *pannonica* Černý in Papp & Černý 2015 !
- *pinguis* (Fallén, 1820) !
- *pulicaria* (Meigen, 1830) !
- *rostrata* (Hendel, 1920) !
- *submaura* Hering, 1926 !
- *vanyushai* Guglya, 2014 !
- *vimmeri* Černý, 1994 !

Phytomyzinae

Amauromyza Hendel, 1931
(*Amauromyza* s.str.)

- *leonuri* Spencer, 1971 !
(*Cephalomyza* Hendel, 1931)
- *flavifrons* (Meigen, 1830) !
- *gyrans* (Fallén, 1823) !
- *karli* (Hendel, 1927) !
- *labiatarum* (Hendel, 1920) !
- *luteiceps* (Hendel, 1920) !
- *mihalyii* Spencer, 1971 !
- *monfalconensis* (Strobl, 1909) !
- *verbasci* (Bouché, 1847) !

Aulagromyza Enderlein, 1936
- *anteposita* Strobl, 1898 !
- *buhri* (de Meijere, 1938) L
  = *simplonensis* (Spencer, 1957)
- *discrepans* (van der Wulp, 1871) !
- *hendeliana* (Hering, 1926) L
- *luteoscutellata* (de Meijere, 1924) !
- *orphana* (Hendel, 1920) !
- *similis* (Brischke, 1880) !
- *trivittata* (Loew, 1873) !

Calycomyza Hendel, 1931
- *artemisiae* (Kaltenbach, 1856) !
- *humeralis* (von Roser, 1840) !
- *solidaginis* (Kaltenbach, 1869) !

Cerodontha Rondani, 1861
(*Butomomyza* Nowakowski, 1967)
- *angulata* (Loew, 1869) !
- *caricivora* (Groschke, 1954) !
- *eucaricis* Nowakowski, 1967 !
- *falcata* Černý in Papp & Černý, 2016 !
- *mellita* Spencer, 1971 !
- *pseuderrans* (Hendel, 1931) !
- *rohdendorfi* Nowakowski, 1967 !
- *scirpi* (Karl, 1926) !
- *staryi* (Starý, 1930) !

(*Cerodontha* s.str.)
- *affinis* (Fallén, 1823) !
- *alpestris* Martinez, 1987 !
- *coxalis* Martinez, 1987 !
- *denticornis* (Panzer, 1806) !
- *flavicornis* (Egger, 1862) L
- *fulvipes* (Meigen, 1830) !
- *phragmitophila* Hering, 1935 !
- *unguicornis* Hendel, 1932 !

(*Dizygomyza* Hendel, 1920)
- *bimaculata* (Meigen, 1830) !

- *brisiaca* Nowakowski, 1973 !
- *caricicola* (Hering, 1926) !
- *chaixiana* (Hering, 1956) !
- *crassiseta* (Strobl, 1900) !
- *fasciata* (Strobl, 1880) !
- *griffithsi* Nowakowski, 1967 !
- *handlirschi* Nowakowski, 1967 !
- *hirtae* Nowakowski, 1967 !
- *iraeos* (Robineau-Desvoidy, 1851) !
- *luctuosa* (Meigen, 1830) !
- *luzulae* (Groschke & Hering, 1957) !
- *morosa* (Meigen, 1830) !
- *silvatica* (Groschke & Hering, 1957) !
- *spinata* (Groschke, 1954) !
- *suturalis* (Hendel, 1931) !

(*Icteromyza* Hendel, 1931)

- *geniculata* (Fallén, 1823) !
- *rozkosnyi* Černý, 2007 !

(*Phytagromyza* Hendel, 1920)

- *flavocingulata* (Strobl, 1909) !

(*Poemyza* Hendel, 1931)

- *alpina* Nowakowski, 1967 !
- *atra* (Meigen, 1830) !
- *beigerae* Nowakowski, 1973 !
- *calamagrostidis* Nowakowski, 1967 !
- *imbuta* (Meigen, 1838) !
- *incisa* (Meigen, 1830) !
- *lateralis* (Macquart, 1835) !
- *lyneborgi* Spencer, 1972 !
- *morula* (Hendel, 1920) !
- *muscina* (Meigen, 1830) !
- *phalaridis* Nowakowski, 1967 ! N6 [5]
- *phragmitidis* Nowakowski, 1967 !
- *pygmaea* (Meigen, 1830) !
- *pygmella* (Hendel, 1931) !
- *spencerae* Zlobin, 1993 !
- *superciliosa* (Zetterstedt, 1860) L
- *thunebergi* Nowakowski, 1967 !
- *unisetiorbita* Zlobin, 1993 L N7
- *vladimiri* Černý in Černý & Merz, 2007 !

(*Xenophytomyza* Frey, 1946)

- *atronitens* (Hendel, 1920) !
- *biseta* (Hendel, 1920) !
- *venturii* Nowakowski, 1967 !

Chromatomyia Hardy, 1849

- *aizoon* (Hering, 1932) L

- *alpigenae* (Hendel, 1925) L
- *beigerae* Griffiths, 1980 !
- *ciliata* (Hendel, 1935) !
- *fuscula* (Zetterstedt, 1838) !
- *gentianae* (Hendel, 1920) L
- *gentianella* (Hendel, 1932) !
- *glacialis* (Griffiths, 1964) !
- *hoppiella* Spencer, 1990 !
- *horticola* (Goureau, 1851) !
- *isicae* (Hering, 1962) !
- *milii* (Kaltenbach, 1864) !
- *nigra* (Meigen, 1830) !
- *norwegica* (Rydén, 1957) !
- *ochracea* (Hendel, 1920) !
- *opacella* (Hendel, 1935) !
- *periclymeni* (Hendel, 1922) !
- *primulae* (Robineau-Desvoidy, 1851) !
- *pseudomilii* Griffiths, 1980 !
- *ramosa* (Hendel, 1923) !
- *rhaetica* Griffiths, 1980 !
- *saxifragae* (Hering, 1924) L
- *scolopendri* (Robineau-Desvoidy, 1851) !
- *soldanellae* (Starý, 1950) L
- *spenceriana* Griffiths, 1980 !
- *styriaca* Griffiths, 1980 !
- *succisae* (Hering, 1922) !
- *syngenesiae* Hardy, 1849 L
- *tschirnhausi* Griffiths, 1980 !
- *vernalis* (Groschke & Hering, 1957) !

Gymnophytomyza Hendel, 1936

- *heteroneura* (Hendel, 1920) !

Liriomyza Mik, 1894

- *aculeolata* Zlobin, 2003 !
- *amoena* (Meigen, 1830) !
- *approximata* (Hendel, 1920) !
- *artemisicola* de Meijere, 1924 !
- *balcanica* (Strobl, 1898) !
- *bryoniae* (Kaltenbach, 1858) !
- *buhri* Hering, 1937 !
- *centaureae* Hering, 1927 !
- *cicerina* (Rondani, 1874) !
- *congesta* (Becker, 1903) !
  = *trifolii* auct. nec Burgess, 1880
- *demeijerei* Hering, 1930 !
- *dendranthemae* Nowakowski, 1975 !
- *dianthicola* (Venturi, 1949) !

- *dracunculi* Hering, 1932 !
- *erucifolii* de Meijere, 1944 !
- *eupatorii* (Kaltenbach, 1873) !
- *europaea* Zlobin, 2003 !
- *flaveola* (Fallén, 1823) !
- *galiivora* (Spencer, 1969) !
  = *Galiomyza galiivora* (Spencer, 1969)
- *globulariae* Hendel, 1931 !
- *graminivora* Hering 1949 !
- *hampsteadensis* Spencer, 1971 !
- *hieracii* (Kaltenbach, 1862) !
- *hieracivora* Spencer, 1971 !
- *huidobrensis* (Blanchard, 1926) L
- *infuscata* Hering, 1926 !
- *intonsa* Spencer, 1976 !
- *lituanica* Pakalniškis, 1992 !
- *lutea* (Meigen, 1830) !
- *morio* (Brischke, 1880) !
  = *Galiomyza morio* (Brischke, 1880)
- *muranica* Černý, 2012 !
- *nietzkei* Spencer, 1973 L
- *obliqua* Hendel, 1931 !
- *occipitalis* Hendel, 1931 !
- *oldenbergi* Hering, 1933 !
- *orbona* (Meigen, 1830) !
- *pascuum* (Meigen, 1838) !
- *pedestris* Hendel, 1931 !
- *phryne* Hendel, 1931 !
- *pisivora* Hering, 1954 !
- *polygalae* Hering, 1927 !
- *pseudopygmina* (Hering, 1933) !
- *ptarmicae* de Meijere, 1925 !
- *puella* (Meigen, 1830) !
- *pusilla* (Meigen, 1830) !
- *pusio* (Meigen, 1830) !
- *richteri* Hering, 1927 !
- *solivaga* Spencer, 1971 !
- *sonchi* Hendel, 1931 !
- *soror* Hendel, 1931 !
- *strigata* (Meigen, 1830) !
- *taraxaci* Hering, 1927 !
- *taurica* Zlobin, 2003 !
- *trifolii* (Burgess in Comstock, 1880) L
- *urophorina* Mik, 1894 !
- *valerianae* Hendel, 1932 !
- *violiphaga* Hendel, 1932 L

= *Galiomyza violiphaga* (Hendel, 1932)
- *virgula* Frey, 1946 !
- *wachtlii* Hendel, 1920 !
- *yasumatsui* Sasakawa, 1972 !

Metopomyza Enderlein, 1936
- *flavonotata* (Haliday, 1833) !
- *nigriorbita* (Hendel, 1931) !
- *scutellata* (Fallén, 1823) !
- *xanthaspioides* (Frey, 1946) !
- *xanthaspis* (Loew, 1858) !

Napomyza Westwood, 1840
- *achilleanella* von Tschirnhaus, 1992 !
- *bellidis* Griffiths, 1967 !
- *carotae* Spencer, 1966 !
- *cichorii* Spencer, 1966 !
- *elegans* (Meigen, 1830) !
- *hirticornis* (Hendel, 1932) !
- *inquilina* (Kock, 1966) !
- *lateralis* (Fallén, 1823) !
- *maritima* von Tschirnhaus, 1981 !
- *merita* Zlobin, 1993 !
- *nigriceps* van der Wulp, 1871 !
- *scrophulariae* Spencer, 1966 !
- *tripolii* Spencer, 1966 !

Nemorimyza Frey, 1946
- *posticata* (Meigen, 1830) !

Phytobia Lioy, 1864
- *cambii* (Hendel, 1931) !
- *mallochi* (Hendel, 1924) !

Phytoliriomyza Hendel, 1931
- *arctica* (Lundbeck, 1901) !
- *melampyga* (Loew, 1869) !
- *perpusilla* (Meigen, 1830) !
- *pteridii* Spencer, 1973 !

Phytomyza Fallén, 1810
- *abdita* Hering, 1927 L
- *abdominalis* Zetterstedt, 1848 !
- *adenostylis* Hering, 1926 L
- *adjuncta* Hering, 1928 !
- *affinis* Fallén, 1823 !
- *agromyzina* Meigen, 1830 ! N8 [6]
- *albipennis* Fallén, 1823 !
- *alpestris* Hendel, 1920 L
- *alpina* Groschke & Hering, 1957 !
- *angelicae* Kaltenbach, 1872 !
  = *laserpitii* Hendel, 1924

- *angelicastri* Hering, 1932 !
- *angelicivora* Hering, 1924 !
- *aquilegiae* Hardy, 1849 !
- *arnicae* Hering, 1925 L
- *arnicicola* Lundquist, 1949 !
- *artemisivora* Spencer, 1971 !
- *aurei* Hering, 1931 !
- *bellidina* Hendel, 1934 !
- *bipunctata* Loew, 1858 L
- *brischkei* Hendel, 1922 !
- *buhriella* Spencer, 1969 !
- *calthivora* Hendel, 1934 !
- *calthophila* Hering, 1931 !
- *campanulae* Hendel, 1920 !
- *carlestolrai* Černý, 2007 !
- *chaerophylli* Kaltenbach, 1856 !
- *chaerophylliana* Hering, 1931 !
- *cirsii* Hendel, 1923 !
- *clematidis* Kaltenbach, 1859 !
- *coniopais* Hering, 1931 !
- *continua* Hendel, 1920 !
- *crassiseta* Zetterstedt, 1860 !
- *digitalis* Hering, 1925 L
- *erigerophila* Hering, 1927 !
- *eumorpha* Frey, 1946 !
- *evanescens* Hendel, 1920 !
- *fallaciosa* Brischke, 1880 !
- *farfarae* Hendel, 1935 !
- *ferina* Spencer, 1971 !
- *flavicornis* Fallén, 1823 !
- *flavofemorata* Strobl, 1893 !
- *glechomae* Kaltenbach, 1862 !
- *griffithsi* Spencer, 1963 !
- *gymnostoma* Loew, 1858 !
- *hendeli* Hering, 1923 !
- *heracleana* Hering, 1937 !
- *hirsuta* Spencer, 1976 !
- *homogyneae* Hering, 1927 !
- *hoppi* Hering, 1925 !
- *ilicis* Curtis, 1846 !
- *kaltenbachi* Hendel, 1922 L
  - = *atragenis* Hering, 1931
  - = *philactaea* Hering, 1932
- *krygeri* Hering, 1949 !
- *kurilensis* Iwasaki, 2000 !
- *kyffhusana* Hering, 1928 !

- *latifolii* Groschke & Hering, 1957 L
- *leucanthemi* Hering, 1935 !
- *marginella* Fallén, 1823 !
  = *prenanthidis* Hering, 1932
- *medicaginis* Hering, 1925 !
- *melana* Hendel, 1920 !
- *minuscula* Goureau, 1851 !
- *monticola* Černý, 2007 !
- *mutellinae* Beiger, 1961 !
- *mylini* Hering, 1954 !
- *narcissiflorae* Hering, 1928 L
- *nigrifemur* Hering, 1934 !
- *nigripennis* Fallén, 1823 !
- *nigritula* Zetterstedt, 1838 !
- *notata* Meigen, 1830 !
- *origani* Hering, 1931 !
- *paraciliata* (Godfray, 1985) !
- *pauliloewii* Hendel, 1920 !
- *penicilla* Hendel, 1935 L
- *petoei* Hering, 1924 !
- *picridocecis* Hering, 1957 !
- *pimpinellae* Hendel, 1924 !
- *plantaginis* Robineau-Desvoidy, 1851 !
- *platonoffi* Spencer, 1976 !
- *platystoma* (Hendel, 1920) !
- *pubicornis* Hendel, 1920 !
- *pullula* Zetterstedt, 1848 !
- *pulsatillae* Hering, 1924 L N9
  = *hoppiana* Hering, 1931
- *ranunculi* (Schrank, 1803) !
- *ranunculicola* Hering, 1949 !
- *ranunculivora* Hering, 1932 !
- *rapunculi* Hendel, 1927 !
- *rectae* Hendel, 1924 L
- *rhabdophora* Griffiths, 1964 !
- *robustella* Hendel, 1936 !
- *rostrata* Hering, 1933 !
- *rufipes* Meigen, 1830 !
- *salviae* (Hering, 1924) !
- *sedi* Kaltenbach, 1869 !
- *sedicola* Hering, 1924 L
- *senecionis* Kaltenbach, 1869 !
- *sitchensis* Griffiths, 1973 !
- *soenderupi* Hering, 1941 !
- *solidaginis* Hendel, 1920 L
- *spondylii* Robineau-Desvoidy, 1851 !

- *tenella* Meigen, 1830 !
- *tetrasticha* Hendel, 1927 !
- *thalictri* Escher-Kündig in de Rougemont, 1912 L
- *thymi* Hering, 1928 L
- *trollii* Hering, 1930 L
- *trolliivora* Hering, 1935 !
- *varipes* Macquart, 1835 !
- *veronicicola* Hering, 1925 !
- *virgaureae* Hering, 1926 !
- *vitalbae* Kaltenbach, 1872 !
- *wahlgreni* Rydén, 1944 !
- *zarzyckii* Nowakowski, 1975 !

Pseudonapomyza Hendel, 1920
- *atra* (Meigen, 1830) !
- *balkanensis* Spencer, 1973 !
- *errata* Zlobin, 1993 !
- *eurasiatica* Zlobin, 2003 !
- *europaea* Spencer, 1973 !
- *moraviae* Černý, 1992 !
- *strobliana* Spencer, 1973 !
- *vota* Spencer, 1973 !

Selachops Wahlberg, 1844
- *flavocinctus* Wahlberg, 1844 !

Excluded species

Agromyza lyneborgi Spencer, 1976 N10

Notes

N1 *Agromyza abdita* L. Papp in Papp & Černý 2015 is new for Switzerland.
N2 *Agromyza igniceps* Hendel, 1920 is new for Switzerland.
N3 *Agromyza phragmitidis* Hendel, 1922 is new for Switzerland.
N4 *Melanagromyza symphyti* Griffiths, 1963 is new for Switzerland.
N5 *Ophiomyia crispa* Guglya, 2013 was synonymised with *Ophiomyia hungarica* Černý in Papp & Černý, 2015 by Černý (2018).
N6 *Cerodontha (Poemyza) phalaridis* Nowakowski, 1967 is new for Switzerland.
N7 Hannover Rai (2013) published on Diptera.info the first record of *Cerodontha* (*Poemyza*) *unisetiorbita* Zlobin, 1993 for Switzerland from a bamboo garden near Zürich. This record was certified in Černý & Rohácek (2015).
N8 *Phytomyza agromyzina* Meigen, 1830 is new for Switzerland.
N9 *Phytomyza hoppiana* Hering, 1931, later synonymised with *P. pulsatillae*, was described from the type locality of Zernez (GR, Switzerland).
N10 The occurrence of *Agromyza lyneborgi* Spencer, 1976 in Switzerland was erroneously presented (Černý & Bächli 2018).

Species records

[1] 1M, VS, Baltschieder, 17.6.1996, leg. Bernhard Merz (CGB)
[2] 2M, VD, Cudrefin, 7.6.2019, 430 m, leg. Sophie Marti (CGB)
[3] 2M, VD, Cudrefin, 7.6.2019, 430 m, leg. Sophie Marti (CGB)
[4] 1M, VD, Cudrefin, 7.6.2019, 430 m, leg. Sophie Marti (CGB)

[5] 1M, VD, Cudrefin, 7.6.2019, 430 m, leg. Sophie Marti (CGB)
[6] 1M, ZH, Dietikon, 10.8.1982, leg. Gerhard Bächli (CGB)

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Opomyzidae

Jan Willem A. van Zuijlen (1998 Checklist: Bernard Merz)
Last update: Jul 2024

Diagnosis: Small (2.0-5.0 mm) and rather slender flies; body yellowish, reddish brown or black, with narrow, more or less distinctly maculated wings (at least with tip darkened). Head rounded, ocelli present; arista pubescent to plumose; ocellar setae present, postverticals (postocellars) absent in the genera occurring in Switzerland, only one reclinate orbital, interfrontal setulae scattered, true vibrissa absent. Thorax with one or more anepimeral (pteropleural) setae; anepisternum (mesopleuron) usually setulose; two scutellar setae. Wings long and slender, alula and anal lobe reduced or absent. Costa with only subcostal break, subcosta reduced and fused with R_1, forming a preapical kink on it, cross-vein bm-cu present but incomplete. Tibiae without dorsopreapical setae. Male genitalia with gonostylus fused to epandrium.

Biology: The adults typically inhabit grassland (wet and dry) but some also occur in grassy undergrowth of forests. The larvae are phytophagous in graminoid herbs, feeding in stems and can cause damage called « dead heart »; several species are cereal pests.

Nomenclature and classification: After the publication of Czerny (1928), no comprehensive study on the Palaearctic Opomzyidae has been published. For the *combinata* group in the genus *Geomyza* the interpretation of Drake (1992) is followed. This is also reflected in van Zuijlen (2013), which classification is followed.

Number of species: CH: 17 (1998 Checklist: 13),
BE: 17, CZ: 21, DE: 21, IT: 12, NL: 14, UK: 16, Europe: 33, World: 56.

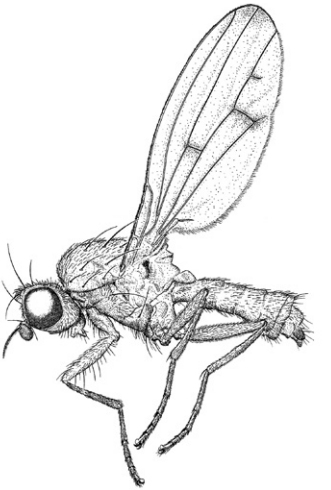
Level of faunistic knowledge in Switzerland: Medium.

General references: Drake (1993) [key for Switzerland – only partial], Czerny (1928) and Carles-Tolrá (1994) [keys], Zuijlen (1999a) [*combinata* group females], Brunel (1998) [general].

References to the Swiss fauna: Meier & Sauter (1989), Drake (1992), Merz (1998), van Zuijlen (1999b), Bächli et al. (2014).

Checklist

Geomyza Fallén, 1810
- *apicalis* (Meigen, 1830) !
  - = *hendeli* Czerny, 1928 N1
- *balachowskyi* Mesnil, 1934 !
- *breviseta* Czerny, 1928 !



Opomyza florum,
female (CMPD3, p. 260).

- *hackmani* Nartshuk, 1984 !
- *martineki* Drake, 1992 !
- *nartshukae* Carles-Tolrá, 1993 !
- *paganettii* (Strobl, 1909) ! N2 [1]
- *pilosula* Czerny, 1928 ! N3 [2]
- *subnigra* Drake, 1993 !
- *tripunctata* Fallén, 1823 !
- *venusta* (Meigen, 1830) !

Opomyza Fallén, 1820
- *decora* Oldenberg, 1910 !
- *florum* (Fabricius, 1794) !
- *germinationis* (Linnaeus, 1758) !
- *petrei* Mesnil, 1934 !
- *punctata* Haliday, 1833 !
- *punctella* Fallén, 1820 !

Notes

N1 As mentioned by Bächli et al. (2014), *Geomyza hendeli* Czerny, 1928 was synonymised by van Zuijlen & Rohaček (2006) with *Geomyza apicalis* (Meigen, 1830).

N2 *Geomyza paganettii*: first verified record for Switzerland, known before to occur from literature only.

N3 *Geomyza pilosula*: first records for Switzerland.

Species records

[1] 1M, GR, Grono (Dorf), 31.8.2006, 350 m., leg. Bernhard Merz

[2] 1F, GR, Lenzerheide, 8.10.1991. leg. Merz & Eggenberger

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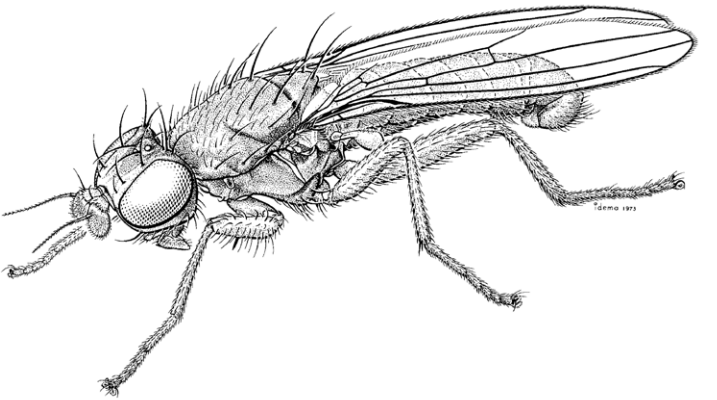
Anthomyzidae

Jindřich Roháček (1998 Checklist: Jindřich Roháček)
Last update: Jul 2024

Diagnosis: Body minute to small (1.3-4.5 mm), slender and usually elongate, yellow to blackish brown. Wings normally narrow elongate, only terricolous species sometimes brachypterous, stenopterous or apterous; legs slender and short. Antenna more or less geniculate; arista drosobasal, short-pubescent to pectinate; ocelli and ocellar setae present, postverticals small, convergent to crossed (rarely absent), 1-3 reclinate orbitals, usually preceded by 1-2 setulae, vibrissa present. Thorax without anepimeral (pteropleural) setulae, fore femur with ctenidial spine that can be secondarily absent (in some genera). Wing membrane unicolourous or dark ornamented; C usually with only subcostal break; Sc distally fused with R_1 and forming a preapical kink on it; anal vein abbreviated, not reaching wing margin. Tibiae lacking dorsopreapical setae. Male terminalia characterised by a complex folding apparatus between the aedeagal complex and hypandrium; hypandrium frame-like, closed also posteriorly; phallapodeme with a robust ventral fulcrum movably connected with the hypandrium anteriorly; distiphallus bifid from its base to form a (usually voluminous) membraneous saccus and a slender sclerotised filum. Female postabdomen with tergite 6 and sternite 6 similar to those of the 5th segment. Tergite 7 (large) and sternite 7 (small) separate or fused to form conical tergosternum. Female genital chamber usually with paired internal sclerites and single medial annular sclerite; unpaired ventral receptacle present but often small, submembranous to duct-like. Spermathecae (1+1) globular to elongately pyriform, with various surface structures. Tergite 10 and sternite 10 present but small. Cerci usually discrete and with rich setosity. For more detail on the morphology of adults and immatures see Roháček (2006, 2009) and Roháček & Barber (2016).

Biology: Adult Anthomyzidae are largely found in wetland habitats, for example damp meadows, marshes, peat-bogs and humid deciduous or mixed forests with rich herbaceous undergrowth. Larvae are (micro) phytosaprophagous to partly phytophagous, feeding on decaying plant tissues between the leaf sheaths of the tillers of grasses, sedges and other larger graminoids. Therefore, they prefer host plants damaged by phytophagous insects or other plant diseases. There are also some species with larvae mining soft tissues of dicotyledonous plants, or even ferns and horsetails; only (three known) species of *Fungomyza* Roháček, 1999 develop in decaying sporocarps of fungi. For more detail about life-history and biology of European Anthomyzidae, see Roháček (2006, 2009, 2013).

Nomenclature and classification: The recent progress in the knowledge of the phylogenetic relationships of (mainly Holarctic) Anthomyzidae (see Roháček 2006, 2009, Roháček & Tóthová 2014, Roháček & Barber 2016, Roháček et al. 2019) has also impacted the classification (chiefly generic affiliation) and nomenclature of some European species. The nomenclature follows the last Palaearctic checklist of Anthomyzidae given by Roháček (2009: 105) because the more recent changes did not affect the European taxa of the family.



Anthomyza collini,
male (MND2, p. 887 as *A. gracilis*).

Number of species: CH: 15 (1998 Checklist: 11),
AT: 12, CZ: 20, DE: 18, FR: 12, IT: 15, UK: 21, Europe: 33, World: 151.

Level of faunistic knowledge in Switzerland: Relatively good; 5 additional species of the family can be expected, so up to 20 species are estimated to occur in Switzerland.

General references: Roháček (2006, 2009).

References to the Swiss fauna: Roháček (1996, 1998, 1999, 2006, 2009, 2013), Merz (2012), Merz et al. (2002, 2006), Bächli et al. (2014).

Checklist

Anagnota Becker, 1902
- *bicolor* (Meigen, 1838) ! N1

Anthomyza Fallén, 1810
- *anderssoni* Roháček, 1984 ! N2
- *clara* Roháček, 2006 !
- *collini* Andersson, 1976 !
- *dissors* Collin, 1944 !
- *gracilis* Fallén, 1823 !
- *macra* Czerny, 1928 !
- *neglecta* Collin, 1944 !
- *pallida* (Zetterstedt, 1838) !
- *pleuralis* Czerny, 1928 !

Arganthomyza Roháček, 2009
- *socculata* (Zetterstedt, 1847) ! N3

Fungomyza Roháček, 1999
- *albimana* (Meigen, 1830) ! N3

Paranthomyza Czerny, 1902
- *nitida* (Meigen, 1838) !

Stiphrosoma Czerny, 1928
- *sabulosum* (Haliday, 1837) !

Typhamyza Roháček, 1992
- *bifasciata* (Wood, 1911) !

Notes

N1 Presence of *Anagnota bicolor* confirmed for Switzerland in Merz et al. (2001).

N2 Presence of *Anthomyza anderssoni* confirmed for Switzerland in Roháček (2009).

N3 *Arganthomyza socculata* and *Fungomyza albimana* were recorded in the 1998 Checklist as *Anthomyza* sp.

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Aulacigastridae

Wayne N. Mathis (1998 Checklist: Gerhard Bächli)
Last update: Jul 2024

Diagnosis: Adult: Small to medium-sized flies (body length 1.6-5.2 mm). Colouration: Body predominantly dark brown to black. Frons often with anterior ¼ - ½ yellowish in ground colour or bearing a transverse, large, orange band. Scutum typically bearing microtomentum. Wing usually mostly hyaline, partly infuscate brown in some species.

Mature larva subcylindrical, amphipneustic, bearing a long, partially retractile terminal respiratory tube; integument white, almost transparent, covered with minute spicules and sensory setae, or smooth; anterior spiracles small, retracted into a pair of deep, narrow pockets; posterior spiracles on apex of respiratory tube, joined at their base, bifurcating posteriorly. Puparium light brown, oval in shape, with prothoracic spiracle completely everted.

Biology: Information in the literature on the natural history of *Aulacigaster* species is scarce. Adults and immatures from the Holarctic Region are peculiar to weeping wounds and sap fluxes of deciduous trees (Robinson 1953, Teskey 1976, Ferrar 1987).

Nomenclature and classification: Aulacigastridae are a distinct family, based on both larval and adult characters, which extent differs widely among authors. In our view two genera are included, with only *Aulacigaster* present in the Palaearctic (Rung et al. 2005).

Number of species: CH: 3 (1998 Checklist: 1),
BE:1, CZ: 2, DE: 1, IT: 1, NL:1, UK:1, Europe: 5, World: 55.

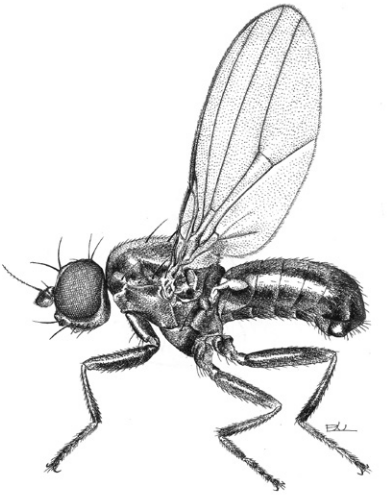
Level of faunistic knowledge in Switzerland: Good. It is unlikely that additional species will be discovered.

General references: Rung & Mathis (2011) [world, key, general], Papp (1997) [European species, key].

References to the Swiss fauna: Bächli (1997, 1998), Bächli et al. (1999), Merz et al. (2002).

Checklist

Aulacigaster Macquart, 1835
- *falcata* Papp, 1998 !
- *leucopeza* (Meigen, 1830) !
- *pappi* Kassebeer, 2001 !



Aulacigaster leucopeza,
male (CMPD3, p. 279).

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Periscelididae (incl. Stenomicrinae)

Lucia Pollini Paltrinieri (1998 Checklist: Gerhard Bächli [Periscelididae],
Gerhard Bächli [Stenomicridae])
Last update: Jul 2024

Diagnosis: Minute to small flies (1-5 mm), either grey-brown flies, often with banded legs and antenna with second segment overhanging third segment like a hat (Periscelidinae), or delicate yellow or grey flies, head with somewhat reduced frontal chaetotaxy and thorax narrower than head (Stenomicrinae). Arista with long rays, ocelli present, tibiae without dorsal preapical bristle. Chaetotaxy and other features characters are different between the two subfamilies.

Periscelidinae: Oc-bristles present, P-bristles divergent, 1 pair of F-bristles curving backward, interfrontal bristles absent, row of vibrissae-like bristles present. Wing clear or with dark spots, veins clear or infuscated, costa continuous, vein Sc incomplete.

Stenomicrinae: Oc-bristles absent, P-bristles small and divergent or absent, 2 pairs of F-bristles lower pair curving inward, interfrontal bristles absent, vibrissae and a series of vibrissae-like bristles present. Wing rather elongate, clear or with tinged spots, subcostal break present, vein Sc incomplete.

Biology: The larvae of Periscelidinae are known for living in exuding sap at wounds on deciduous trees, and the adults are usually found near tree wounds and feed on tree sap; males may be seen hovering near sap runs. The biology of Stenomicrinae is little known, but it seems that they are associated with *Carex* and have been collected from tussocks. *Podocera soniae* (Merz & Roháček 2005) may be associated with dicotyledonous umbellifer.

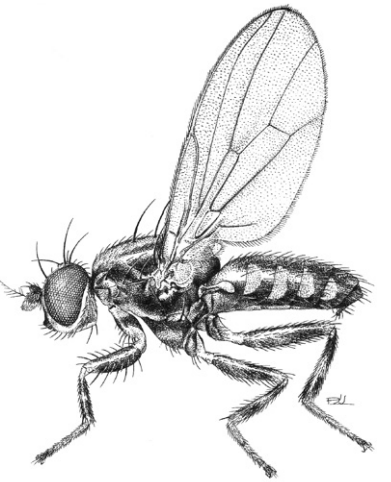
Nomenclature and classification: According to Mathis & Rung (2011) and Roháček et al. (2016). Including two subfamilies, Periscelidinae and Stenomicrinae; the second one was treated as a separate family in the 1998 checklist.

Number of species: CH: 8 (1998 Checklist: 4 [3 + 1]),
CZ: 4, DE: 6, FR: 2, GB: 7, IT: 3, NL: 5, SK: 4, Europe: 10, World: 110.

Level of faunistic knowledge in Switzerland: Good.

General references: Bächli (1997) [key and faunistic], Papp et al. (2011) [nomenclature, key], Roháček et al. (2017) [key], Merz et al. (2005) [key and faunistic], Pollini Paltrinieri & Roháček (2022) [key].

References to the Swiss fauna: Bächli (1997, 1998a, 1998b), Bächli et al. (2006), Pollini Paltrinieri & Roháček (2022).



Periscelis annulata,
male (CMPD3, p. 285).

Checklist

Periscelidinae

Periscelis Loew, 1858
(*Myodris* Lioy, 1864)
- *annulata* (Fallén, 1813) !
- *haennii* Pollini & Roháček, 2022 !
- *piricercus* (Carles-Tolrá & Verdugo Páez, 2009) ! [1]

(*Periscelis* s.str.)
- *annulipes* Loew, 1858 !
- *laszloi* Roháček, 2022 ! [2]
  = *winnertzii* auct. nec (Egger, 1862)
- *winnertzii* Egger, 1862 ! [3]
  = *fugax* Roháček & Andrade, 2017

Stenomicrinae

Podocera Czerny, 1929 N1
- *delicata* (Collin, 1944) !
  = *Stenomicra (Diadelops) delicata* (Collin, 1944)
- *soniae* (Merz & Roháček, 2005) !
  = *Stenomicra (Podocera) soniae* Merz & Roháček, 2005

Notes

N1 Subgenus *Podocera* is raised to genus level (Papp 2006).

Species records

[1] 10M, TI, Losone, Arcegno, Collina di Maia, Castagneto con querce, 23.6.2016, 419 m., leg. Lucia Pollini Paltrinieri

[2] 11M, 7F, TI, Losone, Arcegno, Collina di Maia, Castagneto con querce, 21.7.2015, 419 m., leg. Lucia Pollini Paltrinieri

[3] 7M, 8F, TI, Losone, Arcegno, Collina di Maia, Castagneto con querce, 8.9.2015, 419 m., leg. Lucia Pollini Paltrinieri

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Asteiidae

Gerhard Bächli (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Very small (1-3 mm), soft-bodied flies. Body in *Asteia* yellow and black, abdomen often yellow with delicate black pattern, body in *Leiomyza* dark. Head with few strong setae; vibrissae present; antennae small, third segment short and arista with several short dorsal and ventral rays. Wings without costal breaks; R_{4+5} and M convergent apically; in *Asteia* only cross vein r-m present, in *Leiomyza* only cross veins r-m and dm-cu; anal cell and anal vein absent. Abdomen usually weakly sclerotised. Larvae resembling those of Drosophilidae in general appearance but much smaller, larvae of *Asteia* more slender than those of *Leiomyza*.

Biology: Larvae are all presumed saprophagous. *Leiomyza* species have been found on and reared from numerous species of fungi. Mating takes place on the fungi. The immature stages of *Asteia* species have not yet been described. The adults are often found indoors on windows. Outdoors they are frequently swept from low vegetation.

Nomenclature and classification: According to Carles-Tolrá (2007).

Number of species: CH: 7 (1998 Checklist: 7),
BE: 7, CZ: 8, DE: 6, IT: 2, NL: 6, UK: 4, Europe: 18, World: 130.

Level of faunistic knowledge in Switzerland: Good.

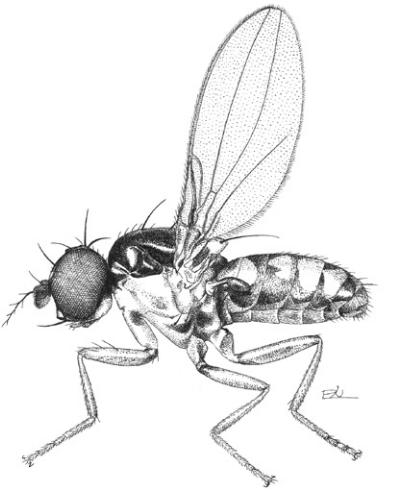
General references: Sabrosky (1956) [key], Chandler (1978) [key], Merz (1996) [key], Papp (1998), Gibbs & Papp (2007).

References to the Swiss fauna: Merz (1996, 1998).

Checklist

Asteia Meigen, 1830
(*Asteia* s.str.)
- *amoena* Meigen, 1830 !
- *concinna* Meigen, 1830 !
- *elegantula* Zetterstedt, 1847 !

Leiomyza Macquart, 1835
- *curvinervis* (Zetterstedt, 1838) !
- *dudai* Sabrosky, 1956 !
- *laevigata* (Meigen, 1830) !
- *scatophagina* (Fallén, 1823) !



Asteia amoena,
male (CMPD3, p. 295).

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Milichiidae

Irina Brake (1998 Checklist: László Papp)
Last update: Jul 2024

Diagnosis: Small, mostly black acalyptrate flies. Body shiny or more or less grey dusted. The family contains about 400 extant and 10 fossil species in 18 genera and has a worldwide distribution.

Most Swiss species can be recognised by the presence of two lateroclinate orbital setae and two medioclinate frontal setae. Proboscis often elongate and palpi in some species enlarged. Costa with humeral and subcostal breaks.

Biology: The behavior of several species of Milichiidae is very specialised. For example, in some species the adults are myrmecophilous, whilst in some others they are klepto-parasitic, feeding on the prey of spiders or predaceous insects. Adults can be collected in meadows, at the edges of or in forests, in stables or houses. The larvae develop in diverse decaying plant and animal matter, like compost, excrement or carrion.

Nomenclature and classification: According to Brake (2019).

Number of species: CH: 18 (1998 Checklist: 17),
BE: 9, CZ: 22, DE: 15, IT: 9, NL: 16, UK: 19, Europe: 43, World: ~400.

Level of faunistic knowledge in Switzerland: Good.

General references: Brake (2019).

References to the Swiss fauna: Papp (1998).

Checklist

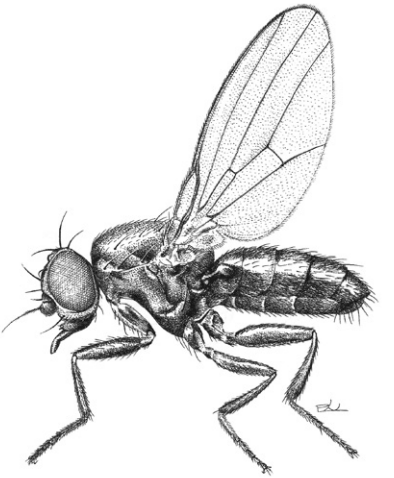
Desmometopa Loew, 1865
- *m-nigrum* (Zetterstedt, 1848) !
- *sordida* (Fallén, 1820) !
- *varipalpis* Malloch, 1927 !

Leptometopa Becker, 1903
- *latipes* (Meigen, 1830) !

Madiza Fallén, 1810
- *britannica* Hennig, 1937 !
- *glabra* Fallén, 1820 !

Milichia Meigen, 1830
- *ludens* (Wahlberg, 1847) !
- *speciosa* Meigen, 1830 !

Neophyllomyza Melander, 1913



Desmometopa sordida,
male (CMPD3, p. 315).

- *acyglossa* (Villeneuve, 1920) !
- *leanderi* Hendel, 1924 !

Phyllomyza Fallén, 1810

- *donisthorpei* Schmitz, 1923 !
- *equitans* (Hendel, 1919) !
- *flavitarsis* (Meigen, 1830) !
- *formicae* Schmitz, 1923 !
- *melania* (Hendel, 1919) !
- *rubricornis* Schmitz, 1923 !
- *securicornis* Fallén, 1823 !
- *tetragona* Hendel, 1924 !

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Carnidae

Jens-Hermann Stuke (1998 Checklist: László Papp)
Last update: Jul 2024

Diagnosis: Very small (1.0-2.5 mm), mainly black flies; head with large frontal triangle; anterior two orbital setae inclinate, posterior orbital setae lateroclinate; frons usually with a pair of interfrontal setae; postocellar setae parallel or divergent; several strong pseudovibrissae; deep antennal fovea; palpi small. Costa with humeral and subcostal break, not deeply notched; subcosta complete, very short. Tibiae without dorsal preapical setae; ventral intersegmental membrane of abdomen with setae. Male postabdomen variable and species specific. Female postabdomen telescoping; cerci fused.

Biology: Larvae of *Meoneura* and *Hemeromyia* have been reared from bird nests, animal droppings, carrion, fungi or decaying plant material. Details of larval development are almost unknown to date. Adults are often found near larval substrates but have also been found visiting flowers. However, most specimens are found by sweeping and detailed observations of adults are rare. *Carnus hemapterus* is specialised on larval development in bird nests and has been recorded from a wide range of bird species. The larvae of *Carnus* feed mainly on blood from the nestlings' skin. Adults lose their wings when they have colonised suitable nests.

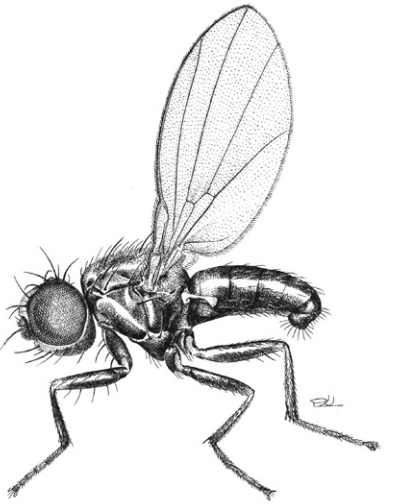
Nomenclature and classification: According to Brake (2011).

Number of species: CH: 28 (1998 Checklist: 19),
BE: > 3, CZ: 24, DE: 21, IT: 23, NL: > 7, UK: 13, Europe: 57, World: 159.

Level of faunistic knowledge in Switzerland: Excellent.

General references: Collin (1930) [key], Hennig (1937) [general introduction], Papp (1978, 1998) [keys, general introduction], Stuke & Bächli (2015) [key], Stuke & Freidberg (2017) [keys].

References to the Swiss fauna: Büttiker (1969, 1975), Büttiker & Aeschlimann (1974), Grimaldi (1997), Merz (2012), Merz et al. (2002), Papp (1985, 1997, 1998), Rezbanyai-Reser & Birrer (2005), Roulin (1999), Roulin et al. (2001), Stuke & Bächli (2015), Stuke & Freidberg (2017), Wegelin (1933).



Meoneura flavifacies, male (CMPD3, p. 211).

Checklist

Carnus Nitzsch, 1818
- *hemapterus* Nitzsch, 1818 L

Hemeromyia Coquillett, 1902
- *longirostris* Carles-Tolrá, 1992 !

Meoneura Rondani, 1856
- *alphabetica* Carles-Tolrá & Ventura, 2002 !
- *alpina* Hennig, 1948 !
- *atoma* L. Papp, 1981 !
- *elongella* (Zetterstedt, 1838) ! N1
- *exigua* Collin, 1930 !
- *falcata* L. Papp, 1997 !
- *flavifacies* Collin, 1930 !
- *flavifrons* L. Papp, 1981 !
- *freta* Collin, 1937 !
- *glaberrima* Becker, 1907 ! N2
  = *neglecta* Collin, 1930
- *helvetica* L. Papp, 1997 !
- *lacteipennis* (Fallén, 1823) !
- *lamellata* Collin, 1930 L
- *longifurca* L. Papp, 1997 !
- *milleri* Gregor, 1973 !
- *minutissima* (Zetterstedt, 1860) !
- *moravica* Gregor & L. Papp, 1981 !
- *neottiophila* Collin, 1930 !
- *obscurella* (Fallén, 1823) !

- *occulta* Stuke, 2015 !
- *pappi* Stuke, 2015 !
- *prima* (Becker, 1903) !
- *pseudoflavifacies* L. Papp, 1997 ! N3
  = *carpathica pseudoflavifacies* L. Papp, 1997
- *triangularis* Collin, 1930 !
- *vagans* (Fallén, 1823) !
- *ziegleri* Stuke, 2015 !

Notes

N1 *Meoneura elongella*: the status of this Scandinavian species in Central Europe remains unsolved. Only a female specimen exists from Switzerland, and its identity cannot be assigned unambiguously (Stuke & Barták 2019).

N2 Ozerov (1994) synonymised *Meoneura neglecta* with *M. glaberrima*.

N3 *Meoneura pseudoflavifacies* is a valid species, not a subspecies as originally proposed. Only *M. pseudoflavifacies* is known from Switzerland, not *M. carpathica*.

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Braulidae

Gerhard Bächli (1998 Checklist: Walter Büttiker)
Last update: Jul 2024

Diagnosis: Small (less than 2 mm), wingless flies; body reddish to dark brown, flattened dorsoventrally. Head broad, short and with minute eye spots; ocelli absent. Thorax short, with strongly reduced sclerites. Wings, scutellum, halters and calypteres absent. Legs relatively long and strongly built; tarsal segments short and broad; tarsal claws in the shape of combs of teeth. Abdomen broad and flattened; tergites with many strong setae, especially laterally.

Biology: The Braulidae are well-known as « bee-lice » in the nests of honeybees (*Apis* spp.). The larvae are commensals, living in cells in the nest and feeding on pollen, honey and organic debris. Adults are « food-parasites » of adult bees, attaching themselves to the body of the queen (rarely of a worker) and feeding on liquids from the mouth-opening of the bee.

Nomenclature and classification: According to Papp (1998), Carles-Tolrá (2007).

Number of species: CH:1 (1998 Checklist: 1),
BE: 2, CZ: 1, DE: 1, IT: 2, NL: 1, UK: 2, Europe: 3, World: 7.

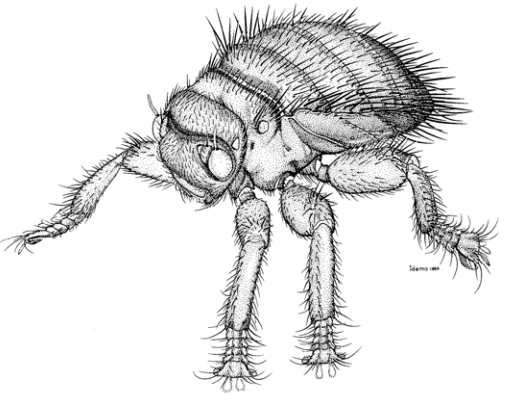
Level of faunistic knowledge in Switzerland: Good.

General references: Dobson (1999) [key, British Isles], Örösi-Pál (1966) [key], Papp (1998) [general].

References to the Swiss fauna: Büttiker (1994, 1998).

Checklist

Braula Nitzsch, 1818
- *coeca* Nitzsch, 1818 !



Braula coeca,
female (MND2, p. 913).

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Canacidae

Lorenzo Munari † (1998 Checklist: absent)
Last update: Dec 2019

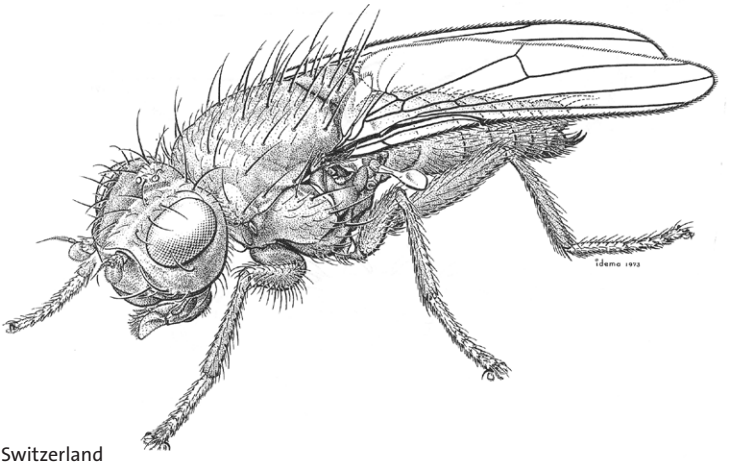
Diagnosis: The family Canacidae *sensu lato*, i.e., including the formerly Tethinidae (these two taxa have very recently been merged into a single, inclusive family [McAlpine 2007]), is distinguished from other families of Carnoidea by the following combination of characters: primarily occurring in saline habitats (secondarily in freshwater habitats); minute to small flies, body length 0.91-5.0 mm. Head with postocellar (= postvertical) setae usually developed; posterior fronto-orbital seta lateroclinate; vibrissa weakly differentiated; antennal arista dorsal; face strongly depressed and short, or with more or less obvious medial carina, or distinctly convex; gena generally bare, except for ventral or nearly ventral row of setae (peristomal setae), or with many tiny setulae (most Pelomyiinae), or even with a few anaclinate, strong setae (Canacinae). Thorax with precoxal bridge developed; prescutellar acrostichal setae usually developed; presutural dorsocentral setae differentiated; anepisternum with 2-3 developed posterior setae, also bearing a dorsoclinate seta at posterodorsal corner; 1 katepisternal seta usually present; proepisternal seta developed. Wing generally hyaline, bearing fine, dense microtrichia; subcosta usually weakened apically, close to vein R_1; vein CuA+CuP short; vein A_1 long, present as a fold. Abdomen with pregenital sclerites of male short and fused; postabdomen of female more or less retracted telescopically.

Biology: The biology and immature stages of the family are very poorly known. Canacidae (except Pelomyiinae) are mostly halobionts and, in many cases, thalassobiont flies, occurring mainly in coastal marine habitats. Adults of thalassobiont species are commonly found in the intertidal and supralittoral zones, wrack heaps (usually brown algae that are most abundant along temperate seashores bathed by cold currents), salt marshes, dune vegetation, lagoon-litoriparian zones, mangroves and on saline soils or bare sand. Various species of the genus *Tethina* also inhabit desert oases and other inland environments sometimes hundreds of kilometres from sea coasts (Beschovski & Nartshuk 1997; Munari 2005). Species of Pelomyiinae (to which the only species occurring in Switzerland belongs) are found mainly in inland damp habitats and occur in maritime environments only occasionally. The canacid flies apparently have no significant economic or medical importance.

Nomenclature and classification: According to Munari & Mathis (2010). The family is mentioned in Merz et al. (2002) under Tethinidae. The actual family name is Canacidae.

Number of species: CH: 1 (1998 Checklist: 0),
BE: 1, DE: 7, CZ: 3, IT: 3, NL: 7, UK: 7, Europe: 37 (incl. Canary Islands and Madeira), World: 320.

Level of faunistic knowledge in Switzerland: Medium. *Pelomyia* Williston 1893 is a primarily New World genus with many species described from the Neotropical Region. Of the 29 described species worldwide, only one species, *Pelomyia occidentalis* Williston 1893, occurs in the Palaearctic Region and is the sole species of the entire family



Canacea macateei,
male, not present in Switzerland
(MND2, p. 1079).

Canacidae recorded from Switzerland. However, in the genus *Pelomyiella* Hendel 1934, three species, i.e., *P. cinerella* (Haliday 1837), *P. hungarica* (Czerny 1928) and the common *P. mallochi* (Sturtevant 1923) are expected to be found.

General references: Hendel (1934) [revision], Foster & Mathis (2003) [revision of *Pelomyia*], McAlpine (2007) [suprageneric reassessment], Munari (2011) [key to Euro-Mediterranean genera and species], Munari & Mathis (2010) [world catalogue].

References to the Swiss fauna: Merz et al. (2002).

Checklist

Pelomyia Williston, 1893
- *occidentalis* Williston, 1893 ! N1

Notes

N1 *Pelomyia occidentalis* was mentioned by Merz et al. (2002) under the family Tethinidae, but the actual family name is Canacidae.

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Chloropidae

Štěpán Kubík (1998 Checklist: Ágnes Dely-Draskovits)
Last update: Jul 2024

Diagnosis: Frit flies (Diptera, Chloropidae) are small to medium sized flies, adult body length 1.5-5.0 mm, rarely larger, with reduced bristling. Body colour very variable, most species are entirely black, and often with metallic sheen (subfamily Oscinellinae, Siphonellopsinae, Rhodesiellinae), whereas some species are yellow with black, red or brown longitudinal stripes on the scutum (subfamily Chloropinae). The adults occur in various marshy habitats, in deciduous woods, in damp meadows and in open areas.

Biology: Chloropid larvae have varied feeding habits. Many species are phytophagous, and some of those damage cereals and other grasses. There are also saprophagous species, a few species that have been bred from fungi, and some predaceous species.

Nomenclature and classification: According to Nartshuk (2012, 2013), Nartshuk & Andersson (2013).

Number of species: CH: 161 (1998 Checklist: 136),
BE: 175, CZ: 205, DE: 141, HU: 207, IT: > 190, NL: 142, SK: 169, UK: 178, Europe: 394, World: > 2000.

Level of faunistic knowledge in Switzerland: Medium; at least 100 additional species are expected.

General references: Duda (1933) [key], Andersson (1977) [key], Ismay & Schulten (2006), Nartchuk (2013) [zoogeographical distribution], Nartshuk & Andersson (2013) [key].

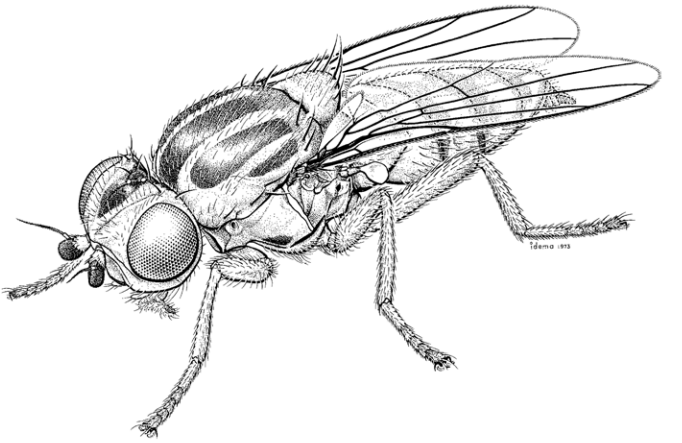
References to the Swiss fauna: Dely-Draskovits (1998), Merz et al. (2006), Bächli et al. (2014), Merz (2008).

Checklist

Chloropinae
Camarota Meigen, 1830
- *curvipennis* (Latreille, 1805) !

Centorisoma Becker, 1910
- *elegantulum* Becker, 1910 !

Cetema Hendel, 1907
(*Cetema* s.str.)
- *cereris* (Fallén, 1820) !
- *elongatum* (Meigen, 1830) !
  = *obliqua* Beschovski, 1984 N1
  = *simile* Ismay, 1985 N1



***Chlorops certimus*,**
female , not present in Switzerland (MND2, p.1049).

- *myopinum* (Loew, 1866) !
- *neglectum* Tonnoir, 1921 !

Chlorops Meigen, 1830
(*Chlorops* s.str.)
- *adjunctus* Becker, 1910 !
- *alpicolus* Becker, 1910 !
- *anthracophagoideus* Strobl, 1900 !
- *calceatus* Meigen, 1830 !
- *centromaculatus* (Duda, 1933) !
- *dasycerus* Loew, 1866 !
- *fasciatus* Meigen, 1830 !
- *finitimus* Becker, 1910 !
- *frontosus* Meigen, 1830 !
- *geminatus* Meigen, 1830 !
- *gracilis* Meigen, 1830 !
- *hypostigma* Meigen, 1830 !
- *interruptus* Meigen, 1830 !
- *longipalpis* (Duda, 1933) !
- *meigenii* Loew, 1866 !
- *planifrons* Loew, 1866 !
- *pumilionis* (Bjerkander, 1778) !
- *ringens* Loew, 1866 !
- *rufinus* (Zetterstedt, 1848) !
- *scalaris* Meigen, 1830 !
- *scutellaris* Zetterstedt, 1838 !
- *serenus* Loew, 1866 !
- *speciosus* Meigen, 1830 !

- *strigulus* (Fabricius, 1794) !
- *triangularis* Becker, 1910 !
- *troglodytes* (Zetterstedt, 1848) !

(*Sclerophallus* Beschovski, 1978)

- *limbatus* Meigen, 1830 L N2
  = *brevimanus* Loew, 1866 N3
- *varsoviensis* Becker, 1910 ! N2

Cryptonevra Lioy, 1864

- *diadema* (Meigen, 1830) !
- *flavitarsis* (Meigen, 1830) !
- *nigritarsis* (Duda, 1933) !

Diplotoxa Loew, 1863

- *messoria* (Fallén, 1820) !

Diplotoxoides Andersson, 1977

- *dalmatina* Strobl, 1900 L N4

Epichlorops Becker, 1910

- *puncticollis* (Zetterstedt, 1848) !

Eutropha Loew, 1855

- *variegata* Loew, 1866 !

Homalura Meigen, 1826

- *tarsata* Meigen, 1826 !

Lasiosina Becker, 1910

- *albipila* (Loew, 1866) !
- *cinctipes* (Meigen, 1830) ! N5
  = *nigripes* Dely-Draskovits, 1977
- *herpini* (Guerin-Meneville, 1843) ! N6
- *intermedia* Dely-Draskovits, 1977 !
- *subnigripes* Dely-Draskovits, 1977 !

Meromyza Meigen, 1830

(*Meromyza* s.str.)

- *bohemica* Fedoseeva, 1962 !
- *curvinervis* (Zetterstedt, 1848) !
- *femorata* Macquart, 1835 !
- *hispanica* Fedoseeva, 1971 !
- *laeta* Meigen, 1838 !
- *nigriseta* Fedoseeva, 1960 !
- *nigriventris* Macquart, 1835 !
- *palposa* Fedoseeva, 1960 !
- *pleurosetosa* Beschovski, 1987 !
- *pluriseta* Péterfi, 1961 !
- *pratorum* Meigen, 1830 !
- *rufa* Fedoseeva, 1962 !
- *saltatrix* (Linnaeus, 1760) !
- *triangulina* Fedoseeva, 1960 !
- *variegata* Meigen, 1830 !
- *zachvatkini* Fedoseeva, 1960 !

Metopostigma Becker, 1903
- *polonicum* (Schnabl, 1884) !

Neohaplegis Beschovski, 1981
- *glabra* (Duda, 1933) !
- *tarsata* (Fallén, 1820) !

Platycephala Fallén, 1820
- *planifrons* (Fabricius, 1798) !
- *umbraculata* (Fabricius, 1794) !

Pseudopachychaeta Strobl, 1902
- *approximatonervis* (Zetterstedt, 1848) !
- *ruficeps* (Zetterstedt, 1838) !

Thaumatomyia Zenker, 1833
- *elongatula* (Becker, 1910) !
- *glabra* (Meigen, 1830) !
- *hallandica* Andersson, 1966 !
- *notata* (Meigen, 1830) !
- *rufa* (Macquart, 1835) !
- *trifasciata* (Zetterstedt, 1848) !

Xena Nartshuk, 1964
- *straminea* Nartshuk, 1964 !

Oscinellinae

Aphanotrigonum Duda, 1932
- *nigripes* (Zetterstedt, 1848) !
- *trilineatum* (Meigen, 1830) !
  = *beschovskii* Dely-Draskovits, 1981 N7

Calamoncosis Enderlein, 1911
(*Calamoncosis* s.str.)
- *aprica* (Meigen, 1830) !
- *aspistylina* Duda, 1935 !
- *minima* (Strobl, 1893) !

Conioscinella Duda, 1929
- *bicingulata* (Strobl, 1893) !
- *frontella* (Fallén, 1820) !
- *gallarum* (Duda, 1933) !
- *sordidella* (Zetterstedt, 1848) !
- *zetterstedti* Andersson, 1966 !
- *zuercheri* Duda, 1933 !

Dicraeus Loew, 1873
(*Dicraeus* s.str.)
- *ingratus* (Loew, 1866) !
- *nigropilosus* Becker, 1910 !
- *raptus* (Haliday, 1838) !
- *tibialis* (Macquart, 1835) !

(*Oedesiella* Becker, 1910)
- *fennicus* Duda, 1933 !

- *rossicus* Stackelberg, 1955 !

(*Paroedesiella* Sabrosky, 1941)

- *styriacus* (Strobl, 1898) !
  - = *vallaris* Collin, 1946 N8
- *vagans* (Meigen, 1838) !

Elachiptera Macquart, 1835

- *austriaca* Duda, 1932 !
- *brevipennis* (Meigen, 1830) !
- *cornuta* (Fallén, 1820) !
  - = *cornuta nigripes* Strobl, 1894 N9
  - = *cornuta nigromaculata* Strobl, 1894 N9
- *diastema* Collin, 1946 !
- *scrobiculata* (Strobl, 1901) !
- *sibirica* (Loew, 1858) !
- *tuberculifera* (Corti, 1909) !

Eribolus Becker, 1910

- *gracilior* (de Meijere, 1918) !
- *hungaricus* Becker, 1910 !

Gampsocera Schiner, 1862

- *numerata* (Heeger, 1858) !

Gaurax Loew, 1863

- *dubius* (Macquart, 1835) !
- *fascipes* Becker, 1910 !
- *flavomaculatus* (Duda, 1933) ! N10
- *niger* Czerny, 1906 !

Hapleginella Duda, 1933

- *laevifrons* (Loew, 1858) !

Incertella Sabrosky, 1980

- *albipalpis* (Meigen, 1830) !
- *kerteszi* (Becker, 1910) !
- *nigrifrons* (Duda, 1933) ! N11
  - = *Conioscinella nigrifrons* Duda, 1933
- *scotica* (Collin, 1946) !
- *zuercheri* (Duda, 1933) !

Lasiambia Sabrosky, 1941

- *baliola* Collin, 1946 ! N12
- *brevibucca* (Duda, 1933) ! N12
- *coxalis* (von Rosen, 1840) ! N12
  - = *Fiebrigella oophila* (Hennig, 1941)
- *palposa* (Fallén, 1820) ! N12

Lasiochaeta Corti, 1909

- *pubescens* (Thalhammer, 1898) ! N13

Lipara Meigen, 1830

- *lucens* Meigen, 1830 !
- *pullitarsis* Doskocil & Chvála, 1971 !
- *rufitarsis* Loew, 1858 !

- *similis* Schiner, 1854 !

Microcercis Beschovski, 1981
- *trigonella* Duda, 1933 ! N14

Oscinella Becker, 1910
(*Oscinella* s.str.)
- *angularis* Collin, 1946 !
- *capreolus* (Haliday, 1838) ! N15
- *cariciphila* Collin, 1946 !
- *frit* (Linnaeus, 1758) !
- *maura* (Fallén, 1820) !
- *nitidissima* (Meigen, 1838) !
- *pusilla* (Meigen, 1830) !
- *trochanterata* Collin, 1946 !

Oscinimorpha Lioy, 1864
- *arcuata* (Duda, 1932) !
- *minutissima* (Strobl, 1900) !
- *novakii* (Strobl, 1893) !
- *sordidissima* (Strobl, 1893) !

Oscinisoma Lioy, 1864
- *cognatum* (Meigen, 1830) !
- *germanicum* (Duda, 1932) !

Polyodaspis Duda, 1933
- *ruficornis* (Macquart, 1835) !
- *sulcicollis* (Meigen, 1838) !

Pseudogaurax Malloch, 1915
- *venustus* (Czerny, 1906) !

Rhopalopterum Duda, 1929
- *anthracinum* (Meigen, 1830) !
- *atricillum* (Zetterstedt, 1838) !
- *atricorne* (Zetterstedt, 1838) !
- *fasciolum* (Meigen, 1830) !
- *femorale* (Collin, 1946) !

Siphonella Macquart, 1835
- *oscinina* (Fallén, 1820) !

Siphunculina Rondani, 1856
- *aenea* (Macquart, 1835) !
- *ismayi* Merz, 2008 !

Speccafrons Sabrosky, 1980
- *genavensis* Merz, 2008 !
- *halophila* (Duda, 1933) ! N16
  = *Conioscinella halophila* Duda, 1933

Trachysiphonella Enderlein, 1936
- *carinifacies* Nartshuk, 1964 !
- *ruficeps* (Macquart, 1835) !
  = *pygmaea* (Meigen, 1838) N17
- *scutellata* (von Roser, 1840) !

Tricimba Lioy, 1864
(*Nartshukiella* Beschovski, 1981)
- *cincta* (Meigen, 1830) !
- *humeralis* (Loew, 1858) !
(*Tricimba* s.str.)
- *lineella* (Fallén, 1820) !

Rhodesiellinae

Rhodesiella Adams, 1905
- *plumiger* (Meigen, 1830) !

Siphonellopsinae

Apotropina Hendel, 1907
- *brevivenosa* (Dely-Draskovits, 1977) !

Notes

N1 *Cetema obliqua* and *C. simile* synonymised with *C. elongatum* by Nartshuk & Andersson (2013).
N2 *Chlorops limbatus* and *C. varsoviensis*: subgeneric affiliation to subgenus (*Sclerophallus*).
N3 *Chlorops brevimanus* synonymised with *C. limbatus* by Nartshuk & Andersson (2013).
N4 *Diplotoxoides dalmatina* was recorded in the 1998 Checklist as *Diplotoxa dalmatina* Strobl, 1900.
N5 *Lasiosina nigripes* synonymised with *Lasiosina cinctipes* by Nartshuk (1997).
N6 *Lasiosina herpini* as *Lasiosina cinctipes* auct. not Meigen (Nartshuk 1997).
N7 *Aphanotrigonum beschovskii* synonymised with *Aphanotrigonum trilineatum* by Nartshuk & Andersson (2013).
N8 *Dicraeus vallaris* synonymised with *D. styriacus* by Nartshuk & Andersson (2013).
N9 *Elachiptera cornuta*: no subspecies accepted (Nartshuk & Andersson 2013).
N10 *Gaurax flavomaculatus* was recorded in the 1998 Checklist as *Fiebrigella flavomaculata* (Duda, 1933).
N11 *Incertella nigrifrons* was recorded in the 1998 Checklist as *Conioscinella nigrifrons* Duda, 1933.
N12 *Lasiambia baliola*, *L. brevibucca*, *L. coxalis*, *L. palposa* were recorded in the 1988 Checklist as *Fiebrigella* sp. (Tschirnhaus 1992).
N13 *Lasiochaeta pubescens* was recorded in the 1998 Checklist as *Melanochaeta pubescens* (Thalhammer, 1898).
N14 *Microcercis trigonella* was recorded in the 1998 Checklist as *Oscinella trigonella* Duda, 1933.
N15 *Oscinella capreolus* was recorded in the 1998 Checklist as *Melanochaeta capreolus* (Haliday, 1838).
N16 *Speccafrons halophila* was recorded in the 1998 Checklist as *Conioscinella halphila* Duda, 1933.
N17 *Trachysiphonella pygmaea* synonymised with *Trachysiphonella ruficeps* by Nartshuk & Andersson (2013).

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Heleomyzidae (incl. Trixoscelidinae)

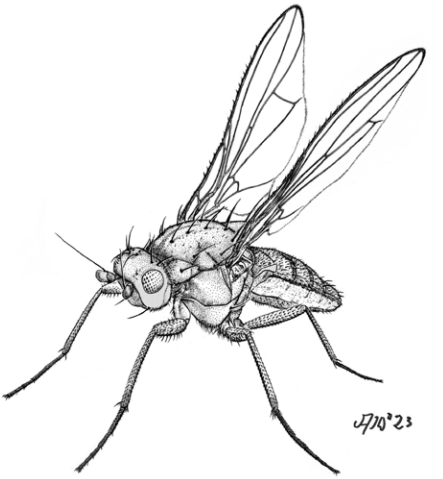
Andrzej J. Woźnica (1998 Checklist: Andrzej J. Woźnica [Heleomyzidae], Andrzej J. Woźnica [Trixoscelididae])

Last update: Jul 2024

Diagnosis: Small to large (1.5-13 mm; usually ca 5 mm) acalyptrate flies with a rather uniform body colour (mostly yellowish-orange, brownish to blackish body colouration). Wing membrane hyaline, often maculate with cross-veins infuscate and costal break well-developed; costal vein extending to vein M_1, usually strongly spinulose. Head generally with rather rounded first flagellomere with arista bare to plumose; vibrissae present; orbital plates present, usually pruinose, extending anteriorly from vertical setae; one to two orbital setae (in all European taxa); postocellar setae cruciate. Thorax flattened, without intra-alar setae; usually with 3-5 pairs of dorsocentral setae; postpronotal seta usually present (absent in *Suillia* Robineau-Desvoidy); 2 notopleural and 3 supra-alar setae present; proepisternal seta present but absent in *Suillia*; katepisternal seta well developed, sometimes more, i.e. two (in *Trixoscelis* Rondani) present; scutellum with 2-3 pairs of scutellar setae. Legs moderately setose; mid tibia with one or more apical ventral setae; fore, mid and hind tibiae usually with preapical dorsal setae (one in the subfamily Heteromyzinae); pulvilli pad-like; empodium seta-like; claws well developed. Abdomen broad basally, tapering distally in female, rather rounded, knob-like in male; moderately setulose; cercus well-developed and long haired, usually at least partially fused.

Biology: Heleomyzid species are rather cold-adapted flies mostly restricted to afforested areas of the Northern Hemisphere, except *Trixoscelis* species, living in open rather grass-like areas (adapted to xeric, hot sandy regions) (Woźnica & Kirk-Spriggs 2021). Larvae are mainly saprophagous (mycetophagous, coprophagous or necrophagous). Few *Suillia* species are phytophagous. The larvae often develop in birds' nests and vertebrates' burrows and bats' guano in caves. Most species are cold-adapted, and adults of some species regularly enter subterranean areas (burrows or caves) during the warmest months. These refuges are also used for hibernation. Therefore, they could also be found on snow on sunny days during winter. Some data concerning winter activity of European Heleomyzidae were summarized and published by Soszyńska-Maj & Woźnica (2016). The biology and ecology of the Heleomyzidae are poorly understood and the data concerning European species were summarised by Smith (1989). Recently some new data were published by Rotheray (2012) and Rotheray et al. (2016). Extralimitary some *Suillia* species have been reared from various mushrooms, but also develop in subterranean truffles of the genus *Tuber* (Rosa-Gruszecka et al. 2023) and representatives of the *S. lurida/univittata* species-group are regarded as pests of onion and garlic (*Allium* spp.).

Nomenclature and classification: The Heleomyzidae are typical representative of the superfamily Sphaeroceroidea (McAlpine 1985). The history of the various rankings and limits of the family have been outlined in many regional Diptera manuals, especially in Papp (1998) concerning European Fauna. Although McAlpine (2007) reduced the Heleomyzidae and Sphaeroceridae to the single family Heteromyzidae, such proposal was not accepted by taxonomists working on sphaerocerid or heleomyzid flies (i.e. McAlpine



Eccoptomera longiseta,
female (Andrzej J. Woźnica).

& Woodley 2010). The presence of two costal breaks in the wing of Sphaeroceridae is a distinct character and clearly separates the lesser dung flies from the Heleomyzidae *sensu* Cogan (1977) (Woźnica & Kirk-Spriggs 2021). The present classification used in the Checklist is a compromise between Gorodkov (1972, 1984) and McAlpine (1985, 2007) works. The genera *Heteromyza* and *Tephrochlamys* are placed here into the separate subfamily Heteromyzinae, and Chiropteromyzinae is considered as a subfamily, as well as Borboropsinae, Heleomyzinae and Trixoscelidinae.

Number of species: CH: 85 (1998 Checklist: 77 [73+4]),
BE: 62, CZ: 90, DE: 49, IT: 48. NL: 49, UK: 44, PL: 87. Europe: 176, World: 440.
(Numbers according to Fauna Europaea (Woźnica 2019)).

Level of faunistic knowledge in Switzerland: Good, but 3-4 additional species occurring in neighbouring countries are expected to be found.

General references: Gorodkov (1972), Cogan (1977), Withers (1977) [keys], Gorodkov (1984), McAlpine (1985), Smith (1989), Gorodkov (1989) [keys], Papp (1998), McAlpine (2007), McAlpine & Woodley (2010), Woźnica (2011) [keys, incl. genus *Gymnomus*], Rotheray (2012), Rotheray et al. (2016), Soszyńska-Maj & Woźnica (2016), Woźnica (2019), Lo Giudice & Woźnica (2020) [keys].

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

Checklist

Borboropsinae
Borboropsis Czerny, 1902
- *puberula* (Zetterstedt, 1838) !

Chiropteromyzinae
Neossos Malloch, 1927
- *broersei* (de Meijere, 1946) ! N1
  = *Chiropteromyza wegelii* Frey, 1952

Heleomyzinae
Acantholeria Garrett, 1921
- *cineraria* (Loew, 1862) !

Eccoptomera Loew, 1862
- *emarginata* Loew, 1862 !
- *infuscata* Wahlgren, 1918 !
- *longiseta* (Meigen, 1830) !
- *microps* (Meigen, 1830) !
- *obscura* (Meigen, 1830) !
- *ornata* Loew, 1862 !
- *pallescens* (Meigen, 1830) !
- *sanmartini* Czerny, 1924 !

Gymnomus Loew, 1863
- *amplicornis* (Czerny, 1924) !
- *caesia* (Meigen, 1830) !
- *mariei* (Séguy, 1934) !
- *martineki* (Papp & Woźnica, 1993) !
- *spectabilis* (Loew, 1862) !

Heleomyza Fallén, 1810
- *borealis* (Boheman, 1865) !

(*Anypotacta* Czerny, 1924)
- *setulosa* (Czerny, 1924) !

(*Heleomyza* s.str.)
- *captiosa* (Gorodkov, 1962) !
- *modesta* (Meigen, 1838) !
- *serrata* (Linnaeus, 1758) !

Morpholeria C.B. Garrett, 1921

(*Morpholeria* s.str.)
- *dudai* (Czerny, 1924) !

(*Spanoparea* Czerny, 1924)
- *kerteszii* Czerny, 1924 !
- *ruficornis* (Meigen, 1830) !
- *variabilis* (Loew, 1862) !

Neoleria Malloch, 1919
- *flavicornis* Loew, 1862 !

- *inscripta* (Meigen, 1830) !
- *ruficauda* (Zetterstedt, 1847) !
- *ruficeps* (Zetterstedt, 1838) !

Oecothea A.H. Haliday, 1837
- *fenestralis* (Fallén, 1820) !
- *praecox* Loew, 1862 !

Orbellia Robineau-Desvoidy, 1830
- *myiopiformis* Robineau-Desvoidy, 1830 !

Scoliocentra Loew, 1862
(*Chaetomus* Czerny, 1924)
- *confusa* (Wahlgren, 1918) !
- *flavotestacea* (Zetterstedt, 1838) !

(*Leriola* Gorodkov, 1962)
- *alpina* (Loew, 1862) !
- *brachypterna* (Loew, 1873) !
- *collini* Woźnica, 2004 !
- *nigrinervis* (Wahlgren, 1918) !

(*Scoliocentra* s.str.)
- *scutellaris* (Zetterstedt, 1838) !
  = *oldenbergii* Czerny, 1924
- *villosa* (Meigen, 1830) !

Heteromyzinae

Heteromyza Fallén, 1820 N2
- *atricornis* Meigen, 1830 !
- *commixta* Collin, 1901 !
- *oculata* Fallén, 1820 !
- *rotundicornis* (Zetterstedt, 1846) !

Tephrochlamys Loew, 1862
- *flavipes* (Zetterstedt, 1838) !
- *laeta* (Meigen, 1830) !
- *rufiventris* (Meigen, 1830) !
- *tarsalis* (Zetterstedt, 1847) !

Suillinae

Suillia Robineau-Desvoidy, 1830
- *affinis* (Meigen, 1830) !
- *atricornis* (Meigen, 1830) !
- *bicolor* (Zetterstedt, 1838) !
- *cepelaki* Martinek, 1985 !
- *crinimana* (Czerny, 1904) !
  = *subdola* Czerny, 1927
- *dawnae* Withers, 1987 !
- *dumicola* (Collin, 1943) !
- *flagripes* (Czerny, 1904) !
- *flava* (Meigen, 1830) !

- *flavifrons* (Zetterstedt, 1838) !
- *fuscicornis* (Zetterstedt, 1847) !
- *gigantea* (Meigen, 1830) !
- *humilis* (Meigen, 1830) !
  = *inornata* (Loew, 1862)
- *imberbis* Czerny, 1924 !
- *laevifrons* (Loew, 1862) !
- *mikii* (Pokorny, 1886) !
- *nemorum* (Meigen, 1830) !
- *notata* (Meigen, 1830) !
- *oxyphora* (Mik, 1900) !
- *pallida* (Fallén, 1820) !
- *parva* (Loew, 1862) !
- *pilimana* (Loew, 1862) !
- *quadrilineata* Czerny, 1924 !
- *similis* (Meigen, 1838) !
- *stroblii* (Czerny, 1904) !
- *tuberiperda* (Rondani, 1867) !
- *umbratica* (Meigen, 1838) !
- *univittata* (von Roser, 1840) !
- *ustulata* (Meigen, 1830) !
- *vaginata* (Loew, 1862) !
- *variegata* (Loew, 1862) !
- *villeneuvei* Czerny, 1924 !

Trixoscelininae

Trixoscelis Rondani, 1856

- *canescens* (Loew, 1865) !
- *frontalis* (Fallén, 1823) !
- *marginella* (Fallén, 1823) !
- *obscurella* (Fallén, 1823) !
- *similis* Hackman, 1970 !

Excluded species

Morpholeria obscuriventris (Zetterstedt, 1847) N3

Notes

N1 The genus *Chiropteromyza* Frey, 1952 was synonymised by Rohaček (2018) with the genus *Neossos* Malloch, 1927. Carles-Tolrá (2009) redescribed *Leptometopa broersei* de Meijere, 1946 (incorrectly placed in Milichiidae) and recognised *Chiropteromyza wegelii* Frey, 1952 as a junior synonym of *Chiropteromyza broersei* (de Meijere, 1946) (new combination). Rohaček (2019) verified the type-specimens of the genus *Chiropteromyza* Frey, 1952 and *Ornitholeria* Frey, 1930 and synonymised both with *Neossos* Malloch, 1927.

N2 *Heteromyza* sp. was recorded in the 1998 Checklist as *Scoliocentra* sp.

N3 *Morpholeria* (*Spanoparea*) *obscuriventris* was erroneously identified. The analysed female specimens (1F, GR, Alp Sampuoir, 1900m, 27.7.1930, leg. Fred Kaiser (BNM); 1F, GR, Val da Stabel chod, 2150m, 18.7.1928, leg. Fred Kaiser (BNM)), belong to *Morpholeria* (*Spanoparea*) *variabilis* (Loew, 1862).

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Chyromyidae

Martin J. Ebejer (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Very small to small (0.75-4.0 mm), generally pale yellow flies, some *Aphaniosoma* partly dark grey or brown; head rounded; eyes iridescent, usually a pale golden green; first flagellomere of antenna round; upper orbital setae reclinate; vibrissae present but often weak; postvertical setulae convergent; thorax somewhat flattened; posterior dorsocentral setae strong; acrostichal setulae small; pleura with strong setae on anepisternum and katepisternum; legs simple and without strong setae; preapical dorsal setae on tibiae absent; wing membrane hyaline; R_1 short, not reaching middle of wing; subcosta complete; costal break at subcosta; anterior and posterior basal cells, discal and anal cells present; R_{2+3} slightly and symmetrically arcuate and gently converging towards R_{4+5} apically; anal vein not reaching wing margin; abdomen short and narrow though sometimes strongly swollen in gravid females of Chyromyinae.

Biology: Little is known about the immature stages. Adults have been reared from bird and mammalian nests and burrows, from tree holes and from guano. Adults are usually swept from foliage but can be collected in numbers using Malaise and pan traps.

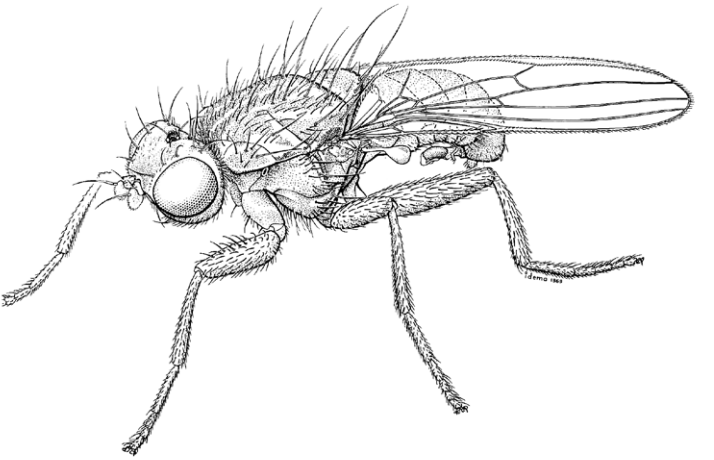
Nomenclature and classification: Nomenclature and classification follow Ebejer (2009). The nine genera of Chyromyidae are classified in two subfamilies. In Europe, the following genera are present: Chyromyinae – *Chyromya*, *Gymnochiromyia*; Aphaniosominae – *Aphaniosoma*. Over 200 species have been named worldwide but many from all zoogeographical regions still remain to be described.

Number of species: CH: 7 (1998 Checklist: 4),
BE: 5, CZ: 9, DE: 13, FR: 14, GB: 11, IT: 17, NL: 8, Europe: 59, World: 215.

Level of faunistic knowledge in Switzerland: Good.

General references: Ebejer (2009).

References to the Swiss fauna: Merz (1997, 1998), Merz et al. (2002, 2006).



Chyromya flava,
male (MND2, p. 985).

Checklist

Aphaniosoma Becker, 1903
- *propinquans* Collin, 1949 !

Chyromya Robineau-Desvoidy, 1830
- *flava* (Linnaeus, 1758) !
- *miladae* Andersson, 1976 !
- *oppidana* (Scopoli, 1763) !

Gymnochiromyia Hendel, 1933
- *flavella* (Zetterstedt, 1848) !
- *inermis* (Collin, 1933) !
- *mihalyii* Soós, 1979 !

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Sphaeroceridae

Paul Gatt (1998 Checklist: László Papp)
Last update: Jul 2024

Diagnosis: Minute to small (0.7-5.5mm) generally dark brown to black acalyptrate flies with a short, dilated hind basitarsus. Vibrissae present. Wing with two costal breaks; Sc reduced; venation reduced in Limosininae; wings shortened in some species.

Biology: Larvae are saprophagous on a wide variety of decaying organic matter of both plant (eg. grass, moss, compost, wood debris, leaf litter, fungi, wrack, mud) and animal (e.g. dung, manure, carrion) origin. Adults occur in the larval breeding habitats, usually in damp places. Relatively many species are terricolous and have adapted to live in caves and animal nests and burrows. A few species are partly synanthropic and may reach nuisance values when they emerge in number near human habitations. Several species have become cosmopolitan through human activities.

Nomenclature and classification: According to the world catalogue of Sphaeroceridae (Roháček et al. 2001, Marshall et al. 2011).

Number of species: CH: 117 (1998 Checklist: 108),
CZ: 164, DE: 137, DK: 82, ES: 146, FI: 118, IE: 76, IT: 138, NL: 81, PT: 54, SK: 153, UK: 145, Europe: 264, World: 1571.

Level of faunistic knowledge in Switzerland: Moderate. Estimated number of species: 150

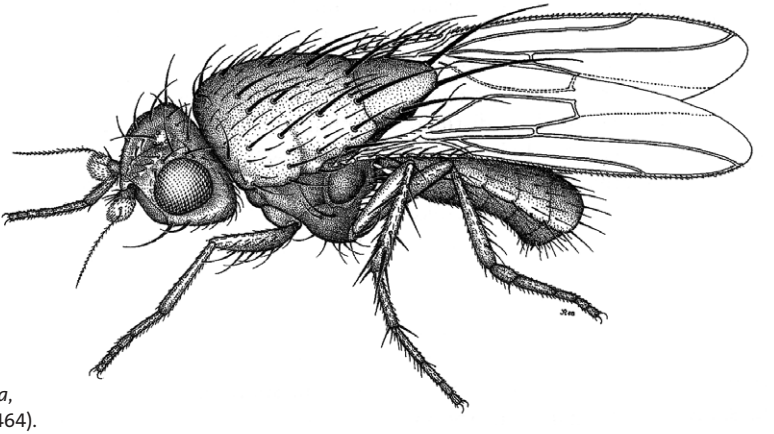
General references: Bergeron et al. (2015), Carles-Tolrá (2001), Han & Kim (1990), Kim & Han (1990), Marshall & Richards (1987), Marshall & Roháček (1984), Marshall et al. (2011), Marshall & Smith (1992, 1993), Norrbom & Kim (1985a, 1985b), Papp (1973, 1983, 1984, 2008a, 2008b), Pitkin (1988), Roháček (1982a, 1982b, 1982c, 1983a, 1983b, 1985, 1991, 1993, 1998, 1999, 2001, 2007, 2009, 2016, 2019,), Roháček & Florén (1987), Roháček & Košel (2003), Roháček & Marshall (1982, 1986, 1988, 2000), Roháček et al. 2001, Roháček & Papp (1988) [most references with keys].

References to the Swiss fauna: Bächli et al. (2014), Gatt (2006), Merz et al. (2006), Merz & Gatt (2012), Nielsen et al. (2000), Papp (1982, 1985, 1998).

Checklist

Copromyzinae
Alloborborus Duda, 1923
- *pallifrons* (Fallén, 1820) !

Borborillus Duda, 1923
- *uncinatus* (Duda, 1923) !
- *vitripennis* (Meigen, 1830) !



***Rachispoda limosa*,**
male (CMPD3, p. 464).

Copromyza Fallén, 1810
- *equina* Fallén, 1820 !
- *nigrina* (Gimmerthal, 1847) !
  = *similis* (Collin, 1930)
- *pseudostercoraria* L. Papp, 1976 !
- *stercoraria* (Meigen, 1830) !

Crumomyia Macquart, 1835
- *fimetaria* (Meigen, 1830) !
- *glabrifrons* (Meigen, 1830) !
- *glacialis* (Meigen, 1830) !
- *nigra* (Meigen, 1830) !
- *nitida* (Meigen, 1830) !
- *notabilis* (Collin, 1902) !
- *parentela* (Séguy, 1963) !
- *pedestris* (Meigen, 1830) !
- *pruinosa* (Richards, 1932) !
- *rohaceki* (Norrbom & Kim, 1985) !
- *roserii* (Rondani, 1880) !
- *setitibialis* (Spuler, 1925) !
  = *freyi* (Hackman, 1965)
- *zuskai* (Roháček, 1976) !

Lotophila Lioy, 1864
- *atra* (Meigen, 1830) !

Norrbomia Papp, 1988
- *costalis* (Zetterstedt, 1847) !
- *sordida* (Zetterstedt, 1847) !

Limosininae

Apteromyia Vimmer, 1929
- *claviventris* (Strobl, 1909) !

Bifronsina Roháček, 1982 N1
- *bifrons* (Stenhammar, 1855) !

Chaetopodella Duda, 1920
- *scutellaris* (Haliday, 1836) !

Coproica Rondani, 1861
- *acutangula* (Zetterstedt, 1847) !
- *ferruginata* (Stenhammar, 1855) !
- *hirticula* (Collin, 1956) !
- *hirtula* (Rondani, 1880) !
- *lugubris* (Haliday, 1836) !
- *pusio* (Zetterstedt, 1847) !
- *rufifrons* Hayashi, 1991 ! N2 [1]
- *vagans* (Haliday, 1833) !

Elachisoma Rondani, 1880
- *aterrimum* (Haliday, 1833) !
- *bajzae* Papp, 1983 !
- *pilosum* (Duda, 1924) !

Eulimosina Roháček, 1983 N3
- *ochripes* (Meigen, 1830) !

Gonioneura Rondani, 1880
- *spinipennis* (Haliday, 1836) !

Herniosina Roháček, 1983
- *bequaerti* (Villeneuve, 1917) !

Leptocera Olivier, 1813
- *caenosa* (Rondani, 1880) !
- *fontinalis* (Fallén, 1826) !
- *nigra* Olivier, 1813 !
- *oldenbergi* (Duda, 1918) !

Limosina Macquart, 1835
- *silvatica* (Meigen, 1830) !

Minilimosina Roháček, 1983

(*Allolimosina* Roháček, 1983)
- *alloneura* (Richards, 1952) !

(*Minilimosina* s.str.)
- *fungicola* (Haliday, 1836) !
- *parvula* (Stenhammar, 1855) !
- *trogeri* Roháček, 1983 !

(*Svarciella* Roháček, 1983)
- *egena* Roháček, 1992 !
- *guestphalica* (Duda, 1918) ! N4
- *v-atrum* (Villeneuve, 1917) ! N5
  = *splendens* auct. nec (Duda, 1928)
- *vitripennis* (Zetterstedt, 1847) !

Opacifrons Duda, 1918
- *coxata* (Stenhammar, 1855) !
- *maculifrons* (Becker, 1907) !

Opalimosina Roháček, 1983
(*Dentilimosina* Roháček, 1983)
- *denticulata* (Duda, 1924) !

(*Hackmanina* Roháček, 1983)
- *czernyi* (Duda, 1918) !

(*Opalimosina* s.str.)
- *mirabilis* (Collin, 1902) !
- *simplex* (Richards, 1929) ! N6 [2]

(*Pappiella* Roháček, 1983)
- *liliputana* (Rondani, 1880) !

Paralimosina Papp, 1973
- *fucata* (Rondani, 1880) !
- *kaszabi* Papp, 1973 ! N7
  = *latigena* (Roháček, 1977)
- *subcribrata* Roháček, 1992 ! N8 [3]
- *trichopyga* (Richards, 1952) !

Philocoprella Richards, 1929
- *italica* (Deeming, 1964) !

Phthitia Enderlein, 1938
(*Collimosina* Roháček, 1983) N9
- *spinosa* (Collin, 1930) !
  = *Kimosina spinosa* (Collin, 1930)

(*Kimosina* Roháček, 1983) N9
- *plumosula* (Rondani, 1880) !
  = *Kimosina plumosula* (Rondani, 1880)

Pseudocollinella Duda, 1924 N10
- *humida* (Haliday, 1836) !
  = *Opacifrons humida* (Haliday, 1836)
- *jorlii* (Carles-Tolrá, 1990) ! N11 [4]
- *septentrionalis* (Stenhammar, 1855) !
  = *Opacifrons septentrionalis* (Stenhammar, 1855)

Pteremis Rondani, 1856
- *fenestralis* (Fallén, 1820) !

Pullimosina Roháček, 1983
(*Pullimosina* Roháček, 1983)
- *heteroneura* (Haliday, 1836) !
- *meijerei* (Duda, 1918) !
- *moesta* (Villeneuve, 1918) ! N12 [5]
- *pullula* (Zetterstedt, 1947) !
- *vulgesta* Roháček, 2001 ! N13

Puncticorpus Duda, 1918
- *cribratum* (Villeneuve, 1918) !

Rachispoda Lioy, 1864 N14

- *breviceps* (Stenhammar, 1855) ! N15
- *fuscipennis* (Haliday, 1833) !
  = *Leptocera fuscipennis* (Haliday, 1833)
- *limosa* (Fallén, 1820) !
  = *Leptocera limosa* (Fallén, 1820)
- *lutosa* (Stenhammar, 1855) !
  = *Leptocera lutosa* (Stenhammar, 1855)
- *lutosoidea* (Duda, 1938) !
  = *Leptocera lutosoidea* (Duda, 1938)
- *modesta* (Duda, 1924) ! N16 [6]
- *segem* (Roháček, 1991) ! N17
- *uniseta* (Roháček, 1991) ! N17
- *varicornis* (Strobl, 1900) !
  = *Leptocera varicornis* (Strobl, 1900)

Spelobia Spuler, 1924
- *cambrica* (Richards, 1929) !
- *clunipes* (Meigen, 1830) !
- *faeroensis* (Deeming, 1966) !
- *luteilabris* (Rondani, 1880) !
- *manicata* (Richards, 1927) !
- *nana* (Rondani, 1880) !
- *palmata* (Richards, 1927) !
- *parapusio* (Dahl, 1909) !
- *pseudosetaria* (Duda, 1918) !
- *rufilabris* (Stenhammar, 1855) !
- *talis* Roháček, 1983 !
- *talparum* (Richards, 1927) !

Telomerina Roháček, 1983
- *flavipes* (Meigen, 1830) !
- *pseudoleucoptera* (Duda, 1924) !

Terrilimosina Roháček, 1983
- *corrivalis* (Villeneuve, 1918) ! N18
  = *sudetica* Roháček, 1975
- *racovitzai* (Bezzi, 1911) !
- *schmitzi* (Duda, 1918) !

Thoracochaeta Duda, 1918
- *zosterae* (Haliday, 1833) !

Trachyopella Duda, 1920
(*Nudopella* Roháček & Marshall, 1986)
- *leucoptera* (Haliday, 1836) !

(*Trachyopella* s.str.)
- *atomus* (Rondani, 1880) !
- *kuntzei* (Duda, 1918) !
- *lineafrons* (Spuler, 1925) !
- *melania* (Haliday, 1836) !

Sphaerocerinae

Ischiolepta Lioy, 1864
- *denticulata* (Meigen, 1830) !
- *nitida* (Duda, 1920) !
- *pusilla* (Fallén, 1820) !
- *scabricula* (Haliday, 1836) !
- *vaporariorum* (Haliday, 1836) !

Lotobia Lioy, 1864
- *pallidiventris* (Meigen, 1830) !

Sphaerocera Latreille, 1804
- *curvipes* Latreille, 1805 !
- *monilis* Haliday, 1836 !

Notes

N1 *Bifronsina* Roháček, 1983 (ex-subgenus of *Spelobia* Spuler, 1924) was elevated to generic rank (Papp 2008b).
N2 *Coproica rufifrons*: new species record for Switzerland.
N3 *Eulimosina* Roháček, 1983 (ex-subgenus of *Spelobia* Spuler, 1924) was elevated to generic rank (Papp 2008b).
N4 *Minilimosina guestphalica* (Duda, 1918) was restituted from synonymy with *M. v-atrum* (Villeneuve, 1917) (Roháček 2001).
N5 *Minilimosina v-atrum* (Villeneuve, 1917) was misidentified as *M. splendens* (Duda, 1938) in the 1998 Checklist (Papp 1998) and then rectified by Roháček (2001).
N6 *Opalimosina simplex*: new species record for Switzerland.
N7 *Paralimosina latigena* (Roháček, 1977) was synonymised with *P. kaszabi* (Papp, 1973) by Roháček (1983a).
N8 *Paralimosina subcribrata*: new species record for Switzerland.
N9 Marshall & Smith (1992) synonymised *Alimosina*, *Collimosina* and *Kimosina* with *Phthitia*, but as they, as well as *Phthitia* s.str., represent monophyletic groups, of which the relationship is unresolved, they are retained as subgenera.
N10 Status of *Pseudocollinella* Duda, 1924 revised by Marshall & Smith (1993).
N11 *Pseudocollinella jorlii*: new species record for Switzerland.
N12 Status of *Pullimosina moesta* rectified by Roháček (2001). It was misidentified in the 1998 Checklist (Papp 1998), again in Merz & Gatt (2012) and newly recorded here.
N13 Status of *Pullimosina vulgesta* rectified by Roháček (2001). Replacement name for *P. moesta* auct. nec Villeneuve, 1918.
N14 *Rachispoda* Lioy, 1864 (ex-subgenus of *Leptocera* Olivier, 1813) was elevated to generic rank and accepted by Roháček et al. (2001).
N15 *Rachispoda breviceps* was added by Merz & Gatt (2012) and reported by Bächli et al. (2014).
N16 *Rachispoda modesta*: new species record for Switzerland.
N17 *Rachispoda segem* and *R. uniseta* were added by Gatt (2006) and reported by Merz et al. (2006).
N18 *Terrilimosina corrivalis* (Villeneuve, 1918) was synonymised with *T. sudetica* (Roháček, 1975) by Roháček (2001).

Species records

[1] 1M, 3F, Basel tortoise terrarium, 22.10.2003, leg. ?
[2] 1F, Unteriberg, O. Weid, 1600 m., 24.6.2001, leg. Bernhard Merz
[3] 1F, TI, Monte San Giorgio, 1097 m., 18.5.2006, leg. Bernhard Merz
[4] 1M, TI, TI, S. Antonino, 7. 1995, leg. Max Hächler
[5] 1M, Bern, Ostermundigen-Berg, 600 m., 20.5.2001, leg. Bernhard Merz
[6] 1M, TI, Gordola, Bolle di Magadino, 19.5.2006, leg. Bernhard Merz

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Drosophilidae

Gerhard Bächli (1998 Checklist: Gerhard Bächli)
Last update: Jul 2024

Diagnosis: Very small to small flies, length 1.5-7.0 mm. Head usually with reddish eyes (when alive); antennae with branched, plumose or micro-pubescent arista; frons with one proclinate and two reclinate orbital setae; face usually with distinct carina. Body pruinose or shiny, ranging in colour from bright yellow, usually with black to brownish pattern, or almost entirely black with some whitish markings on head and thorax. Wings with humeral and subcostal breaks in costa, cross-veins r-m and dm-cu present, anal vein present though sometimes short. Legs simple, males may have short combs of strong bristles on tarsal segments (sex combs). Abdomen often with pattern of paler and darker markings.

Biology: Larvae of most species live on micro-organisms in slime fluxes or sap runs, in decaying fruits, mushrooms and other decomposing or fermenting organic matter; some *Scaptomyza* larvae are leaf miners; *Cacoxenus* larvae are parasitoids in nests of solitary bees (e.g. *Osmia rufa*); *Acletoxenus* larvae predate on larvae of Aleyrodidae (whiteflies). Adults of most species can readily be found near larval habitats.

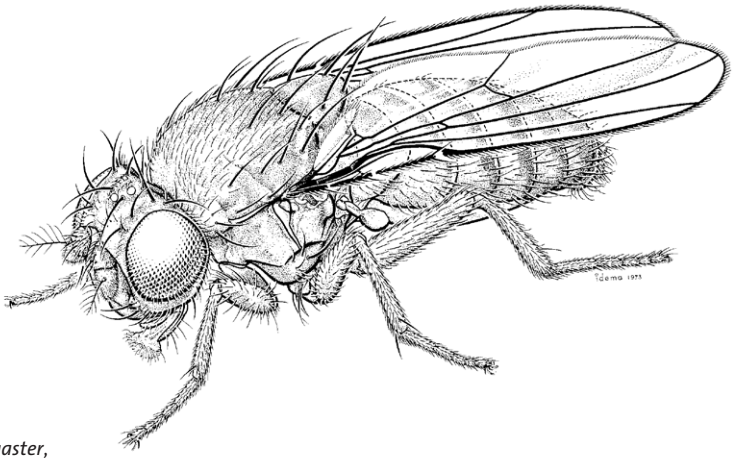
Nomenclature and classification: According to Bächli et al. (2004).

Number of species: CH: 75 (1998 Checklist: 65),
BE: 59, CZ: 75, DE: 48, IT: 44, NL: 48, UK: 29, Europe: 124, World: > 4000.

Level of faunistic knowledge in Switzerland: Good.

General references: Bächli & Burla (1985) [key], Bächli (1997, 1988b), Bächli et al. (2004) [key, biology, systematics].

References to the Swiss fauna: Bächli & Burla (1985), Bächli (1997, 1998a), Merz et al. (2002, 2006), Bächli et al. (2014), Widmann & Bächli (2022).



Drosophila melanogaster, female (MND2, p. 1011).

Checklist

Drosophilinae

Chymomyza Czerny, 1903
- *amoena* (Loew, 1892) !
- *caudatula* Oldenberg, 1914 !
- *costata* (Zetterstedt, 1838) !
- *distincta* (Egger, 1862) !
- *fuscimana* (Zetterstedt, 1838) !

Drosophila Fallén, 1823
(*Dorsilopha* Sturtevant, 1942)
- *busckii* Coquillett, 1901 !

(*Drosophila* s.str.)
- *curvispina* Watabe & Toda, 1984 !
- *funebris* (Fabricius, 1787) !
- *histrio* Meigen, 1830 !
- *hydei* Sturtevant, 1921 !
- *immigrans* Sturtevant, 1921 !
- *kuntzei* Duda, 1924 !
- *limbata* von Roser, 1840 !
- *littoralis* Meigen, 1830 !
- *mercatorum* Patterson & Wheeler, 1942 ! N1
- *nigrosparsa* Strobl, 1898 !
- *phalerata* Meigen, 1830 !
- *picta* Zetterstedt, 1847 !
- *repleta* Wollaston, 1858 !
- *testacea* von Roser, 1840 !

- *transversa* Fallén, 1823 !
- *unimaculata* Strobl, 1983 !

(*Sophophora* Sturtevant, 1939)
- *alpina* Burla, 1948 !
- *ambigua* Pomini, 1940 !
- *bifasciata* Pomini, 1940 !
- *helvetica* Burla, 1948 !
- *melanogaster* Meigen, 1830 !
- *obscura* Fallén, 1823 !
- *simulans* Sturtevant, 1919 !
- *subobscura* Collin, 1936 !
- *subsilvestris* Hardy & Kaneshiro, 1968 !
- *suzukii* (Matsumura, 1931) !
- *tristis* Fallén, 1823 !

Hirtodrosophila Fronta-Pessoa, 1954
- *cameraria* Haliday, 1833 !
- *confusa* Staeger, 1844 !
- *oldenbergi* Duda, 1924 !

Lordiphosa Basden, 1961
- *acuminata* (Collin, 1952) !
- *andalusiaca* (Strobl, 1906) !
- *fenestrarum* (Fallén, 1823) !
- *hexasticha* (Papp, 1971) !
- *miki* (Duda, 1924) !
- *nigricolor* (Strobl, 1898) !

Microdrosophila Malloch, 1921
(*Microdrosophila* s.str.)
- *congesta* (Zetterstedt, 1847) !

Mycodrosophila Oldenberg, 1914
- *poecilogastra* (Loew, 1874) ! [1]

Scaptodrosophila Duda, 1924
- *deflexa* (Duda, 1924) !
- *rufifrons* (Loew, 1873) !

Scaptomyza Hardy, 1850
(*Parascaptomyza* Duda, 1924)
- *adusta* (Loew, 1862) !
- *pallida* (Zetterstedt, 1847) !

(*Scaptomyza* s.str.)
- *flava* (Fallén, 1823) !
- *graminum* (Fallén, 1823) !

Steganinae

Acletoxenus von Frauenfeld, 1868
- *formosus* (Loew, 1864) !

Amiota Loew, 1862
(*Amiota* s.str.)

- *albilabris* (Roth in Zetterstedt, 1860) !
- *alboguttata* (Wahlberg, 1839) !
- *basdeni* Fonseca, 1965 !
- *filipes* Máca, 1980 !
- *flavopruinosa* Duda, 1934 !
- *rufescens* (Oldenberg, 1914) !

Cacoxenus Loew, 1858
(*Cacoxenus* s.str.)
- *indagator* Loew, 1858 !

Gitona Meigen, 1830
- *distigma* Meigen, 1830 !

Leucophenga Mik, 1886
(*Leucophenga* s.str.)
- *helvetica* Bächli, Vilela & Haring, 2002 !
- *hungarica* Papp, 2000 !
- *maculata* (Dufour, 1839) !
- *quinquemaculata* Strobl, 1893 !

Paracacoxenus Hardy, 1960
- *argyreator* Frey, 1932 !
- *exiguus* Duda, 1934 !
  = *inquilinus* Hendel, 1933 N2
- *macai* Bächli & Vilela, 2020 ! N3

Phortica Schiner, 1862
(*Phortica* s.str.)
- *semivirgo* Máca, 1977 !
- *variegata* (Fallén, 1823) !

Stegana Meigen, 1830
(*Stegana* s.str.)
- *furta* (Linnaeus, 1767) !

(*Steganina* Wheeler, 1960)
- *baechlii* Laštovka & Máca, 1982 !
- *coleoptrata* (Scopoli, 1763) !
- *hypoleuca* Meigen, 1830 !
- *longifibula* Takada, 1968 !
- *nigrithorax* Strobl, 1898 !
- *similis* Laštovka & Máca, 1982 !

Notes

N1 *Drosophila mercatorum*: new record by Widmann & Bächli (2022).
N2 *Paracacoxenus inquilinus*: synonymised with *Paracacoxenus exiguus* by Bächli & Vilela (2011).
N3 *Paracacoxenus macai*: new record by Bächli & Vilela (2020).

Species records

[1] TI, Lugano/Davesco: Via Navrée 25, Bosco-prato semi natural, 18.11.2015, 500 m., leg. Lucia Pollini Paltrinieri (MCSN)

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Bächli G. & Burla H. 1985. Diptera Drosophilidae. Insecta Helvetica Fauna 7, CSCF, 116 pp.

Bächli G & Vilela C.R. 2011. On the identities of *Paracacoxenus exiguus* (Duda) and *Paracacoxenus inquilinus* (Hendel), with the description of a new *Paracacoxenus* species from Italy (Diptera, Drosophilidae). Mitteilungen der Schweizerischen Entomologischen Gesellschaft 84: 113-119.

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Merz B., Bächli G. & Haenni J.-P. 2006. Zweiter Nachtrag zur Checkliste der Schweiz. Mitteilungen der Entomologischen Gesellschaft Basel 56(4): 135-165.

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Campichoetidae

Peter J. Chandler (1998 Checklist: Peter J. Chandler & Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small (2.5-4 mm) slender-bodied acalyptrate flies; body colour dark with partly yellow head and legs. Arista short pubescent; ocellar bristles present; a pair of crossing postocellar bristles; two pairs of vertical bristles, inner pair converging, outer diverging; 2-3 pairs of fronto-orbital bristles, 1 pair curving forward, the other pair(s) backward; vibrissae present. Thorax with pleura, including anepisternum, bare. Wing with a row of stronger costal spines; brownish to greyish tinged, sometimes with a central pale spot; costa with only a subcostal break close to junction of R_1, humeral break absent; vein Sc incomplete; crossvein bm-m present; cell cua closed. Tibiae with dorsal preapical bristle.

Biology: The third instar larva of *Campichoeta* was described by Hennig (1952), but the larval biology is unknown; they are probably saprophagous but this has not been confirmed. The adults are found on low vegetation in moist woodland and in open habitats.

Nomenclature and classification: According to Chandler (1987), who recognised Diastatidae and Campichoetidae as separate families, but some other recent authors including Mathis & Barraclough (2011) have treated them as a single family Diastatidae.

Number of species: CH: 3 (1998 Checklist: 3),
AT: 3, BE: 2, CZ: 3, DE: 3, FR: 2, GB: 2, HU; 4, IT: 4, NL: 2, SK: 3, Europe: 7, World: 13.

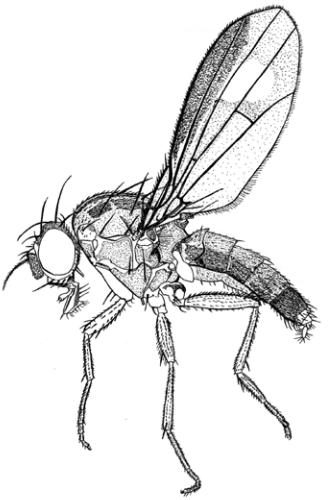
Level of faunistic knowledge in Switzerland: moderate. There have been no additions to the Swiss fauna since the last checklist (Chandler & Merz 1998). Two other species are probably present. *Campichoeta grandiloba* McAlpine, 1962 is known from Greece, Hungary, Italy, Spain and the former Yugoslavia. *Euthychaeta spectabilis* (Loew, 1864) is recorded from Albania, Austria, Bosnia-Herzegovina, Bulgaria, France, Italy, Poland, Romania, Spain and Ukraine.

General references: Chandler (1987) [keys to the European species], Chandler (1998) [general account and key to genera], Mathis & Barraclough (2011) [world catalogue].

References to the Swiss fauna: Merz & Chandler (1998), Chandler & Merz (1998).

Checklist

Campichoeta Meigen, 1835
- *griseola* (Zetterstedt, 1855) !
- *obscuripennis* (Meigen, 1830) !
- *punctum* (Meigen, 1830) !



Campichoeta punctum,
male (CMPD3, p. 516).

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Chandler P.J. & Merz B. 1998. 93. Campichoetidae. In: Merz B., Bächli G., Haenni J.-P. & Gonseth Y. (eds). Diptera - Checklist. Fauna Helvetica 1: 303. CSCF / SEG, Neuchâtel, 369 pp.

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Camillidae

Gerhard Bächli & Jan Máca (1998 Checklist: Bernhard Merz)
Last update: Jul 2024

Diagnosis: Adults of the European species are small (2.0-3.0 mm), glossy black flies; arista with long rays on upper side and much shorter ones on lower side, thus closely resembling some species of Ephydridae. Wing with two costal breaks; C often with outstanding spines (like in Diastatidae), Sc incomplete; cells dm and bm confluent (cross vein bm-cu absent); anal cell absent. Inner side of fore femur with a strong thorn, like in Diastatidae.

Biology: Larvae saprophagous. The larvae of some species were collected at entrances of rabbit and small rodents' burrows; species from Africa and Arabian Peninsula are mostly associated with guano of rock hyraxes, some birds and bats, but in some of them no association to animals was ascertained. Adults can be swept from low vegetation or nearly bare soil, at the entrances of such burrows or near animal latrines and are often found on windows.

Nomenclature and classification: According to Papp (1985, 1998), Carles-Tolrá (2007), Máca (2009).

Number of Species: CH: 5 (1998 Checklist: 2),
BE: 5, CZ: 4; DE: 4, IT: 2, NL: 4, UK: 1, Europe: 9, World: ~65.

Level of faunistic knowledge in Switzerland: Good.

General references: Baumann (1977) [biology], Papp (1985) [key], Papp (1998) [Palaearctic fauna], Barraclough (2005) [biology], Merz (2008) [key], Rotheray (2011) [puparia of 2 European spp.]

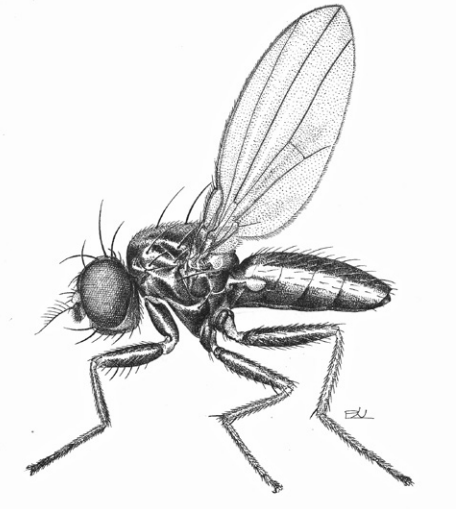
References to the Swiss fauna: Merz (1998a, 1998b, 2004, 2008), Merz et al. (2006), Bächli et al. (2014).

Checklist

Camilla Haliday, 1838
- *acutipennis* (Loew, 1965) ! [1]
- *atrimana* Strobl, 1910 !
- *flavicauda* Duda, 1922 !
- *glabra* (Fallén, 1823) !
- *nigrifrons* Collin, 1933 !

Species records

[1] VS, Zeneggen, 22.6.2014, leg. Gerhard Bächli (CGB)



Camilla atrimana,
male (CMPD3, p. 531).

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Merz B. 2008. Une petite famille de Diptères négligée en Suisse: les Camillidae (Diptera). Entomo Helvetica 1: 15-26.

Merz B., Bächli G. & Haenni J.-P. 2006. Zweiter Nachtrag zur Checkliste der Schweiz. Mitteilungen der Entomologischen Gesellschaft Basel 56(4): 135-165.

Papp L. 1985. A key of the World species of Camillidae (Diptera). Acta zoologica Hungarica 31: 217-227.

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Rotheray G.E. 2011. The puparia of *Chyromya femorellum* (Fallén) (Chyromyidae), *Camilla atrimana* Strobl and *Camilla fuscipes* Collin (Camillidae) (Diptera) reared from bird and mammal nests and burrows. Dipterists Digest 18: 81-93.

Bächli G. & Máca J. 2024. Camillidae (last update: Jul 2024). In: Haenni J.-P., Bächli G., Bernasconi M., Dufour C., Fisler L., Gonseth Y., Lods-Crozet B., Monnerat C. & Pollini Paltrinieri L. (eds.) 2024. Diptera – Checklist. Fauna Helvetica 35: 496-497, info fauna & SEG, Neuchâtel, 590 p.

Diastatidae

Peter J. Chandler (1998 Checklist: Peter J. Chandler & Bernhard Merz)
Lasts update: Feb 2024

Diagnosis: Small (2.5-4 mm), dark coloured acalyptrate flies with grey pruinosity, head partly yellow; antennae and legs largely yellow. Arista short to medium plumose; ocellar bristles present; a pair of crossing postocellar bristles; two pairs of vertical bristles, inner pair converging, outer diverging; two pairs of strong fronto-orbital bristles, the outer pair curving forward, the inner pair backward, with a short weak reclinate bristle between the latter and the vertical bristles; vibrissae present. Thorax with anepisternum setose. Wing with a row of stronger costal spines; variously patterned with dark markings, in some cases clear, but cell c always darkened; costa with both humeral and subcostal breaks, the latter close to the junction with R_1; vein Sc incomplete; crossvein bm-m present; cell cua closed. Tibiae with dorsal preapical bristle.

Biology: The larvae are unknown, but thought to be saprophagous because the adults may be numerous near litter, and among low vegetation, in all types of woodland and wetlands. The puparium of *Diastata costata* was described by Rotheray (2008), who figured the pupal habitus, prothoracic spiracles and the caudal end of the puparium.

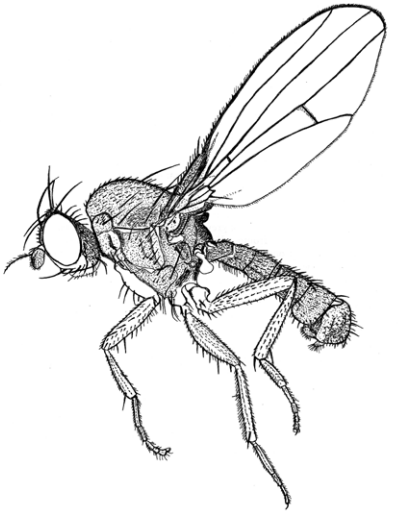
Nomenclature and classification: According to Chandler (1987), who recognised Diastatidae and Campichoetidae as separate families, but some other recent authors including Mathis & Barraclough (2011) have treated them as a single family Diastatidae.

Number of species: CH: 7 (1998 Checklist: 5),
AT: 4, BE: 4, CZ: 8, DE: 8, FR: 4, GB: 6, HU: 6, IT: 6, NL: 7, SK: 7, Europe: 9, World: 35.

Level of faunistic knowledge in Switzerland: Good. There have been no changes to the checklist other than the two additions reported by Bächli et al. (2014). One other species *Diastata cervinala* Chandler, 1987 is known from Germany, the Czech Republic and Slovakia, so is probably present.

General references: Chandler (1987) [key to the Palaearctic species], Chandler (1998) [general account], Mathis & Barraclough (2011) [world catalogue].

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



Diastata fuscula,
male (CMPD3, p. 524, as *D. ornata*).

Checklist

Diastata Meigen, 1830
- *adusta* Meigen, 1830 !
- *costata* Meigen, 1830 !
- *flavicosta* Chandler, 1987 !
- *fuscula* (Fallén, 1823) !
- *nebulosa* (Fallén, 1823) !
- *ornata* Meigen, 1830 !
- *vagans* (Loew, 1864) !

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Bächli G., Merz B. & Haenni J.-P. 2014. Dritter Nachtrag zur Checkliste der Diptera der Schweiz. Entomo Helvetica 7: 119-140.

Chandler P.J. 1987. The families Diastatidae and Campichoetidae (Diptera: Drosophiloidea) with a revision of Palaearctic and Nepalese species of *Diastata* Meigen. Entomologica Scandinavica 18:1-50.

Chandler P.J. 1998. 3.47. Family Diastatidae. In: Papp L. & Darvas B. (eds). Contributions to a Manual of Palaearctic Diptera (with special reference to flies of economic importance). Vol. 3, Higher Brachycera: 523-530. Science Herald, Budapest, 880 pp.

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Ephydridae

Tadeusz Zatwarnicki (1998 Checklist: Volker Hollmann-Schirrmacher)
Last update: Jul 2024

Diagnosis: Adults: very small to moderate-sized flies, length 1-11 mm. Body usually dull and dark colored, but unusually diverse in body structure, vestiture, and ornamentation. Pseudopostocellar setae divergent or lacking. Arista may be distinctly pectinate, plumose or almost bare; face bearing setae and/or setulae; subcranial cavity may be small to very large. Thorax dull to shining, with few to many setae. Wings hyaline to extensively darkened or patterned, costa with humeral and subcostal breaks; Sc vein rudimentary; vein R_1 merging with C before middle of wing; cells bm and dm not separated by a cross-vein; cell cup absent. Anepisternum setulose. No preapical dorsal seta on fore- and hind tibiae. Legs occasionally with ventral armature, fore legs raptorial in *Ochthera*. Abdomen dull to glossy, often somewhat flattened.

Biology: Most species have aquatic or semi-aquatic larvae that may have developed structural or physiological adaptations to specific habitats. The food sources vary considerably, depending on the feeding habit. Most shore fly larvae feed by filtering microorganisms (bacteria, unicellular algae, and yeasts) from the surrounding semiliquid medium, although some prefer dead and decaying animal tissue or excrement, or they are phytophagous and mining in leaves or stems. An exception is *Ochthera*, whose cephalopharyngeal skeleton, including the pointed mouthhooks, is robust and well-suited for piercing their preys' exoskeletons. Adults are often found on or near the soil in humid or wet habitats where they mate, oviposit or feed on a wide variety of matters like algae, honeydew, carrion, etc. Some species have been recorded as pests in crops and greenhouses.

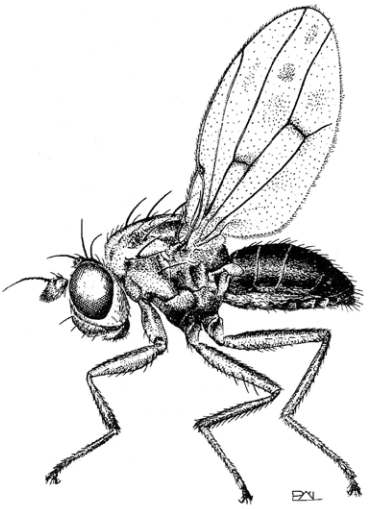
Nomenclature and classification: The World catalogue of the family (Mathis & Zatwarnicki 1995) is the source of nomenclature with updates from recent revisions of *Discomyza* (Zatwarnicki & Mathis 2007) *Scatella* (Zatwarnicki & Irwin 2018), and *Psilopa* group (Zatwarnicki 2018). The family is divided into four subfamilies: Ephydrinae, Gymnomyzinae, Hydrelliinae, and Lipochaetinae (Zatwarnicki 2023), all of which are present in Switzerland.

Number of species: CH: 104 (1998 Checklist: 88),
BE: 126, CZ: 158, DE: 174, IT: 175, NL: 137, UK: 155, Europe: 340, World: 2000.

Level of faunistic knowledge in Switzerland: Moderate.

General references: Mathis & Zatwarnicki (1998) [genera key Palearctic], Zatwarnicki (1997) [North Europe], Drake (2001) [*Notiphila*], Mathis et al. (2009) [*Philotelma*], Olafsson (1991) [Scatellini], Beschovski (2009) [Bulgaria], Stuke (2010) [Germany, selected genera], Papp (1975) [Hungary], Canzoneri & Menghini (1983) [Italy].

References to the Swiss fauna: Bächli et al. (2012), Bächli (2014), Hollmann-Schirrmacher & Zatwarnicki (1997), Hollmann-Schirrmacher (1998), Merz et al. (2006), Papp (1985), Zatwarnicki & Hollmann-Schirrmacher (1995).



Philygria stictica,
female (CMPD3, p. 546).

Checklist

Ephydrinae

Axysta Haliday, 1839
- *cesta* (Haliday, 1833) !

Coenia Robineau-Desvoidy, 1830
- *curvicauda* (Meigen, 1830) !
- *palustris* (Fallén, 1823) !

Hyadina Curtis, 1837
- *guttata* (Fallén, 1813) !
- *humeralis* Becker, 1896 !
- *rufipes* (Meigen, 1830) !

Lamproscatella Hendel, 1917
- *bimaculata* Hendel, 1933 !
- *sibilans* (Haliday, 1833) !

Limnellia Malloch, 1925
- *fallax* (Czerny, 1903) !
- *quadrata* (Fallén, 1813) !

Nostima Coquillett, 1900
- *picta* (Fallén, 1813) !
- *semialata* (Collin, 1913) !

Paracoenia Cresson, 1935
- *fumosa* (Stenhammar, 1844) !

Parydra Stenhammar, 1844
(*Chaetoapnaea* Hendel, 1930)
- *fossarum* (Haliday, 1833) !
- *hecate* (Haliday, 1833) !

- *pusilla* (Meigen, 1830) !
- *quadripunctata* (Meigen, 1830) !

(*Parydra* s.str.)

- *aquila* (Fallén, 1813) !
- *coarctata* (Fallén, 1813) !
- *littoralis* (Meigen, 1830) !
- *nigritarsis* Strobl, 1893 !
- *nubecula* Becker, 1896 !

Philygria Stenhammar, 1844

- *femorata* (Stenhammar, 1844) !
- *flavipes* (Fallén, 1823) !
- *interrupta* (Haliday, 1833) !
- *interstincta* (Fallén, 1813) !
- *morans* (Cresson, 1930) !
- *obtecta* Becker, 1896 !
- *posticata* (Meigen, 1830) !
- *stenoptera* Hollmann-Schirrmacher, 1998 !
- *stictica* (Meigen, 1830) !
- *vittipennis* (Zetterstedt, 1838) !
  - = *trilineata* De Meijere, 1907

Scatella Robineau-Desvoidy, 1830

(*Scatella* s.str.)

- *lacustris* (Meigen, 1830) !
  - = *tenuicosta* Collin, 1930
- *obsoleta* Loew, 1861 !
- *paludum* (Meigen, 1830) !
- *stagnalis* (Fallén, 1813) !

Scatophila Becker, 1896

- *caviceps* (Stenhammar, 1844) !
- *despecta* (Haliday, 1839) !
- *noctula* (Meigen, 1830) !
- *signata* (Loew, 1860) !
- *unicornis* Czerny, 1900 !

Setacera Cresson, 1930

- *breviventris* (Loew, 1860) !
- *micans* (Haliday, 1833) !

Gymnomyzinae

Allotrichoma Becker, 1896

- *laterale* (Loew, 1860) !
- *picenum* Canzoneri & Rampini, 1990 !
- *schumanni* Papp, 1974 !
- *simplex* Loew, 1861 !
  - = *trispinum* Becker, 1896

Athyroglossa Loew, 1860

(*Athyroglossa* s.str.)

- *flaviventris* (Meigen, 1830) !
- *glabra* (Meigen, 1830) !
- *nudiuscula* Loew, 1873 !

(*Parathyroglossa* Hendel, 1931)

- *ordinata* Becker, 1896 !

Diclasiopa Hendel, 1917

- *lacteipennis* (Loew, 1862) !
- *niveipennis* (Becker, 1896) !

Discocerina Macquart, 1835

- *obscurella* (Fallén, 1813) !

Ditrichophora Cresson, 1924

- *calceata* (Meigen, 1830) !
  = *nigrithorax* (Becker, 1926)
- *fuscella* (Stenhammar, 1844) !
- *olivacea* (Becker, 1896) !
  = *canzonerii* (Rampini, 1980)
- *palliditarsis* (Becker, 1896) !

Gymnoclasiopa Hendel, 1930

- *coxalis* (Strobl, 1893) !
  = *dimidiatipennis* (Strobl, 1893)
- *nigerrima* (Strobl, 1893) !
- *plumosa* (Fallén, 1823) !
- *pulchella* (Meigen, 1830) !

Hecamedoides Hendel, 1917

- *unispinosus* (Collin, 1943) !

Mosillus Latreille, 1804

- *subsultans* (Fabricius, 1794) !

Ochthera Latreille, 1802

- *mantis* (De Geer, 1776) !

Polytrichophora Cresson, 1924

(*Sklodowskopa* Zatwarnicki, 2016)

- *duplosetosa* (Becker, 1896) !

Hydrelliinae

Diasemocera Bezzi, 1895

- *glabricula* Fallén, 1813 !
  = *nigritella* Stenhammar, 1844
- *marginella* Fallén, 1823 !
- *roederi* Girschner, 1889 !

Dichaeta Meigen, 1830

- *caudata* Fallén, 1813 !

Discomyza Meigen, 1830

- *baechlii* Zatwarnicki & Mathis, 2007 !
- *incurva* (Fallén, 1823) !

Hydrellia Robineau-Desvoidy, 1830

- *albiceps* (Meigen, 1824) !

= *maura* Meigen, 1838
- *albilabris* (Meigen, 1830) !
- *cardamines* Haliday, 1839 !
- *concolor* (Stenhammar, 1844) !
- *fascitibia* (von Roser, 1840) !
- *flaviceps* (Meigen, 1830) !
- *fulviceps* (Stenhammar, 1844) !
- *fusca* (Stenhammar, 1844) !
- *griseola* (Fallén, 1813) !
- *minutissima* Papp, 1983 !
- *mutata* (Zetterstedt, 1846) !
- *nigricans* (Stenhammar, 1844) !
- *obscura* (Meigen, 1830) !
- *thoracica* Haliday, 1839 !

Notiphila Fallén, 1810
(*Agrolimna* Cresson, 1917)
- *venusta* Loew, 1860 !

(*Notiphila* s.str.)
- *aquatica* Becker, 1896 !
- *brunipes* (Robineau-Desvoidy, 1830) !
- *cinerea* Fallén, 1813 !
- *dorsata* (Stenhammar, 1844) !
- *maculata* Stenhammar, 1844 !
- *nigricornis* Stenhammar, 1844 !
- *riparia* Meigen, 1830 !
- *stagnicola* (Robineau-Desvoidy, 1830) !

Psilopa Fallén, 1824
- *apicalis* (Perris, 1847) !
- *compta* (Meigen, 1830) !
- *nitidula* (Fallén, 1813) !
- *obscuripes* Loew, 1860 !
- *polita* (Macquart, 1835) !
- *stackelbergi* Nartshuk, 1970 !
  = *pappi* (Canzoneri & Meneghini, 1975)

Trimerina Macquart, 1835
- *madizans* (Fallén, 1813) !
- *microchaeta* Hendel, 1932 !

Lipochaetinae

Ilythea Haliday, 1839
- *spilota* (Curtis, 1832) !

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Hippoboscidae

Jean-Paul Haenni (1998 Checklist: Willi Büttiker)
Last update: Jul 2024

Diagnosis: Small to medium sized (2.5-12 mm) calyptrate flies adapted to ectoparasitic life on vertebrates; body dorsoventrally flattened, with strong setosity; head more or less adpressed to thorax, eyes separated in both sexes, ocelli often well-developed, sometimes vestigial or absent, antennae short, highly modified, mouth-parts adapted for bloodsucking; wing usually fully developed, frequently reduced, shortened or narrowed, or totally absent or lost; venation simple and nearly complete or variously reduced, more or less concentrated on anterior region of wing; legs robust, moderately short, tarsal claws strong; abdomen weakly sclerotized. Identification is mainly based upon characteristics of wing venation and vestiture of wing membrane, thoracic structures and setosity.

Biology: Adults are obligate ectoparasites of birds (Ornithomyiinae) or mammals, both wild and domestic (Hippoboscinae and Lipopteninae); some species may occasionally also attack man. Host specificity narrow in some species while others may be found on a large number of varied hosts. Larval development takes place in the female uterus (one larva at a time); the mature larva (prepupa) is deposited in birds' nests, in the fur of mammal hosts, in sheltered places or on the ground, and it pupates shortly after laying.

Nomenclature and classification: According to Fauna Europaea (Petersen et al. 2013).

Number of species: CH: 17 (1998 Checklist: 15),
BE: 14, CZ: 16, DE: 12, GB: 14, IT: 18, NL: 12, SK: 16, Europe: 31, World: ~210.

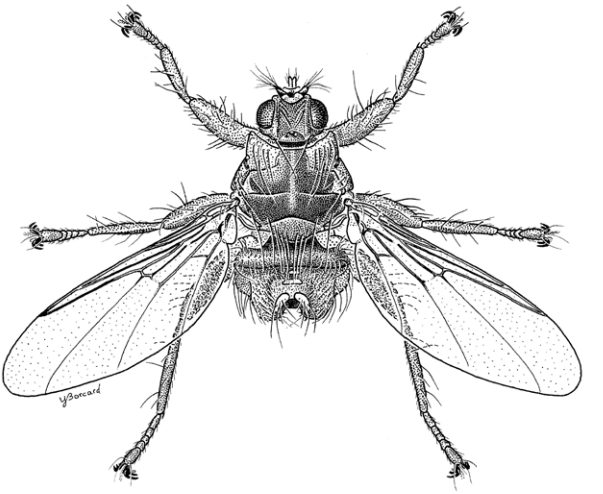
Level of faunistic knowledge in Switzerland: Very good.

General references: Büttiker (1994) [general, biology, Swiss distribution, literature], Hutson (1984) [keys, British species], Haenni (1994) [*key, Central European species*], Hutson (1984) [key, British species], Maa (1969) [World catalogue and host index], Oboňa et al. (2022) [key, European species], Soós & Hůrka (1986) [catalogue, Palaearctic species], Petersen et al. (2013) [Fauna Europaea database], Theodor & Oldroyd (1964) [keys, Palaearctic species]

References to the Swiss fauna: Bächli et al. (2014), Büttiker (1994, 1998), Droz & Haenni (2011), Haenni (1994), Merz (2012), Merz et al. (2006).

Checklist

Crataerina Macquart, 1835
- *melbae* (Rondani, 1879) !
- *pallida* (Latreille, 1812) !



***Ornithomya biloba*,**
female (Büttiker 1994, p. 47).

Hippobosca Linnaeus, 1758
- *equina* Linnaeus, 1758 ! N1

Icosta Speiser, 1905
- *ardeae* (Macquart, 1835) !

Lipoptena Nitzsch, 1818
- *cervi* (Linnaeus, 1758) !
- *fortisetosa* Maa, 1965 !

Melophagus Latreille, 1802
- *ovinus* (Linnaeus, 1758) ! N2
- *rupicaprinus* Rondani, 1879 !

Ornithoica Rondani, 1878
- *turdi* (Latreille, 1812) ! N3

Ornithomya Latreille, 1802
- *avicularia* (Linnaeus, 1758) !
- *biloba* (Dufour, 1827) !
- *chloropus* Bergroth, 1901 !
- *fringillina* Curtis, 1863 !
- *rupes* Hutson, 1981 !

Ornithophila Rondani, 1879
- *metallica* (Schiner, 1864) !

Pseudolynchia Bequaert, 1926
- *canariensis* (Macquart, 1840) L N4

Stenepteryx Leach, 1817
- *hirundinis* (Linnaeus, 1758) !

Notes

N1 *Hippobosca equina* was last recorded from Switzerland in 1966 (Büttiker 1994). It is probably very rare nowadays, or possibly extinct, due to intensification of pest control of the host (domestic horse).

N2 *Melophagus ovinus* was last recorded from Switzerland in 1968 (Büttiker 1994). It is probably very rare nowadays, or possibly extinct, due to intensification of pest control of the host (domestic sheep).

N3 *Ornithoica turdi*: only one recent record known from a vagrant bird (Droz & Haenni 2011), status of the species in Switzerland still dubious.

N4 *Pseudolynchia canariensis*: only one recent record known (Merz 2012), status of the species in Switzerland still dubious.

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Nycteribiidae

Tamara Szentiványi (1998 Checklist: Villy Aellen)
Last update: Jul 2024

Diagnosis: Small or medium (1.5-5.0 mm), spider like ectoparasites of bats. Body colour is generally yellowish to light brown. Bat flies show highly modified morphology as species are wingless, have reduced or missing eyes and ocelli are absent. Halters are present. In some species (e.g. *Basilia* spp.), eyes are on pigmented base. Body is dorsoventrally flattened and head is folded back to the thorax at rest. Thoracic and abdominal ctenidia are present in most species. Strong sexual dimorphism is present between sexes. Egg fertilisation and larval development entirely occur inside the female therefore distinguishing species based on these life-stages is not possible. Puparium is dark brown, oval-shaped with smooth surface and formed from the third larval skin. Pupae, which are glued to the host roost wall, usually can be found in the near vicinity of bat hosts.

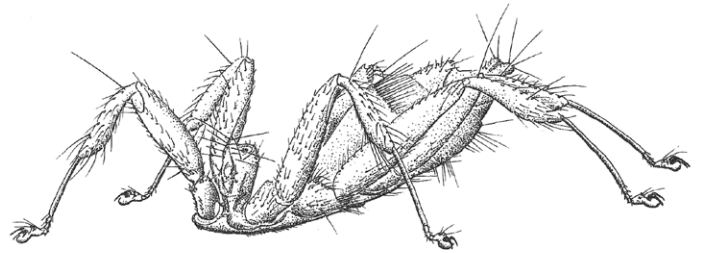
Biology: Obligate hematophagous ectoparasites of bats. Bat flies have a unique reproduction strategy, so-called obligate pseudo-placental unilarviparity (previously « Pupipara »). Eggs are fertilised internally and one single larva develops within female feeding on the so-called « milk-glands ». Females deposit the third instar larva on the surface of the host roost (e.g. cave wall), which immediately pupates. Generally, only females leave their hosts during larviposition. After emergence, imagoes search for bat hosts immediately. Most bat flies show high host specificity towards one or two closely related bat species. They are known and suspected vectors of bat-associated pathogens, such as *Polychromophilus* spp. (Haemospororida: Plasmodiidae) and *Bartonella* spp. (Rhizobiales: Bartonellaceae), respectively. Bat flies occasionally host highly specific entomopathogenic fungi, belonging to the order Laboulbeniales (Fungi: Ascomycota).

Nomenclature and classification: Bat flies are currently divided into two families, family Nycteribiidae and Streblidae. Both bat fly families belong to the superfamily Hippoboscoidea, along with family Hippoboscidae (louse flies, ked flies) and family Glossinidae (tsetse flies).

Number of species: CH: 11 (1998 Checklist: 11),
AL: 11 AT: 7, BA: 7 BE: 3, BG: 9, CY: 5, CZ: 8, DE: 8, DK: 2, EE: 1, ES: 10, FI: 2, FR: 12, GB: 3, GR: 8, HR: 8, HU: 12 IE: 2, IT: 10, LV: 2, MK: 7, ME: 6; NL: 4, NO: 2, PL: 7, PT: 7, RO: 11, RS: 7 SI: 4, SE: 3, SK: 10, UA: 6 Europe: 16, World: ~280.

Level of faunistic knowledge in Switzerland: Good. Two species are potentially present in the Swiss fauna, based on their current known distribution and host spectrum: *Basilia mongolensis nudior* Hurka, 1972 and *Penicillidia monoceros* Speiser, 1900.

General references: Beaucournu (1962) [french fauna], Theodor (1967) [catalogue and keys to species], Marshall (1982) [ecology], Gardner & Molyneux (1988) [vectorial role in bat malaria], Beaucournu & Noblet (1996) [french fauna], Hurka (1998) [key to genera], Dick & Patterson (2006) [biology and ecology], Lourenço & Palmeirim (2008) [reproduction], Dick & Dittmar (2013) [host specificity, vectorial potential], Pape et al. (2015) [Fauna Europea],



Phthirdium biarticulatum,
female (CMPD3, p. 829).

Witsenburg et al. (2015) [vector ecology], Dittmar et al. (2015) [evolution], Szentiványi et al. (2016, 2018, 2019, 2020), Haelewaters et al. (2017, 2018) [microparasite and Laboulbeniales infection], Burazerović et al. (2018) [balkan fauna] Sándor et al. (2018) [vector ecology].

References to the Swiss fauna: Aellen (1955, 1963, 1998), Szentiványi et al. (2016).

Checklist

Basilia Miranda Ribeiro, 1903
- *italica* Theodor, 1954 !
- *nana* Theodor & Moscona, 1954 !
- *nattereri* (Kolenati, 1857) !

Nycteribia Latreille, 1796
(*Acrocholidia* Kolenati, 1857)
- *vexata* Westwood, 1835 !

(*Nycteribia* s.str.)
- *kolenatii* Theodor & Moscona, 1954 !
- *latreillii* (Leach, 1817) !
- *pedicularia* Latreille, 1805 !
- *schmidlii* Schiner, 1853 !

Penicillidia Kolenati, 1863
- *conspicua* Speiser, 1901 !
- *dufourii* (Westwood, 1835) !

Phthiridium Hermann, 1804
- *biarticulatum* Hermann, 1804 !

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Scathophagidae

Marco V. Bernasconi & František Šifner (1998 Checklist: Bernhard Merz & Gerhard Bächli)

Last update: Jul 2024

Diagnosis: Body length 5.0-15.0 mm, ground-colour dark, black or yellow, frequently shining, entirely or partially grey dusted, strongly bristled and often yellow haired. The status of the family is well-founded and unambiguous, with the following principal characters: lower calypter (squama alaris) greatly reduced and linear, head more or less spherical and eyes in both sexes widely separated, frontal vitta in both sexes wide and without a pair of crossed frontal bristles, second antennomere with distinct and complete dorsal longitudinal seam, venation of wing almost constant and without a strong costal spine at end of subcostal vein, katepisternum with one to three bristles, two pairs of gonapophyses. The phylogenetic relationships within this family are now generally well understood; two subfamilies, Scathophaginae and Delininae, are recognised. The species *Scathophaga stercoraria* has served since the early 1960s in numerous ecological, behavioural and evolutionary investigations, particularly as model system for studies of sperm competition, cryptic female choice, and life history evolution.

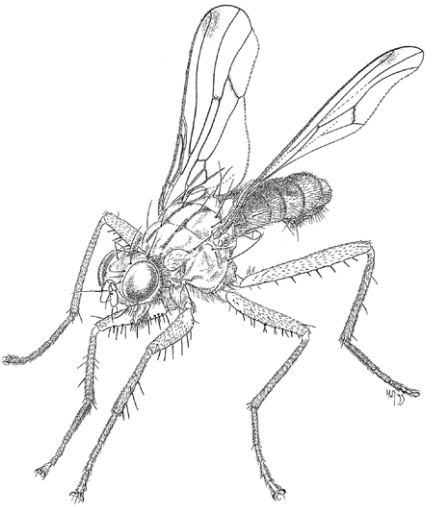
Biology: The adults occur in sheltered and moist habitats of various types, forests, lowland to montane meadows, littoral vegetation, marshes, peatbogs, etc. Many adults are predators and hunt small insects, exceptionally consuming nectar in flowers, whilst others are coprophagous or saprophagous. Several Arctic species are regularly observed on carrion and mammalian dung. Some species breed in rotting seaweed. The eggs are attached to the leaf surface or inserted into plant tissues, dung, or other substrates. Most of the larvae are phytophagous and mine the leaves and stems particularly of monocotyledonous plants. Other larvae are predaceous in dung, coprophagous or saprophagous. Larvae may also live in soil, in stagnant or running water. The larval development is only known for a limited number of species. Individuals of several species perform the ecologically important function of resource recycling.

Nomenclature and classification: According to Šifner (2008) with some changes especially concerning the species listed as belonging to *Norellia* Robineau-Desvoidy, 1830 or *Norellisoma* Wahlgren, 1917.

Number of species: CH: 58 (1998 Checklist: 45),
AT: 69, CZ: 85, DE: 59, HU: 40, PL: 67, SK: 65, Palaearctic: 256, World: 362.

Level of faunistic knowledge in Switzerland: Medium.

General references: Becker (1894), Bernasconi et al. (2000a, 2000b, 2001, 2010), Bernasconi & Šifner (2021), Collin (1958), Gorodkov (1986), Hackman (1956), de Jong (2005), Kutty et al. (2007), Sack (1937), Séguy (1934, 1952), Šifner (1995, 2003, 2008, 2009, 2018), Šifner & Bernasconi (2021).



Norellia spinipes,
male (CMPD A, p. 431).

References to the Swiss fauna: Bächli et al. (2014), Merz & Bächli (1998), Merz et al. (2002, 2006), Šifner (1979, 2018).

Checklist

Delininae

Americina Malloch, 1923
- *media* Becker, 1894 !
- *vittata* (Meigen, 1826) !

Delina Robineau-Desvoidy, 1830
- *nigrita* (Fallén, 1819) !

Leptopa Zetterstedt, 1838
- *filiformis* Zetterstedt, 1838 !

Micropselapha Becker, 1894
- *filiformis* (Zetterstedt, 1846) !

Mirekiana Šifner, 2012
- *anthrax* (Schiner, 1864) ! N1
  - = *carbonaria* (Pokorny, 1887)

Neochirosia Malloch, 1917
- *nigriceps* (Becker, 1894) L N2

Scathophaginae

Acanthocnema Becker, 1894
- *nigrimana* (Zetterstedt, 1846) !

Amaurosoma Becker, 1894 N3

- *armillatum* (Zetterstedt, 1846) !
- *fasciatum* Meigen, 1826 !
- *flavipes* (Fallén, 1819) !
- *longicorne* (von Roser, 1840) !
- *tibiellum* (Zetterstedt, 1838) !

Chaetosa Coquillett, 1898
- *punctipes* (Meigen, 1826) !

Cleigastra Macquart, 1835
- *apicalis* (Meigen, 1826) !

Conisternum Strobl, 1894
- *obscurum* (Fallén, 1819) !

Cordilura Fallén, 1810 N4
- *albilabris* (Fabricius, 1805) ! N5
- *albipes* (Fallén, 1819) !
- *ciliata* (Meigen, 1826) !
- *picipes* (Meigen, 1826) !
- *pudica* (Meigen, 1826) L
- *rufipes* (Meigen, 1826) ! N6
  = *pubera* (Linnaeus, 1758)

Cosmetopus Becker, 1894
- *dentimanus* (Zetterstedt, 1838) L

Gimnomera Rondani, 1866 N7
- *castanipes* Becker, 1894 L
- *dorsata* (Zetterstedt, 1838) !
- *lasiostoma* Becker, 1894 L

Gonatherus Rondani, 1856
- *planiceps* (Fallén, 1826) !

Hexamitocera Becker, 1894
- *loxocerata* (Fallén, 1826) !

Hydromyza Fallén, 1813
- *livens* (Fabricius, 1794) !

Megaphthalma Becker, 1894
- *pallida* (Fallén, 1819) !

Megaphthalmoides Ringdahl, 1936
- *unilineata* (Zetterstedt, 1838) !

Microprosopa Becker, 1894
- *haemorrhoidalis* (Meigen, 1826) !
- *pallidicauda* (Zetterstedt, 1838) L
- *zlobini* Ozerov, 2008 ! N8

Norellia Robineau-Desvoidy, 1830
- *alpestris* Schiner, 1864 !
- *femoralis* (Loew, 1864) !
- *liturata* (Wiedemann in Meigen, 1826) !
- *nervosa* (Meigen, 1826) !
- *spinimana* (Fallén, 1819) !
- *spinipes* (Meigen, 1826) !

- *striolata* (Meigen, 1826) !
- *tipularia* (Fabricius, 1794) !

Norellisoma Wahlgren, 1917
- *mirusae* Šifner, 1974 ! N9
- *vockerothi* Ozerov, 2013 !

Parallelomma Strobl, 1894
- *fuscipes* (Zetterstedt, 1838) !
  = *fuscitibia* (Rondani, 1867)

Scathophaga Meigen, 1803
- *analis* (Meigen, 1826) ! N10 [1]
- *cineraria* (Meigen, 1826) !
  = *lurida* Schiner, 1864
- *cordylurina* (Holmgren, 1883) !
- *furcata* (Say, 1823) !
- *incola* (Becker, 1900) !
- *inquinata* (Meigen, 1826) L N11
- *lutaria* (Fabricius, 1794) !
  = *maculipes* Zetterstedt, 1846
- *scybalaria* (Linnaeus, 1758) !
- *stercoraria* (Linnaeus, 1758) !
- *suilla* (Fabricius, 1794) !
  = *ordinata* Becker, 1894
- *taeniopa* (Rondani, 1867) ! N12

Spaziphora Rondani, 1856
- *hydromyzina* (Fallén, 1819) !

Trichopalpus Rondani, 1856
- *fraternus* (Meigen, 1826) !

Notes

N1 *Delina carbonaria* Pokorny was synonymised with *Delina anthrax* (Schiner, 1864) by Strobl (1898); see also Šifner (2008). *Delina anthrax* has been then transferred to the new genus *Mirekiana* by Šifner (2012).

N2 *Delina nigriceps* (Becker, 1894) is in the genus *Neochirosia* Malloch, 1917 (see Ozerov 2009).

N3 The genus *Nanna* Strobl, 1894 should be replaced by *Amaurosoma* Becker, 1894 as detailed in Šifner (2003).

N4 The subdivision of *Cordilura* into subgenera does not find clear support in any phylogenetic analyses (e.g. Bernasconi et al. 2000 and Kutty et al. 2007).

N5 *Phrosia albilabris* should be considered as *Cordilura albilabris*, therefore a Scathophaginae and not a Delininae. See Bernasconi et al. (2000a) and Kutty et al. (2007).

N6 The new name of *Cordilura pubera* (L., 1758) is *Cordilura rufipes* (Meigen, 1826); see Šifner (2008, 2018).

N7 The genus name *Gimnomera* is used instead of *Cochliarium*. See Šifner (2008); see also Bernasconi et al. (2000a) and Kutty et al. (2007).

N8 The correct name is *Microprosopa zlobini*, not « *zlobinii* ».

N9 The author of *Norellisoma mirusae* is Šifner, 1974, and not Spitzer, 1974 (see Šifner 1974).

N10 *Scathophaga analis* is a valid species (Šifner 2018) and the Swiss record was validated.

N11 *Scathophaga inquinata* was already recorded for Switzerland by Šifner (1979).

N12 *Scathophaga taeniopa* is a valid species. See Bernasconi et al. (2000a, 2001, 2010), Kutty et al. (2007), Šifner (2003, 2008).

Species records

[1] 1M, Dietikon ZH, 16.7.1994, leg. Gerhard Bächli (NML)

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Anthomyiidae

Verner Michelsen & Andreas Grossmann (1998 Checklist: Verner Michelsen & Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small to medium-sized (2.5-9 mm) calyptrate flies. Dorsocentral setae 2 + 3 present. Meron bare, exceptionally with cluster of fine setulae, but never with a subvertical row of setae. Ventral tip of scutellum with some fine setulae. Vein M_1 not curved or angled forward on distal part; vein A_1 usually traceable to wing margin. Separation from other muscoid families: presence of a projecting (non-linear) lower calypter and/or a pair of crossed setae or setulae on frontal stripe will separate species of Anthomyiidae from Scathophagidae. Presence of at least two of the following three characters will separate species of Anthomyiidae from Fanniidae and Muscidae: enlarged ventrobasal setula present on hind basitarsus; fine hairs present on the ventral tip of scutellum; and wing vein A_1 faintly extended to the wing margin.

Biology: The adults of many species are anthophilous and important pollinators. Other species are rather attracted to honeydew, dung or carrion. The larvae are highly varied in their feeding habits, including scavengers living in decaying organic substrates, herbivores producing leaf-mines or tunnels in stems, and fungivores developing in mushrooms. Specialised cleptoparasitism has developed in *Leucophora* and *Eustalomyia*, where the larvae feed on the provision for the offspring of their hymenopteran hosts. *Acyglossa* species are known as larval parasitoids of bush crickets (Tettigoniidae).

Nomenclature and classification: According to previous checklist, with minor changes.

Number of species: CH: 208 (1998 Checklist: 118),
Europe: ~510, World: ~1925.

Level of faunistic knowledge in Switzerland: Medium

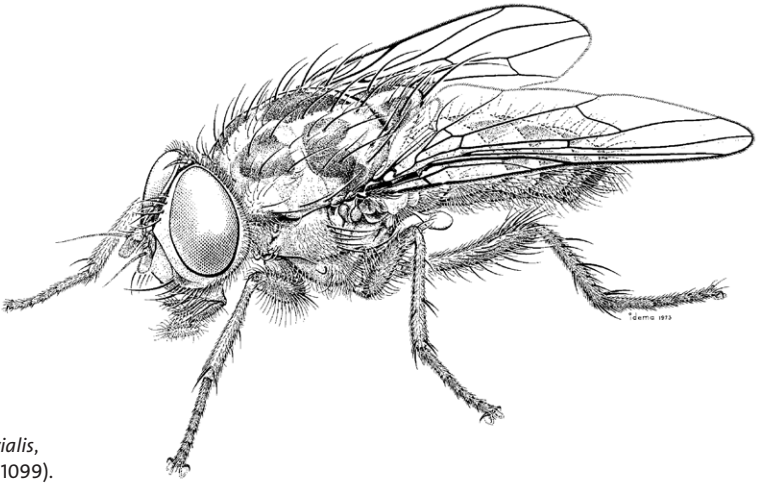
General references: Hennig (1966-1976), Michelsen (2011), Suwa & Darvas (1998).

References to the Swiss fauna: Ackland & Merz (2003), Bächli et al. (2014), Grossmann (2024), Merz et al. (2002, 2006), Michelsen & Merz (1998).

Checklist

Acyglossa Rondani, 1866
- *atramentaria* (Meigen, 1826) !
- *pollinosa* Villeneuve, 1908 L

Adia Robineau-Desvoidy, 1830
- *cinerella* (Fallén, 1825) !
- *grisella* (Rondani, 1871) !



***Anthomyia pluvialis*,**
male (MND2, p.1099).

Alliopsis Schnabl & Dziedzicki, 1911
- *atronitens* (Strobl, 1893) !
- *billbergi* (Zetterstedt, 1838) !
- *glacialis* (Zetterstedt, 1845) !
- *incisivalva* (Strobl, 1898) !
  = *conifrons* auct. nec (Zetterstedt, 1845)
- *kuntzei* (Ringdahl, 1934) !
- *pilitarsis* (Stein, 1900) !
- *rambolitensis* (Villeneuve, 1922) !
- *sepiella* (Zetterstedt, 1845) !
- *silvestris* (Fallén, 1824) !
- *teriolensis* (Pokorny, 1893) !

Anthomyia Meigen, 1803
- *bazini* Séguy, 1929 !
- *confusanea* Michelsen, 1985 !
- *liturata* (Robineau-Desvoidy, 1830) !
  = *pullula* Zetterstedt, 1845
- *monilis* (Meigen, 1826) !
- *pluvialis* (Linnaeus, 1758) !
- *procellaris* Rondani, 1866 !
- *quinquemaculata* Macquart, 1839 !

Botanophila Lioy, 1864
- *bompadrei* (Bezzi, 1918) !
- *brunneilinea* (Zetterstedt, 1845) !
  = *schisticolor* Zetterstedt, 1860
- *centaureae* (Hennig, 1970) L
- *discreta* (Meigen, 1826) !

- *dissecta* (Meigen, 1826) !
- *estonica* (Elberg, 1970) !
- *facettii* (Bezzi, 1918) !
- *fugax* (Meigen, 1826) !
- *gentianae* (Pandellé, 1900) L
- *helviana* Michelsen, 1983 !
- *latifrons* (Zetterstedt, 1845) !
- *lobata* (Collin, 1967) !
- *maculipes* (Zetterstedt, 1845) !
- *phrenione* (Séguy, 1937) !
- *profuga* (Stein, 1916) !
- *rubrigena* (Schnabl, 1915) !
- *rupicapra* (Mik, 1887) !
  = *flavisquama* (Stein, 1906)
- *sanctimarci* (Czerny, 1906) !
- *seneciella* (Meade, 1892) !
- *spinosa* (Rondani, 1866) !
- *striolata* (Fallén, 1824) !
  = *fugitiva* Schnabl, 1911
- *trapezina* (Zetterstedt, 1845) !
- *tuxeni* (Ringdahl, 1953) !
- *varicolor* (Meigen, 1826) !
  = *odontogaster* Zetterstedt, 1845
- *verticella* (Zetterstedt, 1838) !
- *vicaria* (Hennig, 1972) !

Calythea Schnabl & Dziedzicki, 1911
- *dedecorata* (Rondani, 1866) !
- *nigricans* (Robineau-Desvoidy, 1830) !

Chiastocheta Pokorny, 1889
- *dentifera* Hennig, 1953 !
- *inermella* (Zetterstedt, 1838) !
  = *trollii* Zetterstedt, 1845) sensu Collin, 1954
- *lophota* Karl, 1943 !
  = *inermella* Zetterstedt, 1838) sensu Hennig, 1953
  = *trollii* Zetterstedt, 1845) sensu Hennig, 1966
- *macropyga* Hennig, 1953 !
- *rotundiventris* Hennig, 1953 !
- *setifera* Hennig, 1953 !
- *trollii* (Zetterstedt, 1845) !
  = *schnabli* Collin, 1954

Chirosia Rondani, 1856
- *betuleti* (Ringdahl, 1935) !
- *cinerosa* (Zetterstedt, 1845) !
- *montana* Pokorny, 1893 !

Delia Robineau-Desvoidy, 1830
- *antiqua* (Meigen, 1826) L

- *brassicaeformis* (Ringdahl, 1926) !
- *brunnescens* (Zetterstedt, 1845) !
- *capdellae* Michelsen, 2012 !
- *cardui* (Meigen, 1826) !
- *carduiformis* (Schnabl, 1911) L
- *coarctata* (Fallén, 1825) !
- *commixta* (Séguy, 1925) !
- *crinita* Hennig, 1974 !
- *criniventris* (Zetterstedt, 1860) !
- *discalis* (Séguy, 1925) !
- *echinata* (Séguy, 1923) !
- *elongata* (Pokorny, 1889) L
- *fallax* (Loew, 1873) !
- *floralis* (Fallén, 1824) !
- *floricola* Robineau-Desvoidy, 1830 !
- *florilega* (Zetterstedt, 1845) !
  = *trichodactyla* Rondani, 1866
- *frontella* (Zetterstedt, 1838) !
  = *exigua* Meade, 1883
- *gallica* Hennig, 1974 !
- *hirticrura* (Rondani, 1871) !
- *interflua* (Pandellé, 1900) L
- *judicariae* (Pokorny, 1893) !
- *longicauda* (Strobl, 1898) !
- *lophota* (Pandellé, 1900) L
  = *nuda* (Strobl, 1901)
- *majuscula* (Pokorny, 1889) !
- *nasutula* (Pandellé, 1900) L
  = *aconiti* (Ringdahl, 1948)
- *nigrescens* (Rondani, 1877) !
  = *angusta* Stein, 1897 sensu Ringdahl, 1957
- *penicilliventris* Ackland, 2010 !
  = *penicillaris* auct. nec (Rondani, 1866)
- *penicillosa* Hennig, 1974 !
- *pilifemur* (Ringdahl, 1933) !
- *pilitibia* (Stein, 1916) !
- *piliventris* (Pokorny, 1889) !
- *planipalpis* (Stein, 1898) L
  = *pilipyga* Villeneuve, 1917
- *platura* (Meigen, 1826) !
  = *cilicrura* Rondani, 1866
- *pruinosa* (Zetterstedt, 1845) L
- *pseudofugax* (Strobl, 1893) !
- *radicum* (Linnaeus, 1758) !
  = *brassicae* Bouché, 1833
- *tenuiventris* (Zetterstedt, 1860) !

- *tornensis* (Ringdahl, 1926) !
- *trispinosa* (Karl, 1937) !

Egle Robineau-Desvoidy, 1830
- *brevicornis* (Zetterstedt, 1838) !
- *ciliata* (Walker, 1849) !
- *concomitans* (Pandellé, 1900) !
- *inermis* Ackland, 1970 !
- *lyneborgi* Ackland & Griffiths, 2003 !
- *minuta* (Meigen, 1826) !
- *myricariae* Grossmann, 1998 !
- *parva* Robineau-Desvoidy, 1830 !
- *parvaeformis* Schnabl, 1911 !
- *pilitibia* (Ringdahl, 1918) !
- *rhinotmeta* (Pandellé, 1900) !
- *subarctica* (Huckett, 1965) !

Emmesomyia Malloch, 1917
- *grisea* (Robineau-Desvoidy, 1830) !
- *socia* (Fallén, 1825) !

Eustalomyia Kowarz, 1873
- *festiva* (Zetterstedt, 1845) !
- *hilaris* (Fallén, 1823) !
- *histrio* (Zetterstedt, 1838) !
- *vittipes* (Zetterstedt, 1845) !

Eutrichota Kowarz, 1893
- *frigida* (Zetterstedt, 1845) !
- *longimana* (Pokorny, 1887) L
- *paratunicata* (Hennig, 1973) !
- *pilimana* (Ringdahl, 1918) !
- *praeclara* (Stein, 1914) L
- *praepotens* (Wiedemann, 1817) !
- *stenometopa* (Hennig, 1973) L
- *triticiperda* (Stein, 1900) !

Heterostylodes Hennig, 1967
- *annularis* (Tiensuu, 1946) !
- *nominabilis* (Collin, 1947) !
- *obscura* (Macquart, 1835) !
- *pilifera* (Zetterstedt, 1845) !
- *pratensis* (Meigen, 1826) !

Hydrophoria Robineau-Desvoidy, 1830
- *bavarica* Hennig, 1969 !
- *diabata* (Pandellé, 1899) !
- *lancifer* (Harris, 1780) !
  - = *conica* Wiedemann, 1817
- *linogrisea* (Meigen, 1826) !
- *ruralis* (Meigen, 1826) !
- *silvicola* (Robineau-Desvoidy, 1830) !

= *annulata* auct. nec (Pandellé, 1899)
Hylemya Robineau-Desvoidy, 1830
- *nigrimana* (Meigen, 1826) !
- *urbica* van der Wulp, 1896 !
- *vagans* (Panzer, 1798) !
= *strenua* Robineau-Desvoidy, 1830
= *strigosa* Fabricius, 1794
- *variata* (Fallén, 1823) !
Hylemyza Schnabl & Dziedzicki, 1911
- *partita* (Meigen, 1826) !
= *lasciva* (Zetterstedt 1838)
Hyporites Pokorny, 1893
- *montanus* (Schiner, 1862) !
Lasiomma Stein, 1916
- *anthomynum* (Rondani, 1856) !
= *anthomyinum* (Rondani, 1866)
- *craspedodontum* Hsue, 1980 !
- *latipenne* (Zetterstedt, 1838) !
= *Chirosia latipennis* (Zetterstedt, 1838)
- *picipes* (Meigen, 1826) L
= *octoguttatum* Zetterstedt, 1845
- *seminitidum* (Zetterstedt, 1845) !
- *strigilatum* (Zetterstedt, 1838) !
= *eriophthalma* Zetterstedt, 1860
Leucophora Robineau-Desvoidy, 1830
- *brevifrons* (Stein, 1916) !
- *cinerea* Robineau-Desvoidy, 1830 !
- *dorsalis* (Stein, 1916) !
- *grisella* Hennig, 1967 !
- *obtusa* (Zetterstedt, 1838) !
- *sericea* Robineau-Desvoidy, 1830 !
- *unistriata* (Zetterstedt, 1838) !
Mycophaga Rondani, 1856
- *testacea* (Gimmerthal, 1834) !
Paradelia Ringdahl, 1933
- *brunneonigra* (Schnabl, 1911) !
- *intersecta* (Meigen, 1826) !
- *lunatifrons* (Zetterstedt, 1845) !
- *lundbeckii* (Ringdahl, 1918) !
- *palpata* (Stein, 1906) !
- *setiventris* (Huckett, 1965) !
Paregle Schnabl, 1911
- *audacula* (Harris, 1780) !
- *coerulescens* (Strobl, 1893) !
Pegomya Robineau-Desvoidy, 1830
- *bicolor* (Wiedemann, 1817) !

- *calyptrata* (Zetterstedt, 1846) !
- *conformis* (Fallén, 1825) !
- *exilis* (Meigen, 1826) !
- *flavifrons* (Walker, 1849) !
- *flavoscutellata* (Zetterstedt, 1838) L
  = *flavipalpis* Zetterstedt, 1845
- *geniculata* (Bouché, 1834) !
- *grahami* Michelsen & Ackland, 2009 !
- *haemorrhoum* (Zetterstedt, 1838) !
- *meridiana* (Villeneuve, 1923) !
- *nigrisquama* (Stein, 1888) L
- *pallidoscutellata* (Zetterstedt, 1852) !
- *rufina* (Fallén, 1825) !
- *rugulosa* (Zetterstedt, 1845) !
- *solennis* (Meigen, 1826) !
  = *nigritarsis* Zetterstedt, 1838
- *transversa* (Fallén, 1825) !
- *winthemi* (Meigen, 1826) !

Pegoplata Schnabl & Dziedzicki, 1911
- *aestiva* (Meigen, 1826) !
- *infirma* (Meigen, 1826) !
- *patellans* (Pandellé, 1900) !

Phorbia Robineau-Desvoidy, 1830
- *acklandi* Hennig, 1969 !
- *atrogrisea* Tiensuu, 1936 !
- *bartaki* Ackland & Michelsen, 1987 !
- *curvicauda* (Zetterstedt, 1845) !
- *fascicularis* Tiensuu, 1936 !
- *fumigata* (Meigen, 1826) !
- *genitalis* (Schnabl, 1911) !
- *longipilis* (Pandellé, 1900) !
- *moliniaris* (Karl, 1917) !
- *penicillaris* (Stein, 1916) !
- *unipila* (Karl, 1917) !

Strobilomyia Michelsen, 1988
- *anthracina* (Czerny, 1906) !
- *infrequens* (Ackland, 1965) !
- *laricicola* (Karl, 1928) !
- *melania* (Ackland, 1965) !
- *svenssoni* Michelsen, 1988 !

Subhylemyia Ringdahl, 1933
- *longula* (Fallén, 1824) !

Zaphne Robineau-Desvoidy, 1830
- *ambigua* (Fallén, 1823) !
- *caudata* (Zetterstedt, 1855) !
- *divisa* (Meigen, 1826) !

- *frontata* (Zetterstedt, 1838) L
- *lineatocollis* (Zetterstedt, 1838) !
- *septimalis* (Pandellé, 1899) !
- *spiniclunis* (Pandellé, 1899) !

Excluded species

Pegomya maculata (Stein, 1906)

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Fanniidae

Adrian C. Pont & Andreas Grossmann (1998 Checklist: Adrian C. Pont & Bernhard Merz)
Last update: Jul 2024

Diagnosis: The Fanniidae is a small family of the Muscoidea series of Calyptrate families. There are 408 described species, mostly from the Holarctic and temperate Neotropical regions, placed in five genera of which *Fannia* Robineau-Desvoidy, 1830 is by far the most speciose. Adults can be recognised by the very short vein A_1, with vein A_2 curved forward beyond the tip of A_1, and hind tibia with a true dorsal submedian seta aligned with the dorsal preapical seta. Males have the mid legs always modified in some way, with at least a mat of fine setulae along the ventral surface of the tibia. Females have the fronto-orbital plates broad, their inner margins convex, the lower orbital seta directed outwards, without proclinate orbital setae or crossed setae on the frontal vitta.

Biology: In the Holarctic region adult Fanniidae are generally woodland species and are rarely found in open or marshy environments. Males commonly indulge in characteristic aerial hovering and swarming, whilst females live in the ground vegetation among shrubs and flowers. Some species have developed a close association with man and his waste products (e.g. *Fannia canicularis*, *Fannia scalaris*, *Fannia leucosticta*). Larvae are saprophages and develop in many kinds of organic detritus, particularly decaying vegetable matter but also carrion and dung. Some species have more specific associations, developing in fungi, birds' nests and mammal lairs.

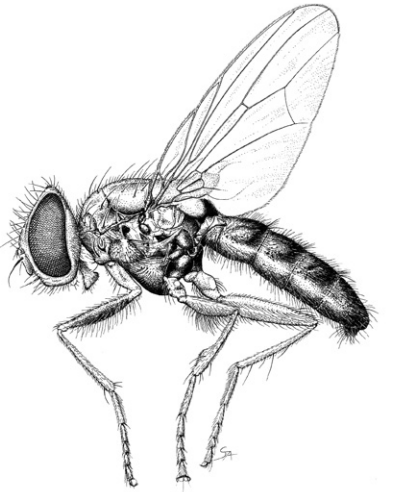
Nomenclature and classification: According to most recent account of the European species (Barták et al. 2016).

Number of species: CH: 63 (1998 Checklist: 55),
BE: 35, CZ: 70, DE: 59, FR: 50, GB: 61, HU: 48, IT: 42, NL: 24, SK: 54, Europe: 84, World: 408.

Level of faunistic knowledge in Switzerland: Good.

General references: d'Assis-Fonseca (1968) [keys, British species], Barták et al. (2016) [keys, European species], Hennig (1955a, 1955b, 1956) [descriptions and figures, Palaearctic species; still useful], Lyneborg (1965) [keys, larvae, European species], Pont (1986) [catalogue, Palaearctic species], Pont (2014) [Fauna Europaea], Rozkošný et al. (1997) [keys, descriptions and figures, European species].

References to the Swiss fauna: Bächli et al. (2014), Grossmann & Pont (2024), Haenni & Pont (2008), Merz et al. (2002, 2006), Merz & Pont (2012).



Fannia scalaris,
male (CMPD A, p. 448).

Checklist

Fannia Robineau-Desvoidy, 1830
- *aequilineata* Ringdahl, 1945 !
- *armata* (Meigen, 1826) !
- *atra* (Stein, 1895) !
- *barbata* (Stein, 1892) !
- *brinae* Albuquerque, 1951 !
- *canicularis* (Linnaeus, 1761) !
- *carbonaria* (Meigen, 1826) L
- *carbonella* (Stein, 1895) !
- *clara* Collin, 1939 !
- *conspecta* Rudzinski, 2003 !
- *coracina* (Loew, 1873) !
- *corvina* (Verrall, 1892) !
- *cothurnata* (Loew, 1873) !
- *difficilis* (Stein, 1895) !
- *fuscitibia* Stein, 1920 !
- *fuscula* (Fallén, 1825) !
- *genualis* (Stein, 1895) !
- *hirticeps* (Stein, 1892) !
- *immutica* Collin, 1939 !
- *incisurata* (Zetterstedt, 1838) !
- *krimensis* Ringdahl, 1934 !
- *latipalpis* (Stein, 1892) !
- *lepida* (Wiedemann, 1817) !
  = *mutica* (Zetterstedt, 1845)

- *leucosticta* (Meigen, 1838) L
- *lineata* (Stein, 1895) !
- *lucidula* (Zetterstedt, 1860) ! N1
  = *glaucescens* auct.
- *lugubrina* (Zetterstedt, 1838) !
- *lustrator* (Harris, 1780) !
  = *hamata* (Macquart, 1835)
- *manicata* (Meigen, 1826) !
- *melania* (Dufour, 1839) !
- *metallipennis* (Zetterstedt, 1838) !
- *minutipalpis* (Stein, 1895) !
- *mollissima* (Haliday, 1840) !
- *monilis* (Haliday, 1838) !
- *monticola* Pont, 1996 !
- *nidica* Collin, 1939 !
- *nigra* Malloch, 1910 !
- *norvegica* Ringdahl, 1934 !
- *ornata* (Meigen, 1826) !
- *pallitibia* (Rondani, 1866) !
- *parva* (Stein, 1895) !
- *pauli* (Pont in Rozkošný et al., 1997) ! N2
  = *nitida* (Stein, 1895), preocc.
- *polychaeta* (Stein, 1895) !
- *postica* (Stein, 1895) !
- *posticata* (Meigen, 1826) !
  = *pretiosa* (Schiner, 1862)
- *pruinosa* (Meigen, 1826) !
- *pseudonorvegica* d'Assis-Fonseca, 1966 !
- *ringdahlana* Collin, 1939 !
- *rondanii* (Strobl, 1893) !
- *scalaris* (Fabricius, 1794) !
- *serena* (Fallén, 1825) !
- *similis* (Stein, 1895) !
- *sociella* (Zetterstedt, 1845) !
  = *spinosa* Karl, 1928
- *spathiophora* Malloch, 1918 !
- *speciosa* (Villeneuve, 1898) !
- *subsimilis* Ringdahl, 1934 !
- *umbratica* Collin, 1939 !
- *umbrosa* (Stein, 1895) !
- *verrallii* (Stein, 1895) !
- *vesparia* (Meade, 1891) !
- *vespertilionis* Ringdahl, 1934 !

Piezura Rondani, 1866

- *graminicola* (Zetterstedt, 1846) !
  = *boletorum* (Rondani, 1866)

- *pardalina* Rondani, 1866 ! N3
  = *graminicola* auct.

Notes

N1 The lectotype of *Fannia glaucescens* (Zetterstedt, 1845) proved to belong to *Fannia armata* (Meigen, 1826), and so the name *Fannia lucidula* (Zetterstedt, 1860) became the correct name for *Fannia glaucescens* auctt. (Pont 2002).

N2 *Fannia nitida* (Stein, 1895) is a junior secondary homonym of *Fannia nitida* (Macquart, 1835) and was given the replacement name *Fannia pauli* Pont in Rozkošný et al. (1997).

N3 Study of the holotype of *Piezura graminicola* (Zetterstedt, 1846) showed that the name had been consistently misapplied. *Piezura graminicola* is actually an older name for *Piezura boletorum* (Rondani, 1866), and *Piezura pardalina* Rondani, 1866 is the correct name for *Piezura graminicola* auctt. (Pont 2002).

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Muscidae

Adrian C. Pont & Andreas Grossmann (1998 Checklist: Adrian C. Pont & Bernhard Merz)
Last update: Jul 2024

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_1 incomplete but extending over half the distance from crossvein CuA_2 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* (Zettertedt, 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 Pokorny, 1893
- *alma* (Meigen, 1826) !
- *brachialis* (Rondani, 1877) !
- *erythrocera* (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) !
- *solitariana* (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

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Calliphoridae (incl. Rhinophorinae, excl. Polleniidae)

Knut Rognes †, Pierfilippo Cerretti & Silvia Gisondi (1998 Checklist: Knut Rognes [Calliphoridae], **Benno Herting & Hans-Peter Tschorsnig** [Rhinophoridae])

Last update: Jul 2024

Diagnosis: The current circumscription of the family Calliphoridae follows that of Yan et al. (2021), including a morphologically and ecologically heterogeneous clade for which no unique autapomorphies can be identified. The family typically includes medium to large sized oestroid flies, often characterised by green or blue metallic colouration, but there are numerous exceptions (see Rognes 1991, 1998a, Cerretti et al. 2020).

Biology: The natural history of the family shows great diversity; calliphorids can develop as scavengers, feeding on vertebrates or other sources, or as coprophagous. They can also be parasitoids, preying on various groups including arthropods, molluscs and annelids. Adult calliphorids have a varied diet, consuming substances ranging from excrement and decaying animal and plant tissues to plant exudates, nectar and pollen.

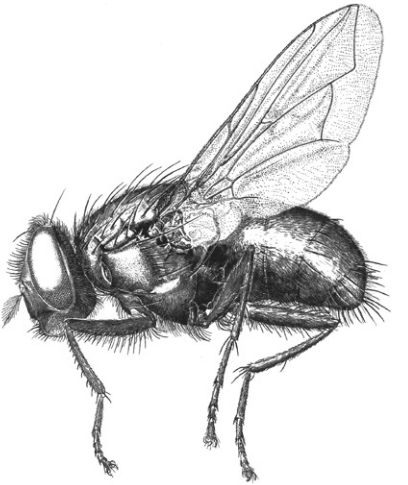
Nomenclature and classification: Since the publication of the 1998 Checklist, there have been significant changes in the classification of oestroid flies, in particular in the definition of the family Calliphoridae. Currently, following the results of phylogenetic studies carried out using different types of data and different taxa, Polleniidae and Mesembrinellidae (formerly treated as subfamilies of Calliphoridae) have been elevated to family status. The remaining calliphorids now form a monophyletic group. According to the recent classification by Yan et al. (2021), this includes the subfamilies Calliphorinae, Chrysomyiinae, Ameniinae, Luciliinae, Rhiniinae and Rhinophorinae.

Number of species: CH: 58 (1998 Checklist: 55 [52+14-11]).

Level of faunistic knowledge in Switzerland: Overall good. However, a significant proportion of current species reports of Calliphoridae are based on a limited number of records, most of which date back to the last century. This presents a challenge as the current conservation status of all reported species remains unclear and the number of species that have experienced local extinctions is unknown. Identifying and prioritising this information gap is crucial for future efforts. This will enable us to accurately assess the extinction risk of recorded species and develop comprehensive and informative Red Lists.

General references: Rognes (1991), Cerretti et al. (2020), Gisondi et al. (2023).

References to the Swiss fauna: Ringdal (1957), Meisterhans & Heusser (1970), Rognes (1998b, 2008), Pape et al. (2015).



Lucilia sericata,
male (CMPD3, p. 617).

Checklist

Ameniinae

Eurychaeta Brauer & Bergenstamm, 1891
- *palpalis* (Robineau-Desvoidy, 1830) !

Calliphorinae

Angioneura Brauer & Bergenstamm, 1893
- *acerba* (Meigen, 1838) !
- *cyrtoneurina* (Zetterstedt, 1859) L
- *fimbriata* (Meigen, 1826) !

Bellardia Robineau-Desvoidy, 1863
- *bayeri* (Jacentkovsky, 1937) !
- *pandia* (Walker, 1849) !
- *pubicornis* (Zetterstedt, 1838) !
- *stricta* (Villeneuve, 1926) !
- *vespillo* (Fabricius, 1794) !
- *viarum* (Robineau-Desvoidy, 1830) !
- *vulgaris* (Robineau-Desvoidy, 1830) !

Calliphora Robineau-Desvoidy, 1830
- *genarum* (Zetterstedt, 1838) !
- *loewi* Enderlein, 1903 !
- *stelviana* (Brauer & Bergenstamm, 1891) !
- *stylifera* (Pokorny, 1889) ! N1
- *subalpina* (Ringdahl, 1931) !
- *vicina* Robineau-Desvoidy, 1830 !
- *vomitoria* (Linnaeus, 1758) !

Cynomya Robineau-Desvoidy, 1830
- *mortuorum* (Linnaeus, 1760) !

Eggisops Rondani, 1862
- *pecchiolii* Rondani, 1862 !

Melanomya Rondani, 1856
- *nana* (Meigen, 1826) !

Melinda Robineau-Desvoidy, 1830
- *gentilis* (Robineau-Desvoidy, 1830) !
- *viridicyanea* (Robineau-Desvoidy, 1830) !

Onesia Robineau-Desvoidy, 1830
- *floralis* Robineau-Desvoidy, 1830 !
- *zumpti* Schumann, 1964 !

Chrysomyinae

Chrysomya Robineau-Desvoidy, 1830
- *albiceps* (Wiedemann, 1819) !

Phormia Robineau-Desvoidy, 1830
- *regina* (Meigen, 1826) !

Protocalliphora Hough, 1899
- *azurea* (Fallén, 1817) !
- *falcozi* Séguy, 1928 !
- *lii* Fan, 1965 !
- *nuortevai* Grunin, 1972 !
- *peusi* Gregor & Povolný, 1959 !

Protophormia Townsend, 1908
- *terraenovae* (Robineau-Desvoidy, 1830) !

Trypocalliphora Peus, 1960
- *braueri* Hendel, 1901 !

Luciliinae

Lucilia Robineau-Desvoidy, 1830
- *ampullacea* Villeneuve, 1922 !
- *bufonivora* Moniez, 1876 L N2
- *caesar* (Linnaeus, 1758) !
- *illustris* (Meigen, 1826) !
- *pilosiventris* Kramer, 1910 ? N3
- *richardsi* Collin, 1926 !
- *sericata* (Meigen, 1826) !
- *silvarum* (Meigen, 1826) !

Rhiniinae

Stomorhina Rondani, 1861
- *lunata* (Fabricius, 1805) !

Rhinophorinae

Melanophora Robineau-Desvoidy, 1830

- *roralis* (Linnaeus, 1758) !

Oplisa Rondani, 1862
- *tergestina* (Schiner, 1861) !

Paykullia Robineau-Desvoidy, 1830
- *brevicornis* (Zetterstedt, 1844) L
- *maculata* (Fallén, 1815) !

Phyto Robineau-Desvoidy, 1830
- *angustifrons* Rondani, 1861 !
- *cingulata* (Zetterstedt, 1844) !
- *melanocephala* (Meigen, 1824) !
- *similis* Stein, 1924 !

Rhinomorinia Brauer & Bergenstamm, 1889
- *sarcophagina* (Schiner, 1862) !

Rhinophora Robineau-Desvoidy, 1830
- *lepida* (Meigen, 1824) !

Stevenia Robineau-Desvoidy, 1830
- *acutangula* (Villeneuve, 1910) !
- *atramentaria* (Meigen, 1824) !
- *deceptoria* (Loew, 1847) !
- *umbratica* (Fallén, 1820) !

Tricogena Rondani, 1856
- *rubricosa* (Meigen, 1824) !

Excluded species

Onesia austriaca Villeneuve, 1920 N4

Notes

N1 *Calliphora stylifera* occurs in Switzerland and Italy only.

N2 *Lucilia bufonivora* was mentioned for Switzerland by Meisterhans & Heusser (1970).

N3 *Lucilia pilosiventris*: the specimen cited by Ringdahl (1957: 123) from Basel, could not be found in ZMLund after a request in 2003.

N4 *Onesia austriaca* was removed from the list. In the 1998 Checklist (p. 335, 336) I kept the record because Ringdahl (1957: 123) had reported it from Arosa (Graubünden), but I had not been able to examine the specimen at the time. I have since been able to examine the specimen (in ZMLund) (7 March 2003). It was a misidentified specimen of *Onesia floralis* (KR).

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Polleniidae

Knut Rognes †, Pierfilippo Cerretti & Silvia Gisondi (1998 Checklist: Knut Rognes [Calliphoridae, part])
Last update: Jul 2024

Diagnosis: The group, as currently circumscribed, has no clear autapomorphies. A pollenid specimen can be identified by the following combination of characters: Oestroid flies of small to medium size with dark colouration, but with various exceptions. The facial sclerite is typically carinate, although weakly so, with some exceptions such as *Pollenia griseotomentosa* (Jacentkovský). The stem vein lacks dorsal bristles. The anal vein does not reach the wing margin. The posterodorsal margin of the posterior coxa is bare. Both the prosternum and the proepisternal depression are bare. The postalar wall is usually bristly, although it may be bare in smaller *Morinia* Robineau-Desvoidy specimens. In females, the oviscapt sclerites are of moderate length, the eighth sternite is elongate with an intact apex, and the cerci are long and slender. In males, the distal parts of the distiphallus have a smooth ventral and ventrolateral surface.

Biology: The family Polleniidae, commonly known as « cluster flies » because some species congregate indoors in early autumn, is a group of flies that develop as endoparasitoids in earthworms (Rognes 1991, Szpila 2003). Despite being a locally abundant group, such as the genus *Pollenia* Robineau-Desvoidy, which is widespread in the Palaearctic region and has been accidentally introduced to various parts of the world, the biology of the Polleniidae is known only from a handful of species, all belonging to this genus. Nothing is known about the natural history of *Morinia*, which is less widespread but locally abundant, especially in the mountainous belt of mesophilous broadleaves, or of the rare *Alvamaja* Rognes, known from only a few specimens.

Nomenclature and classification: Historically classified by various authors as either a subfamily (Polleniinae) or a tribe (Polleniini) within the family Calliphoridae, they have recently been elevated to family status (Cerretti et al. 2019). Polleniids are recognised as the closest living relatives of the highly diverse parasitoid group Tachinidae (Cerretti et al. 2017, Kutty et al. 2019, Stireman et al. 2019, Yan et al. 2021), although their morphology does not explicitly support this relationship. The family Polleniidae currently comprises 147 species in eight genera, the majority of which are found in the Palaearctic region (Gisondi et al. 2020). Cluster flies are also widespread and abundant in the Oriental and Australasian regions. However, their presence is more restricted in the Nearctic (mainly the west coast of the USA) and in southern Africa within the Afrotropical region, and they are not found in the Neotropics. There are three genera in the western Palaearctic: *Alvamaja* Rognes, monotypic and known only from a few records from Italy (Schlüsslmayr and Cerretti, unpublished), Romania and Serbia; *Morinia* Robineau-Desvoidy, with 13 species identified, also present in the Afrotropical region, but with only one species recorded in Europe; and *Pollenia* Robineau-Desvoidy, with 95 recognised species, which occurs in almost all zoogeographical regions (Gisondi et al. 2020). A recent comprehensive review of the world's Polleniidae species is provided by Gisondi et al. (2020).

Number of species: CH: 11 (1998 Checklist: 11 [Calliphoridae, part]).

Level of faunistic knowledge in Switzerland: While such checklists often highlight new country records without acknowledging potential local extinctions, the overall faunal knowledge of Switzerland is good in a European context. Nevertheless, there is a gap in the detailed understanding of the local distribution of the species listed, and their conservation status remains unexamined. The next phase after the checklists should be the compilation of Red Lists according to IUCN guidelines.

General references: Dear (1986), Rognes (1991, 1998a), Szpila (2003), Grzywacz et al. (2012), Cerretti et al. (2019), Gisondi et al. (2020), Gisondi et al. (2023).

References to the Swiss fauna: Rognes (1998b), Pape et al. (2015).

Checklist

Moriniinae

Morinia Robineau-Desvoidy, 1830
- *melanoptera* (Fallén, 1817) !

Polleniinae

Pollenia Robineau-Desvoidy, 1830
- *amentaria* (Scopoli, 1763) !
- *angustigena* Wainwright, 1940 !
- *atramentaria* (Meigen, 1826) !
- *fulvipalpis* Macquart, 1835 !
- *griseotomentosa* (Jacentkovský, 1944) !
- *hungarica* Rognes, 1987 !
- *labialis* Robineau-Desvoidy, 1863 !
- *pediculata* Macquart, 1834 !
- *rudis* (Fabricius, 1794) !
- *tenuiforceps* Séguy, 1928 !

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Sarcophagidae

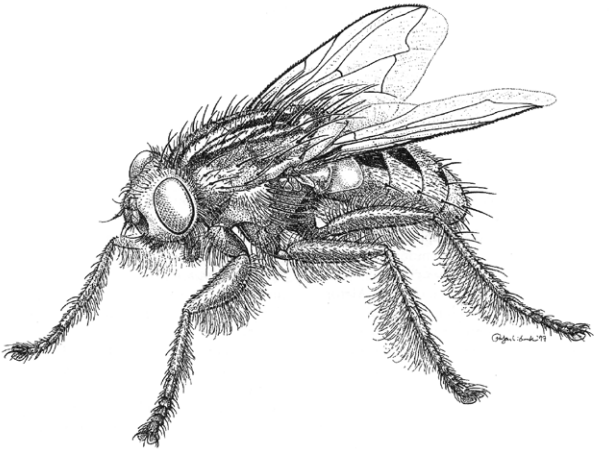
Daniel Whitmore & Thomas Pape (1998 Checklist: Thomas Pape & Bernhard Merz)
Last update: Jul 2024

Diagnosis: Small to large (3.0-20.0 mm), robust brachyceran flies varying from a sand-coloured, mottled appearance (common in the subfamily Miltogramminae) to combinations of grey and black colouration, with a typical striped thorax/chequered abdomen pattern in the subfamily Sarcophaginae. Eyes bare, often of a reddish brick colour. Frons usually narrower in males, but eyes never touching. Proclinate frontal setae absent in males of most species (all species of Sarcophaginae). Antennal arista well developed, bare in Miltogramminae, with long hairs (not reaching tip of arista) in all Sarcophaginae and most Paramacronychiinae. Proboscis short to medium-length, never very long. Terminal section of wing vein M always bent towards vein R_{4+5}, usually at a sharp angle of around 90°; wing cell r_{4+5} usually open or closed at wing margin, rarely short-petiolate. Mid femur with a ctenidium in male *Blaesoxipha* and *Ravinia*. Posterior surface of female mid femur (in a few species also fore femur) of several species of *Sarcophaga* with a weakly-sclerotised, sometimes discoloured area (mid femoral organ). Male genitalia strongly modified in Paramacronychiinae and Sarcophaginae, with numerous species-specific diagnostic characters in the distiphallus. Tergite 6 fused to syntergosternite 7+8 in Sarcophaginae. Epandrium enlarged (bulging) and shiny in the genus *Sarcophaga*. Female genitalia usually short, unmodified; with a piercer in the genus *Blaesoxipha*. Larvae (and puparium) with posterior spiracles situated within a recession.

Biology: Adult sarcophagids (common name: « flesh flies ») are most active from late March to October. They visit flowers, carrion, faeces and other decomposing matter. Males of most species are most active in full sunlight, often occupying small territories on the ground or on low vegetation such as stones, patches of leaf litter or broad leaves; males of several species aggregate on hilltops or other elevated landscape features. Females are not territorial and are often seen on flowers or actively searching for a suitable larval substrate on the ground or in low vegetation. Females of all Sarcophagidae are viviparous or ovoviviparous, laying live first instar larvae or fully incubated eggs that are ready to hatch. Males and females of many Miltogramminae occur in sandy habitats, close to their hymenopteran hosts. The larvae of most members of this subfamily are kleptoparasitic in nests of solitary bees and wasps, feeding on prey or pollen stocked by the host for its offspring. The larval biology of other flesh flies is diverse, ranging from necrophagy on large and small carrion and coprophagy to parasitoidism or predation on (e.g.) snails, grasshoppers (*Blaesoxipha*), earthworms, moth pupae, bumblebees, spider egg sacs and lizard eggs. Larvae of *Wohlfahrtia* (and occasionally some *Sarcophaga* species) are parasites of vertebrates (= agents of myiasis), including farmed and domestic animals and (rarely) humans.

Nomenclature and classification: According to Fauna Europaea (Pape 2004), with some minor changes (see notes).

Number of species: CH: 125 (1998 Checklist: 119),
BE: 64, CZ: 129, DE: 130, FR: 174, GB: 65, HR: 148, HU: 140, IT: 200, NL: 74, SK: 128, Europe: ~310,



Wohlfahrtia bella,
male, not present in Switzerland
(CMPD3, p. 650).

World: ~3100.
(BE, CZ, DE, FR, HU, NL, SK, Europe: Pape 2004, GB: Whitmore et al. 2020, HR: Krčmar et al. 2019, World: Courtney et al. 2017, IT: Pape 2004, Whitmore et al. unpublished)

Level of faunistic knowledge in Switzerland: Good.

General references: Pape (1987) [fauna of Denmark and Fennoscandia], Pape (1996) [world catalogue], Pape (1998) [Palaearctic manual], Pape (2004) [Fauna Europaea], Povolný & Verves (1997) [Central European fauna], Richet et al. (2011) [French fauna (*Sarcophaga*)], Rohdendorf (1930, 1935, 1971, 1975, 1982) [Palaearctic fauna], Rohdendorf (1937) [fauna of the USSR], Szpila (2010) [Miltogramminae first instar larvae], Verves (1982, 1985) [Palaearctic fauna], Verves (1986) [Palaearctic catalogue], Whitmore et al. (2020) [key to British species].

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Checklist

Agria Robineau-Desvoidy, 1830
- *affinis* (Fallén, 1817) L
- *mamillata* (Pandellé, 1896) L N1
- *monachae* (Kramer, 1908) L N2

Amobia Robineau-Desvoidy, 1830

- *pelopei* (Rondani, 1859) !
- *signata* (Meigen, 1824) !

Angiometopa Brauer & Bergenstamm, 1889
- *falleni* Pape, 1986 L
- *flavisquama* Villeneuve, 1911 !

Blaesoxipha Loew, 1861
(*Acridiophaga* Townsend, 1917)
- *fossoria* (Pandellé, 1896) ! [1]

(*Blaesoxipha* s.str.)
- *arenicola* Rohdendorf, 1928 !
- *cochlearis* (Pandellé, 1896) ! N3
- *colorata* Verves, 1985 ! N4
- *lapidosa* Pape, 1994 !
  = *campestris* auct. nec Robineau-Desvoidy, 1863
- *laticornis* (Meigen, 1826) !
  = *grylloctona* Loew, 1861
- *lautaretensis* Villeneuve, 1928 L
- *litoralis* (Villeneuve, 1911) !
- *matilei* Léonide & Léonide, 1983 ! [2]
  = *descosseae* Léonide & Léonide, 1983
- *occatrix* (Pandellé, 1896) !
- *plumicornis* (Zetterstedt, 1859) !
- *pygmaea* (Zetterstedt, 1844) L
- *redempta* (Pandellé, 1896) !
- *ungulata* (Pandellé, 1896) ! N5 [3]
- *unicolor* (Villeneuve, 1912) !

(*Servaisia* Robineau-Desvoidy, 1863)
- *erythrura* (Meigen, 1826) !
- *rossica* Villeneuve, 1912 !

(*Tephromyia* Brauer & Bergenstamm, 1891)
- *grisea* (Meigen, 1826) !

Brachicoma Rondani, 1856
- *devia* (Fallén, 1820) !

Macronychia Rondani, 1859
- *agrestis* (Fallén, 1810) !
- *alpestris* Rondani, 1865 !
- *dolini* Verves & Khrokalo, 2006 ! N6
- *griseola* (Fallén, 1820) !
- *polyodon* (Meigen, 1824) ! [4]
- *striginervis* (Zetterstedt, 1838) !

Metopia Meigen, 1803
- *argentata* Macquart, 1850 !
  = *stackelbergi* Rohdendorf, 1955
- *argyrocephala* (Meigen, 1824) ! [5]
- *campestris* (Fallén, 1810) ! [6]
- *grandii* Venturi, 1953 ! [7]

- *italiana* Pape, 1985 !
  = *argentata* auct. nec Macquart, 1850
- *staegerii* Rondani, 1859 !
- *tshernovae* Rohdendorf, 1955 !

Miltogramma Meigen, 1803
- *brevipila* Villeneuve, 1911 !
- *germari* Meigen, 1824 !
- *occipitalis* Pandellé, 1895 ! N7 [8]
- *punctata* Meigen, 1824 !
- *taeniata* Meigen, 1824 !
- *testaceifrons* (von Roser, 1840) !
- *villeneuvei* Verves, 1982 !

Nyctia Robineau-Desvoidy, 1830
- *halterata* (Panzer, 1798) ! [9]

Oebalia Robineau-Desvoidy, 1863
- *cylindrica* (Fallén, 1810) ! [10]
- *minuta* (Fallén, 1810) ! [11]

Paramacronychia Brauer & Bergenstamm, 1889
- *flavipalpis* (Girschner, 1881) ! [12]

Phrosinella Robineau-Desvoidy, 1863
- *nasuta* (Meigen, 1824) !

Phylloteles Loew, 1844
- *pictipennis* Loew, 1844 !

Pterella Robineau-Desvoidy, 1863
- *grisea* (Meigen, 1824) ! [13]
- *melanura* (Meigen, 1824) !

Ravinia Robineau-Desvoidy, 1863
- *pernix* (Harris, 1780) !

Sarcophaga Meigen, 1826
(*Bellieriomima* Rohdendorf, 1937)
- *subulata* Pandellé, 1896 ! [14]

(*Bercaea* Robineau-Desvoidy, 1863)
- *africa* (Wiedemann, 1824) !
  = *cruentata* Meigen, 1826

(*Helicophagella* Enderlein, 1928)
- *agnata* Rondani, 1860 !
- *crassimargo* Pandellé, 1896 !
- *hirticrus* Pandellé, 1896 !
- *melanura* Meigen, 1826 !
- *noverca* Rondani, 1860 !
- *novercoides* Böttcher, 1913 L
- *okaliana* (Lehrer, 1975) !
- *rosellei* Böttcher, 1912 !

(*Heteronychia* Brauer & Bergenstamm, 1889)
- *amita* Rondani, 1860 ! N8 [15]
- *ancilla* Rondani, 1865 ! N9 [16]

- *arcipes* Pandellé, 1896 ! N8 [17]
- *bulgarica* (Enderlein, 1936) !
  = *boettcheriana* Rohdendorf, 1937
- *cucullans* Pandellé, 1896 ! N8
- *depressifrons* Zetterstedt, 1845 ! [18]
- *dissimilis* Meigen, 1826 ! [19]
- *filia* Rondani, 1860 ! [20]
- *haemorrhoa* Meigen, 1826 !
- *haemorrhoides* Böttcher, 1913 L
- *infantilis* Böttcher, 1913 ! N10
- *lederbergi* (Lehrer, 1995) ! N11
  = *borodorf* Pape, 1996
  = *rohdendorfi* Povolný & Slamecková, 1959
- *nigricaudata* (Povolný & Slamecková, 1982) ! N12
- *pauciseta* Pandellé, 1896 !
- *proxima* Rondani, 1860 ! [21]
- *pumila* Meigen, 1826 ! N8 [22]
- *rondaniana* (Rohdendorf, 1937) !
- *schineri* Bezzi, 1891 ! [23]
- *vagans* Meigen, 1826 ! [24]
- *vicina* Macquart, 1835 ! [25]

(*Kramerea* Rohdendorf, 1937)
- *schuetzei* Kramer, 1909 !

(*Krameromyia* Verves, 1982)
- *anaces* Walker, 1849 !

(*Liopygia* Enderlein, 1928)
- *argyrostoma* (Robineau-Desvoidy, 1830) ! [26]

(*Liosarcophaga* Enderlein, 1928)
- *emdeni* (Rohdendorf, 1969) !
- *pleskei* (Rohdendorf, 1937) !
- *portschinskyi* (Rohdendorf, 1937) !
- *teretirostris* Pandellé, 1896 !
- *tuberosa* Pandellé, 1896 L

(*Mehria* Enderlein, 1928)
- *nemoralis* Kramer, 1908 !
- *sexpunctata* (Fabricius, 1805) !
  = *clathrata* Meigen, 1826

(*Myorhina* Robineau-Desvoidy, 1830)
- *lunigera* Böttcher, 1914 !
- *nigriventris* Meigen, 1826 !
- *pandifera* Blackith & Pape, 1999 !
  = *discifera* auct. nec Pandellé, 1896 N13
- *socrus* Rondani, 1860 !
- *soror* Rondani, 1860 !
  = *discifera* Pandellé, 1896 N14

(*Pandelleana* Rohdendorf, 1937)

- *protuberans* Pandellé, 1896 !
(*Pandelleisca* Rohdendorf, 1937)
- *similis* Meade, 1876 !
(*Parasarcophaga* Johnston & Tiegs, 1921)
- *albiceps* Meigen, 1826 !
(*Robineauella* Enderlein, 1928)
- *caerulescens* Zetterstedt, 1838 ! [27]
(*Rosellea* Rohdendorf, 1937)
- *aratrix* Pandellé, 1896 !
(*Sarcophaga* s.str.)
- *carnaria* (Linnaeus, 1758) !
- *jeanleclercqi* Lehrer, 1975 !
- *lehmanni* Müller, 1922 !
- *subvicina* Rohdendorf, 1937 !
- *variegata* (Scopoli, 1763) !
(*Sarcotachinella* Rohdendorf, 1937)
- *sinuata* Meigen, 1826 !
(*Thyrsocnema* Enderlein, 1928)
- *incisilobata* Pandellé, 1896 !
- *kentejana* (Rohdendorf, 1937) !

Sarcophila Rondani, 1856
- *latifrons* (Fallén, 1817) !

Senotainia Macquart, 1846
- *albifrons* (Rondani, 1859) ! [28]
- *conica* (Fallén, 1810) ! [29]
- *puncticornis* (Zetterstedt, 1838) !
- *tricuspis* (Meigen, 1838) !

Sphenometopa Townsend, 1908
- *eluta* (Pandellé, 1895) !
- *fastuosa* (Meigen, 1824) ! [30]
- *stelviana* (Brauer & Bergenstamm, 1891) ! [31]

Taxigramma Perris, 1852
- *heteroneura* (Meigen, 1830) ! [32]
- *hilarella* (Zetterstedt, 1844) !
- *stictica* (Meigen, 1830) !

Wohlfahrtia Brauer & Bergenstamm, 1889
- *meigenii* (Schiner, 1862) L N15

Excluded species

Blaesoxipha batilligera Séguy, 1941 N3
Macronychia kanoi Kurahashi, 1972 N6
Sarcophaga bezziana Böttcher, 1913 N10
Sarcophaga dux Thomson, 1869 ! N16
Wohlfahrtia vigil (Walker, 1849) N15

Notes

N1 *Agria mamillata*: Added by Pape (2004) based on Kuhlmann (1995).

N2 *Agria monachae*: Added by Pape (2004) (source of record unknown).

N3 *Blaesoxipha cochlearis*: Previously misidentified as *B. batilligera*. Here correctly identified following Verves (1985) and our recent examination of the lectotype of *B. cochlearis* in Staatliches Museum für Naturkunde Stuttgart (unpublished).

N4 *Blaesoxipha colorata*: Previously misidentified as *B. cochlearis*. Here correctly identified following Verves (1985) and based on our examination of the primary types of B. cochlearis and B. colorata (Staatliches Museum fur Naturkunde Stuttgart).

N5 *Blaesoxipha ungulata*, previously listed only from the literature, is confirmed based on a female from Valais (G. Bächli collection).

N6 *Macronychia dolini*: Previously misidentified as *Macronychia kanoi* (see Verves & Khrokalo 2006).

N7 *Miltogramma occipitalis*: Added based on specimens from Valais (Staatliches Museum für Naturkunde Stuttgart).

N8 *Heteronychia amita*, *H. arcipes*, *H. cucullans*, *H. pumila*: Previously listed in the subgenus *Discachaeta*, which is now a junior synonym of the subgenus *Heteronychia* (see Whitmore et al. 2013).

N9 *Sarcophaga ancilla*: Added based on specimens from Valais (Naturhistoriska riksmuseet, Stockholm).

N10 *Sarcophaga infantilis*: Previously misidentified as *Sarcophaga bezziana* (see Whitmore et al. 2009).

N11 *Sarcophaga lederbergi* is the correct name for *S. borodorf* (see Pape 2004).

N12 *Sarcophaga nigricaudata*: This species is here considered valid based on morphology and removed from synonymy with *S. dissimilis*, **stat. res.**

N13 *Sarcophaga pandifera/discifera* auct.: Misidentification resolved by Blackith & Pape (1999).

N14 *Sarcophaga soror*: Senior synonym of *S. discifera* (see Blackith & Pape 1999).

N15 *Wohlfahrtia meigenii*: Previously misidentified as *W. vigil* (see Krčmar et al. 2019).

N16 *Sarcophaga dux* was recorded by Cherix et al. (2012) based on a female specimen from Vaud in Musée cantonal de zoologie (Naturéum), Lausanne. The specimen was examined and re-identified by us as *Sarcophaga* (*Sarcophaga*) sp., and *S. dux* is accordingly removed from the Swiss list.

Species records

[1] 1M 1F, GR, Dischmatal, 16.6.1990, leg. Peter Brodmann (CGB)
[2] 1F, SH, Merishausen, 19.8.1992, leg. Gerhard Bächli (CGB)
[3] 1F, VS, Mörel, 28.5.2010, 850 m., leg. Martin Obrist (CGB)
[4] 1M, TI, Gordola, 12.6.1969, leg. Benno Herting (SMNS)
[5] 1M, TI, Bignasco, 18.9.1983, leg. Hans-Peter Tschorsnig (SMNS)
[6] 1M, ZH, Zürich, Pfannenstiel, 31.5.1954, leg. Benno Herting (SMNS)
[7] 1M, SO, Messen, KF 83, 28.6.2004, leg. Beat Wermelinger (CGB)
[8] 1F, VD, Val de Triqueut, 10.7.1929, leg. Erwin Lindner (SMNS)
[9] 1M, SO, Messen, KF 83, 19.7.2004, leg. Beat Wermelinger (CGB)
[10] 1M, JU, Delémont, Domont, 7.7.1964, leg. Benno Herting (SMNS)
[11] 1M, JU, Delémont, Domont, 30.6.1964, leg. Benno Herting (SMNS)
[12] 1M, GR, Celerina, 2005, leg. Peter Duelli (CGB)
[13] 1F, VS, Leuk-Platten, 1.8.1998, leg. Bernhard Merz (CGB)
[14] 1M, SO, Messen, KF 71, 9.8.2004, leg. Beat Wermelinger (CGB)
[15] 9M, VS, Leuk-Platten, 1.8.1998, leg. Bernhard Merz (CGB)
[16] 1M, VS, Leuk-Pfynwald, 25.5.1997, 630 m., leg. Bernhard Merz (MHND)
[17] 1M, VS, Leuk-Brentjong, 25.6.1999, leg. Gerhard Bächli (CGB)
[18] 2M, ZH, Zürich-Zürichberg, 22.7.1996, 650 m., leg. Bernhard Merz (MHND)
[19] 1M, GL, Klöntal, Vorauen, 8.8.1995, leg. Bernhard Merz (NHMD)
[20] 1M, VS, Jeizinen, 10.8.2013, leg. Gerhard Bächli (CGB)
[21] 1M, VS, Leuk-Rotafen, 16.5.1996, 900 m., leg. Bernhard Merz (NHMD)
[22] 1M, GR, Graubünden, Lenzerheide, 21.7.2000, 2000 m., leg. Bernhard Merz (NHMD)
[23] 1M, GR, Graubünden, Savognin, 17.8.1988, leg. Gerhard Bächli (NHMD)
[24] 1M, GL, Glarus, Klöntal, Vorauen, 8.8.1995, leg. Bernhard Merz (NHMD)

[25] 1M, GR, Arosa, 28.6.1955, 1800 m., leg. Oscar Ringdahl (NHMD)
[26] 1M, SO, Messen, KF 73, 5.7.2004, leg. Beat Wermelinger (CGB)
[27] 1M, SO, Messen, KF 72, 9.8.2004, leg. Beat Wermelinger (CGB)
[28] 1F, VS, Visp, 2005, leg. Peter Duelli (CGB)
[29] 1F, VD, Cudrefin, 2000, leg. Peter Duelli (CGB)
[30] TI, Gordola, 19.6.1965, leg. Benno Herting (SMNS)
[31] 1F, TI, Robiei, 4.7.2008, leg. Gerhard Bächli (CGB)
[32] 1F, VS, Wallis, Pfynwald, 4.8.1968, leg. Benno Herting (SMNS)

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Tachinidae

Pierfilippo Cerretti, Davide Badano & Silvia Gisondi
(1998 Checklist: Hans-Peter Tschorsnig & Benno Herting)
Last update: Jul 2024

Diagnosis: Tachinidae, also known as « bristle flies », are a family of the Oestroidea, comprising more than 8500 described species (Pape et al. 2011). Their common name refers to the dense covering of thick setae over the body of most species. The family is well defined morphologically, with a highly developed, convex subscutellum (only *Litophasia* is an exception), and from a natural history point of view, as all known species develop as endoparasitoids of arthropods, mainly phytophagous insects.

Biology: Tachinidae are internal parasitoids and their host range encompasses at least 15 orders of arthropods (Stireman et al. 2006). However, most of them parasitise phytophagous insects, such as lepidopteran and coleopteran larvae and adult hemipterans (Cerretti 2010), playing a crucial role as control agents in both natural and managed ecosystems. Tachinids are diverse and abundant on all continents and islands, but the peak of species diversity is in the Neotropical Region, followed by the Palaearctic Region. Afrotropical, Oriental and Australasian regions also hold an astonishing diversity of these parasitoids, which is still largely undescribed.

Nomenclature and classification: According to Pape et al. (2015) with some changes.

Number of species: CH: 560 (1998 Checklist: 526),
Europe: 980.

Level of faunistic knowledge in Switzerland: Good.

General references: Cerretti (2010), Cerretti et al. (2012), Pape et al. (2015, 2011), Stireman et al. (2006, 2019).

References to the Swiss fauna: Merz et al. (2002, 2006), Bächli et al. (2014), Obrecht (2014), Pétremand et al. (2015), Tschorsnig & Herting (1998), Zeegers et al. (2016), Ziegler et al. (2016)

Checklist

Acemya Robineau-Desvoidy, 1830
- *acuticornis* (Meigen, 1824) !
- *rufitibia* (von Roser, 1840) !

Actia Robineau-Desvoidy, 1830
- *crassicornis* (Meigen, 1824) !
  = *dubitata* Herting, 1971
- *infantula* (Zetterstedt, 1844) !

***Brachymera rugosa*,**
male (CMPD3, p. 692).

- *lamia* (Meigen, 1838) !
- *maksymovi* Mesnil, 1952 !
- *pilipennis* (Fallén, 1810) !
- *resinellae* (Schrank, 1781) !
  = *nudibasis* Stein, 1924

Admontia Brauer & Bergenstamm, 1889
- *blanda* (Fallén, 1820) !
- *cepelaki* (Mesnil, 1961) !
- *continuans* Strobl, 1910 !
- *grandicornis* (Zetterstedt, 1849) !
- *maculisquama* (Zetterstedt, 1859) !
- *podomyia* Brauer & Bergenstamm, 1889 !
- *seria* (Meigen, 1824) !

Allophorocera Hendel, 1901
- *ferruginea* (Meigen, 1824) !
- *pachystyla* (Macquart, 1850) !
- *rutila* (Meigen, 1824) !

Alsomyia Brauer & Bergenstamm, 1891
- *capillata* (Rondani, 1859) !

Amelibaea Mesnil, 1955
- *tultschensis* (Brauer & Bergenstamm, 1891) !

Ancistrophora Schiner, 1865
- *mikii* Schiner, 1865 !

Anthomyiopsis Townsend, 1916
- *nigrisquamata* (Zetterstedt, 1838) !
- *plagioderae* Mesnil, 1972 !

Aphria Robineau-Desvoidy, 1830

- *latifrons* Villeneuve, 1908 !
- *longilingua* Rondani, 1861 !
- *longirostris* (Meigen, 1824) !
- *xyphias* Pandellé, 1896 !

Aplomya Robineau-Desvoidy, 1830
- *confinis* (Fallén, 1820) !

Athrycia Robineau-Desvoidy, 1830
- *curvinervis* (Zetterstedt, 1844) !
- *impressa* (Wulp, 1869) !
- *trepida* (Meigen, 1824) !

Atylomyia Brauer, 1898
- *loewi* Brauer, 1898 !

Atylostoma Brauer & Bergenstamm, 1889
- *tricolor* (Mik, 1884) !

Bactromyia Brauer & Bergenstamm, 1891
- *aurulenta* (Meigen, 1824) !

Belida Robineau-Desvoidy, 1863
- *angelicae* (Meigen, 1824) !

Bessa Robineau-Desvoidy, 1863
- *parallela* (Meigen, 1824) !
- *selecta* (Meigen, 1824) !

Besseria Robineau-Desvoidy, 1830
- *anthophila* (Loew, 1871) !
- *reflexa* Robineau-Desvoidy, 1830 !

Billaea Robineau-Desvoidy, 1830
- *adelpha* (Loew, 1873) !
- *fortis* (Rondani, 1862) !
- *irrorata* (Meigen, 1826) !
- *pectinata* (Meigen, 1826) !
- *triangulifera* (Zetterstedt, 1844) !

Bithia Robineau-Desvoidy, 1863
- *demotica* (Egger, 1861) !
- *jacentkovskyi* (Villeneuve, 1937) !
- *modesta* (Meigen, 1824) !
- *spreta* (Meigen, 1824) !

Blepharipa Rondani, 1856
- *pratensis* (Meigen, 1824) !
- *schineri* (Mesnil, 1939) !

Blepharomyia Brauer & Bergenstamm, 1889
- *angustifrons* Herting, 1971 !
- *pagana* (Meigen, 1824) !
- *piliceps* (Zetterstedt, 1859) !

Blondelia Robineau-Desvoidy, 1830
- *inclusa* (Hartig, 1838) !
- *nigripes* (Fallén, 1810) !

Botria Rondani, 1856

- *frontosa* (Meigen, 1824) !
- *subalpina* Villeneuve, 1910 !

Brachicheta Rondani, 1861
- *strigata* (Meigen, 1824) !

Brachymera Brauer & Bergenstamm, 1889
- *rugosa* (Mik, 1863) !

Buquetia Robineau-Desvoidy, 1847
- *musca* Robineau-Desvoidy, 1847 !

Cadurciella Villeneuve, 1927
- *tritaeniata* (Rondani, 1859) !

Campylocheta Rondani, 1859
- *inepta* (Meigen, 1824) !
- *latigena* Mesnil, 1974 !
- *praecox* (Meigen, 1824) !
- *similis* Ziegler & Shima, 1996 !

Carcelia Robineau-Desvoidy, 1830
- *alpestris* Herting, 1966 !
- *atricosta* Herting, 1961 !
- *bombylans* Robineau-Desvoidy, 1830 !
- *dubia* (Brauer & Bergenstamm, 1891) !
- *falenaria* (Rondani, 1859) !
- *gnava* (Meigen, 1824) !
- *iliaca* (Ratzeburg, 1840) !
- *kowarzi* Villeneuve, 1912 !
- *laxifrons* Villeneuve, 1912 !
- *lucorum* (Meigen, 1824) !
- *puberula* Mesnil, 1941 !
- *rasa* (Macquart, 1849) !
- *rasella* Baranov, 1931 !
- *tibialis* (Robineau-Desvoidy, 1863) !

Catagonia Brauer & Bergenstamm, 1891
- *aberrans* (Rondani, 1859) !

Catharosia Rondani, 1868
- *albisquama* (Villeneuve, 1932) !
- *flavicornis* (Zetterstedt, 1859) !
- *pygmaea* (Fallén, 1815) !

Ceratochaetops Mesnil, 1954
- *delphinensis* (Villeneuve, 1931) !
- *triseta* (Villeneuve, 1922) !

Ceromasia Rondani, 1856
- *rubrifrons* (Macquart, 1834) !

Ceromya Robineau-Desvoidy, 1830
- *bicolor* (Meigen, 1824) !
- *dilecta* Herting, 1977 !
- *dorsigera* Herting, 1967 !
- *flaviceps* (Ratzeburg, 1844) !

- *flaviseta* (Villeneuve, 1921) !
- *monstrosicornis* (Stein, 1924) !
- *silacea* (Meigen, 1824) !

Cestonia Rondani, 1861
- *cineraria* Rondani, 1861 !

Chaetovoria Villeneuve, 1920
- *antennata* (Villeneuve, 1920) !

Chetogena Rondani, 1856
- *acuminata* Rondani, 1859 !
- *alpestris* Tschorsnig, 1997 !
- *fasciata* (Egger, 1856) !
- *filipalpis* Rondani, 1859 !
- *janitrix* (Hartig, 1838) !
- *obliquata* (Fallén, 1810) !
- *rondaniana* (Villeneuve, 1931) !
- *tschorsnigi* Ziegler, 1999 !

Chetoptilia Rondani, 1862
- *puella* (Rondani, 1862) !

Chrysosomopsis Townsend, 1916
- *aurata* (Fallén, 1820) !
- *macrocercus* Zeegers, Ziegler & Tschorsnig, 2016 !

Cinochira Zetterstedt, 1845
- *atra* Zetterstedt, 1845 !

Cistogaster Latreille, 1829
- *globosa* (Fabricius, 1775) !
- *mesnili* (Zimin, 1966) !

Clairvillia Robineau-Desvoidy, 1830
- *biguttata* (Meigen, 1824) !

Clemelis Robineau-Desvoidy, 1863
- *majuscula* Mesnil, 1954 !
- *pullata* (Meigen, 1824) !

Cleonice Robineau-Desvoidy, 1863
- *callida* (Meigen, 1824) !

Clytiomya Rondani, 1892
- *continua* (Panzer, 1798) !
- *sola* (Rondani, 1861) !

Compsilura Bouché, 1834
- *concinnata* (Meigen, 1824) !

Conogaster Brauer & Bergenstamm, 1891
- *pruinosa* (Meigen, 1824) !

Cylindromyia Meigen, 1803
- *auriceps* (Meigen, 1838) !
- *bicolor* (Olivier, 1812) !
- *brassicaria* (Fabricius, 1775) !
- *brevicornis* (Loew, 1844) !
- *intermedia* (Meigen, 1824) !

- *interrupta* (Meigen, 1824) !
- *pilipes* (Loew, 1844) !
- *pusilla* (Meigen, 1824) !
- *xylotina* (Egger, 1860) !

Cyrtophleba Rondani, 1856
- *ruricola* (Meigen, 1824) !

Cyzenis Robineau-Desvoidy, 1863
- *albicans* (Fallén, 1810) !
- *jucunda* (Meigen, 1838) !

Demoticus Macquart, 1854
- *amorphus* Villeneuve, 1911 !
- *plebejus* (Fallén, 1810) !

Dexia Meigen, 1826
- *rustica* (Fabricius, 1775) !
- *vacua* (Fallén, 1817) !

Dexiosoma Rondani, 1856
- *caninum* (Fabricius, 1781) !

Dinera Robineau-Desvoidy, 1830
- *carinifrons* (Fallén, 1817) !
- *ferina* (Fallén, 1817) !
- *fuscata* Zhang & Shima, 2006 !
- *grisescens* (Fallén, 1817) !

Dionaea Robineau-Desvoidy, 1830
- *aurifrons* (Meigen, 1824) !
- *flavisquamis* Robineau-Desvoidy, 1863 L

Drino Robineau-Desvoidy, 1863
- *atropivora* (Robineau-Desvoidy, 1830) !
- *galii* (Brauer & Bergenstamm, 1891) !
- *gilva* (Hartig, 1838) !
- *inconspicua* (Meigen, 1830) !
- *lota* (Meigen, 1824) !
- *vicina* (Zetterstedt, 1849) !

Dufouria Robineau-Desvoidy, 1830
- *chalybeata* (Meigen, 1824) !
- *nigrita* (Fallén, 1810) !

Ectophasia Townsend, 1912
- *crassipennis* (Fabricius, 1794) !
- *oblonga* (Robineau-Desvoidy, 1830) !

Eliozeta Rondani, 1856
- *helluo* (Fabricius, 1805) !
- *pellucens* (Fallén, 1820) !

Eloceria Robineau-Desvoidy, 1863
- *delecta* (Meigen, 1824) !

Elodia Robineau-Desvoidy, 1863
- *ambulatoria* (Meigen, 1824) !
- *morio* (Fallén, 1820) !

Emporomyia Brauer & Bergenstamm, 1891
- *kaufmanni* Brauer & Bergenstamm, 1891 !

Entomophaga Lioy, 1864
- *nigrohalterata* (Villeneuve, 1921) !
- *sufferta* (Villeneuve, 1942) !

Epicampocera Macquart, 1849
- *succincta* (Meigen, 1824) !

Eriothrix Meigen, 1803
- *argyreatus* (Meigen, 1824) !
- *micronyx* Stein, 1924 L
- *monticola* (Egger, 1856) !
- *prolixa* (Meigen, 1824) !
- *rufomaculatus* (De Geer, 1776) !

Erycia Robineau-Desvoidy, 1830
- *fasciata* Villeneuve, 1924 !
- *fatua* (Meigen, 1824) !
- *festinans* (Meigen, 1824) !

Erynnia Robineau-Desvoidy, 1830
- *ocypterata* (Fallén, 1810) !

Erythrocera Robineau-Desvoidy, 1848
- *nigripes* (Robineau-Desvoidy, 1830) !

Estheria Robineau-Desvoidy, 1830
- *bohemani* (Rondani, 1862) !
- *cristata* (Meigen, 1826) !
- *microcera* (Robineau-Desvoidy, 1830) !
- *petiolata* (Bonsdorff, 1866) !

Ethilla Robineau-Desvoidy, 1863
- *aemula* (Meigen, 1824) !

Eulabidogaster Belanovsky, 1951
- *setifacies* (Rondani, 1861) !

Eumea Robineau-Desvoidy, 1863
- *linearicornis* (Zetterstedt, 1844) !
- *mitis* (Meigen, 1824) !

Eurysthaea Robineau-Desvoidy, 1863
- *scutellaris* (Robineau-Desvoidy, 1848) !

Exorista Meigen, 1803
- *cuneata* Herting, 1971 !
- *fasciata* (Fallén, 1820) !
- *glossatorum* (Rondani, 1859) !
- *grandis* (Zetterstedt, 1844) !
- *larvarum* (Linnaeus, 1758) !
- *mimula* (Meigen, 1824) !
- *nympharum* (Rondani, 1859) !
- *paligera* Mesnil, 1970 !
- *rustica* (Fallén, 1810) !
- *segregata* (Rondani, 1859) !

- *tubulosa* Herting, 1967 !

Freraea Robineau-Desvoidy, 1830
- *gagatea* Robineau-Desvoidy, 1830 !

Frontina Meigen, 1838
- *laeta* (Meigen, 1824) !

Gaedia Meigen, 1838
- *connexa* (Meigen, 1824) !
- *distincta* Egger, 1861 !

Gastrolepta Rondani, 1862
- *anthracina* (Meigen, 1826) !

Germaria Robineau-Desvoidy, 1830
- *ruficeps* (Fallén, 1820) !

Gonia Meigen, 1803
- *capitata* (De Geer, 1776) !
- *distinguenda* Herting, 1963 !
- *divisa* Meigen, 1826 !
- *ornata* Meigen, 1826 !
- *picea* (Robineau-Desvoidy, 1830) !
- *vacua* Meigen, 1826 !

Goniocera Brauer & Bergenstamm, 1891
- *montium* (Villeneuve, 1921) !
- *schistacea* Brauer & Bergenstamm, 1891 !
- *versicolor* (Fallén, 1820) !

Graphogaster Rondani, 1868
- *brunnescens* Villeneuve, 1907 !
- *buccata* Herting, 1971 !
- *dispar* (Brauer & Bergenstamm, 1889) !
- *nigrisquamata* Tschorsnig, 1989 !

Gymnocheta Robineau-Desvoidy, 1830
- *magna* Zimin, 1958 !
- *viridis* (Fallén, 1810) !

Gymnosoma Meigen, 1803
- *clavatum* (Rohdendorf, 1947) !
- *costatum* (Panzer, 1800) !
- *dolycoridis* Dupuis, 1961 !
- *inornatum* Zimin, 1966 !
- *nitens* Meigen, 1824 !
- *nudifrons* Herting, 1966 !
- *rotundatum* (Linnaeus, 1758) !

Halidaya Egger, 1856
- *aurea* Egger, 1856 !

Hebia Robineau-Desvoidy, 1830
- *flavipes* Robineau-Desvoidy, 1830 !

Hemimacquartia Brauer & Bergenstamm, 1893
- *paradoxa* Brauer & Bergenstamm, 1893 !

Hemyda Robineau-Desvoidy, 1830

- *obscuripennis* (Meigen, 1824) !
- *vittata* (Meigen, 1824) !

Hubneria Robineau-Desvoidy, 1847
- *affinis* (Fallén, 1810) !

Hyalurgus Brauer & Bergenstamm, 1893
- *crucigera* (Zetterstedt, 1838) !
- *lucidus* (Meigen, 1824) !
- *tomostethi* Cepelák, 1963 !

Hyleorus Aldrich, 1926
- *elatus* (Meigen, 1838) !

Hyperaea Robineau-Desvoidy, 1863
- *femoralis* (Meigen, 1824) !

Istocheta Rondani, 1859
- *cinerea* (Macquart, 1850) !
- *longicornis* (Fallén, 1810) !
- *sublutescens* Herting, 1975 !

Kirbya Robineau-Desvoidy, 1830
- *moerens* (Meigen, 1830) !

Klugia Robineau-Desvoidy, 1863
- *marginata* (Meigen, 1824) !

Labigastera Macquart, 1834
- *forcipata* (Meigen, 1824) !
- *nitidula* (Meigen, 1824) !
- *pauciseta* (Rondani, 1861) !

Lecanipa Rondani, 1859
- *bicincta* (Meigen, 1824) !
- *leucomelas* (Meigen, 1824) !

Leiophora Robineau-Desvoidy, 1863
- *innoxia* (Meigen, 1824) !

Leskia Robineau-Desvoidy, 1830
- *aurea* (Fallén, 1820) !

Leucostoma Meigen, 1803
- *anthracinum* (Meigen, 1824) !
- *crassum* Kugler, 1966 !
- *meridianum* (Rondani, 1868) !
- *nudifacies* Tschorsnig, 1991 !
- *simplex* (Fallén, 1815) !
- *turonicum* Dupuis, 1964 !

Ligeria Robineau-Desvoidy, 1863
- *angusticornis* (Loew, 1847) !

Ligeriella Mesnil, 1961
- *aristata* (Villeneuve, 1911) !

Linnaemya Robineau-Desvoidy, 1830
- *comta* (Fallén, 1810) !
- *fissiglobula* Pandellé, 1895 !
- *frater* (Rondani, 1859) !

- *haemorrhoidalis* (Fallén, 1810) !
- *helvetica* Herting, 1963 !
- *impudica* (Rondani, 1859) !
- *lithosiophaga* (Rondani, 1859) !
- *media* Zimin, 1954 !
- *olsufjevi* Zimin, 1954 !
- *perinealis* Pandellé, 1895 !
- *picta* (Meigen, 1824) !
- *rossica* Zimin, 1954 !
- *tessellans* (Robineau-Desvoidy, 1830) !
- *vulpina* (Fallén, 1810) !
- *zachvatkini* Zimin, 1954 !

Litophasia Girschner, 1887
- *hyalipennis* (Fallén, 1815) !

Loewia Egger, 1856
- *adjuncta* Herting, 1971 !
- *brevifrons* (Rondani, 1856) !
- *foeda* (Meigen, 1824) !
- *nudigena* Mesnil, 1973 !
- *phaeoptera* (Meigen, 1824) !
- *piligena* Mesnil, 1973 !
- *submetallica* (Macquart, 1855) !

Lomachantha Rondani, 1859
- *parra* Rondani, 1859 !

Lophosia Meigen, 1824
- *fasciata* Meigen, 1824 !

Lydella Robineau-Desvoidy, 1830
- *grisescens* Robineau-Desvoidy, 1830 !
- *stabulans* (Meigen, 1824) !
- *thompsoni* Herting, 1959 !

Lydina Robineau-Desvoidy, 1830
- *aenea* (Meigen, 1824) !

Lypha Robineau-Desvoidy, 1830
- *dubia* (Fallén, 1810) !
- *ruficauda* (Zetterstedt, 1838) !

Macquartia Robineau-Desvoidy, 1830
- *chalconota* (Meigen, 1824) !
- *dispar* (Fallén, 1820) !
- *grisea* (Fallén, 1810) !
- *macularis* Villeneuve, 1926 !
- *nudigena* Mesnil, 1972 !
- *praefica* (Meigen, 1824) !
- *pubiceps* (Zetterstedt, 1845) !
- *tenebricosa* (Meigen, 1824) !
- *tessellum* (Meigen, 1824) !
- *viridana* Robineau-Desvoidy, 1863 !

Macroprosopa Brauer & Bergenstamm, 1889
- *atrata* (Fallén, 1810) !

Masicera Macquart, 1834
- *pavoniae* (Robineau-Desvoidy, 1830) !
- *silvatica* (Fallén, 1810) !
- *sphingivora* (Robineau-Desvoidy, 1830) !

Masistylum Brauer & Bergenstamm, 1893
- *arcuatum* (Mik, 1863) !

Medina Robineau-Desvoidy, 1830
- *collaris* (Fallén, 1820) !
- *luctuosa* (Meigen, 1824) !
- *melania* (Meigen, 1824) !
- *multispina* (Herting, 1966) !
- *separata* (Meigen, 1824) !

Meigenia Robineau-Desvoidy, 1830
- *dorsalis* (Meigen, 1824) !
- *grandigena* (Pandellé, 1896) !
- *incana* (Fallén, 1810) L
- *majuscula* (Rondani, 1859) !
- *mutabilis* (Fallén, 1810) !
- *simplex* Tschorsnig & Herting, 1998 !
- *uncinata* Mesnil, 1967 !

Melisoneura Rondani, 1861
- *leucoptera* (Meigen, 1824) !

Microphthalma Macquart, 1844
- *europaea* Egger, 1860 !

Microsoma Macquart, 1855
- *exiguum* (Meigen, 1824) !

Mintho Robineau-Desvoidy, 1830
- *rufiventris* (Fallén, 1817) !

Minthodes Brauer & Bergenstamm, 1889
- *picta* (Zetterstedt, 1844) !

Myxexoristops Townsend, 1911
- *abietis* Herting, 1964 !
- *blondeli* (Robineau-Desvoidy, 1830) !
- *bonsdorffi* (Zetterstedt, 1859) !
- *hertingi* Mesnil, 1955 !
- *stolida* (Stein, 1924) !

Nemoraea Robineau-Desvoidy, 1830
- *pellucida* (Meigen, 1824) !

Nemorilla Rondani, 1856
- *floralis* (Fallén, 1810) !
- *maculosa* (Meigen, 1824) !

Neophryxe Townsend, 1916
- *vallina* (Rondani, 1861) !

Neoplectops Malloch, 1930

- *pomonellae* (Schnabl & Mokrzecki, 1903) !

Nilea Robineau-Desvoidy, 1863
- *brigantina* Herting, 1977 !
- *hortulana* (Meigen, 1824) !
- *innoxia* Robineau-Desvoidy, 1863 !
- *rufiscutellaris* (Zetterstedt, 1859) !

Nowickia Wachtl, 1894
- *atripalpis* (Robineau-Desvoidy, 1863) !
- *ferox* (Panzer, 1809) !
- *marklini* (Zetterstedt, 1838) !
- *reducta* Mesnil, 1970 !
- *rondanii* (Giglio-Tos, 1890) !
- *strobelii* (Rondani, 1865) !

Ocytata Gistel, 1848
- *pallipes* (Fallén, 1820) !

Onychogonia Brauer & Bergenstamm, 1889
- *cervini* (Bigot, 1881) !
- *flaviceps* (Zetterstedt, 1838) !
- *suggesta* (Pandellé, 1896) !

Opesia Robineau-Desvoidy, 1863
- *cana* (Meigen, 1824) !
- *descendens* Herting, 1973 !

Oswaldia Robineau-Desvoidy, 1863
- *eggeri* (Brauer & Bergenstamm, 1889) !
- *muscaria* (Fallén, 1810) !
- *spectabilis* (Meigen, 1824) !

Pachystylum Macquart, 1848
- *bremii* Macquart, 1848 !

Pales Robineau-Desvoidy, 1830
- *abdita* Cerretti, 2005 !
- *pavida* (Meigen, 1824) !
- *peregrina* Herting, 1975 !
- *processioneae* (Ratzeburg, 1840) !
- *pumicata* (Meigen, 1824) !

Pandelleia Villeneuve, 1907
- *otiorrhynchi* Villeneuve, 1922 !
- *sexpunctata* (Pandellé, 1896) !

Panzeria Robineau-Desvoidy, 1830
- *anthophila* (Robineau-Desvoidy, 1830) !
- *argentifera* (Meigen, 1824) !
- *caesia* (Fallén, 1810) !
- *connivens* (Zetterstedt, 1844) !
- *consobrina* (Meigen, 1824) !
- *fucosa* Mesnil, 1975 !
- *gemina* (Mesnil, 1972) !
- *incongruens* Herting, 1975 !

- *indigens* (Pandellé, 1896) !
- *intermedia* (Zetterstedt, 1844) !
- *laevigata* (Meigen, 1838) !
- *nemorum* (Meigen, 1824) !
- *puparum* (Fabricius, 1794) !
- *rudis* (Fallén, 1810) !
- *suspecta* (Pandellé, 1896) !
- *truncata* (Zetterstedt, 1838) !
- *vagans* (Meigen, 1824) !
- *vivida* (Zetterstedt, 1838) !

Paracraspedothrix Villeneuve, 1919
- *montivaga* Villeneuve, 1919 !

Parasetigena Brauer & Bergenstamm, 1891
- *silvestris* (Robineau-Desvoidy, 1863) !

Paratrixa Brauer & Bergenstamm, 1891
- *polonica* Brauer & Bergenstamm, 1891 !

Paratryphera Brauer & Bergenstamm, 1891
- *barbatula* (Rondani, 1859) !
- *bisetosa* (Brauer & Bergenstamm, 1891) !

Pelamera Herting, 1969
- *atra* (Rondani, 1861) !

Pelatachina Meade, 1894
- *tibialis* (Fallén, 1810) !

Peleteria Robineau-Desvoidy, 1830
- *abdominalis* Robineau-Desvoidy, 1830 !
- *ferina* (Zetterstedt, 1844) !
- *iavana* (Wiedemann, 1819) !
  = *varia* (Fabricius, 1794)
- *popelii* (Portschinsky, 1882) !
- *prompta* (Meigen, 1824) !
- *rubescens* (Robineau-Desvoidy, 1830) !
- *ruficornis* (Macquart, 1835) !
- *sphyricera* (Macquart, 1835) !

Periarchiclops Villeneuve, 1924
- *scutellaris* (Fallén, 1820) !

Peribaea Robineau-Desvoidy, 1863
- *apicalis* Robineau-Desvoidy, 1863 !
- *discicornis* (Pandellé, 1894) !
- *fissicornis* (Strobl, 1910) !
- *longirostris* Andersen, 1996 !
- *tibialis* (Robineau-Desvoidy, 1851) !

Periscepsia Gistel, 1848
- *carbonaria* (Panzer, 1798) !
- *handlirschi* (Brauer & Bergenstamm, 1891) !

(*Ramonda* Robineau-Desvoidy, 1863)
- *cleui* Herting, 1980 !

- *delphinensis* (Villeneuve, 1922) !
- *jugorum* (Villeneuve, 1928) !
- *latifrons* (Zetterstedt, 1844) !
- *prunaria* (Rondani, 1861) !
- *prunicia* (Herting, 1969) !
- *ringdahli* (Villeneuve, 1922) !
- *spathulata* (Fallén, 1820) !

Petagnia Rondani, 1856
- *subpetiolata* Rondani, 1859 !

Peteina Meigen, 1838
- *erinaceus* (Fabricius, 1794) !

Pexopsis Brauer & Bergenstamm, 1889
- *aprica* (Meigen, 1824) !

Phania Meigen, 1824
- *curvicauda* (Fallén, 1820) !
- *funesta* (Meigen, 1824) !
- *incrassata* Pandellé, 1894 !
- *thoracica* Meigen, 1824 !

Phasia Latreille, 1804
- *aurigera* (Egger, 1860) !
- *aurulans* Meigen, 1824 !
- *barbifrons* (Girschner, 1887) !
- *hemiptera* (Fabricius, 1794) !
- *obesa* (Fabricius, 1798) !
- *pandellei* (Dupuis, 1957) !
- *pusilla* Meigen, 1824 !

Phebellia Robineau-Desvoidy, 1846
- *glauca* (Meigen, 1824) !
- *glirina* (Rondani, 1859) !
- *pauciseta* (Villeneuve, 1908) !
- *triseta* (Pandellé, 1896) !
- *villica* (Zetterstedt, 1838) !

Phonomyia Robineau-Desvoidy, 1893
- *aristata* (Rondani, 1861) !

Phorinia Robineau-Desvoidy, 1830
- *aurifrons* Robineau-Desvoidy, 1830 !

Phorocera Robineau-Desvoidy, 1830
- *assimilis* (Fallén, 1810) !
- *grandis* (Rondani, 1859) !
- *obscura* (Fallén, 1810) !

Phryno Robineau-Desvoidy, 1830
- *vetula* (Meigen, 1824) !

Phryxe Robineau-Desvoidy, 1830
- *caudata* (Rondani, 1859) !
- *erythrostoma* (Hartig, 1838) !
- *heraclei* (Meigen, 1824) !

- *magnicornis* (Zetterstedt, 1838) !
- *nemea* (Meigen, 1824) !
- *prima* (Brauer & Bergenstamm, 1889) !
- *setifacies* (Villeneuve, 1910) !
- *tenebrata* Herting, 1977 !
- *vulgaris* (Fallén, 1810) !

Phyllomya Robineau-Desvoidy, 1830
- *procera* (Meigen, 1824) !
- *volvulus* (Fabricius, 1794) !

Phytomyptera Rondani, 1845
- *bohemica* (Kramer, 1907) !
- *canella* (Herting, 1967) !
- *cingulata* (Robineau-Desvoidy, 1830) !
- *minutissima* (Zetterstedt, 1844) !
- *nigrina* (Meigen, 1824) !
- *nigroaenea* (Herting, 1968) !
- *vaccinii* Sintenis, 1897 !
- *zonella* (Zetterstedt, 1844) !

Picconia Robineau-Desvoidy, 1863
- *incurva* (Zetterstedt, 1844) !

Platymya Robineau-Desvoidy, 1830
- *fimbriata* (Meigen, 1824) !

Policheta Rondani, 1856
- *unicolor* (Fallén, 1820) !

Prooppia Townsend, 1926
- *nigripalpis* (Robineau-Desvoidy, 1847) !
- *strigifrons* (Zetterstedt, 1838) !
- *stulta* (Zetterstedt, 1844) !

Prosena Lepeletier & Serville, 1828
- *siberita* (Fabricius, 1775) !

Prosethilla Herting, 1984
- *kramerella* (Stein, 1924) !

Prosopea Rondani, 1861
- *nigricans* (Egger, 1861) !

Pseudogonia Brauer & Bergenstamm, 1889
- *parisiaca* (Robineau-Desvoidy, 1851) !
- *rufifrons* (Wiedemann, 1830) !

Pseudopachystylum Mik, 1891
- *goniaeoides* (Zetterstedt, 1838) !

Pseudoperichaeta Brauer & Bergenstamm, 1889
- *nigrolineata* (Walker, 1853) !
- *palesioidea* (Robineau-Desvoidy, 1830) !

Ptesiomyia Brauer & Bergenstamm, 1893
- *alacris* (Meigen, 1824) !

Redtenbacheria Schiner, 1861
- *insignis* Egger, 1861 !

Rhacodinella Mesnil, 1968
- *apicata* (Pandellé, 1896) !

Rhamphina Macquart, 1835
- *pedemontana* (Meigen, 1824) !

Rondania Robineau-Desvoidy, 1850
- *cucullata* Robineau-Desvoidy, 1850 !
- *dimidiata* (Meigen, 1824) !
- *fasciata* (Macquart, 1834) !

Sarromyia Pokorny, 1893
- *nubigena* Pokorny, 1893 !

Senometopia Macquart, 1834
- *confundens* (Rondani, 1859) !
- *excisa* (Fallén, 1820) !
- *intermedia* (Herting, 1960) !
- *lena* (Richter, 1980) !
- *pilosa* (Baranov, 1931) !
- *pollinosa* (Mesnil, 1941) !
- *separata* (Rondani, 1859) !
- *susurrans* (Rondani, 1859) !

Siphona Meigen, 1803
- *boreata* Mesnil, 1960 !
- *collini* Mesnil, 1960 !
- *confusa* Mesnil, 1961 !
  = *mesnili* Andersen, 1982
- *cristata* (Fabricius, 1805) !
- *flavifrons* Staeger, 1849 !
- *geniculata* (De Geer, 1776) !
- *grandistylum* Pandellé, 1894 !
- *ingerae* Andersen, 1982 !
- *maculata* Staeger, 1849 !
- *nigricans* (Villeneuve, 1930) !
- *paludosa* Mesnil, 1960 !
- *pauciseta* Rondani, 1865 !
- *rossica* Mesnil, 1961 !
- *setosa* Mesnil, 1960 !

(*Aphantorhaphopsis* Townsend, 1926)
- *brunnescens* (Villeneuve, 1921) !
- *samarensis* (Villeneuve, 1921) !
- *selecta* (Pandellé, 1894) !
- *siphonoides* (Strobl, 1898) !
- *starkei* (Mesnil, 1952) !
- *tristella* Herting, 1966 !

(*Ceranthia* Robineau-Desvoidy, 1830)
- *abdominalis* (Robineau-Desvoidy, 1830) !
- *lichtwardtiana* (Villeneuve, 1931) !

Smidtia Robineau-Desvoidy, 1830

- *amoena* (Meigen, 1824) !
- *conspersa* (Meigen, 1824) !

Solieria Robineau-Desvoidy, 1830
- *fenestrata* (Meigen, 1824) !
- *inanis* (Fallén, 1810) !
- *pacifica* (Meigen, 1824) !
- *vacua* (Rondani, 1861) !

Spallanzania Robineau-Desvoidy, 1830
- *hebes* (Fallén, 1820) !
- *multisetosa* (Rondani, 1859) !
- *quadrimaculata* Herting, 1967 !

Staurochaeta Brauer & Bergenstamm, 1889
- *albocingulata* (Fallén, 1820) !

Stomina Robineau-Desvoidy, 1830
- *calvescens* Herting, 1977 !
- *tachinoides* (Fallén, 1817) !

Strongygaster Macquart, 1834
- *celer* (Meigen, 1838) !
- *globula* (Meigen, 1824) !

Sturmia Robineau-Desvoidy, 1830
- *bella* (Meigen, 1824) !

Subclytia Pandelle, 1894
- *rotundiventris* (Fallén, 1820) !

Synactia Villeneuve, 1916
- *parvula* (Rondani, 1861) !

Tachina Meigen, 1803
- *fera* (Linnaeus, 1760) !
- *grossa* (Linnaeus, 1758) !
- *lurida* (Fabricius, 1781) !
- *magnicornis* (Zetterstedt, 1844) !
- *nigrohirta* (Stein, 1924) !
- *nupta* (Rondani, 1859) !
- *praeceps* Meigen, 1824 !
- *ursina* (Meigen, 1824) !

Thecocarcelia Townsend, 1933
- *acutangulata* (Macquart, 1850) !

Thelaira Robineau-Desvoidy, 1830
- *leucozona* (Panzer, 1809) !
- *nigripes* (Fabricius, 1794) !
- *solivaga* (Harris, 1780) !

Thelyconychia Brauer & Bergenstamm, 1889
- *solivaga* (Rondani, 1861) !

Thelymorpha Brauer & Bergenstamm, 1889
- *marmorata* (Fabricius, 1805) !

Therobia Brauer, 1862
- *leonidei* (Mesnil, 1965) !

Tlephusa Robineau-Desvoidy, 1863
- *cincinna* (Rondani, 1859) !

Townsendiellomyia Baranov, 1932
- *nidicola* (Townsend, 1908) !

Trafoia Brauer & Bergenstamm, 1893
- *monticola* Brauer & Bergenstamm, 1893 !

Triarthria Stephens, 1829
- *legeri* (Villeneuve, 1908) !
- *setipennis* (Fallén, 1810) !

Trichactia Stein, 1924
- *pictiventris* (Zetterstedt, 1855) !

Trichopoda Berthold, 1827
- *pictipennis* Bigot, 1876 ! N1
  = *pennipes* auct. nec (Fabricius, 1781)

Trixa Meigen, 1824
- *alpina* Meigen, 1824 !
- *conspersa* (Harris, 1776) !

Tryphera Meigen, 1838
- *lugubris* (Meigen, 1824) !

Vibrissina Rondani, 1861
- *debilitata* (Pandellé, 1896) !
- *turrita* (Meigen, 1824) !

Villanovia Strobl, 1910
- *villicornis* (Zetterstedt, 1849) !

Voria Robineau-Desvoidy, 1830
- *ruralis* (Fallén, 1810) !

Wagneria Robineau-Desvoidy, 1830
- *alpina* Villeneuve, 1910 !
- *costata* (Fallén, 1815) !
- *discreta* Herting, 1971 !
- *gagatea* Robineau-Desvoidy, 1830 !

Weberia Robineau-Desvoidy, 1830
- *digramma* (Meigen, 1824) !

Winthemia Robineau-Desvoidy, 1830
- *bohemani* (Zetterstedt, 1844) !
- *cruentata* (Rondani, 1859) !
- *erythrura* (Meigen, 1838) !
- *quadripustulata* (Fabricius, 1794) !
- *rufiventris* (Macquart, 1849) !
- *speciosa* (Egger, 1861) !
- *venusta* (Meigen, 1824) !

Xylotachina Brauer & Bergenstamm, 1891
- *diluta* (Meigen, 1824) !

Zaira Robineau-Desvoidy, 1830
- *cinerea* (Fallén, 1810) !

Zenillia Robineau-Desvoidy, 1830

- *dolosa* (Meigen, 1824) !
- *libatrix* (Panzer, 1798) !

Zeuxia Meigen, 1826
- *cinerea* Meigen, 1826 !
- *subapennina* Rondani, 1862 !
- *zernyi* Mesnil, 1963 !

Ziminia Mesnil, 1963
- *masiceraeformis* (Portschinsky, 1881) !

Zophomyia Macquart, 1835
- *temula* (Scopoli, 1763) !

Notes

N1 *Trichopoda pictipennis*: this species was recorded under the uncorrect name *pennipes* (Fabr.) by Obrecht (2014) and Pétremand et al. (2015).

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Oestridae

Thomas Pape & Daniel Whitmore (1998 Checklist: Thomas Pape & Marcel Leclercq)
Last update: Jul 2024

Diagnosis: Large, robust flies (15-25 mm) with body clothed with pile-like setosity, which varies from short (*Oestromyia*, *Oestrus*, *Pharyngomyia*) to long and furry (*Cephenemyia*, *Gasterophilus*, *Hypoderma*), in some cases giving the species a marked bumble bee-like appearance. Antenna with short postpedicel and bare arista. Mouthparts reduced to minute vestiges. First instar larva usually with one or two bands of robust spines anteriorly on each segment. Posterior segment with numerous crochet-like spines (*Cephenemyia*, *Oestrus*) or with tubular extensions carrying the posterior spiracles (*Gasterophilus*). Second and third instar larva often with strong spines encircling the segments anteriorly, but dorsal surface bare in *Oestrus*. Posterior spiracle with slits almost straight (*Gasterophilus*) or forming a porous plate (*Cephenemyia*, *Hypoderma Oestromyia*, *Oestrus*).

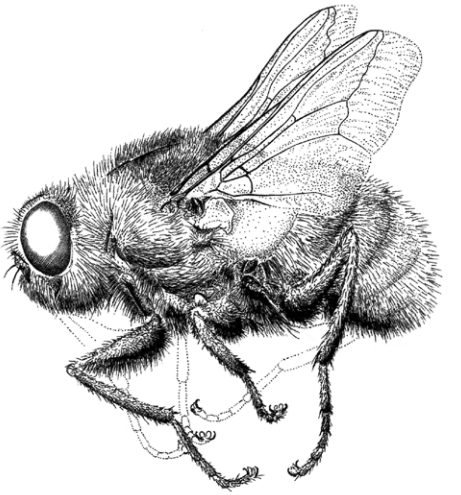
Biology: All Oestridae are obligate parasites of mammals, with larvae living in skin boils (Hypodermatinae), naso-pharyngeal cavities (Oestrinae) or the intestinal tract (most Gasterophilinae). Adult females of European species emerge with mature eggs and mate soon after. Species of European Hypodermatinae glue their eggs to individual hairs of the host. The first instars of *Hypoderma* spp. show an extensive subcutaneous migration before settling and forming a swelling under the skin (warble or skin boil). Species of Oestrinae are ovolarviparous, with eggs hatching when they are squirted towards the muzzle of their host, from where the first instar larvae migrate into the pharyngeal area (*Cephenemyia*, *Pharyngomyia*) or the frontal sinuses (*Oestrus*). The first instars of *Gasterophilus* spp. migrate subcutaneously on cheeks or lips or inside the mouth in the epithelium of the tongue or the gums before they enter the gastrointestinal tract. When the larva is mature, it leaves the host, backing out of the warble, passing through the anus or exiting via the nostrils, and pupates in the ground. *Oestromyia leporina* produces skin boils in small rodents, while the remaining European species parasitise larger hosts like horses and asses (*Gasterophilus*) or ruminants (*Cephenemyia*, *Hypoderma*, *Pharyngomyia*).

Nomenclature and classification: According to Evenhuis & Pape (2021).

Number of species: CH: 11 (1998 Checklist: 11),
BE: 8, CZ: 13, DE: 14, FR: 16, GB 10, HU: 13, IT: 12, NL: 10, SK: 13, Europe: 23, World: 155.
(Pape 2004, Li et al. 2019b, Pape [unpubl])

Level of faunistic knowledge in Switzerland: Good.

General references: Colwell et al. (2006) [general, economic importance, management], Grunin (1965, 1966, 1969) [keys, Palaearctic species], Li et al. (2018, 2019a, 2019b) [world *Gasterophilus*], Minář (2000a, 2000b, 2000c) [general, Palaearctic fauna, keys to genera], Pape (2001, 2006) [phylogeny, evolution], Soos & Minář (1986a, 1986b, 1986c) [catalogue, Palaearctic species].



Hypoderma bovis,
male (CMPD A, p. 479).

References to the Swiss fauna: Bouvier (1971), Brocard & Pfister (1991), Büttiker (1962), Pfister & Charbon (2014), Sauter & Huber (1988), Pape & Leclercq (1998).

Checklist

Gasterophilinae

Gasterophilus Leach, 1817
- *haemorrhoidalis* (Linnaeus, 1758) ! N1
- *intestinalis* (De Geer, 1776) !
- *nasalis* (Linnaeus, 1758) L
- *pecorum* (Fabricius, 1794) L

Hypodermatinae

Hypoderma Latreille, 1818
- *bovis* (Linnaeus, 1758) ! [1]
- *lineatum* (de Villers, 1789) !

Oestromyia Brauer, 1860
- *leporina* (Pallas, 1778) !

Oestrinae

Cephenemyia Latreille, 1818
- *auribarbis* (Meigen, 1824) ! [2]
- *stimulator* (Clark, 1815) !

Oestrus Linnaeus, 1758
- *ovis* Linnaeus, 1758 !

Pharyngomyia Schiner, 1861
- *picta* (Meigen, 1824) !

Notes

N1 *Gasterophilus flavipes* Olivier, 1811 was recently resurrected as a valid species (Li et al. 2019a) and its presence in Switzerland is possible. It is very similar to *G. haemorrhoidalis* and *G. inermis*.

Species records

[1] 1M, VS, Col de Torrent, 1.7.1929, leg. Erwin Lindner (SMNS)

[2] 1M, GR, St. Bernardin-Pass, 17.6.1960, 2000 m, leg. William Frederick Reinig (SMNS)

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