

Chamaemyiidae (incl. Cremifaniinae)

Stephen D. Gaimari (1998 Checklist: Lázsló Papp & Venelin L. Beschovski [Chamaemyiidae], Lázsló Papp [Cremifaniidae])

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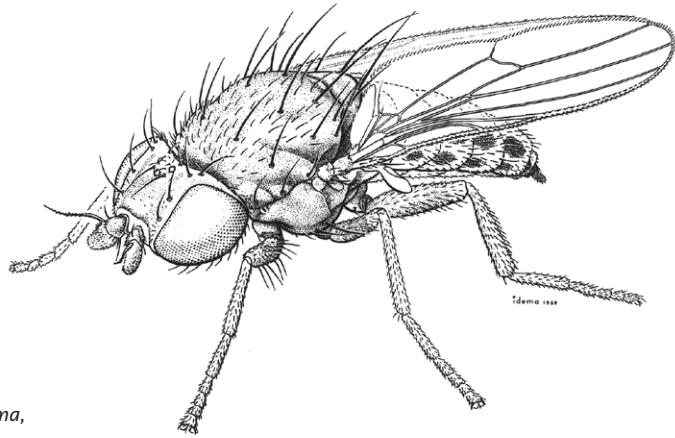
Diagnosis: Small compact-bodied or elongate flies (body length 1-5 mm); usually densely silvery-gray pruinose, occasionally brown or polished black; often with brown to goldish vittae on scutum and/or brown to black pruinose spots or bands on abdominal tergites. Head either compact, shorter than high 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 gymnosperms 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 Dipteroorum* (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

- *atratura* (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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