

- incisuralis* (MACOUART, 1851): Dipt. exot., Suppl., 4: 305 (*Chlorops*). Type-locality: "De l'Egypte".—Distr.: Europe: GB, E; Asia: Syria; North Africa: Egypt, Tunisia, Algeria.
- pictipes* BECKER, 1903: Mitt. zool. Mus. Berl., 2(3): 185 (*Rhinoëssa*). Type-localities: Kairo and Siala (Egypt).
- pallipes* LOEW, 1865 sensu BECKER, 1907: Z. syst. Hymenopt. Dipterol., 7(5): 40 (*Tethina*); misidentification.
- longirostris* LOEW, 1865: Berl. ent. Z., 9: 36 (*Rhinoëssa*). Type-locality: Sicilien (Italy).—Distr.: Europe: I, E, GB; North Africa: Egypt.
- marmorata* BECKER, 1908: Mitt. zool. Mus. Berl., 4(1): 164 (*Rhinoëssa*). Type-locality: Orotava (Teneriffe).—Distr.: Canary Is.
- nigripes* (CZERNY, 1928): 55. Tethinidae, Fliegen pal. Reg., 6(1): 7 (*Tethina*). Type-localities: Sülldorf, Beirut.—Distr.: Europe: DDR, I (Sicily), PL; Asia: Lebanon.
- pallipes* LOEW, 1865: Berl. ent. Z., 9: 37 (*Rhinoëssa*). Type-localities: "In Griechenland und auf den griechischen Inseln".—Distr.: Europe: GR; Azores, ?Canary Is.
- penita* COLLIN, 1966: Boll. Mus. civ. Stor. nat. Venezia, 16: 31 (*Rhinoëssa*). Type-locality: Aldeburgh (Suffolk) (England).—Distr.: Europe: GB.
- simplex* COLLIN, 1966: Boll. Mus. civ. Stor. nat. Venezia, 16: 32 (*Rhinoëssa*). Type-locality: Holme-by-sea (Norfolk) (England).—Distr.: Europe: GB.
- strobliana* MERCIER, 1923: Anns Soc. ent. Belg., 63: 18 (*Rhinoëssa*). Type-localities: "Espagne (Algeciras, Alicante), France (côte du Calvados; mare saumâtre à Bénouville dune de Courseulles)".—Distr.: Europe: E, F, H, DDR, I (Sicily), PL.
- longirostris* LOEW, 1865 sensu CZERNY, 1928: 55. Tethinidae, Fliegen pal. Reg., 6(1): 6 (*Tethina*); misidentification.

### Horaismoptera HENDEL, 1907

HENDEL, 1907: Wien. ent. Ztg, 26: 238.

Type-species: *Horaismoptera vulpina* HENDEL, 1907: l.c.: 240 (mon.).

*vulpina* HENDEL, 1907: Wien. ent. Ztg, 26: 240 (*Horaismoptera*). Type-locality: Abd-elKari [= Abd-al-Kuri Is., Yemen].—Distr.: North Africa: Egypt; Asia: Saudi Arabia.

## Family Milichiidae

By L. PAPP

Small to very small, usually dark flies; costal vein broken just proximally to conjointment with radial veint  $r_1$  and broken or very much tapering distally to humeral vein; 1-4 pairs of inclinate lower fronto-orbitals, 2-3 pairs of upper fronto-orbitals; several interfrontal pairs (disarranged in several cases); female cerci fused.

Facial plate (prae-frons) flat or with antennal foveae but latter not deep; no high and sharp facial keel. Lunule with a pair of bristles in several cases. Palps large to very large, setose. Male third antennal joints enlarged in some species. Proboscis usually elongate, in several genera labellae very long. Frontal chaetotaxy (other than above): 1 pair each of strong *vte*, *vti* and *ac*, one pair of *prt* of various inclinations. Postoculars usually strong with one inner and outer occipital pairs each. Vibrissae strong, peristomal and genal bristles various in length. Thoracic chaetotaxy: 1-(2) *h*, 2 *np*, 0-1 *posth*, (0)-1 *prst*, 1-3 *sa*, 2 *pa*, 0-1 + 2-4 *dc*, 0-1 *prsc*, 2 *sc*, 1 *stg*, 0-2 *pp*, 1-4 *st* bristle pairs: in numerous species also mesopleuron setose (Madizinae). Legs simple, tibiae without dorsal preapicals. Subcostal vein complete but very thin; basal cell and anal cell always present; anal vein welldeveloped or replaced by a long vein-fold. In males of some species abdominal tergites completely or partly silvery. Male epandrium small, male cerci usually elongate or enlarged, surstyli usually simple, phallus not coiled. Females with chitinized though retractile abdominal segments 7-9. Female cerci free, not fused. No sclerotized spermathecae.

The larvae are slightly S-shaped with distinct intersegmental transverse tubercles. Cephalopharyngeal skeleton basically same as in other cyclorrhaphans, with dentate sclerites, parastomal rods, intercalar and hypostomal sclerites and with longitudinal ridges on ventral cornua. Dorsal cornua essentially smaller than ventrals. Anterior spiracles with spherical or digitiform papillae. Posterior spiracles with 3 interspiracular processes (hair-like distally) or with numerous branching long hairs in 3 groups. Segment 12 with or without wart-like processes dorsally. No pupal horns, posterior spiracles slightly elevated on pupae.

The larvae are coprophagous or saprophagous in the widest sense. They have been reared from dung (droppings, manure heaps and stables), kitchen refuse, birds' nests and amorphous plant detritus. Some species have been found in ants' nests. Adults of some species are commensalists of predatory insects, some other species are sucking flower nectar.

References: HENNIG, 1937 (general, and keys for the Palearctic spp.), 1956 (larval morph.); MOSER and NEFF, 1971 (biol., larval morph.); PAPP, 1978 (keys to the Hungarian spp.).

## Subfamily Milichiinae

### Milichia MEIGEN, 1830

MEIGEN, 1830: Syst. Besch., 6: 131.

Type-species: *Milichia speciosa* MEIGEN, 1830: l.c.: 132 (des. WESTWOOD, 1840: Synopsis: 151).

*Lobioptera* WAHLBERG, 1847: Öfvers. K. VetenskAkad. Förh., 4(9): 259. Type-species: *Lobioptera ludens* WAHLBERG, 1847: l.c.: 259 (mon.).

*Argyritis* LATREILLE in CUVIER, 1829: La règne animal..., nouv. ed., 5: 518 (without included species) (preocc. by HÜBNER, 1816 (Lepidoptera)).

*albomaculata* (STROBL, 1900): Wien. ent. Ztg, 19: 9 (*Lobioptera*). Type-locality: Iativa (Spain).—Distr.: Europe: E.

*decora* (LOEW, 1870): Z. ges. Naturw., (N.F.) I(Vol. 35): 9 (*Lobioptera*). Type-locality: "Korsika".—Distr.: Europe: F (Corsica, ?South France).

[*integra* BECKER, 1923: Denkschr. Akad. Wiss. Wien, Kl. math.-naturw., 98: 71 (*Milichia*). Type-localities: Tonga and El-Obeid (Sudan).—Distr.: North Africa: Sudan.]

*ludens* (WAHLBERG, 1847): Öfvers. K. VetenskAkad. Förh., 4(9): 259 (*Lobioptera*). Type-localities: "ad Gusum Ostrogothiae ... in pascuo Ålängshagen

Papp, 1984

- ... prope Lillsjön" (Sweden).—Distr.: S, SF, GB, D, DDR, PL, H, R; USSR: NET.
- palposa* ZETTERSTEDT, 1848: Dipt. Scand., 7: 2722 (*Milichia*). Type-localities: "in Scania ad Abusam . . . in Ostrogothia ad Lärketorp . . . in Uplandia ad Nacka prope Holmiam" (Sweden).
- mixta* BECKER, 1907: Anns hist.-nat. Mus. natn. hung., 5: 518 (*Milichia*). Type-localities: Tenerife: Guimar and Orotava (Canary Is.).—Distr.: Canary Is.
- nitida* BECKER, 1907: Anns hist.-nat. Mus. natn. hung., 5: 520 (*Milichia*). Type-locality: Gran Canaria (Canary Is.).—Distr.: Canary Is.
- nitens* BECKER, 1908: Mitt. zool. Mus. Berl., 4(1): 161 (*Milichia*). Type-locality and type-specimen same as for *nitida* BECKER, 1907.
- pseudoludens* L. PAPP, 1977: Acta zool. hung., 23: 173 (*Milichia*). Type-locality: Szada (Hungary).—Distr.: Europe: H.
- pubescens* BECKER, 1907: Anns hist.-nat. Mus. natn. hung., 5: 519 (*Milichia*). Type-locality: Gran Canaria (Canary Is.).—Distr.: Canary Is.; North Africa: Egypt; ?Asia: ?Formosa.
- seguyi* HENNIG, 1937: 60a. Milichiidae et Carnidae, Fliegen pal. Reg., 6(1): 23 (*Milichia*). Type-locality: Yakouren (Algeria).—Distr.: North Africa: Algeria.
- speciosa* MEIGEN, 1830: Syst. Besch., 6: 132 (*Milichia*). Type-localities: Marseille, Provence and "Hr. Megerle von Mühlfeld theilte mir es gleichfalls mit, jedoch ohne Angabe des Wohnortes".—Distr.: Europe: E, F, I, CH, H, YU, R; USSR: SET, ?FE; North Africa: Morocco; Asia: Palestine.
- speciosa canariensis* BECKER, 1907: Anns hist.-nat. Mus. natn. hung., 5: 517 (*Milichia*). Type-locality: La Palma, Gran Canaria (Canary Is.).—Distr.: Canary Is. Probably a separate species.

### *Eccoptomma* BECKER, 1907

- BECKER, 1907: Anns hist.-nat. Mus. natn. hung., 5: 540.  
Type-species: *Eccoptomma frontale* BECKER, 1907: l.c.: 542 (des. MALLOCH, 1934: Diptera of Patagonia and South Chile, 6(5): 463); not Palaearctic.
- freyi* HENDEL in FREY, 1936: Commentat. biol., 6: 125 (*Eccoptomma*). Type-locality: Tenerife, Icod de los Vinos (Canary Is.).—Distr.: Canary Is.

### *Milichiella* GIGLIO-TOS, 1895

- GIGLIO-TOS, 1895: Anns Soc. ent. Fr., 64: 367.  
Type-species: *Tephritis argentea* FABRICIUS, 1805: Syst. antl.: 323 (mon.; a misidentification of the species, which was described later as *Milichiella tosi* BECKER, 1907); not Palaearctic. Since the type-species was misidentified, the

- case should have been referred to the I.C.Z.N. (cf. SABROSKY, 1969: Cat. Dipt. North America: 733; Sabrosky, 1973: Cat. Dipt. South America: 75.4.).
- Ophthalmomyia* WILLISTON, 1896: Trans. R. ent. Soc. Lond., 1896: 426. Type-species: *Lobioptera lacteipennis* LOEW, 1866: Berl. ent. Z., 9(1865): 185 (mon.).
- Stenoporomyia* HENDEL, 1903: Wien. ent. Ztg., 22: 250. Type-species: *Lobioptera tiefii* MIK, 1887: Verh. zool.-bot. Ges. Wien, 37: 178 (mon.).
- argentiventris* HENDEL, 1931: Bull. Soc. ent. Égypte (N.S.), 15(2): 72 (*Milichiella*). Type-locality: Wadi Kanssisrob (Gebel Elba) (Egypt).—Distr.: North Africa: Egypt.
- argyrogaster* (PERRIS, 1876): Anns Soc. ent. Fr., (5) 6: 208 (*Milichia*). Type-locality: Dept. Landes (France).—Distr.: Europe: F, A, H; USSR: NET, FE (Ussuri region).
- tiefii* (MIK, 1887): Verh. zool.-bot. Ges. Wien, 37: 178 (*Lobioptera*). Type-locality: Villach in Kärnten (Austria).
- bimaculata* BECKER, 1907: Anns hist.-nat. Mus. natn. hung., 5: 534 (*Milichiella*). Type-locality: Gran Canaria (Canary Is.).—Distr.: Canary Is. (Tenerife, Gran Canaria).
- bimaculata* BECKER, 1908: Mitt. zool. Mus. Berl., 4(1): 163 (*Milichiella*). Type-locality: Tenerife (Canary Is.).
- lacteipennis* (LOEW, 1866): Berl. ent. Z., 9(1865): 185 (*Lobioptera*). Type-locality: Cuba.—Distr.: Asia: Afghanistan; Canary Is., Madeira Is.; Nearctic, Neotropical, Afrotropical and Oriental Regions.

## Subfamily Madizinae

### *Madiza* FALLÉN, 1810

- FALLÉN, 1810: Specim. entom. novam Dipt.: 19.  
Type-species: *Madiza glabra* FALLÉN, 1820: Oscinides Sveciae: 9 (des. HENDEL, 1903: Wien. ent. Ztg., 22: 251).\*
- Cleptoneria* LIOY, 1864: Atti Ist. veneto Sci., (3) 9: 1120. Type-species: *Madiza glabra* FALLÉN, 1820: Oscinides Sveciae: 9 (mon.).
- Polphorina* ENDERLEIN, 1921: Zool. Anz., 52(8/9): 231. Type-species: *Piophilina flavitarsis* MEIGEN, 1830: Syst. Besch., 6: 383 (mon.) [= *glabra* FALLÉN, 1820].

\* The earliest type-designation for *Madiza* FALLÉN is actually *Madiza oscinina* FALLÉN, 1820 [now *Siphonella oscinina* (FALLÉN), Chloropidae], des. by RONDANI, 1856: Dipt. Ital. Prodromus, 1: 128. Since most workers have treated *Madiza* as a milichiid, that usage is reasonable to be maintained. Suspension of the Rules has been applied for (SABROSKY, 1973: Bull. zool. Nom., 30: 126-128). The description of the case is quoted from SABROSKY, 1977: Cat. Dipt. Orient. Reg., 3: 272.

- britannica* HENNIG, 1937: 60a. Milichiidae et Carnidae, Fliegen pal. Reg., 6(1): 53 (*Madiza*). Type-locality: Cambs., Snailwell (England).—Distr.: Europe: GB, CH.
- glabra* FALLÉN, 1820: Oscinides Sveciae: 9 (*Madiza*). Type-localities: Scania, Ostrogothia (Sweden).—Distr.: all parts of Europe (incl. the European part of the USSR); USSR: TC, WS, KZ, SMA, FE; Asia: Turkey, Iran, Afghanistan, Mongolia, China; North Africa: Morocco, Algeria, Tunisia, Egypt; Canary, Madeira and Azores Is.; Nearctic Region.
- flavitaris* (MEIGEN, 1830): Syst. Besch., 6: 383 (*Piophila*). Type-locality: nr Aachen (Germany).
- rufitaris* (MEIGEN, 1838): Syst. Besch., 7: 384 (*Gymnopa*). Type-locality: not given ("Kaltenbach coll.").
- pachymera* BECKER, 1908: Annis hist.-nat. Mus. natn. hung., 6: 320 (*Madiza*). Type-locality: Ugod (Hungary).—Distr.: Europe: H, YU.

### Desmometopa LOEW, 1866

- LOEW, 1866: Berl. ent. Z., 9(1865): 184 (Centuria 6, No. 96).  
Type-species: *Agromyza m-atrum* MEIGEN, 1830: Syst. Besch., 6: 170 (des. HENDEL, 1903: Wien. ent. Ztg, 22: 251 [= *sordida* (FALLÉN, 1820)]).
- Liodesma* DUDA, 1935: Natuurh. Maandbl., 24: 25. Type-species: *Liodesma atra* DUDA, 1935: l.c.: 25 (mon.) [= *sordida* (FALLÉN, 1820)].
- Liodesmometopa* DUDA, 1935: Natuurh. Maandbl., 24: 24 (invalid: published first time as a synonymous name to *Liodesma* DUDA).
- microps* LAMB, 1914: Trans. Linn. Soc. Lond. (2) Zool., 16(4): 364 (*Desmometopa*). Type-locality: Seychelles.—Distr.: Asia: Afghanistan, Nepal, China (Manchuria: Charbin), Japan; Oriental Region and the Seychelles Is.
- m-nigrum* (ZETTERSTEDT, 1848): Dipt. Scand., 7: 2743 (*Agromyza*). Type-localities: "in Ostrogothia ad Wadstena. In Gottlandia ad Läderbro" (Sweden).—Distr.: Europe: all parts from Sweden to the Mediterranean (?excl. Britain), M; USSR: NET, CET, SET; Asia: Israel, Afghanistan; North Africa: Morocco, Algeria, Tunisia, Libya, Egypt, Sudan; Nearctic, Neotropical, Oriental and Afrotropical Regions, almost cosmopolitan.
- nilotica* BECKER, 1903: Mitt. zool. Mus. Berl., 2(3): 188 (*Desmometopa*). Type-localities: "in ganzen Nilthal" (Egypt).
- singaporensis* KERTÉSZ, 1899: Természetr. Fü., 22: 194 (*Desmometopa*). Type-locality: Singapore.—Distr.: Asia: Afghanistan, China (Szechwan), Korea; Oriental, Afrotropical, Australian and Pacific Regions.
- sordida* (FALLÉN, 1820): Oscinides Sveciae: 10 (*Madiza*). Type-locality: Esperöd (Sweden).—Distr.: all parts of Europe from Middle Scandinavia to the Mediterranean and from England to the Ural Mts. (incl. the European part of the USSR); USSR(Asia): WS; Asia: Mongolia; North Africa; Nearctic Region; ?Oriental Region. Some South European and North African data need revision.

- m-atrum* (MEIGEN, 1830): Syst. Besch., 6: 170 (*Agromyza*). Type-locality: not given (?Aachen, Germany).
- atra* (DUDA, 1935): Natuurh. Maandbl., 24: 25 (*Liodesma*). Type-locality: "Oberschlesien" [? Poland].
- [*tarsalis* LOEW, 1866: Berl. ent. Z., 9(1865): 184 (*Desmometopa*). Type-locality: Cuba; not Palaearctic.]
- varipalpis* MALLOCH, 1927: Proc. Linn. Soc. N.S.W., 52: 7 (*Desmometopa*). Type-locality: Bourke, New South Wales (Australia).—Distr.: ?Europe: ?South France; Asia: Afghanistan; North Africa: Egypt; Oriental, Australian, Afrotropical, Nearctic and Neotropical Regions.
- singaporensis*: authors.
- tarsalis*: authors.

### Aldrichiomyza HENDEL, 1914

- HENDEL, 1914: Ent. Mitt., 3: 73, new name for *Aldrichiella* HENDEL, 1911 (preocc. by VAUGHAN, 1903).  
Type-species: *Aldrichiella agromyzina* HENDEL, 1911: Wien. ent. Ztg, 30: 37 (aut.).
- Aldrichiella* HENDEL, 1911: Wien. ent. Ztg, 30: 35. Type-species: *Aldrichiella agromyzina* HENDEL, 1911: l.c.: 37; not Palaearctic.
- elephas* (HENDEL, 1913): Supplta ent., 2: 108 (*Aldrichiella*). Type-localities: Anping, Taihupu (Formosa).—Distr.: Asia: North Korea; Formosa.
- longirostris* HENDEL, 1931: Bull. Soc. ent. Égypte, (N.S.), 15(2): 71 (*Aldrichiomyza*). Type-localities: Wadi Beida, Wadi Edeib (Gebel Elba) (Egypt).—Distr.: North Africa: Egypt.

### Neophyllomyza MELANDER, 1913

- MELANDER, 1913: JI N.Y. ent. Soc., 21: 237, 243.  
Type-species: *Neophyllomyza quadricornis* MELANDER, 1913: l.c.: 243 (orig. des.); not Palaearctic.
- Vichyia* VILLENEUVE, 1920: Bull. Soc. ent. Fr., 1920: 69. Type-species: *Vichyia acyglossa* VILLENEUVE, 1920: l.c.: 70 (mon.).
- acyglossa* (VILLENEUVE, 1920): Bull. Soc. ent. Fr., 1920: 70 (*Vichyia*). Type-locality: Dépt. Allier: Vichy (France).—Distr.: Europe: SF, F, D, PL, CS, H, R; USSR: NET, Asia: Mongolia.
- quercus* DUDA, 1935: Natuurh. Maandbl., 24: 26 (*Neophyllomyza*). Type-locality: Gleiwitz.
- leanderi* HENDEL, 1924: Dt. ent. Z., 1924: 406 (*Neophyllomyza*). Type-locality: Oberösterreich, Kremsmünster (Austria).—Distr.: Europe: A, R.

**Leptometopa** BECKER, 1903

- BECKER, 1903: Mitt. zool. Mus. Berl., 2(3): 188.  
 Type-species: *Leptometopa rufifrons* BECKER, 1903: l.c.: 188 (mon.).
- Macrurus* LIOY, 1864: Atti Ist. veneto Sci., (3) 9: 1313 (preocc. by BLOCH, 1780 (Pisces)). Type-species: *Agromyza latipes* MEIGEN, 1830: Syst. Besch., 6: 177 (mon.).
- Hypaspistomyia* HENDEL, 1907: Wien. ent. Ztg., 26: 240. Type-species: *Hypaspistomyia coquilletti* HENDEL, 1907: l.c.: 240 (mon.).
- Prodesmometopa* HENDEL, 1914: Supplta ent., 3: 97. Type-species: *Agromyza latipes* MEIGEN, 1830: Syst. Besch., 6: 177 (orig. des.).
- Cnemoplegas* ENDERLEIN, 1927: Stettin. ent. Ztg., 88: 108. Type-species: *Agromyza latipes* MEIGEN, 1830: Syst. Besch., 6: 177 (orig. des.).
- Desmometopina* CURRAN, 1930: Bull. Am. Mus. nat. Hist., 61: 81. Type-species: *Agromyza latipes* MEIGEN, 1830: Syst. Besch., 6: 177 (mon.).
- Dicraeoptera* DUDA, 1932: 61. Chloropidae, Fliegen pal. Reg., 6(1): 34. Type-species: *Siphonella niveipennis* STROBL, 1900: Wiss. Mitt. Bosn. Herzeg., 7: 631 (mon.).
- broerse* DE MEIJERE, 1946: Tijdschr. Ent., 87(1944): 17 (*Leptometopa*). Type-locality: Amsterdam (Oude Oosterbegraafplaats) (Netherlands).—Distr.: Europe: NL. A doubtful species.
- [*coquilletti* (HENDEL, 1907): Wien. ent. Ztg., 26: 241 (*Hypaspistomyia*). Type-locality: Aden.—Distr.: Asia: Yemen; not Palaearctic.]
- kaszabi* L. PAPP, 1976: Acta zool. hung., 22: 371 (*Leptometopa*). Type-locality: "Süd gobi aimak: SW Rand des Salzsees Dund gol (am "alten" Somon Gurban-tes)" (Mongolia).—Distr.: Asia: Mongolia.
- latipes* (MEIGEN, 1830): Syst. Besch., 6: 177 (*Agromyza*). Type-localities: Berlin and Solingen (Germany).—Distr.: all parts of Europe (incl. the European part of the USSR); Asia: Iran, Afghanistan, Mongolia, China; North Africa: Tunisia; Afrotropical, Oriental, Nearctic and Neotropical Regions.
- annulimana* (VON ROSER, 1840): CorrespBl. württ. landw. Ver. Stuttg. (N.S.) 17(1): 63 (*Agromyza*). Type-locality: not given (Württemberg).
- annularis* (VON ROSER, 1840): CorrespBl. württ. landw. Ver. Stuttg. (N.S.) 17(1): 63 (*Agromyza*). Type-locality: not given (Württemberg).
- annularis* (ZETTERSTEDT, 1848): Dipt. Scand., 7: 2674 (*Madiza*). Type-localities: "Lundae . . . e Dania".
- niveipennis* (STROBL, 1900): Wiss. Mitt. Bosn. Herzeg., 7: 631 (*Siphonella*). Type-localities: Dalmatia (Mostar, Spalato, Sebenico (Yugoslavia); Trieste (Italy).—Distr.: Europe: D, DDR, PL, CS, H, NL, F, E, R, BG, I; USSR: SET, KZ, SMA(Uz); Asia: Iran, Afghanistan, Mongolia; North Africa: Tunisia, Libya, Egypt.
- simplicipes* (BECKER, 1907): Wien. ent. Ztg., 26: 4 (*Desmometopa*). Type-locality: "Hilversum, Holland" (Netherlands).

- niveipennis fascifrons* (BECKER, 1907): Annl. hist.-nat. Mus. natn. hung., 5: 548 (*Desmometopa*). Type-locality: Ajaccio, Corsica.—Distr.: Europe: F (Corsica).
- rufifrons* BECKER, 1903: Mitt. zool. Mus. Berl., 2(3): 188 (*Leptometopa*). Type-locality: Suez (Egypt).—Distr.: Europe: E, YU, R; USSR: SMA(Uz); Asia: Turkey, Iran, Afghanistan, ?China (Tibet); North Africa: Algeria, Tunisia, Libya, Egypt; Canary Is.
- flavipalpis* SÉGUY, 1932: Annali Mus. civ. Stor. nat. Genova, 55: 502 (*Leptometopa*). Type-localities: Augila and Sebeha di Buema (Libya).
- latigenis* (HENDEL, 1933): Dt. ent. Z., 1933: 54 (*Hypaspistomyia*). Type-locality: Arbe I. (Dalmatia) (Yugoslavia).

**Phyllomyza** FALLÉN, 1810

- FALLÉN, 1810: Specim. entom. novam Dipt.: 20.  
 Type-species: *Phyllomyza securicornis* FALLÉN, 1823: Phytomyzides et Ochtidae Sveciae: 8 (subsequent mon.).
- Hendelomyza* DUDA, 1935: Natuurh. Maandbl., 24: 25 (as subgenus of *Phyllomyza*) (preocc. by FREY, 1927: Acta Soc. Fauna Flora fenn., 56(8): 8, 42 (Lauzanidae)). Type-species: *Neophyllomyza tetragona* HENDEL, 1924: Dt. ent. Z., 1924: 407 (orig. des.).
- beckeri* KRAMER, 1920: Zool. Jb. Syst., 43: 331 (*Phyllomyza*). Type-localities: "am Fenster meiner Schulstube . . . Honigbrunnen auf dem Löbauer Berge und als blinder Passagier im Eilzug Zittau-Dresden".—Distr.: Europe: DDR, ?GB. (A doubtful species, see HENNIG, 1937).
- donisthorpei* SCHMITZ, 1923: Konowia, 2: 47 (*Phyllomyza*). Type-localities: Darenth Wood, Weybridge, Surrey; Wellington College, Berks. (England).—Distr.: Europe: GB, F, H.
- equitans* (HENDEL, 1919): Ent. Mitt., 8: 198 (*Neophyllomyza*). Type-localities: Bisamberg nr Vienna and Troppau.—Distr.: Europe: GB, DDR, A, H; USSR: NET, CET(Rs), ?FE.
- fagicola* (HENDEL, 1924): Dt. ent. Z., 1924: 408 (*Neophyllomyza*). Type-locality: "Niederösterreich, Waldviertel" (Austria).
- lasiae* (DUDA, 1935): Naturh. Maandbl., 24: 25 (*Hendelomyza*). Type-locality: not given (England).
- flavitaris* (MEIGEN, 1830): Syst. Besch., 6: 172 (*Agromyza*). Type-locality: not given (?Aachen, Germany).—Distr.: Europe: GB, D, H.
- tarsata* (ZETTERSTEDT, 1848): Dipt. Scand., 7: 2723 (*Milichia*). Type-localities: "in Ölandia ad Gärdslösa . . . in Gottlandia ad Öja" (Sweden).
- formicae* SCHMITZ, 1923: Konowia, 2: 46 (*Phyllomyza*). Type-localities: Weybridge Surrey and Nethy Bridge (England).—Distr.: Europe: GB, DK, F.
- longipalpis* (SCHMITZ, 1924): Natuurh. Maandbl., 13: 16 (*Neophyllomyza*). Type-locality: Sittard (Netherlands).—Distr.: Europe: NL, PL, CS, H.

- lucens** HENDEL, 1924: Dt. ent. Z., 1924: 405 (*Phyllomyza*). Type-locality: Rapallo (Italy).—Distr.: Europe: I.
- melania** (HENDEL, 1919): Ent. Mitt., 8: 198 (*Neophyllomyza*). Type-localities: Austria: "Unterberg in Niederösterreich, Troppau".—Distr.: Europe: A, H.
- mongolica** L. PAPP, 1976: Acta zool. hung., 22: 370 (*Phyllomyza*). Type-locality: "Bulgan aimak: 30 km NNW von Somon Daschinčilen" (Mongolia).—Distr.: Asia: Mongolia.
- pallida** DE MEIJERE, 1940: Ent. Ber., Amst., 10(No. 232): 222 (*Phyllomyza*). Type-locality: Nunspeet (Netherlands).—Distr.: Europe: NL. A doubtful species.
- rubricornis** SCHMITZ, 1923: Konowia, 2: 44 (*Phyllomyza*). Type-locality: Budapest (Hungary).—Distr.: Europe: H; USSR: NET.
- securicornis** FALLÉN, 1823: Phytomyzides et Ochtidae Sveciae: 8 (*Phyllomyza*). Type-locality: Esperöd (Sweden).—Distr.: Europe: S, SF, DK, D, DDR, GB, F, CH, A, H, E, I; USSR: NET, CET(Rs), FE; Nearctic Region.
- flavitaris** (MEIGEN, 1830): Syst. Besch., 6: 107 (*Opomyza*). Type-locality: not given (? nr Aachen, Germany).
- flavipes** (MEIGEN, 1830): Syst. Besch., 6: 108 (*Opomyza*). Type-locality: not given (? Austria; Winthem coll.).
- silesiaca** (DUDA, 1935): Natuurh. Maandbl., 24: 25 (*Hendelimyza*). Type-locality: Habelschwerdt.—Distr.: Europe: PL; USSR: NET.
- tetragona** HENDEL, 1924: Dt. ent. Z., 1924: 407 (*Phyllomyza*). Type-localities: Austria, Vienna; "Liegnitz (Schlesien)" [= Legnica] (Poland).—Distr.: Europe: PL, A, DDR, H.

#### Taxa removed from the family

*Horaismoptera* HENDEL, 1907: Wien. ent. Ztg, 26: 238.

Type-species: *Horaismoptera vulpina* HENDEL, 1907: Wien. ent. Ztg, 26: 240 (mon.). To Tethinidae.

## Family Carnidae

By L. PAPP

Very small (1.0–2.4 mm) black flies; costal vein broken just proximally to conjoinment with radial vein *r*, and broken or becoming very thin distally to humeral vein; 2 pairs of inclinate lower and 2 pairs of exclinate upper fronto-orbitals; only 1 *if* pair in supralunular position; female cerci fused. Head rounded, frons wide with big frontal triangle. Facial plate (prae-frons) with deep antennal foveae and distinct facial keel. Clypeus very thin and hidden. Palpi very small, labellae only exceptionally long. Cephalic bristles other than fronto-orbitals: strong *v* and *vi* pairs and ocellars. Postverticals weak, exclinate, inclinate, parallel or absent; 3–4 pairs of strong vibrissae, usually a row of genal bristles.

Thoracic chaetotaxy: 1 *h* (occasionally some additional short *h*), 2 *np*, 1 *prst*, 1 *sa*, 1 *pa*, 1 posterior *ia*, 0–1 + 1–3 *dc*, 0–1 *prsc*, 2 *sc*. Meso- and sternopleura setulose, usually with at least 1 characteristic bristle each. No dorsal preapicals on tibiae, fore femora with 1 or more long and thick bristles posteroventrally. In the majority of species there are no anal cell and anal vein on wings (except for *Hemeromyia* COQ). Crossveins rather basal in position, hind crossvein occasionally absent (*Carnus* NITZSCH). Abdomen with 5 preabdominal segments in both sexes, abdominal spiracles in membrane. Male tergites 6–8 weakly sclerotized and more or less fused. In most species two pairs of epandrial processes (anterior one named "lamella", posterior one "surstylus"). Penis long, curved or coiled with numerous spinules. Male 9th sternite (forked plate) distinct, usually of characteristic shape and armature. Female 6th tergite and sternite usually small, even if sometimes large, withdrawn in 5th segment, segments 7–10 telescoping, hardly sclerotized, 8th segment completely membranous, cerci fused. No sclerotized spermathecae.

Larvae saprophagous, comparatively simple, slightly S-shaped, with cephalopharyngeal skeleton similar to that of other saprophagous fly families but weakly chitinized (except for mouth hooks and hypostomal sclerite); anterior spiracles with 5–7 (*Carnus*) or 3 (*Meoneura*) short protuberances, posterior spiracles always with 3 protuberances each. Pupae black, short and cylindrical with posterior spiracles at caudal end (*Carnus*) or in dorsal position (*Meoneura*).

The larvae are living in birds' nests as semiparasitic-saprophagous (*Carnus*) or saprophagous (*Meoneura*), or they develop in droppings of animal or in other dead organic substances (exceptionally in carrion).

The majority of the species are Palaearctic or Nearctic, some of them show a Holarctic distribution, very few species occur in other regions. Numerous species are still undescribed in museum collections.

References: EICHLER, 1936 (biol.); HENNIG, 1937 (rev. and keys to Palaearctic species); NORDBERG, 1936 (biol.); PAPP, 1978 (Hungarian spp., taxonomy, keys, life-habits); SABROSKY, 1959 (review, biol., key to the Nearctic species).

### Carnus NITZSCH, 1818

NITZSCH, 1818: Germar's Mag. Ent., 3: 305.

Type-species: *Carnus hemapterus* NITZSCH, 1818: l.c.: 305 (mon.).

*Cenchrinobia* SCHINER, 1862: Wien. ent. Mschr., 6: 435. Type-species: *Cenchrinobia eggeri* SCHINER, 1862: l.c.: 436 (mon.) [= *hemapterus* NITZSCH, 1818].

*hemapterus* NITZSCH, 1818: Germar's Mag. Ent., 3: 305 (*Carnus*). Type-locality: Sachsen (Germany).—Distr.: Europe: ?GB, S, SF, D, DDR, CH, NL, H, R, YU, I; USSR: NET, CET, SET; Nearctic and Afrotropical Regions.

*eggeri* (SCHINER, 1862): Wien. ent. Mschr., 6: 436 (*Cenchrinobia*). Type-locality: Austria.

*setosus* STOBBE, 1913: Dt. ent. Z., 1913: 193 (*Carnus*). Type-locality: not given ("in Österreich").

### Hemeromyia COQUILLET, 1902

COQUILLET, 1902: JI N.Y. ent. Soc., 10: 190.

Type-species: *Hemeromyia obscura* COQUILLET, 1902: l.c.: 190 (mon.); not Palaearctic.

- afghanica* L. PAPP, 1979: Folia ent. hung. (S.N.), 32(1): 108 (*Hemeromyia*). Type-locality: Bini Hesar, Prov. Kabul (Afghanistan).—Distr.: Asia: Afghanistan.
- anthracina* COLLIN, 1949: Bull. Soc. Fouad I. Ent., 33: 222 (*Hemeromyia*). Type-locality: Mariut (Siwa Oase, Libyan Desert, Egypt).—Distr.: Europe: H; North Africa: Egypt.
- remotinervis* (STROBL, 1902): Glasn. zemalj. Mus Bosni Herceg., 14: 502 (*Agromyza*). Type-locality: Zara [= Zadar], Dalmatia (Yugoslavia).—Distr.: Europe: H, YU; ?North Africa: ?Egypt.

### *Meoneura* RONDANI, 1856

RONDANI, 1856: Dipt. Ital. Prodromus, 1: 128.

Type-species: *Agromyza obscurella* FALLÉN, 1823: Agromyzides Sveciae: 6 (mon.).

- Anisonevra* LIOY, 1864: Atti Ist. veneto Sci., (3) 9: 1314. Type-species: *Agromyza lacteipennis* FALLÉN, 1823: Agromyzides Sveciae: 4 (mon.).
- Agrobia* LIOY, 1864: Atti Ist. veneto Sci., (3) 9: 1313. Type-species: *Agromyza pectinata* MEIGEN, 1830: Syst. Besch., 6: 179 (mon.) [= *obscurella* (FALLÉN, 1823)].
- Psalidotus* BECKER, 1903: Mitt. zool. Mus. Berl., 2(3): 191. Type-species: *Psalidotus primus* BECKER, 1903: l.c.: 192 (mon.).
- acuticerca* GREGOR, 1973: Acta ent. bohemoslov., 70: 138 (*Meoneura*). Type-locality: "Děvín in Pavlovské vrchy-hills, Moravia merid". (Czechoslovakia).—Distr.: Europe: CS.
- algerica* HENNIG, 1937: 60a. Milichiidae et Carnidae, Fliegen pal. Reg., 6(1): 61 (*Meoneura*). Type-locality: Hassi Babah (Algeria centr.).—Distr.: North Africa: Algeria.
- alpina* HENNIG, 1948: Z. wien. ent. Ges., 33: 138 (*Meoneura*). Type-locality: Niedere Tauern (Austria).—Distr.: Europe: A.
- anceps* FREY, 1935: Notul. ent., 15: 100 (*Meoneura*). Type-locality: "Lojo bei Torhola" (Finland).—Distr.: Europe: SF; USSR: NET.
- asiatica* L. PAPP, 1976: Acta zool. hung., 22: 374 (*Meoneura*). Type-locality: "Central aimak, Žargalant" (Mongolia).—Distr.: Asia: Mongolia; North Africa: Tunisia.
- atoma* L. PAPP, 1981: Acta zool. hung., 27: 184 (*Meoneura*). Type-locality: Obergurgl (Austria).—Distr.: Europe: A.
- bicuspidata* COLLIN, 1930: Entomologist's mon. Mag., 66: 88 (*Meoneura*). Type-localities: Skelbo sandhills nr Dornoch, Southerland, St. Merryn, Cornwall and Frinton-on-Sea, Essex (England).—Distr.: Europe: GB.
- carpathica* L. PAPP, 1977: Acta zool. hung., 23: 176 (*Meoneura*). Type-locality: Homoródfürdő (Roumania).—Distr.: Europe: CS, A, H, R.

- [*compacta* GREGOR, 1971: Acta ent. bohemoslov., 68: 55 (*Meoneura*). Type-locality: Hindukush (Pakistan), Tirich-valley, Shekhniyak. — Distr.: Asia: Pakistan, probably also Afghanistan.]
- elongella* (ZETTERSTEDT, [1838]): Insecta Lapp.: 790 (*Agromyza*). Type-locality: "Lapponia Umensi, Lycksele".—Distr.: Europe: S.
- exigua* COLLIN, 1930: Entomologist's mon. Mag., 66: 84 (*Meoneura*). Type-locality: Toulouse (France).—Distr.: Europe: F, H, ?CS.
- flavifacies* COLLIN, 1930: Entomologist's mon. Mag., 66: 85 (*Meoneura*). Type-localities: Cornwall, Devon, Hampshire, Essex, Suffolk, Cambridgeshire (England).—Distr.: Europe: SF, GB, D, DDR, CS, A, H, R; USSR: NET; Asia: Mongolia; Nearctic Region.
- flavifrons* L. PAPP, 1981: Acta zool. hung., 27: 185 (*Meoneura*). Type-locality: Obergurgl (Austria).—Distr.: Europe: A.
- forcipata* SABROSKY, 1959: Ann. ent. Soc. Am., 52(1): 24 (*Meoneura*). Type-locality: Mt. Revelstoke, British Columbia (Canada).—Distr.: Asia: Mongolia; Nearctic Region.
- freta* COLLIN, 1937: Entomologist's mon. Mag., 73: 251 (*Meoneura*). Type-locality: "Blakeney Point on the Norfolk coast" (England).—Distr.: Europe: GB, CS, H, E.
- furcata* HENNIG, 1937: 60a. Milichiidae et Carnidae, Fliegen pal. Reg., 6(1): 64 (*Meoneura*). Type-locality: "Zentralalgerien, Hassi Babah".—Distr.: North Africa: Algeria.
- glaberrima* BECKER, 1910: Dt. ent. Z., 1910: 664 (*Meoneura*). Type-locality: Corsica (France).—Distr.: Europe: F (Corsica); Asia: Afghanistan; North Africa: Tunisia.
- graeca* HENNIG, 1972: Stuttg. Beitr. Naturk., No. 240: 8 (*Meoneura*). Type-locality: "an der Straße von Kalambáka nach Grevená (Grebená), etwa 20 km vor diesem Ort" (Greece).—Distr.: Europe: GR.
- granadensis* LYNEBORG, 1969: Ent. Meddr, 37: 42 (*Meoneura*). Type-locality: Granada (Spain).—Distr.: Europe: E.
- hennigi* GREGOR, 1971: Acta ent. bohemoslov., 68: 54 (*Meoneura*). Type-locality: Hindukush (Pakistan), Tirich-valley, Shekhniyak.—Distr.: USSR: SMA(TJ); Asia: Afghanistan; Pakistan.
- hungarica* L. PAPP, 1977: Acta zool. hung., 23: 177 (*Meoneura*). "Hortobágy N. P., Tiszacsege, Kiskccskés" (Hungary).—Distr.: Europe: CS, H; North Africa: Tunisia.
- inversa* L. PAPP, 1976: Acta zool. hung., 22: 375 (*Meoneura*). Type-locality: "Bajan-Ölgij aimak; im Tal des Flusses Chavcalyn gol" (Mongolia).—Distr.: Asia: Mongolia (Bajan-Ölgij, Central Gobi).
- kaszabi* L. PAPP, 1976: Acta zool. hung., 22: 376 (*Meoneura*). Type-locality: "Mittelgobi aimak: Choot bulag, zwischen Chuld und Somon Delgerchangaj" (Mongolia).—Distr.: Asia: Mongolia (Central Gobi, Central, Chentej aimaks).

- lacteipennis* (FALLÉN, 1823): *Agromyzides Sveciae*: 4 (*Agromyza*). Type-locality: not given (Sweden).—Distr.: Europe: S, SF, H; USSR: NET; North Africa: Tunisia.
- lamellata* COLLIN, 1930: *Entomologist's mon. Mag.*, 66: 86 (*Meoneura*). Type-localities: Dorset, Suffolk, Norfolk (England).—Distr.: Europe: GB, SF, D, DDR, A, CS, H; USSR: NET.
- milleri* GREGOR, 1973: *Acta ent. bohemoslov.*, 70: 137 (*Meoneura*). Type-locality: "Děvin in Pavlovské vrchy-hills, Moravia merid." (Czechoslovakia).—Distr.: CS.
- minuscula* L. PAPP, 1977: *Acta zool. hung.*, 23: 178 (*Meoneura*). Type-locality: Fenyőfő (Hungary).—Distr.: Europe: H.
- minutissima* (ZETTERSTEDT, 1860): *Dipt. Scand.*, 14: 6459 (*Agromyza*). Type-locality: "Kungsmarken prope Lund" Skåne (Sweden).—Distr.: Europe: S, GB, CS, H.
- mongolica* L. PAPP, 1976: *Acta zool. hung.*, 22: 378 (*Meoneura*). Type-locality: "Central aimak: 12 km S von Somon Bajanbaraat" (Mongolia).—Distr.: Asia: Mongolia.
- moravica* GREGOR et L. PAPP, 1981: *Acta ent. bohemoslov.*, 78(3): 205 (*Meoneura*). Type-locality: Podhradí, Moravia (Czechoslovakia).—Distr.: Europe: CS.
- neglecta* COLLIN, 1930: *Entomologist's mon. Mag.*, 66: 88 (*Meoneura*). Type-locality: Moulton in Suffolk (England).—Distr.: Europe: GB, DDR, CS, H; USSR: ?NET.
- neottiophila* COLLIN, 1930: *Entomologist's mon. Mag.*, 66: 87 (*Meoneura*). Type-localities: Newmarket, Suffolk; Oxford; Reading; Weston, Herts.; Chippenham, Cambs.; New Forest, Hants.; Logie, Elgin (England).—Distr.: Europe: GB, S, SF, DDR, CS, H; USSR: NET.
- nevadensis* LYNEBORG, 1969: *Ent. Meddr.*, 37: 41 (*Meoneura*). Type-locality: Granada, N. slope Veleta, Sierra Nevada (Spain).—Distr.: Europe: E.
- obscurella* (FALLÉN, 1823): *Agromyzides Sveciae*: 6 (*Agromyza*). Type-locality: "Skania" [= Skåne] (Sweden).—Distr.: Europe: IS, S, SF, GB, D, DDR, A, H, ?GR; USSR: NET, ?Vrangel I.; ?North Africa; ?Madeira; Nearctic Region.
- pectinata* (MEIGEN, 1830): *Syst. Besch.*, 6: 179 (*Agromyza*). Type-locality: not given (?Austria).
- infuscata* (MEIGEN, 1830): *Syst. Besch.*, 6: 184 (*Agromyza*). Type-locality: not given (?Austria).
- palaestinensis* HENNIG, 1937: 60a. *Milichiidae et Carnidae, Fliegen pal. Reg.*, 6(1): 70 (*Meoneura*). Type-locality: "Rehobot bei Jaffa" (Israel).—Distr.: Asia: Israel; North Africa: Tunisia.
- paralacteipennis* L. PAPP, 1977: *Acta zool. hung.*, 23: 179 (*Meoneura*). Type-locality: Tiszatarján (Hungary).—Distr.: Europe: H.

- paraseducta* L. PAPP, 1976: *Acta zool. hung.*, 22: 379 (*Meoneura*). Type-locality: "Archangaj aimak: Koschoo zaidam am Chogschin-Orchon" (Mongolia).—Distr.: Asia: Mongolia.
- parva* L. PAPP, 1976: *Acta zool. hung.*, 22: 380 (*Meoneura*). Type-locality: "Chentej aimak: 7 km NO von Somon Mörön" (Mongolia).—Distr.: Asia: Mongolia.
- perlamellata* HENNIG, 1937: 60a. *Milichiidae et Carnidae, Fliegen pal. Reg.*, 6(1): 71 (*Meoneura*). Type-locality: Jerusalem.—Distr.: Asia: Israel (Rehobot); Jerusalem.
- prima* (BECKER, 1903): *Mitt. zool. Mus. Berl.*, 2(3): 192 (*Psolidotus*). Type-localities: Kairo, Fayum (Egypt) (Kairo by lectotype des.).—Distr.: Europe: SF, GB, CS, GR; Asia: Jordania, Afghanistan; North Africa: Tunisia, Egypt; Nearctic Region.
- seducta* COLLIN, 1937: *Entomologist's mon. Mag.*, 73: 250 (*Meoneura*). Type-localities: South Kensington, Grasholm Island off the Pembrokeshire coast (England).
- pseudoseducta* L. PAPP, 1976: *Acta zool. hung.*, 22: 381 (*Meoneura*). Type-locality: "Bajan-Ölgij aimak: im Tal des Flusses Chavcalyn gol, 25 km O von Somon Cagaannuur" (Mongolia).—Distr.: Asia: Mongolia.
- pseudotriangularis* L. PAPP, 1976: *Acta zool. hung.*, 22: 382 (*Meoneura*). Type-locality: "Central aimak: Ulan-Baator, Nucht im Bogdo ul" (Mongolia).—Distr.: Asia: Mongolia.
- quadrisetosa* L. PAPP, 1976: *Acta zool. hung.*, 22: 382 (*Meoneura*). Type-locality: "Central aimak: 12 km S von Somon Bajanbaraat" (Mongolia).—Distr.: Asia: Mongolia.
- setipyga* L. PAPP, 1976: *Acta zool. hung.*, 22: 384 (*Meoneura*). Type-locality: "Central aimak: Žargalant" (Mongolia).—Distr.: Asia: Mongolia.
- subfreta* L. PAPP, 1979: *Folia ent. hung. (S. N.)*, 32: 107 (*Meoneura*). Type-locality: Kandahar (Afghanistan).—Distr.: Asia: Afghanistan.
- subnivalis* GREGOR, 1971: *Acta ent. bohemoslov.*, 68: 56 (*Meoneura*). Type-locality: Hindukush (Afghanistan), Ishmurkh-valley, 4500 m.—Distr.: Asia: Afghanistan.
- triangularis* COLLIN, 1930: *Entomologist's mon. Mag.*, 66: 88 (*Meoneura*). Type-locality: Newmarket, Sussex (England).—Distr.: Europe: SF, GB, D, DDR, A, CS, H; USSR: NET, Asia: Mongolia; Nearctic Region.
- tunisia* L. PAPP, 1978: *Folia ent. hung. (S. N.)*, 31(2): 202 (*Meoneura*). Type-locality: La Hencha (Tunisia).—Distr.: Tunisia (La Hencha, Boughrara).
- vagans* (FALLÉN, 1823): *Agromyzides Sveciae*: 5 (*Agromyza*). Type-locality: not given (Sweden).—Distr.: Europe: S, SF, GB, A, CS, H, R, ?GR, Faerøe Is. (DK); USSR: NET; Nearctic Region.

## Doubtful species

- baluchistani* DUDA, 1936: Ann. Mag., nat. Hist., (10)18: 337 (*Meoncura*). Type-locality: Pakistan: Quetta. In all probability a junior synonym of *prima* (BECKER, 1903).  
*geniculata* (STROBL, 1900): Wiss. Mitt. Bosn. Herzeg., 7: 640 (*Agromyza*, as var. of *vagans* FALLÉN, 1823). Type-localities: Mostar, Trebinje, Dalmatia (Yugoslavia).

## Family Canacidae

(Canaceidae)

By B. H. COGAN

Cyclorrhapha, with the arista short, bare to short pubescent; three to five pairs of divergent fronto-orbitals and postverticals absent; vibrissae present; facial bristles usually small or absent; costa with only one break at apex of  $r_1$ ; subcosta visible along its length, except close to the apex of  $r_1$ ; second basal and anal cells complete, but a small, short anal vein present; female with two spermathecae and with cerci hook-shaped.

Species of the Palearctic Canacidae are confined to the marine environment, where the adult flies are found on the seashore and the larvae live and feed upon algae on intertidal rocks. Details of the life-histories of members of the family are lacking for all but a minority of species, and there is little published information on the Palearctic fauna.

A small family of flies of worldwide distribution, represented in the Palearctic Region by only 16 species, the majority of which are found in the far eastern part of the region, mostly in Japan. Although in the past they were usually included in the Ephydriidae, the Canacidae are not particularly closely related to the latter family, but appear to be the sister-group of the Tethinidae.

References: WIRTH (1951) revised the World fauna and, for the Palearctic Region, his work should be used in conjunction with the papers of MIYAGI (1963-1973).

## Canace HALIDAY, 1839

- HALIDAY, 1839: Ann. nat. Hist., 3: 411 (as subgenus of *Ephydra* FALLÉN, 1823).  
 Type-species: *Ephydra nasica* HALIDAY, 1839: l.c.: 411 (mon.).  
*nasica* (HALIDAY, 1839): Ann. nat. Hist., 3: 411 (*Ephydra*). Type-locality: England.—Distr.: Europe: North Sea and Atlantic coasts, W. Mediterranean; Azores, Madeira, Canary Is; Cape Verde Is.  
*salonitana* STROBL, 1900: Wiss. Mitt. Bosn. Herzeg., 7: 635 (*Canace*). Type-locality: Salona (Greece).—Distr.: Europe: Mediterranean coasts, E, BG.

## Chaetocanace HENDEL, 1914

- HENDEL, 1914: Supplta ent., 3: 98.  
 Type-species: *Canace biseta* HENDEL, 1914; l.c.: 95 (orig. des.).  
*biseta* (HENDEL, 1914): Supplta ent., 3: 95 (*Canace*). Type-locality: Tainan, Formosa.—Distr.: Asia: Japan, Korea; Philippines, Ryukyu Is, Formosa.

## Nocticanace MALLOCH, 1933

- MALLOCH, 1933: Bull. Bernice P. Bishop Mus., 114: 4.  
 Type-species: *Nocticanace peculiaris* MALLOCH, 1933: l.c.: 4 (orig. des.); not Palearctic.  
*danzoensis* MIYAGI, 1973: Jap. Trop. Med., 15: 174 (*Nocticanace*). Type-localities: Meshima, Danjo Is., Nagasaki, Kyushu (Japan).—Distr.: Asia: Japan.  
*hachijoensis* MIYAGI, 1965: Kontyû, 33: 302 (*Nocticanace*). Type-locality: Hachijojima, Honshu (Japan).—Distr.: Asia: Japan.  
*japonicus* MIYAGI, 1965: Kontyû, 33: 300 (*Nocticanace*). Type-locality: Otaru, Hokkaido (Japan).—Distr.: Asia: Japan.  
*takagii* MIYAGI, 1965: Kontyû, 33: 302 (*Nocticanace*). Type-locality: Kumano, Kii, Wakayama-ken, Honshu (Japan).—Distr.: Asia: Japan.

## Procanace HENDEL, 1913

- HENDEL, 1913: Supplta ent., 2: 93.  
 Type-species: *Procanace griseascens* HENDEL, 1913 l.c.: 93 (mon.).  
*aestuaricola* MIYAGI, 1965: Insecta matsum., 27: 89 (*Procanace*). Type-locality: Matsuyama, Shikoku (Japan).—Distr.: Asia: Japan: Ryukyu Is.  
*flavescens* MIYAGI, 1965: Insecta matsum., 27: 88 (*Procanace*). Type-locality: Ibusuki, Kagoshima-ken, Kyushu (Japan).—Distr.: Asia: Japan.  
*fulva* MIYAGI, 1965: Insecta matsum., 27: 91 (*Procanace*). Type-locality: Okoppe, Hokkaido (Japan).—Distr.: Asia: Japan.  
*griseascens* HENDEL, 1913: Supplta ent., 2: 93 (*Procanace*). Type-locality: Anping, Formosa.—Distr.: Asia: Japan, Ryukyu Is, Formosa, Thailand, W. Pakistan.  
*rivalis* MIYAGI, 1965: Insecta matsum., 27: 86 (*Procanace*). Type-locality: Katsurasawa, Hokkaido (Japan).—Distr.: Asia: Japan.  
*suigoensis* MIYAGI, 1965: Insecta matsum., 27: 93 (*Procanace*). Type-locality: Suigo, Chiba-ken, Honshu (Japan).—Distr.: Asia: Japan.  
*williamsi* WIRTH, 1951: Occ. Pap. Bernice P. Bishop Mus., 20: 257 (*Procanace*). Type-locality: Oahu, Kalihi, Honolulu (Hawaii).—Distr.: Asia: Japan; Hawaii.

## Xanthocanace HENDEL, 1914

- HENDEL, 1914: Supplta ent., 3: 98.  
 Type-species: *Canace ranula* LOEW, 1874: Berl. ent. Z., 18: 81 (orig. des.).  
*Dinomylia* BECKER, 1926: 56b. Canaceidae Fliegen pal. Reg., 6(1): 107. Type-species: *Canace ranula* Loew, 1874: Berl. ent. Z., 18: 81 (mon.).  
*Myioblax* ENDERLEIN, 1935: Sber. Ges. naturf. Freunde Berl., 1935: 235. Type-species: *Canace ranula* LOEW, 1874: Berl. ent. Z., 18: 81 (orig. des.).