

## Tephritidae

Valery A. Korneyev (1998 Checklist: Bernhard Merz)

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**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 prenisetae, 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 rhizomes) 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 *Oxyina*], 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 !
  - *inulaedysentericae* Blot, 1827 !
- Noeeta* Robineau-Desvoidy, 1830
  - *bisetosa* Merz, 1992 !
  - *pupillata* (Fallén, 1814) !
- Orellia* Robineau-Desvoidy, 1830
  - *falcata* (Scopoli, 1763) !
  - *scorzoneræ* (Robineau-Desvoidy, 1830) ! N3
  - = *distans* (Loew, 1847) N3
- Oxya* 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) !
- *gynaecochochroma* (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 *Carpomyia*.
- 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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