Pollinator Academy

Genus: *Spilomyia*

Spilomyia triangulata male habitus

Genus: *Spilomyia* Meigen, 1803

Family: Syrphidae

Subfamily: Eristalinae

Tribe: Milesiini

Number of species of this genus found in Europe: 7

Description

Head

The head is wider than the thorax. The face is yellow with a black medial stripe, is weakly dusted and has yellow hairs laterally. In lateral profile the face is almost straight, without a facial tubercle and the epistome has a weak tubercle. The mouthedge is black. The eyes are holoptic in males, bare and with a brown colour pattern along the eye margin and medially, often in the shape of spots and bands. The frons is yellow and weakly dusted, the vertex is yellow and the ocellar triangle is black with long yellow and black hairs with weak dusting on the yellow parts. The antennae are quite short, with a slightly elongate basoflagellomere. The arista is bare and comparatively long.

Thorax

The thorax is black with yellow to orange-brown markings, a pattern of greyish-yellow dusting and white to black hairs of varying lengths (short to long). The postpronotum, the notopleuron and a stripe along the lateral margin ending in the transverse suture are often yellow. In addition, there is usually a characteristic inverted v-shaped yellow marking near the scutellum. The pleurae are black with yellow to brown spots, predominantly yellow haired and weakly greyish-yellow dusted. They have comparatively short to longer hairs, at least on the anterior anepisternum, the anepimeron and the katepisternum. The metasternum is well developed. The scutellum has an obvious apical rim and is black with the posterior margin yellow or predominantly orange-brownish. The hairs on the scutellum are somewhat longer than those on the

scutum and are predominantly yellow. The lateral thoracic wing sclerites are well developed and are usually black, although some sclerites may be yellow.

Wings

The wings are relatively long and narrow, with the anterior half dark-brown infuscated. Vein r-m is strongly oblique and placed on apical 1/3 of cell dm. Vein R_{4+5} is straight and cell R_{4+5} is acute and has a short petiole. Cell r_1 is open and vein A_1 is long and almost parallel to the posterior wing margin.

Legs

The legs are comparatively long and stout, with the femora slightly enlarged and often strongly contrastingly coloured with yellow and black. The the apical half of the front tibiae and the front tarsi are often predominantly black but in some species they are weakly contrasting yellow, orange to dark-brownish coloured. The hind femur has an apicoventral anterolateral spur and is slightly curved, as is the hind tibia.

Abdomen

The abdomen is long, elongate and with a weak posterior margin. The tergites are black and yellow or black and orange-brown. The yellow or orange-brown colour predominates and forms two lines on each tergum, often with two spots anteriorly and a band posteriorly. There is a mixture of generally short black and white hairs on the abdomen.

General comments on identification to species level

Differential diagnosis

This is a genus of large to very large (11-24 mm), black and yellow species with a characteristic pattern of brownish spots on the eyes and short body hairs. The face is concave, and has no facial tubercle. The scutum has characteristic yellow markings and the scutellar margin is strongly flattened. The anterior half of the wing is more or less brownish infuscated. Cell R_{4+5} is acute and slightly petiolate and cross-vein r-m is strongly oblique. The front legs are dark-orange to extensively black. The hind femur has an apicoventral anterolateral spur. The tergites are slightly margined, undusted and with orange-yellow markings. The aedeagus has a normal shaped ejaculatory process. The hypandrium is symmetrical.

This genus is a member of the Milesiini based on the hairy postpronotum. The antennae are comparatively long and are slightly shorther than the width of the head. The arista is bare and is placed basally on the basoflagellomere. Vein R_{4+5} is weakly curved to straight whilst cross-vein r-m is strongly oblique and lies in the outer half of cell dm. The hind femur has no basal patch of bristles. *Spilomyia* is closely related to *Milesia* and also resembles *Sphecomyia* and *Temnostoma* based on their wasp-like appearance.

Spilomyia differs from *Milesia*, *Sphecomyia* and *Temnostoma* by the following characteristics: the eye has a pattern of dark-brown spots and stripes whereas it is unicolourous brownish in the other genera. The antennae are directly placed on the head and are slightly elongate whereas in *Sphecomyia* the antennae are placed on a frontal prominence. The antennae are elongate and longer than the head whereas in *Milesia* and *Temnostoma* they are placed directly on the head and are comparatively short. The scutum of *Spilomyia* has yellow to brownish markings, with weak grey dusting along the transverse suture only whereas in the other genera the scutum has yellowish to brownish dust spots, at least anteriorly. Cell r_1 of *Spilomyia* is open as in *Sphecomyia* and *Temnostoma* but in *Milesia* it is closed. In *Spilomyia* vein R_{4+5} is straight, as in *Sphecomyia* and *Temnostoma*, whereas in *Milesia* it curves slightly down into cell r_{4+5}. Cross-vein dm-m in *Spilomyia* is weakly oblique whereas in *Milesia* it is strongly oblique and in *Sphecomyia* and *Temnostoma* it is straight. The hind femur of *Spilomyia* has an apicoventral anterolateral spur as in *Milesia*, whereas in *Sphecomyia* and *Temnostoma* the hind femur lacks a spur.

Spilomyia manicata head lateral

Milesia crabroniformis head lateral

Temnostoma vespiforme male habitus lateral

Sphecomyia vespiformis male head lateral

Spilomyia saltuum thorax lateral

Tempostoma bombylans male habitus

Milesia cretica female habitus

Spilomyia triangulata male habitus

Geographical distribution and global diversity

This is a predominantly north temperate genus that extends into the Neotropical Region, southward to Argentina. It is also known from the Oriental region (Ahmad Wachkoo et al. 2019). There are 36 described species, but several others await description, especially from the tropical regions. (Thompson et al. 2010) In the western

Palaearctic there are 7 known species, and one additional species from North Africa. (IUCN 2021, Kutznetsov 1997)

Presence in Europe

Albania, Andorra, Austria, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Moldova, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russian Federation - European Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey - European part, Ukraine.

Biology

Adult behaviour and flower preferences. *Spilomyia* can be found in thermophilous *Quercus* forest with overmature trees, in coniferous and deciduous (*Fagus, Tilia, Fraxinus*) forest, *Larix sibirica*/*Pinus sibirica* forest with *Betula* or in conifer forest with *Abies*/*Picea*. Observations from a *Populus* plantation report individuals flying from tree to tree and sometimes settling on the trees or foliage.

Adults visit flower-rich grassland and have been found on sunny, flower-rich alpine meadows with small springs, in coniferous forest. Here they feed on umbellifer flowers and settle on low-growing vegetation or tree trunks. Males often patrol around umbellifers and display territorial behaviour, but also fly around tree trunks and foliage, searching for females with which to mate. Some species fly through the middle of the day, at the hottest time of the year, visiting the stony edges of streams to drink, after landing walking under overhanging, low-growing vegetation before drinking. Adults of *S. saltuum* and *S. manicata* are largely arboreal, but descend to flowers to feed (early morning) and also to drink at the margins of forest brooks, where these are in direct sunlight. The males can be found engaged in shorts bursts of hovering at 1 to 3 m, interspersed with very fast direct flight, at the edge of large open areas within forest, where patches of shorter ground vegetation are intermixed with scrub and regenerating forest trees.

Flowers visited include *Mentha* spp., white umbellifers, yellow composites, *Scabiosa* spp., *Sambucus ebulus*, *Plumbago europaea*, *Spirea* spp., *Succisa pratensis*, *Eryngium* spp., *Sambucus ebulus*, *Scabiosa* spp., *Hypericum* spp., *Thapsia* spp., *Solidago* spp., *Filipendula* spp., *Allium* spp., *Cirsium* spp., *Crataegus* spp., *Euonymus* spp., *Knautia* spp., *Solidago virgaurea*, *Achillea millefolium*, *Angelica sylvestris*, *Heracleum sosnowskyi*, *Heracleum sibiricum*, *Leucanthemum vulgare*, *Rosa* spp., *Epilobium* spp., *Veronica* spp. and *Ptarmica cartilaginea*.

Reproduction and larval biology. The larval development of a number of species is not described, although it is known that the larvae inhabit damp, rotten timber in hollow trees and the decaying heartwood of deciduous trees (*Populus*, *Acer*).

Seasonal life cycle. *Spilomyia* species fly from June to September and are probably univoltine.

Type species: *Musca diophthalma* Linnaeus, 1758

Common names:
FI - ampiaispuuharit;
NB - treblomsterfluer

List of species found in Europe:

1. *Spilomyia digitata* (Rondani, 1865)

2. *Spilomyia diophthalma* (Linnaeus, 1758)

3. *Spilomyia graciosa* Violovitsh, 1985

4. *Spilomyia manicata* (Rondani, 1865)

5. *Spilomyia maxima* Sack, 1910

6. *Spilomyia saltuum* (Fabricius, 1794)

7. *Spilomyia triangulata* van Steenis, 2000

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Attributions

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