Pollinator Academy

Genus: *Parasyrphus*

Parasyrphus lineolus male

Genus: *Parasyrphus* Matsumura 1917

Family: Syrphidae

Subfamily: Syrphinae

Tribe: Syrphini

Number of species of this genus found in Europe: 11

Description

Head

The face is rather variable in width, but always has a prominent facial tubercle, which is often slightly sloping ventrally in lateral view. The face is yellow, usually with a distinct, brownish to black median stripe, but this stripe can be completely absent. The face lacks parafacia. The oral margin is usually completely brown to black, but can occasionally be partly yellow on the sides. The postclypeus is black and ranges in shape from square to nearly 3 times longer than wide. The male is holoptic, the female dichoptic, with eyes from virtually bare to distinctly hairy. The frons is covered with black hairs its ground colour is mainly black; this colour is somewhat obscured by distinctly silvery to yellowish dusting, except above the antennae, where it is usually narrowly yellow and broadly shining black. Very exceptionally, the frons is swollen and very broad. The frontal dust spots on the female frons are usually large; they are often confluent in the midline of the frons and extend down to the face along the eyes. The vertical triangle is black, mostly dusted, and black haired. The antenna is completely brown to black often pale brown to yellow below. The basoflagellomere is short and circular or only slightly oval in lateral view, the arista is virtually bare. The occiput is

black with silvery dusted postocular orbits. In the male, the postocular orbits are considerably narrowed dorsally, usually to almost ¼ of its maximum width.

Thorax

The scutum is black, subshiny, bronze to greenish-black dusted and covered with long erect yellow hairs. The scutellum is dull yellow, commonly brown to black laterally. The subscutellar fringe is complete, with yellow hairs. The pleuron is black, faintly dusted, and covered with fine whitish-yellow hairs, which are often wavy at their tops. The dorsal part of the anterior anepisternum is covered with long fine erect hairs. The katepisternum has upper and lower katepisternal hair patches separated or narrowly joined posteriorly. The meron, metapleuron and metasternum are bare. The haltere is yellow.

Wings

The wing membrane is hyaline, entirely microtrichose or with small bare areas near the base of the wing. The pterostigma is light brown to brown. The wing membrane beyond vein M_1 and cross vein dm-m is rather narrow and does not undulate. Vein R_{4+5} is almost straight. There are no minute sclerotized dots along the posterior margin of the wing. There are no long erect hairs on the upper surface of the lower calypter.

Legs

Legs simple, at least partly yellow; basal part of femora mostly black; tarsi and hind legs mostly brownish to black; hind tibia often

yellow with brownish ring in the middle or to almost whole black except knee. Hind coxa with posteromedial apical tuft of several strong hairs.

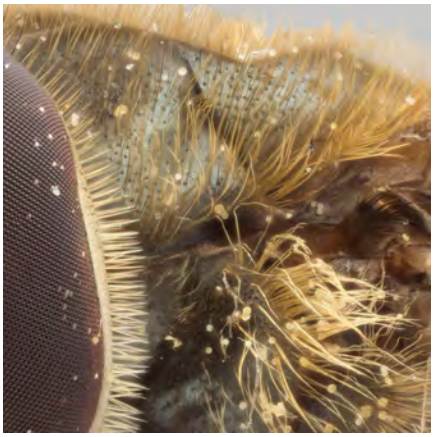
Abdomen

The abdomen is narrowly oval to oval, usually without a marginal sulcus, exceptionally (in the case of *P. nigritarsis*) with a very weak marginal sulcus. Tergite 2 usually bears a pair of yellow ‘golf club’-shaped bars; tergites 3 and 4 each have a pair of yellow bars or an entire yellow transverse band usually with deeply emarginate posterior margin; tergite 4 and usually tergite 5 have the posterior margin narrowly yellow, but the colouration of tergite 5 is variable. The abdomen is black haired from the posterior margin of tergite 2 to the apex, but the surface of the yellow markings including the yellow sections of the lateral margins of tergites 3 and 4 tend to be at least partly yellow haired. The colouration of the sternites is variable, usually with faint to distinct brownish to black central triangles, but they may be entirely yellow, with central brownish to black spots, stripes, broad triangles to transverse broad bands.

Melanic specimens (mostly females) are more frequent in this genus than in other related genera. The yellow markings on the abdomen of melanic specimens are indistinct or completely absent. In some species, in which melanic specimens are more common, the face may also be completely brownish-black.

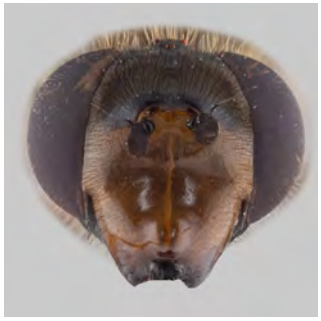
Parasyrphus punctulatus male head

Parasyrphus lineolus female head



Parasyrphus nigritarsis male anepisternum

Parasyrphus relictus male head

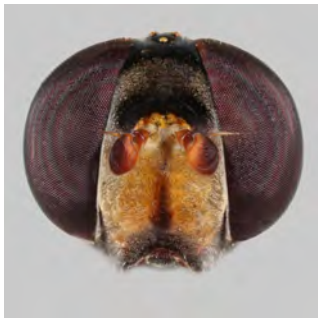


Parasyrphus groenlandicus female head

Parasyrphus tarsatus male head

Parasyrphus tarsatus male sternites

Parasyrphus relictus female head



Parasyrphus malinellus female head

Parasyrphus punctulatus male antenna

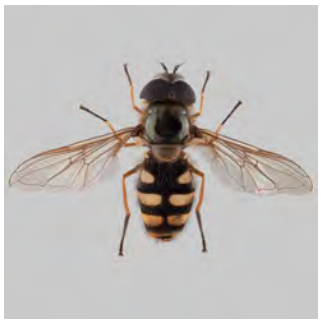
Parasyrphus relictus hind leg

General comments on identification to species level

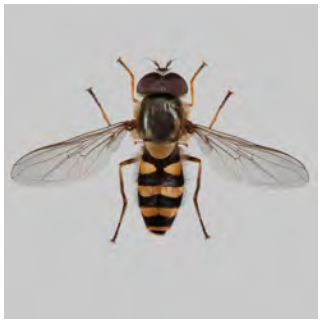
Differential diagnosis

The genus *Parasyrphus* comprises small to medium sized hoverflies (body length 6-11 mm) of the tribe Syrphini that have a black, oval abdomen with yellow transverse markings; tergite 2 usually has a pair of typical yellow ‘golf club’-shaped bars; and both tergite 3 and 4 have a pair of posteriorly rounded yellow bars or with an entire posteriorly emarginate transverse yellow band. The surface of the yellow markings is covered in yellow hairs that are also present on the lateral margins of the tergites. The yellow abdominal markings may sometimes be reduced or completely absent in a melanic specimen. In general appearance individual species of *Parasyrphus* are very similar to the smaller species/specimens of the genus *Syrphus*, but unlike *Parasyrphus*, all species of the genus *Syrphus* have long erect hairs on the upper surface of the lower calypter. Some species of *Parasyrphus* can also be confused with species of *Epistrophe* (e.g. *Parasyrphus nigritarsis*) or other species of related genera of the tribe Syrphini with a similarly coloured oval abdomen (*Melangyna*, *Dasysyrphus*), but only us *Parasyrphus* species have long fine hairs on the anterior anepisternum that are about as long as hairs on the postocular orbits. Although *Episyrphus* and *Meliscaeva* also have hairs on the anterior anepisternum, they

clearly differ in the colouration of the abdomen and, in addition, they have a series of minute sclerotized dots on the posterior margin of the wing that are absent in species of *Parasyrphus*.



Parasyrphus tarsatus male habitus



Parasyrphus relictus male habitus

Parasyrphus punctulatus female abdomen

Syrphus vitripennis male habitus

Parasyrphus lineolus male habitus

Parasyrphus nigritarsis male habitus

Syrphus ribesii lower calypter

Geographical distribution and global diversity

Parasyrphus is a Holarctic genus currently with about 30 valid species, eleven of which are widely distributed in Europe and northern Asia. Five species of them even have a Holarctic distribution throughout the arctic and subarctic or boreal to sub boreal forest zone (Barkalov & Mutin 2018, Bartsch *et al.* 2009b, Mutin 1990, Peck 1988, Skevington *et al.* 2019, Speight 2020a).

Presence in Europe

Austria, Andorra, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Isle of Man, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russian Federation - European Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom.

Biology

Species of the genus *Parasyrphus* are among the most abundant hoverflies of humid coniferous (*Picea*) and mixed forests, including

conifer plantations. Some species are also capable of inhabiting deciduous forests or arctic and alpine habitats. Adults are largely arboreal and like to fly around foliage in the crowns of conifers and deciduous trees and frequently settle on the foliage, but also descend to visit various flowers in open places in or near forests and trees, with the exception of arctic/alpine species which are associated with dwarf *Betula* and *Salix* shrubs. The larvae are predators usually of aphids preferably in crowns of spruces (*Picea*), other coniferous trees and sometimes also on deciduous trees and shrubs (*Fagus*, *Acer*, *Betula*, *Salix*, *Rosa*). Exceptionally, in the Palaearctic area the larva of *Parasyrphus nigritarsis* is known as a specialized predator of larvae of chrysomelid beetles on deciduous trees and shrubs. The larvae usually overwinter among leaf litter on the forest floor (Speight 2020a, Bartsch *et al.* 2009b, Rojo *et al.* 2003, Speight *et al.* 2016a, Skevington *et al.* 2019, Kula 1980, 1982, 1997, 1999).

Type species: *Syrphus aeneostoma* Matsumura, 1917

Common names
FI - kainokirvarit;
NB - buskblomsterfluer;
SV - buskblomflugor

List of species found in Europe:

1. *Parasyrphus annulatus* (Zetterstedt, 1838)
2. *Parasyrphus groenlandicus* (Nielsen, 1910)
3. *Parasyrphus kirgizorum* (Peck, 1969)
4. *Parasyrphus lineola* (Zetterstedt, 1843)
5. *Parasyrphus macularis* (Zetterstedt, 1843)
6. *Parasyrphus malinellus* (Collin, 1952)
7. *Parasyrphus nigritarsis* (Zetterstedt, 1843)
8. *Parasyrphus proximus* Mutin, 1990
9. *Parasyrphus punctulatus* (Verrall, 1873)
10. *Parasyrphus relictus* (Zetterstedt, 1838)
11. *Parasyrphus tarsatus* (Zetterstedt, 1838)

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Attributions

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