



Genus: *Eupeodes*



Eupeodes luniger male habitus (© Sander Bot, licensed to the EU under CC-BY-NC 4.0)

Genus: *Eupeodes* Osten-Sacken, 1877

Family: Syrphidae

Subfamily: Syrphinae

Tribe: Syrphini

Number of species of this genus found in Europe: 22

Description

Head

The yellow face occupies 40 – 60 % of the width of the head and has a distinct facial tubercle often with a brownish to black short median stripe. It is predominantly black haired although usually partly pale haired ventrally and around the facial tubercle. The oral margin is yellow laterally or completely brownish to black. The postclypeus is black and quadrate to almost 3 times longer than wide. Males are holoptic, females dichoptic. The eye is bare or virtually bare in European species. The frontal triangle is yellow, often with brownish to brown spots on the lunule, almost always black haired. Anterior angle of approximation of the eyes is usually around 90° but variable from 75° to nearly 135°; if angle wide then the frons can be swollen as found in *Scaeva*. The vertical triangle is black, black haired and usually shiny. The frons in females is yellow anteriorly, brown to black posteriorly and with shorter hairs than in males. It frequently has distinct frontal dust spots mostly extending ventrally along the eye margins. The basoflagellomere is oval or elongate oval, usually slightly longer than wide, mostly brown although usually pale brown to yellow ventrally. The arista is virtually bare. The occiput is black with silverish dust, mostly off-white haired. The postocular orbits are broad in the upper part or narrowed dorsally in males with a row of cilia which are all off-white or with several of them black near the vertical triangle.



Eupeodes lucasi male



Eupeodes curtus male



Eupeodes luniger female

(© Sander Bot, licensed to the EU under CC-BY-NC 4.0)

Thorax

The scutum is black, although sometimes obscurely brownish laterally, and shiny or subshiny with off-white, yellow to brownish hairs but in some specimens there may also be some brown to black hairs. The scutellum is dull yellow, translucent and with black or yellow hairs. The subscutellar fringe is complete and with yellow hairs. The anepisternum is black or greyish black, shiny or subshiny and very sparsely dusted with white to yellow fine hairs often undulated at their tops. The anterior anepisternum, meron and metepisternum are bare. The metasternum is hairy and the upper and lower katepisternal hair patches are moderately separated or narrowly joined posteriorly. The haltere is yellow.

Wings

The wing membrane is hyaline and microtrichose but commonly with bare areas on basal cells and alula, these bare areas are generally slightly more extensive in females. The wing membrane outside of vein M_1 and crossvein $dm-m$ is broad and slightly undulating. Vein R_{4+5} is only slightly curved with the hypothetical tangent at any point on it not intersecting vein R_{2+3} . The dorsal surface of the lower lobe of the calypter is without long erect hairs.

Legs

The legs are simple, slim and yellow to brownish although the femora are usually broadly brown to black basally and the tarsomeres are often brownish above towards their apex. The short

adpressed hairs on the front and mid legs are mostly yellow but with some black while on the hind leg they are mainly black except at the base of the femur. The front and mid femora also have long posterior black or yellow hairs. The coxa and trochanter are black with yellow hairs.

Abdomen

The shape is oval and usually flattened with a distinct marginal sulcus from close to the middle of tergite 2 to the apex of tergite 5, this is black haired including on any margins of the tergites that are yellow. Tergites 2 to 4 have a black ground colour with yellow transverse markings. These tergites are black haired although mostly yellow haired on the surface of the transverse yellow markings and before the yellow markings on tergite 2. Tergite 2 has a pair of separated yellow spots or bars, in dark specimens of most species these are separated from the lateral margins of the tergite while in pale specimens they broadly overlap the lateral margins of the tergite. Tergites 3 and 4 each with an entire emarginate yellow band reaching or separated from the lateral margins of the tergite. This band is commonly divided into a pair of lunulate, sometimes oblique, bars. Tergite 4 has the posterior margin narrowly yellow. Tergite 5 is yellow with a central black spot or band which sometimes reaches the lateral margins which are yellow or black. The sternites have a yellow ground colour. Sternites 2 and 3, and often all sternites, each have a dark brown to black central spot or band.

The extent of yellow markings on the abdomen is highly variable within a particular species. It is influenced by temperature during pupal development (Dušek et Láska 1974). In dark specimens from cold conditions the yellow markings are reduced and, in extreme cases, may be absent altogether. The tergites and the sternites may also be almost entirely black.



Eupeodes lucasi male sternites



Eupeodes nitens male sternites



Eupeodes corollae male sternites

(© Sander Bot, licensed to the EU under CC-BY-NC 4.0)

General comments on identification to species level

Differential diagnosis

The genus *Eupeodes* comprises rather robust average sized hoverflies with virtually bare eyes, a shiny or subshiny thorax and a black oval abdomen with more or less extensive transverse yellow markings. The abdomen is flattened with a very distinct marginal sulcus covered only with black hairs including on any margins of the tergites that are yellow. Tergites 3 and 4 are black in ground colour each with a pair of yellow more or less undulated bars or a straight, wavy or emarginate band. The wing membrane outside of vein M_1 and crossvein $dm-m$ is broad and usually slightly undulating which is similar to the related genera *Scaeva* and *Lapposyrphus* but all *Eupeodes* species have the R_{4+5} only slightly curved and the metasternum hairs unlike the other genera.



Lapposyrphus lapponicus male habitus



Scaeva selenitica male habitus



Eupeodes nuba male habitus

(© Sander Bot, licensed to the EU under CC-BY-NC 4.0)

Geographical distribution and global diversity


Eupeodes is a virtually cosmopolitan genus with individual species often having a large distribution range. There are 93 species of *Eupeodes* divided into two or three subgenera: the nominotypical subgenus, that comprises often only the one Nearctic species, alongside the more numerous subgenus *Metasyrphus* Matsumura, 1917 and the distinctive subgenus *Macrosyrphus* Matsumura, 1917. The highest species diversity occurs in the Holarctic region within the subgenus *Metasyrphus*. Of the 26 species which occur in the Nearctic region seven species have more or less Holarctic distribution and two species extend marginally into the Neotropical region where one of them has a closely related endemic species. A total of 72 species are listed for the Palaearctic region at present, 21 for Europe and 64 for Asia. However, about 40 Asian species are known only from type specimens and their taxonomic status needs to be confirmed by a comprehensive revision since the high intraspecific variability can often mislead authors. Two species extend from the Palaearctic into the Afrotropical region, where one further species has been described. Four Palaearctic species also extend into Oriental region where one or more species of the distinctive southeast Palaearctic subgenus *Macrosyrphus* can also be found which are widespread across the whole Oriental region and just reach Australia.

Presence in Europe

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

Biology

The habitat preference of most species seems to be unclear since adults are capable flyers, vagrants and several species even have a pronounced migratory behaviour. Adults are recorded in almost any situation where flowering trees, shrubs or herbs and/or appropriate prey aphids are present. Some species are mostly reported while hill topping. The larvae of many species have been reported as active predators of a wide variety of aphids on all kinds of deciduous and coniferous trees, shrubs and higher herbs, including crops (Rojo et al. 2003, Bartsch et al. 2009). *Eupeodes* species are generally polyvoltine, however, usually only one generation per year is achieved in higher latitudes. Most species probably overwinter in the diapausing pupal stage (Dušek and Láska 1986).

 **Type species:** *Eupeodes volucris* Osten-Sacken, 1877

Common names:

EN - Aphideaters;

NO - markblomsterfluer;

SV - fältblomflugor;

FI - laikkukirvarit

List of species found in Europe:

1. *Eupeodes (Metasyrphus) abiskoensis* (Dušek & Láska, 1973)
2. *Eupeodes (Metasyrphus) biciki* Nielsen, 2003
3. *Eupeodes (Metasyrphus) borealis* (Dušek & Láska, 1973)

4. *Eupeodes (Metasyrphus) frequens* (Matsumura, 1917)
5. *Eupeodes (Metasyrphus) corollae* (Fabricius, 1794)
6. *Eupeodes (Metasyrphus) curtus* (Hine, 1922)
7. *Eupeodes (Metasyrphus) duseki* Mazánek, Láska & Bičík, 1999
8. *Eupeodes (Metasyrphus) flaviceps* (Rondani, 1857)
9. *Eupeodes (Metasyrphus) goeldlini* Mazánek, Láska & Bičík, 1999
10. *Eupeodes (Metasyrphus) lambecki* (Dušek & Láska, 1973)
11. *Eupeodes (Metasyrphus) latifasciatus* (Macquart, 1829)
12. *Eupeodes (Metasyrphus) lucasi* (Marco-García & Láska, 1983)
13. *Eupeodes (Metasyrphus) lundbecki* (Soot Ryen, 1946)
14. *Eupeodes (Metasyrphus) luniger* (Meigen, 1822)
15. *Eupeodes (Metasyrphus) nielseni* (Dušek & Láska, 1976)
16. *Eupeodes (Metasyrphus) nitens* (Zetterstedt, 1843)
17. *Eupeodes (Metasyrphus) nuba* (Wiedemann, 1830)
18. *Eupeodes (Metasyrphus) punctifer* (Frey, 1934)
19. *Eupeodes (Metasyrphus) rufipunctatus* (Curran, 1925)
20. *Eupeodes (Metasyrphus) tirolensis* (Dušek & Láska, 1973)
21. *Eupeodes (Metasyrphus) vandergooti* (Dušek & Láska, 1973)
22. *Eupeodes (Metasyrphus) vockerothi* (Fluke, 1952)

References

Barkalov, A.V. and Mutin, V.A. (2018). Checklist of the hover-flies (Diptera, Syrphidae) of Russia. *Euroasian Entomological Journal* 17(6): 466-510. [BAR18CHE].

- Bartsch, H., Binkiewicz, E., Rådén, A. & Nasibov, E. (2009). *Blomflugor: Syrphinae. Nationalnyckeln till Sveriges flora och fauna*, DH53a. Artdatabanken, SLU, Uppsala, 406 p. [BAR09BLOA].
- Dušek, J. & Láska, P. (1967). Versuch zum aufbau eines Natürlichen Systems mitteleuropaischer Arten der Unterfamilie Syrphinae (Diptera). *Acta sc. nat.* Brno 1, 349–390. [DUS67VER].
- Dušek J., Láska P. (1973). Description of five new European species of the genus *Metasyrphus* (Diptera, Syrphidae), with notes on variation within the species. *Acta Entomologica Bohemoclovaca*, 70: 415-426. [DUS73DES].
- Dušek J., Láska P. (1974). Influence of temperature during pupal development on the colour of Syrphid adults (Syrphidae, Diptera). In: Rozkošný, R., (ed.), 11th Meeting of Czechoslovak Dipterists Cikháj 22.-24.11.1973. *Folia Facultatis Scientiarum Naturalium Universitatis Purkynianae Brunensis 15, Biologia*, 43(1): 77-81. [DUS74INF].
- Dušek J., Láska P. (1976). European species of *Metasyrphus*: key, descriptions and notes (Diptera, Syrphidae). *Acta Entomologica Bohemoclovaca* 73: 263-282. [DUS76EUR].
- Dušek J., Láska P. (1986). Life cycle strategies of aphidophagous syrphids. (Minireview). pp.185-192. In: Hodek I. (ed.), *Ecology of Aphidophaga*. Zvíkovské Podhradí, 2.-8. Sept. 1984, Academia, Prague. [DUS86LIF]
- Fluke, C.L. (1956). *Catalogue of the family Syrphidae in the Neotropical (Diptera)*. Revista Brasileira de Entomologia, São Paulo. 6: 193-268. [FLU56CAT]
- Haarto, A. & Kerppola, S. (2007). *Finnish hoverflies and some species in adjacent countries*. Otavan Kirjapaino Oy, 647. [HAA07FIN].
- Knutson, L.V., Thompson, F.C. & Vockeroth, J.R. (1975). Family Syrphidae. Pp. 307–374. In: Delfinado, M.D., Elmo Hardy, D. (eds.): *A Katalog of the Diptera of the oriental region*. The University Press of Hawaii, Honolulu. Volume II, x + 459 pp. [KNU75FAM].

Mazánek, L. (2003). World revision of the genus *Eupeodes* Osten Sacken with study of immature stages of some related genera of Syrphinae (Diptera: Syrphidae). Doctoral thesis, Department of Zoology and Anthropology, Faculty of Natural Sciences. Palacký University Olomouc, 16 pp + 12 papers. [MAZ03WOR]

Mazánek L., Láska P., Bičík V. (1999a). Revision of type material of *Metasyrphus chillcotti* (Diptera: Syrphidae). In: Jedlička, L. (ed.), *Dipterologica bohemoslovaca*. Vol. 9. Slovak Entomological Society, Bratislava. pp. 139-142. [MAZ99REV]

Mazánek L., Láska P., Bičík V., Nielsen T.R. (2005). Key to females of Norwegian species of *Eupeodes* (Diptera, Syrphidae). In: Kubík, Š., Barták, M. (eds) *Dipterologica bohemoslovaca* Vol. 11. Folia Fac. Sci. Nat. Univ. Masaryk. Brun., Biologia 109(2004): 203-213. [MAZ05KEY]

Mazánek L., Láska P., Bičík V., Nielsen T.R. (1999b). Key to males of Norwegian species of *Eupeodes* (Diptera, Syrphidae). In: Jedlička, L. (ed.), *Dipterologica bohemoslovaca*. Vol. 9. Slovak Entomological Society, Bratislava. pp. 143-152 [MAZ99KEY]

Mengual, X., Ståhls, G., Láska, P., Mazánek, L. & Rojo, S. (2018). Molecular genetics of the predatory lineage of flower flies *Eupeodes-Scaeva* (Diptera: Syrphidae), with the description of the Neotropical genus *Austroscaeva* gen. nov. *Journal of Zoological Systematics and Evolutionary Research* 56, 148–169. [MEN18MOL]. <https://doi.org/10.1111/jzs.12212>

Peck, L.V. (1988). Syrphidae. In: A. Soos and L. Papp (Eds), *Catalogue of Palaearctic Diptera*. Akad. Kiado, Budapest, pp. 11–230. [PEC88SYR].

Rojo, S., Gilbert, F., Marcos-García, M.-A., Nieto, J.M. & Mier, M.P. (2003). *A world review of predatory hoverflies (Diptera, Syrphidae: Syrphinae) and their prey*. CIBIO Ediciones, Alicante, 319 p. [ROJ03WOR]

Skevington, J.H., Locke, M.M., Young, A.D., Moran, K., Crins, W.J. & Marshall, S.A. (2019). *Field Guide to the Flower Flies of Northeastern North America*. Princeton Field Guides, Princeton University Press, 511 p. [SKE19FIE].

Speight, M.C.D. (2020) Species accounts of European Syrphidae, (2020). Syrph the Net, the database of European Syrphidae (Diptera), vol. 104, *Syrph the Net publications*, Dublin, 314 pp. [SPE20SPE].

Ssymank, A., Jordaens, K., Meyer, M., Reemer, M. & Rotheray, G.E. (2021). Syrphidae. In: B. J. Sinclair and Kirk-Spriggs (Eds), *Manual of Afrotropical Diptera*. South African National Biodiversity Institute, Pretoria, pp. 1439–1491. [SSY21SYRA].

Thompson, F.C. (1999). A key to the genera of the flower flies (Diptera: Syrphidae) of the Neotropical Region including descriptions of new genera and species and glossary of taxonomic terms. *Contributions to Entomology, International*. 3(3): 321–378. [THO99KEY].

Thompson, F.C., Vockeroth, J.R. & Sedman, Y.S. (1976). Family Syrphidae. In: Papavero, N. (Ed.): *A catalogue of the Diptera of the Americas south of the United States*. 46 Museo e Zoologia, Universidade de Sao Paulo, Brazil. 1-195. [THO76FAM].

Thompson, F.C., Vockeroth, J.R. (2016). Family Syrphidae. pp. 437-458. In: Evenhuis, N.L. (Ed.), *Catalog of the Diptera of the Australasian and Oceanian Regions*. (online version). Available at: <http://hbs.bishopmuseum.org/aocat/hybotidae.html>, (Last accessed: [6.4.2023]). [THO16FAM].

Vockeroth, J.R. (1969). *A revision of the genera of the Syrphini (Diptera: Syrphidae)*. Mem. ent. Soc. Can, 1–176. [VOC69REV].

Vockeroth, J.R. (1992). The flower flies of the Subfamily Syrphinae of Canada, Alaska and Greenland (Diptera, Syrphidae). *The insects and arachnids of Canada*, Pt. 18, 1–456. [VOC92FLO].

Attributions

This factsheet was created by Taxo-Fly and is one of the outputs from a network of European Initiatives dedicated to pollinators, such as the EU Pollinator Monitoring Scheme (EUPoMS), the

Preparatory Action for EU Pollinator Monitoring Scheme and Indicators (SPRING project), the Horizon 2020 Europe research projects (POSHBEE, SAFEGUARD), and European National action plans for pollinators.

Authors

Photographs: Sander Bot (Taxo-Fly team)

Text: Libor Mazánek (Taxo-Fly team)

Reviewer: Chris Palmer (Taxo-Fly team)

License

The content of this factsheet is licensed under a Creative Commons Attribution-ShareAlike ([CC BY-SA](#)).

Image rights

Most images created under the Taxo-Fly project have an open Creative Commons license ([CC BY 4.0](#)). However, some images are licensed to the European Union and shared under the Creative Commons license Attribution-NonCommercial 4.0 International ([CC-BY-NC 4.0](#)). This is indicated in the image caption.

