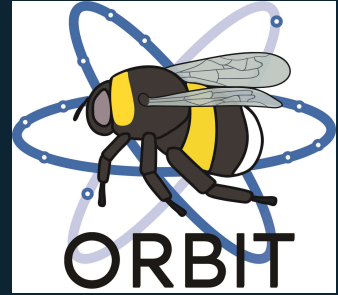




Pollinator Academy

Genus: *Hylaeus*



Female



Male

Genus: *Hylaeus* Fabricius, 1793

Clade: Anthophila

Family: Colletidae

SubFamily: Hylaeinae

Tribe: Hylaeini

Number of species of this genus found in Europe: 88

Morphology & diagnosis

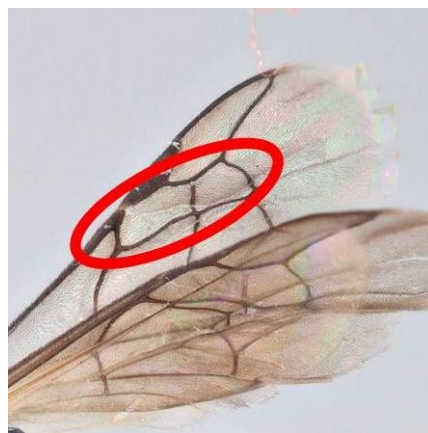
They are small to medium sized bees (4-10mm). The body is generally black and shiny, almost totally glabrous. They usually have yellow or white marks on the face, scape, pronotal lobes, tegulae, axilla, scutellum and the base of the tibiae. They show a short tongue with a bifid tip, generating a two-lobed tongue. This trait is shared with the genus *Colletes*, of the same family. The clypeus show a characteristic trapeze shape, the lateral margins being straight leaving triangular paraclypeal regions. These paraclypeal regions often show a white or yellow colour in both sexes, the clypeus being of the same white or yellow colour in the males. Certain species show light markings on the supraclypeal area and antennal insertion. The forewings bear two submarginal cells, the second being twice as large as the first.

Summary of distinctive traits

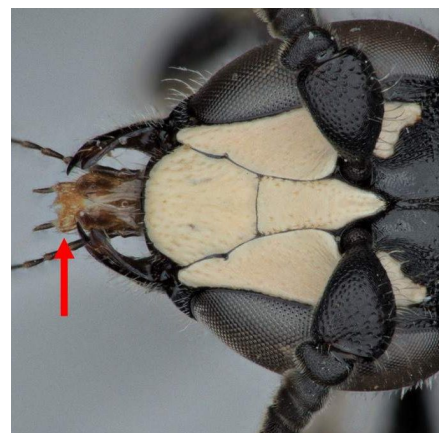
- Small wasp-like hairless bees
- Most of the time yellow markings on the face (a)
- Face with eyes converging towards the clypeus (a)
- Two submarginal cells, submarginal cell 1 about twice as long as submarginal cell 2 (b)
- Glossa ('tongue') bifid (c)



(a) *Hylaeus glacialis* Female



(b) *Hylaeus glacialis* Male



(c) *Hylaeus nivalis* Male

General comments on identification to species level

Species identification is complex, and requires expert assessment. If subgeneric identification might be difficult in some females, the genitalia and last sterna of the males carry useful criteria to distinguish the subgenera and species-groups. Pilosity, structure of the propodeum, sternites, punctation of the body (especially that of the first tergum) and antenna (especially the scape of the males) are important morphological features for species identification. When studying *Hylaeus*, examination of the tegument sculpture is essential and requires a binocular with high magnification (x50-x90) and a very soft diffuse lighting, fine sculpture (such as the very fine tessellate surface) are not visible otherwise. This is also important to evaluate accurately the distance between punctures which is influenced a lot by the lighting conditions. Lots of attention has been given to the body light markings (e.g. that of the face) but one must be really cautious using these features as they proved to be highly variable in most species (either in their colour and in their extent).

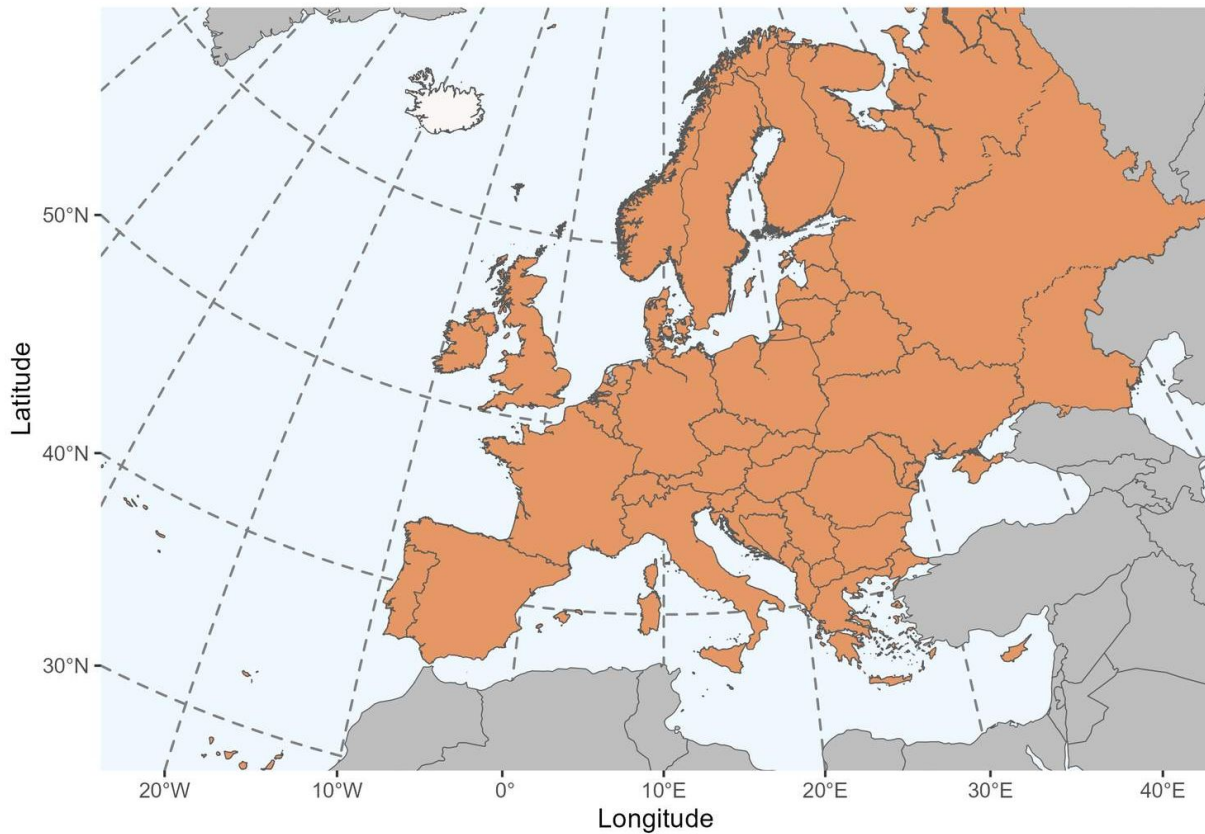
Morphologically similar genera, and how to distinguish them

Hylaeus is the only small, hairless bee species in Europe with 2 submarginal cells in which submarginal cell 1 is twice as large as submarginal cell 2, and with a bifid tongue. Their yellow markings on the face and body make them easily recognisable.

Geographical distribution and global diversity

This genus is cosmopolite, occurring in all continents except Antarctica. There are around 750 described species within this genus, with the focus of diversity being in Australia and some Pacific islands (Michener 2007). This genus comprises 55

subgenera at the global scale, 11 of them can be found in Europe. There are around 150 species recorded for the West Palearctic (Kuhlmann et al., 2014). They are present in a high diversity of environments, from the lower elevations to the top of the mountains and a diversity of habitats such as forest edges, hedgerows, meadows, ruderal areas, sand and clay pits, gardens and parks.



Presence in Europe

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

Biology

Seasonal life cycle

They are usually univoltine but some species are bivoltine. They are active mainly in spring and summer. They overwinter as larvae. Males usually emerge a few days before the females.

Reproduction

As in most cases in solitary bees, the copula occurs close to where the individuals emerge, commonly on vegetation or on the ground (Bergmark et al., 1984), and it lasts a few seconds. Males usually patrol the areas where the old nests are located, waiting for the females to emerge.

Nesting

Some species place their nests within dead stems, while other species nest in old wood using pre-existing cavities, such as beetle burrows or even human-made bee hotels. A few species can nest in the ground using abandoned galleries made by other Hymenoptera. Females line the interior of the nest cells with a cellophane-like secretion from their Dufour glands, as *Colletes* does.

Parasites

No cuckoo bees are associated to *Hylaeus*, they are mainly parasitized by wasps.

Floral preferences

Most species are polylectic, visiting flowers with the nectaries readily available. They are easily observed visiting flowers of the families Apiaceae, Asteraceae, Campanulaceae and Crassulaceae. Certain species are oligolectic *H. nigrinus* on Asteraceae or *H. signatus* on *Reseda* (Resedaceae). As they don't have a scopa, the pollen is transported internally within the crop.



Type species: *Prosopis annulata* Fabricius, 1804 = *Apis annulata* Linnaeus, 1758, by designation of Latreille, 1810

Synonyms: *Prosopis* Fabricius, 1804

Etymology: the exact origin of the name of this genus is unknown. Several hypotheses have been postulated, but the most plausible is the latinized root '*hylaïos*', coming from the Greek root '*hylē*' meaning 'forest, wood', as a reference to the fact that their nests are usually located within stems or in holes in dead wood.

Common names:

FR: les hylés ou abeilles masquées

GER: der Maskenbienen

NL: de maskerbijen

EN: Yellow-face Bee

List of species found in Europe:

1. *Hylaeus (Prosopis) absolutus* (Gribodo, 1894)
2. *Hylaeus (Hylaeus) adriaticus* (Warncke, 1972)
3. *Hylaeus (Spatulariella) alpinus* (Morawitz, 1867)
4. *Hylaeus (Hylaeus) angustatus* (Schenck, 1861)
5. *Hylaeus (Lambdopsis) annularis* (Kirby, 1802)
6. *Hylaeus (Hylaeus) annulatus* (Linnaeus, 1758)
7. *Hylaeus (Paraprosopis) ater* (Saunders, 1903)
8. *Hylaeus (Paraprosopis) azorae* (Warncke, 1992)
9. *Hylaeus (Dentigera) biarmicus* (Warncke, 1992)
10. *Hylaeus (Koptogaster) bifasciatus* (Jurine, 1807)
11. *Hylaeus (Dentigera) brachycephalus* (Morawitz, 1868)
12. *Hylaeus (Dentigera) brevicornis* Nylander, 1852

13. *Hylaeus (Paraprosopis) canariensis* Erlandsson, 1983
14. *Hylaeus (Hylaeus) cardioscapus* Cockerell, 1924
15. *Hylaeus (Paraprosopis) clypearis* (Schenck, 1853)
16. *Hylaeus (Hylaeus) communis* Nylander, 1852
17. *Hylaeus (Dentigera) conformis* Förster, 1871
18. *Hylaeus (Prosopis) confusus* Nylander, 1852
19. *Hylaeus (Prosopis) convergens* Dathe, 2000
20. *Hylaeus (Prosopis) coriaceus* (Pérez, 1895)
21. *Hylaeus (Abrupta) cornutus* Curtis, 1831
22. *Hylaeus (Lambdopsis) crassanus* (Warncke, 1972)
23. *Hylaeus (Spatulariella) cypricola* (Warncke, 1972)
24. *Hylaeus (Hylaeus) deceptorius* (Benoist, 1959)
25. *Hylaeus (Spatulariella) decipiens* Förster, 1871
26. *Hylaeus (Patagiata) difformis* (Eversmann, 1852)
27. *Hylaeus (Lambdopsis) dilatatus* (Kirby, 1802)
28. *Hylaeus (Prosopis) duckei* (Alfken, 1904)
29. *Hylaeus (Lambdopsis) euryscapus* Förster, 1871
30. *Hylaeus (Mehelyana) friesei* (Alfken, 1904)
31. *Hylaeus (Prosopis) garrulus* (Warncke, 1981)
32. *Hylaeus (Prosopis) gazagnairei* (Vachal, 1891)
33. *Hylaeus (Prosopis) gibbus* Saunders, 1850
34. *Hylaeus (Dentigera) glacialis* Morawitz, 1872
35. *Hylaeus (Hylaeus) gracilicornis* (Morawitz, 1867)

36. *Hylaeus (Dentigera) gredleri* Förster, 1871
37. *Hylaeus (Hylaeus) hellenicus* Dathe, 2000
38. *Hylaeus (Paraprosopis) hohmanni* Dathe, 1993
39. *Hylaeus (Spatulariella) hyalinatus* Smith, 1842
40. *Hylaeus (Spatulariella) hyperpunctatus* (Strand, 1909)
41. *Hylaeus (Prosopis) hyrcanius* Dathe, 1980
42. *Hylaeus (Hylaeus) ibericus* Dathe, 2000
43. *Hylaeus (Dentigera) imparilis* Förster, 1871
44. *Hylaeus (Prosopis) incongruus* Förster, 1871
45. *Hylaeus (Dentigera) intermedius* Förster, 1871
46. *Hylaeus (Dentigera) kahri* Förster, 1871
47. *Hylaeus (Hylaeus) koenigsmanni* Dathe, 1981
48. *Hylaeus (Hylaeus) leptocephalus* (Morawitz, 1870)
49. *Hylaeus (Paraprosopis) lineolatus* (Schenck, 1861)
50. *Hylaeus (Spatulariella) longimacula* (Alfken, 1936)
51. *Hylaeus (Paraprosopis) maderensis* (Cockerell, 1921)
52. *Hylaeus (Hylaeus) mariannae* Theunert, 2013
53. *Hylaeus (Prosopis) meridionalis* Förster, 1871
54. *Hylaeus (Spatulariella) moniae* Nobile & Tomarchio, 1998
55. *Hylaeus (Hylaeus) nigrifacies* Bramson, 1879
56. *Hylaeus (Hylaeus) nigritus* (Fabricius, 1798)
57. *Hylaeus (Hylaeus) nivaliformis* Dathe, 1977
58. *Hylaeus (Hylaeus) nivalis* (Morawitz, 1867)

59. *Hylaeus (Dentigera) pallidicornis* Morawitz, 1876
60. *Hylaeus (Hylaeus) paulus* Bridwell, 1919
61. *Hylaeus (Nesoprosopis) pectoralis* Förster, 1871
62. *Hylaeus (Dentigera) penalaris* Dathe, 1979
63. *Hylaeus (Lambdopsis) pfankuchi* (Alfken, 1919)
64. *Hylaeus (Paraprosopis) pictipes* Nylander, 1852
65. *Hylaeus (Prosopis) pictus* (Smith, 1853)
66. *Hylaeus (Dentigera) pilosulus* (Pérez, 1903)
67. *Hylaeus (Spatulariella) punctatus* (Brullé, 1832)
68. *Hylaeus (Koptogaster) punctulatissimus* Smith, 1842
69. *Hylaeus (Dentigera) punctus* Förster, 1871
70. *Hylaeus (Prosopis) purpurissatus* (Vachal, 1895)
71. *Hylaeus (Hylaeus) pyrenaicus* Dathe, 2000
72. *Hylaeus (Lambdopsis) rinki* (Gorski, 1852)
73. *Hylaeus (Dentigera) rubicola* Saunders, 1850
74. *Hylaeus (Prosopis) rugicollis* Morawitz, 1873
75. *Hylaeus (Hylaeus) scutellaris* Morawitz, 1873
76. *Hylaeus (Lambdopsis) scutellatus* (Spinola, 1838)
77. *Hylaeus (Hylaeus) sidensis* (Warncke, 1981)
78. *Hylaeus (Prosopis) signatus* (Panzer, 1798)
79. *Hylaeus (Paraprosopis) sinuatus* (Schenck, 1853)
80. *Hylaeus (Paraprosopis) soror* (Pérez, 1903)
81. *Hylaeus (Paraprosopis) styriacus* Förster, 1871

82. *Hylaeus (Spatulariella) sulphuripes* (Gribodo, 1894)
83. *Hylaeus (Paraprosopis) taeniolatus* Förster, 1871
84. *Hylaeus (Prosopis) teruelus* (Warncke, 1981)
85. *Hylaeus (Hylaeus) trifidus* (Alfken, 1936)
86. *Hylaeus (Prosopis) trinotatus* (Pérez, 1895)
87. *Hylaeus (Hylaeus) tyrolensis* Förster, 1871
88. *Hylaeus (Prosopis) variegatus* (Fabricius, 1798)

Subgenera found in Europe:

- *Abrupta* Méhelj, 1935
- *Dentigera* Popov, 1939
- *Hylaeus* s. str. Fabricius, 1793
- *Koptogaster* Alfken, 1912
- *Lambdopsis* Popov, 1939
- *Mehelyana* Sandhouse, 1943
- *Nesoprosopis* Perkins, 1899
- *Paraprosopis* Popov, 1939
- *Patagiata* Blüthgen, 1949
- *Prosopis* Fabricius, 1804
- *Spatulariella* Popov, 1939

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