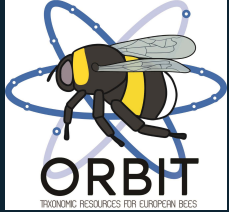




Pollinator Academy

# Genus: Anthidium



Female

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Male

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**Genus:** *Anthidium* Fabricius 1804

**Clade:** Anthophila

**Family:** Megachilidae

**SubFamily:** Megachilinae

**Tribe:** Anthidiini

**Number of species of this genus found in Europe: 17**

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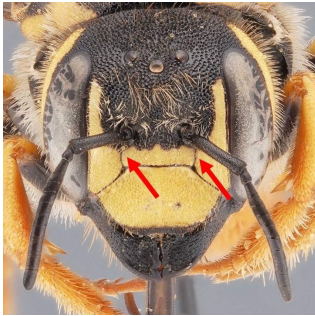
# Morphology & diagnosis

They are small to large bees (6-18mm). They show multiple yellow spots across the body. They present a long tongue morphology. They have mandibles with 5-18 sharp teeth separated by acute notches. The clypeus is not protruding in relation to the eyes. The basal margin of the clypeus is straight, and is apically twice as wide as basally. The subantennal sutures are straight and parallel sided or oblique, converging to the clypeus. They normally lack a lower preoccipital carina, and when is present it does not reach the base of the mandible. They have two submarginal cells, and the second recurrent vein is postfurcal. The pronotal lobe is often carinate. Their axillae are rounded and attached to the scutellum, sometimes separated from scutellum by very weak notch. The scutellum has the posterior margin barely overhanging the metanotum. The propodeum is generally mat or densely punctate, it can rarely show small impunctate smooth and shiny surfaces. They don't present arolium generally, sometimes it may be present as a slender tapering process between the tarsal claws. The shape of the metasoma is also characteristic, with parallel margins and slightly flattened dorso-ventrally. Females have a ventral scopa. Tergite 6 of the female presents an apically depressed marginal zone, sometimes hidden by pilosity. The marginal area of tergite 6 typically presents a medial notch, and lateral projections. The last sternum has long pilosity, similar to that of preceding sterna. Males present thorn-like projections on the terminal segments of the metasoma. This is one of the only bee genera where males are larger than females.

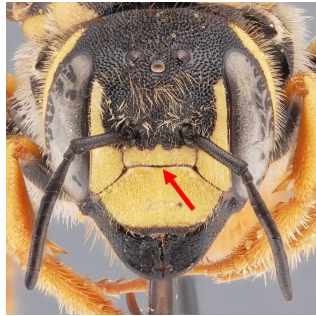
## Summary of distinctive traits

- The subantennal sutures are straight and parallel sided or oblique, converging to the clypeus (a)
- The basal margin of the clypeus is straight, and is apically twice as wide as basally (b)
- Their axillae are rounded and attached to the scutellum, sometimes separated from scutellum by very weak notch (c)
- Shape of the metasoma characteristic, with parallel margins (d)
- 2nd recurrent vein reaching beyond submarginal cell 2 (e)

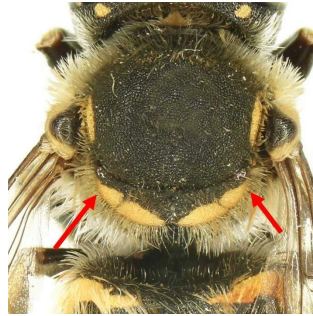
- Females with ventral scopa (f)
- Absence of arolium (g)
- Male tergite 7 with lateral spines (h)



(a) *Anthidium manicatum*  
Female



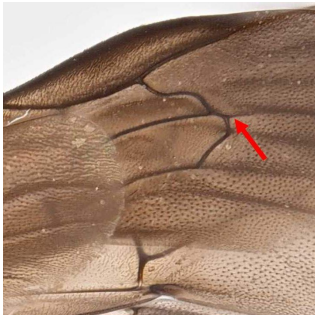
(b) *Anthidium manicatum*  
Female



(c) *Anthidium cingulatum*  
Female



(d) *Anthidium septemspinosum* Female



(e) *Anthidium manicatum*  
Female



(f) *Anthidium manicatum*  
Female



(g) *Anthidium manicatum*  
Female



(h) *Anthidium manicatum*  
Male

## General comments on identification to species level

Species can be distinguished based on lateral ornaments on metasomal tergites and mandible characters, then mandibles have to be open and metasoma has to be well

expanded.

## Morphologically similar genera, and how to distinguish them

- ***Anthidium* - *Afranthidium***

*Anthidium* species have a basal margin of the clypeus and subantennal suture straight.

*Afranthidium* species have a basal margin of the clypeus and subantennal sutures arched.

- ***Anthidium* - *Icteranthidium* & *Pseudoanthidium***

*Anthidium* species have rounded axillae, not produced, aligned with the scutellum.

*Icteranthidium* & *Pseudoanthidium* species have axillae pointed or produced, the apex separated from the scutellum.

- ***Anthidium* - *Anthidiellum*, *Eoanthidium*, *Rhodanthidium* & *Trachusa***

*Anthidium* species don't have an arolium between their claws.

*Anthidiellum*, *Rhodanthidium* & *Trachusa* species have an arolium between their claws.

- ***Anthidium* - *Stelis***

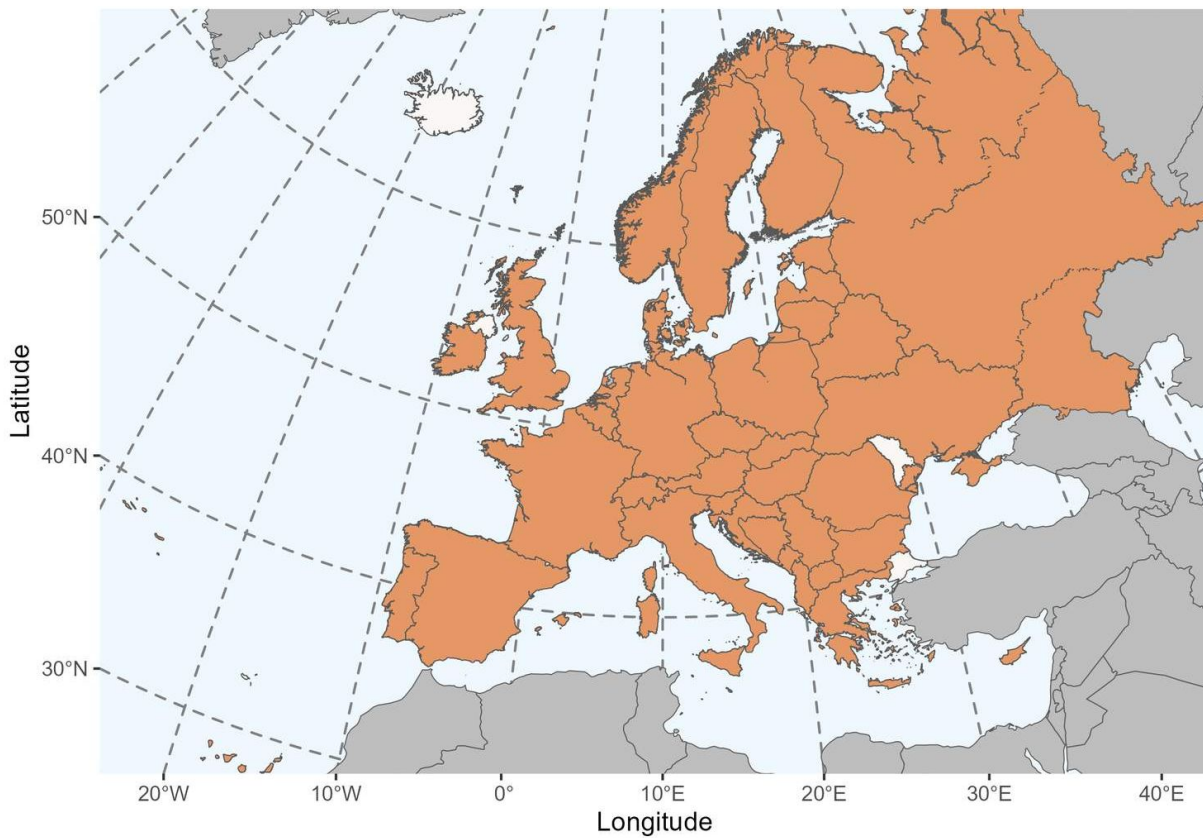
*Anthidium* species have rounded axillae, and females have a ventral scopa.

*Stelis* species have pointed axillae, females have no ventral scopa.

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## Geographical distribution and global diversity

The genus *Anthidium* is almost cosmopolite (Kasperek, 2023). There are 102 species described of the genus, of those relatively few occur in Africa and Europe.



## Presence in Europe

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

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## Biology

### Seasonal life cycle

They are univoltine summer species.

## Reproduction

Males have a very interesting patrolling behaviour, shared by other genera of the tribe. They control a territory and do flights of 30-60 hovering still for a few seconds before another flight. They show a strong territoriality. They attack every other insect that enters their territory. They normally follow females entering their territory until they approach her to copulate. The copula lasts a few seconds. They normally mate in the flowers, but they can fall to the ground. Females can reject the male. Both males and females copulate with several partners.

## Nesting

They are solitary. Most species nest in preexisting cavities aboveground, a few species nest in cavities underground. *A. byssinum* dig tunnels in the ground. They line the nest cells with plant tissue, principally pilosity. The interior of the nest seems coated in wool, giving this genus its common name.

## Parasites

*Stelis punctulatissima* is the only known cleptoparasite attacking species of this genus (Amiet et al. 2004).

## Floral preferences

Some species are theoretically polylectic, but most of them show floral preferences for the families with long corolla tubes such as Fabaceae, Lamiaceae or Asteraceae. Some species are oligolectic, such as *A. montanum* on members of the family Fabaceae ; *A. diadema*, *A. spiniventre* and *A. wuestneii* on members of the family Asteraceae; and *A. caspicum* on Campanulaceae (Müller 1996).



**Type species:** *Apis manicata* Linnaeus, 1758, by designation of Latreille, 1810: 439.

**Synonyms:** *Stenanthidium* Moure, 1947; *Tetranthidium* Moure, 1947; *Melanthidium* Cockerell, 1947

**Etymology:** the origin of this name comes from the Greek root 'antho', meaning 'flower', and 'dia', meaning 'through'

**Common names:**

FR : les anthidies

GER : der Wollbienen

NL : de wolbijen

EN : wool carder bees

## List of species found in Europe:

1. *Anthidium caspicum* Morawitz, 1880
2. *Anthidium cingulatum* Latreille, 1809
3. *Anthidium dalmaticum* Mocsáry, 1884
4. *Anthidium diadema* Latreille, 1809
5. *Anthidium florentinum* (Fabricius, 1775)
6. *Anthidium loti* Perris, 1852
7. *Anthidium manicatum* (Linnaeus, 1758)
8. *Anthidium montanum* Morawitz, 1865
9. *Anthidium oblongatum* (Illiger, 1806)
10. *Anthidium punctatum* Latreille, 1809
11. *Anthidium rotundum* Warncke, 1980
12. *Anthidium septemspinatum* Lepeletier, 1841
13. *Anthidium spiniventre* Friese, 1899

14. *Anthidium taeniatum* Latreille, 1809
15. *Anthidium undulatifforme* Friese, 1917
16. *Anthidium undulatum* Dours, 1873
17. *Anthidium wuestneii* Mocsáry, 1887

## Subgenera found in Europe:

1. *Anthidium* s.str Fabricius, 1804
2. *Gulanthidium* Pasteels, 1969
3. *Proanthidium* Friese, 1898.

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## References

Amiet, F., Herrmann, M., Müller, A. and Neumeyer, R. 2004. Apidae 4: *Anthidium*, *Chelostoma*, *Coelioxys*, *Dioxys*, *Heriades*, *Lithurgus*, *Megachile*, *Osmia*, *Stelis*. Centre Suisse de Cartographie de la Faune (CSCF)/Schweizerische Entomologische Gesellschaft (SEG).

Müller, A. 1996. Host plant specialization in western palearctic Anthidiini bees. *Ecological Monographs* 66(2): 235-257.

## Attributions

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