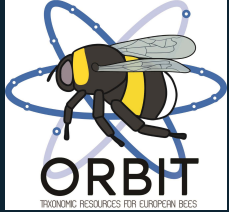




Pollinator Academy

Genus: Trachusa



Female



Male

Genus: *Trachusa* Panzer 1804

Clade: Anthophila

Family: Megachilidae

SubFamily: Megachilinae

Tribe: Anthidiini

Number of species of this genus found in Europe: 9

Morphology & diagnosis

They are medium to large sized bees (9-16mm). The yellow marks on the body typical of the Anthidiini depend on the subgenera. Males are easily recognized by a black brush on sternites 4 and 5. The subgenera *Trachusa* s.s. does not show them, being the species totally black (except for the face). The other two subgenera show the yellow markings typical of the Anthidiini. The posterior part of the head is well-developed, rendering the lateral ocelli closer to the compound eyes than the preoccipital margin. The lower part of the preoccipital carina is absent. The clypeus is not protruding in relation to the eyes and the tongue is long. Females show a distinctive trait, 4 (sometimes 3) teeth on the extreme of the mandibles. The axillae are mostly not pointed posteriorly. The omauli are rounded or angular. Their forewings bear two submarginal cells and the second recurrent vein is postfurcal in the subgenera *Trachusa* s.s. and *Paraanthidium*, while it is prefurcal in the subgenus *Archiantidium*. On the hindwings, the anal crossvein is usually oblique and as long as the second abscissa of 2nd abscissa of cubital vein. The scutellum is rounded. They do present arolium between the claws. The median tibiae show rounded dorso-apical plate. Females show ventral scopa.

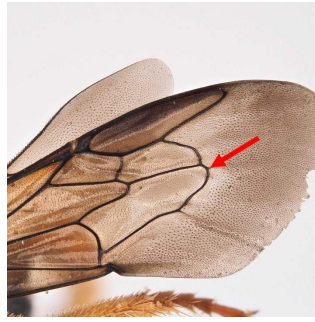
Summary of distinctive traits

- The posterior part of the head is well-developed, rendering the lateral ocelli closer to the compound eyes than the preoccipital margin (a)
- 2nd recurrent vein reaching beyond submarginal cell 2 (except in *Archiantidium* subgenus) (b)
- Hindwing with anal crossvein at least as long as 2nd abscissa of cubital vein
- Presence of arolium (c)
- Scutellum rounded (d)
- Posterior tibia with rounded dorso-apical plate (e)
- Female mandible with 4 (or 3) teeth (f)

- Male sternites 4 and 5 with tuff of black hairs (g)



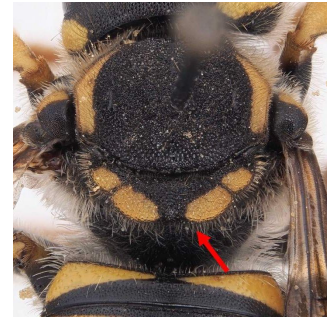
(a) *Trachusa byssina*
Female



(b) *Trachusa interrupta*
Female



(c) *Trachusa interrupta*
Male



(d) *Trachusa interrupta*
Female



(e) *Trachusa interrupta*
Female



(f) *Trachusa interrupta*
Female



(g) *Trachusa interrupta*
Male

General comments on identification to species level

Diagnostic characters for species identification are located on the mandibles, maxillary palps, scutellum and axillae, as well as genitalia and sternites. These area should be made visible as far as possible.

Morphologically similar genera, and how to distinguish them

- ***Trachusa* - *Rhodanthidium***

Trachusa species have a rounded dorso-apical plate of the posterior tibia.

Rhodanthidium species have at least one apical tooth on the dorso-apical plate of the posterior tibia.

- ***Trachusa* - *Afranthidium*, *Anthidium*, *Icteranthidium* & *Pseudoanthidium***

Trachusa species do have an arolium between their claws.

Afranthidium, *Anthidium*, *Icteranthidium* & *Pseudoanthidium* species don't have an arolium between their claws.

- ***Trachusa* - *Anthidiellum***

Trachusa species have a rounded scutellum and are larger.

Anthidiellum species have a subrectangular, posteriorly extended scutellum and are much smaller.

- ***Trachusa* - *Eoanthidium***

Trachusa species don't have a carina at their antennal fossa.

Eoanthidium species have a carinate antennal fossa.

- ***Trachusa* - *Stelis***

Trachusa species have rounded axillae, males have one apical tooth (sometimes bifid) on their anterior and median tibiae and females have a ventral scopa.

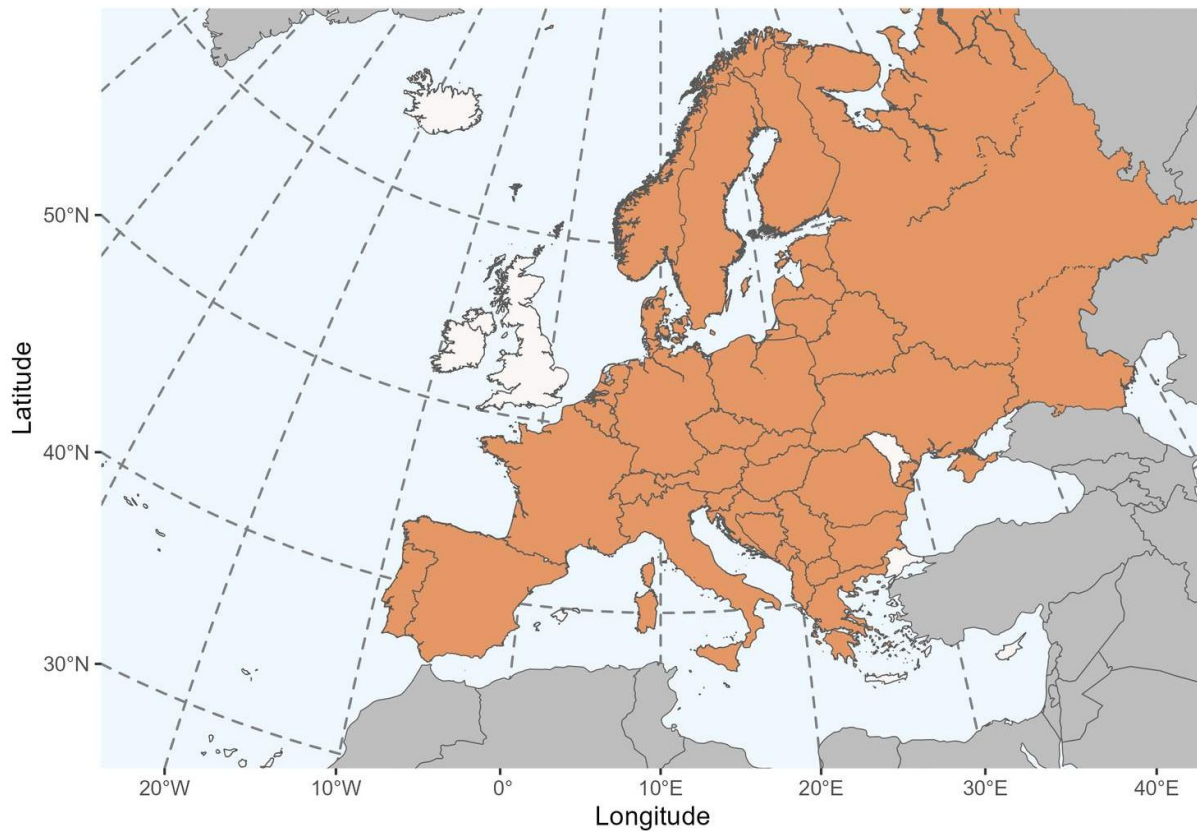
Stelis species may have pointed axillae, males have two widely separated apical teeth on their anterior and median tibiae and females have no ventral scopa.

Geographical distribution and global diversity

This genus is distributed across Europe, Asia, and Africa, North America and Mexico.

Worldwide there are approximately 49 species, split into 11 subgenera (Litman et al.

2016 ; Kasperek 2017).



Presence in Europe

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

Biology

Seasonal life cycle

They are univoltine.

Reproduction

Details about their reproduction are not known.

Nesting

They are ground nesting. They cut slices of leaves that they use to line the interior part of their nest cells. They also use resin to prepare the nest.

Parasites

Brood parasitic bees of the genera *Coelioxys* and *Stelis* are known as nest parasites.

Floral preferences

For several species, floral preferences are not known. For the two species for which the feeding habits are known, *T. byssina* is oligolectic on Fabaceae (specially *Lotus corniculatus*) while *T. interrupta* is oligolectic on Dipsacaceae (specially on the genus *Scabiosa*).



Type species: *Trachusa serratulae* Panzer, 1804 = *Apis byssina* Panzer, 1798, by designation of Sandhouse, 1943.

Synonyms: *Protanthidium* Cockerell and Cockerell, 1901; *Protoanthidium* Cameron, 1902; *Diphysis* Lepeletier, 1841; *Megachileoides* Radoszkowski, 1874; *Megachiloides* Saussure, 1890.

Etymology: from the Greek root 'trachus', meaning 'rough'

Common names: n/a

List of species found in Europe:

1. *Trachusa (Archianthidium) balcanica* Kasperek, 2018
2. *Trachusa (Trachusa) byssina* (Panzer, 1798)
3. *Trachusa (Paraanthidium) dumerlei* (Warncke, 1980)
4. *Trachusa (Paraanthidium) integra* (Eversmann, 1852)
5. *Trachusa (Paraanthidium) interrupta* (Fabricius, 1781)
6. *Trachusa (Archianthidium) laeviventris* (Dours, 1873)
7. *Trachusa (Archianthidium) laticeps* (Morawitz, 1873)
8. *Trachusa (Archianthidium) pubescens* (Morawitz, 1872)
9. *Trachusa (Paraanthidium) varia* (Olivier, 1789)

List of subgenera found in Europe:

1. *Archianthidium* Mavromoustakis, 1939
2. *Paraanthidium* Friese, 1898
3. *Trachusa* s.str. Panzer, 1804

References

Kasperek M. (2017) Resin bees of the anthidiine genus *Trachusa* - Identification, taxonomy, distribution and biology of the Old World species. *Entomofauna*, supplement, 21, 1-155

Litman, J. R., T. Griswold, Danforth B.N. (2016). Phylogenetic systematics and a revised generic classification of anthidiine bees (Hymenoptera: Megachilidae). *Molecular Phylogenetics and Evolution* 100: 183-198.

Attributions

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