



Pollinator Academy

Genus: *Habropoda*



Female



Male

Genus: *Habropoda* Smith, 1854

Clade: Anthophila

Family: Apidae

SubFamily: Apinae

Tribe: Anthophorini

Number of species of this genus found in Europe: 3

Morphology & diagnosis

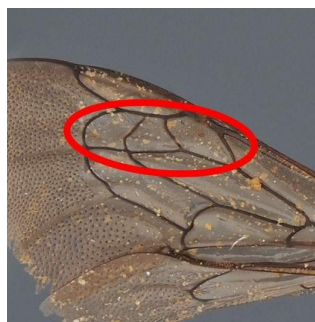
They are robust bees with long to very long-tongues. The clypeus is protuberant and the antennae are relatively short in comparison with other groups. The wings always have three submarginal cells, all of them of equivalent size, and the marginal cell is short. The first recurrent vein reaches the apex of the second submarginal cell and the nervulus is postfurcal. They often show a dense pilosity on the abdomen, which can be homogeneously distributed or forming bands. They have a dense scopa on the hind tibia and basitarsus. Regarding their behaviour, they are fast flyers and they don't always stop on the flowers to forage, they can forage in flight.

Summary of distinctive traits

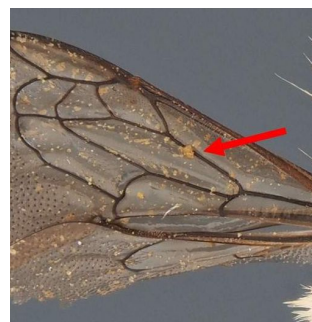
- Stout species with protuberant clypeus and short antennae
- The 3 submarginal cells of equivalent size
- Straight basal vein
- 1st recurrent vein reaching the apex of submarginal cell 2
- Males with short antennae



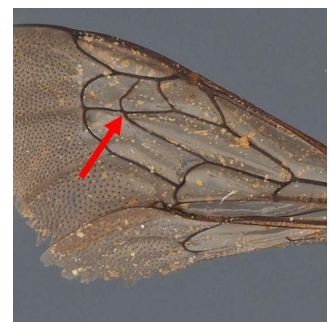
(a) *Habropoda tarsata*
Female



(b) *Habropoda zonatula*
Male



(c) *Habropoda zonatula*
Male



(d) *Habropoda zonatula*
Male

General comments on identification to species level

For males, the form of the hind legs, the pilosity on the middle leg as well as the yellow markings on the face and the genitalia are the most used diagnostic characters. For females, the criteria are mostly related to hair cover and punctuations. While preparing the specimens, it is very important to extract the male genitalia and make sure the specimen body pilosity is clean and well preserved.

Morphologically similar genera, and how to distinguish them

- ***Habropoda* - *Amegilla* & *Anthophora***

Habropoda species have a more elongated tip of marginal cell (the apex of the anterior margin of submarginal cell 3 reaches only the middle of the marginal cell), the 1st recurrent vein reaches the apex of submarginal cell 2, and the nervulus is post-furcal. *Anthophora* & *Amegilla* species have a distinctly short marginal cell, as well as the 1st recurrent vein which enters the middle of submarginal cell 2, and the nervulus is interfurcal.

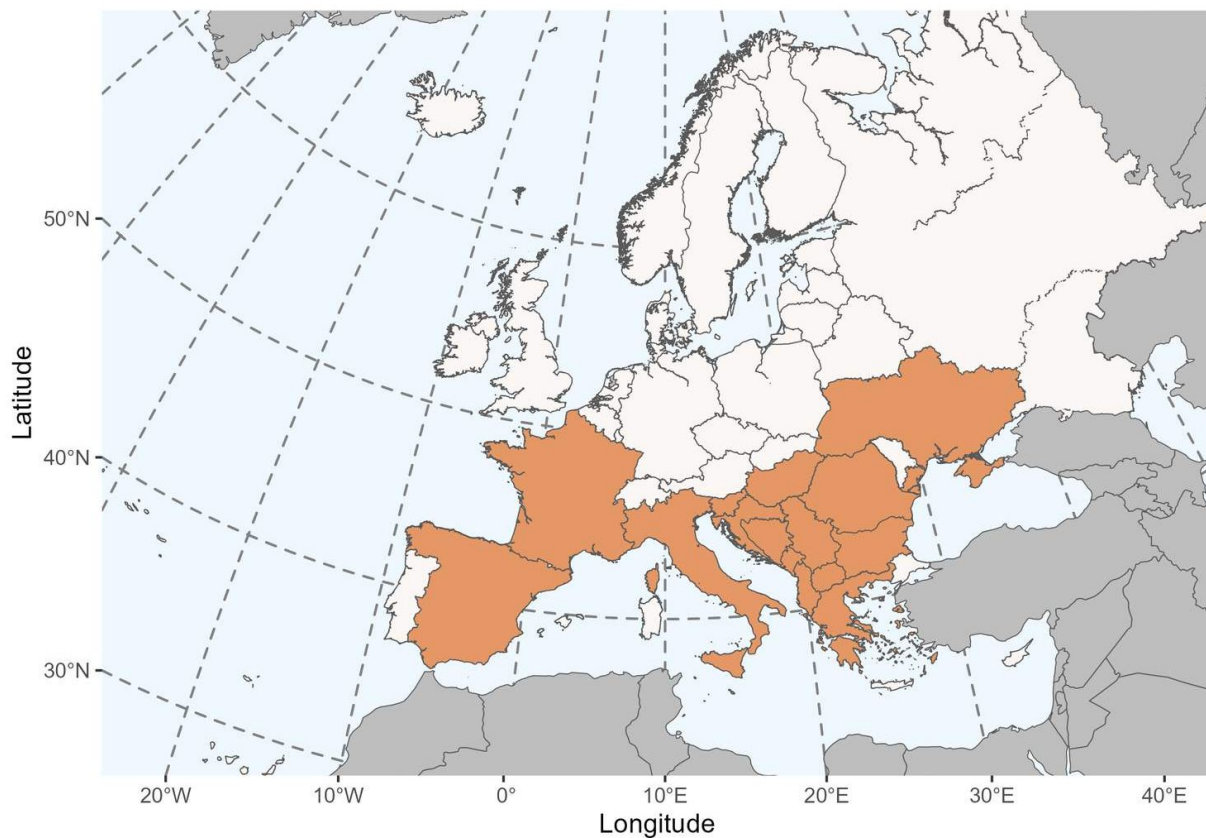
- ***Habropoda* - *Bombus***

Habropoda species have non-aligned ocelli, males often bear yellow-markings on the face and have no vein partially-crossing the 1st submarginal cell.

Bombus species have aligned ocelli, never bear yellow-markings on the face and have a vein partially-crossing the 1st submarginal cell.

Geographical distribution and global diversity

The Anthophorini can be found on all the continents, except Antarctica. Nevertheless, the maximum diversity is seen in the regions having Mediterranean or steppe vegetation. *Habropoda* includes 30 species worldwide (Michener 2007), and is present in Southern and Eastern Europe, the Mediterranean basin more broadly, most of Asia, and North America.



Presence in Europe

Albania, Bosnia & Herzegovina, Bulgaria, Croatia, France, Greece, Hungary, Italy, Malta, Montenegro, North Macedonia, Romania, Serbia, Slovenia, Spain, Ukraine.

Biology

Seasonal life cycle

Habropoda are active in spring.

Reproduction

Little is known about the mating behaviour of *Habropoda*, especially in Europe. As in other Anthophorini genera, males emerge before females. Males of the North American species *H. pallida* switch between different tactics to locate females. In the first strategy males will fly in circuits near emergence holes and inspect those or enter them to look for females, they will try to mate with a female once they locate her. The mating lasts only a few seconds. In the second strategy, males fly around the emergence lows without stopping to inspect them, but sometimes inspecting nearby flowers on which they will mate with foraging females. When a female emerges, several males are immediately attracted to the spot and try mating with her nearly simultaneously. This can result in mating balls of one female and four or five males (Alcock & Buchmann, 2011). The large number of attracted males in both strategies suggests that attractive female pheromones are involved. However, currently such pheromones remain unknown.

Nesting

Very little information is available on the nesting habits of *Habropoda*, especially in Europe. Literature from North America reports that females build deep nests in well drained soils in the case of *Habropoda laboriosa* (Cane, 1994), whereas species such as *H. depressa* nests in hard-packed soil or clay (Barthell et al., 1998). Alcock et al. (1978) report that *H. pallida* nests in large aggregations.

Parasite

Bees from the genus *Melecta*, subgenus *Eupavlovskia* are parasites of *Habropoda*.

Floral preferences

Species like *Habropoda tarsata* and *Habropoda zonatula* forage predominantly on Fabaceae flowers; pollen analysis is required to establish whether they are broadly oligolectic on this family.



Type species: *Habrophora ezonata* Smith, 1854.

Synonyms: *Habrophora* Smith, 1854 (nec. Erichson);
Emphoropsis Ashmead 1899; *Meliturgopsis* Ashmead, 1899.

Etymology: *Habropoda*, from the Greek habro- = attractive, pleasant and poda = leg

Common names:

FR: Habropodes

ENG: Digger bees

List of species found in Europe:

1. *Habropoda ezonata* (Smith, 1854)
2. *Habropoda tarsata* (Spinola, 1838)
3. *Habropoda zonatula* Smith, 1854

References

Alcock J, Barrows EM, Gordh G, Hubbard LJ, Kirkendall L, Pyle DW, Ponder TL, Zalom FG (1978) The ecology and evolution of male reproductive behavior in the bees and wasps. *Zool J Linn Soc Lond* 64:293–326.

Alcock, J., Buchmann, S. (2011). The Mating System of *Habropoda pallida* Timberlake (Anthophorinae: Apidae). *Journal of insect behavior*, 24, 348-362. doi: 10.1007/s10905-011-9261-0

Barthell, John F., Daniel M. Bromberger, Howell V. Daly, and Robbin W. Thorp. "Nesting Biology of the Solitary Digger Bee *Habropoda depressa* (Hymenoptera: Anthophoridae) in Urban and Island Environments." *Journal of the Kansas Entomological Society* 71, no. 2 (1998): 116–36. <http://www.jstor.org/stable/25085826>.

Cane, J. H. (1994). Nesting Biology and Mating Behavior of the Southeastern Blueberry Bee, *Habropoda laboriosa* (Hymenoptera: Apoidea). *Journal of the Kansas Entomological Society*, 67(3), 236–241. <http://www.jstor.org/stable/25085519>.

Attributions

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