Pollinator Academy

Genus: *Schmiedeknechtia*

Female

Male

Genus: *Schmiedeknechtia* Friese, 1896

Clade: Anthophila

Family: Apidae

SubFamily: Nomadinae

Tribe: Ammobatoidini

Number of species of this genus found in Europe: 1

Morphology & diagnosis

Schmiedeknechtia are small-sized brood parasitic bees (4-5mm) with a long tongue. They have two submarginal cells and the clypeus is prominent. The clypeus, the base of the mandibles, the labrum and the antennal scape are yellow. The median segments of the antennal flagellum are as long as broad, or sometimes longer. The eyes of the males of Schmiedeknechtia are divergent on the dorsum of the head, and the anterior area of the first abdominal segment is slightly concave.

Summary of distinctive traits

- 2 submarginal cells
- Submarginal cell 1 much larger than cell 2 so that recurrent vein 1 connects with submarginal cell 1
- Oval marginal cell (not truncate)
- Long mouthparts

General comments on identification to species level

The identification of both males and females must be carried out under the microscope. The elements to examine are the last sternites, the structure of the (micro-)pilosity, the punctuations of the thorax, the maxillary palpus, and the three-dimensional structure of the genitalia for the males.

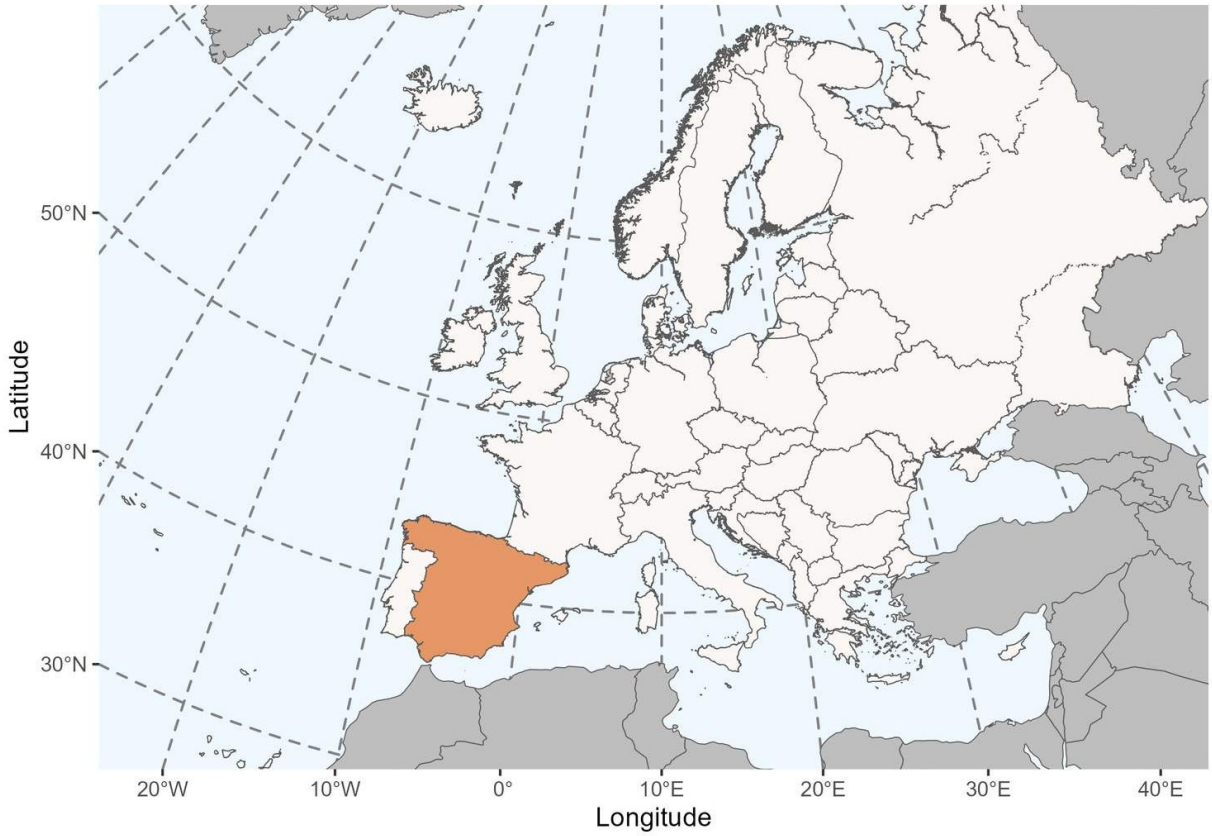
Morphologically similar genera, and how to distinguish them

- ***Schmiedeknechtia - Ammobatoides***
  Schmiedeknechtia body size is < 7mm, inner margin of the eyes straight, males with non-converging eyes, legs yellow.
  Ammobatoides body size is > 10mm, inner margin of the eyes concave, males with converging eyes, legs black.

- ***Schmiedeknechtia - Ammobates, Biastes, Chiasmognathus, Parammobatodes & Pasites***
  Schmiedeknechtia has an oval marginal cell, basal part of submarginal cell 1 is around twice as long as that of submarginal cell 2, reccurent vein 1 ending in submarginal cell 1.
  Ammobates, Biastes, Chiasmognathus, Parammobatodes & Pasites have a truncated marginal cell, basal part submarginal cell 1 is about as long as that of submarginal cell 2, reccurent vein 1 ending in submarginal cell 2.

Geographical distribution and global diversity

The genus *Schmiedeknechtia* contains 6 species with a strictly Palaearctic distribution: certain species are found from Algeria, Tunisia, Spain in the west and up to Turkey or Uzbekistan in the east. The Palaearctic fauna has been reviewed by Schwarz (1993) and only one species is encountered in Europe: *Schmiedeknechtia oraniensis* Friese, 1896.



Presence in Europe

Spain (mainland)

Biology

Seasonal life cycle

Schmiedeknechtia are brood parasitic bees, and they are strictly linked to the seasonality of their host species. They fly essentially in spring and summer.

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.

Nesting

Schmiedeknechtia never build their own nest: they exclusively depend on ground-nesting bees and their nests for reproduction. Then, the females are constantly patrolling the area searching nests of their host species. Once the hosts leave their nest to forage, they infiltrate into the host nests where they lay an egg on the reserves of food that the host has prepared for its own descendants. As most brood parasitic bees, have a tough cuticle and a strong sting which can potentially use against their hosts if they encounter each other in the nest or in the vicinity.

Host species

Schmiedeknechtia are specialized in bees of the genera Camptopoeum (Andrenidae, Panurginae) (Schwarz, 1993).

Floral preferences

As brood parasitic bees, the females do not actively collect pollen to feed their larvae. Males and females are then seen visiting a diversity of flowers from which they collect the nectar and a small quantity of pollen for their own consumption. However, certain known hosts are oligolectic. Thus, *Schmiedeknechtia* are therefore also automatically specialized on these plants, as their larvae only consumes the food resources accumulated by their hosts.

Type species: *Schmiedeknechtia oraniensis Friese 1896, monobasic.*

Synonyms: *Viereckella* Swenk, 1907

Etymology: The name of the genus was chosen in honour of the German entomologist Otto Schmiedeknecht, author of an

impressive monograph on wild bees of central Europe (Schmiedeknecht 1930).

Common names: n/a

List of species found in Europe:

1. *Schmiedeknechtia (Schmiedeknechtia) oraniensis* Friese, 1896

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