



Pollinator Academy

# Genus: *Lithurgus*



Female

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Male

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**Genus:** *Lithurgus* Latreille, 1825

**Clade:** Anthophila

**Family:** Megachilidae

**SubFamily:** Lithurginae

**Tribe:** Lithurgini

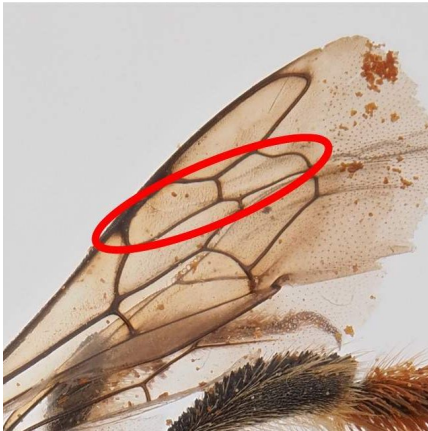
**Number of species of this genus found in Europe:** 3

# Morphology & diagnosis

Bees of this genus, 8 to 19 mm long, are robust, suggesting a slightly elongated *Megachile*, but the metasoma is somewhat flattened, and commonly has apical tergal and sternal hair bands. They have tridentate mandibles, the middle tooth being the longest. Females have a scopa on the ventral side of the abdomen, and apical fringes of hair on the metasomal terga. Females can easily be recognized by the elevated supraclypeal area, raised in a large plate or a swollen transverse bulge. The cuticula of their head and mesonotum is coriaceous, covered by many irregular ridges. The tegument of the gaster is smooth and shiny, thus conspicuously contrasting with that of the mesonotum. The apical margin of the metasomal tergum 6 bears a long lateral spine, its pygidial plate is produced into a narrow spine. Males can be recognized among all Megachilid bees by the combination of a small basitibial tooth-shaped plate on hind tibiae and a produced spine-shaped pygidial plate on the metasomal tergum 7.

## Summary of distinctive traits

- 2 submarginal cells (a)
- Females with ventral scopa (b)
- Lack of arolium (c)
- The middle tooth of their tridentate mandibles is the longest
- Last metasomal tergum with a spine-shaped pygidial plate (d)
- Hind tibia with a small basitibial plate
- Supraclypeal area of the female raised into a large plate (e)
- Dorsal face of the female's hind tibiae covered by spicules (f)



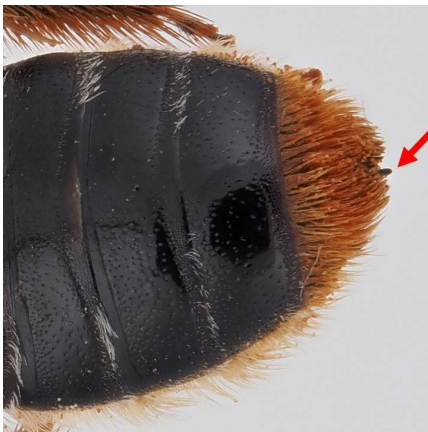
(a) *Lithurgus cornutus* Female



(b) *Lithurgus cornutus* Female



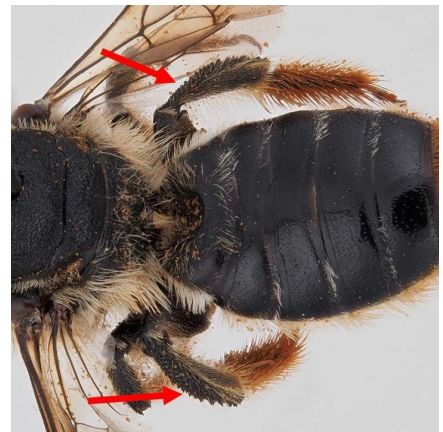
(c) *Lithurgus chrysurus* Female



(d) *Lithurgus cornutus* Female



(e) *Lithurgus cornutus* Female



(f) *Lithurgus cornutus* Female

## General comments on identification to species level

Among other criteria, the three European species can be identified by their size, the shape of the supraclypeal area, the pilosity of the gaster, shape of legs and genitalia.

## Morphologically similar genera, and how to distinguish them

- ***Lithurgus* - *Megachile***

*Lithurgus* species have a pygidial plate.

*Megachile* species do not have pygidial plate.

- ***Lithurgus* - *Osmia*, *Hoplitis*, *Heriades*, *Chelostoma*, *Haetosmia*, *Hofferia*, *Stenoheriades* & *Protosmia***

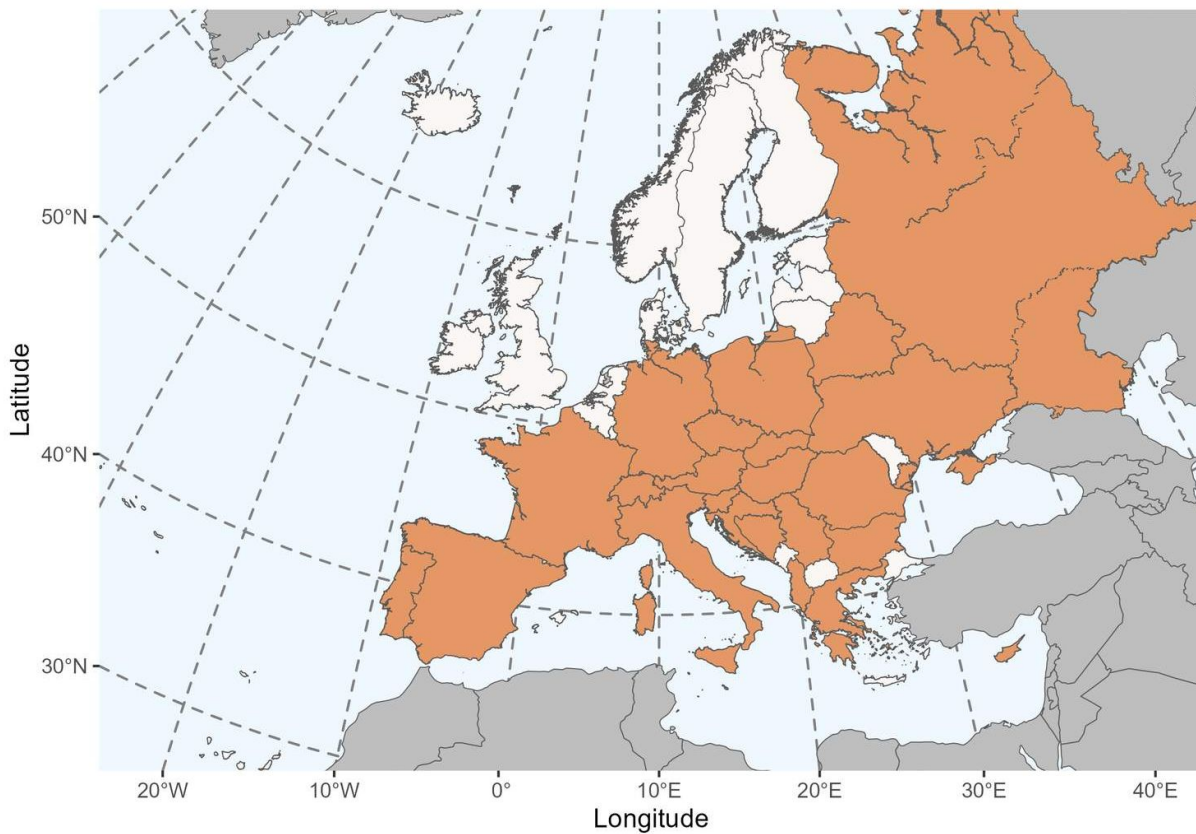
*Lithurgus* species have no arolium.

*Osmia*, *Hoplitis*, *Heriades*, *Chelostoma*, *Haetosmia*, *Hofferia*, *Stenoheriades* and *Protosmia* species have an arolium.

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## Geographical distribution and global diversity

The genus *Lithurgus* is represented worldwide by 26 species (Michener 2007), 5 of them in the Palearctic region (Zanden, 1986; Ortiz-Sánchez et al. 2007). In Europe they are mainly distributed in the central and southern countries.



## Presence in Europe

Albania, Austria, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, France, Germany, Greece, Hungary, Italy, Malta, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Switzerland, Ukraine.

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## Biology

### Seasonal life cycle

They are univoltine summer species. They hibernate as larvae.

## Reproduction

No details about their reproduction are known.

## Nesting

They chew their own nest in dead wood.

## Parasites

Parasites of *Lithurgus* include species of the genus *Stelis*.

## Floral preferences

They are specialist on Asteraceae tribe Cardueae and on Malvaceae.



**Type species:** *Andrena cornuta* Fabricius, 1787, monobasic.

**Synonyms:** *Lithurge* Latreille, 1825; *Liturgus* Ashmead, 1899.

**Etymology:** the name comes from the Greek root 'lith-', meaning 'stone', and 'urgus', meaning 'worker'

**Common names:**

FR: les Lithurges (= les abeilles des pierres)

DE: der Steinbienen

## List of species found in Europe:

1. *Lithurgus (Lithurgus) chrysurus* Fonscolombe, 1834
2. *Lithurgus (Lithurgus) cornutus* (Fabricius, 1787)
3. *Lithurgus (Lithurgus) tibialis* Morawitz, 1875

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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).

Banaszak, J. and Romasenko, L. 2001. *Megachilid bees of Europe (Hymenoptera, Apoidea, Megachilidae)*. Bydgoszcz University, Bydgoszcz.

Michener, C.D. 2007. *The bees of the world, second edition*. Johns Hopkins University Press, Baltimore and London, 953 pp.

Ortiz-Sánchez F. J., Ornos C. and Torres F. 2007. Taxonomic considerations on *Lithurgus sublaevis* Pérez, 1897 and *Lithurgus chrysurus* Fonscolombe, 1834 (Hymenoptera, Apoidea, Megachilidae). *Linzer Biologische Beiträge* 39 (1): 111-116.

Van Der Zanden 1986. Die palaarktischen Arten der Gattung *Lithurgus* Latreille, 1825. *Mitteilungen aus dem Zoologischen Museum in Berlin* 62: 53-59.

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## Attributions

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## Authors

Photographs: Paolo Rosa (ORBIT consortium)

Text: ORBIT consortium

Reviewers: Romain Le Divelec (ORBIT consortium)

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