

First record of Bethylidae (Hymenoptera) from Malta

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Bethylidae are true aculeates, having a retractable sting with venom that temporarily immobilizes the larvae of their host. Similar to the closely related cuckoo wasps (Chrysididae), females track down a concealed larva, place one or more eggs on it, and continue their search. No nests are built and hosts are rarely transported to a safer place. Bethylid females usually place four eggs on the back of a host larva. The wasp larvae are ectoparasitoids, feeding on haemolymph with only their mouthparts inserted in the body of the host, until they have reached the required size to pupate. They then quickly consume the remaining internals of the host larva and start spinning a cocoon.

As far as known no records of Bethylidae from Malta have been officially published. The cause will undoubtedly be the ‘low profile’ of these flat-bodied wasps, which prefer to remain hidden in densely packed foliage or woody substrates. David Mifsud reared one species and information on this record is reported below.

Sclerodermus domesticus Klug, 1809

Material examined: Malta, Buskett, 7.vi.2003, 7 females, reared from larvae of *Icosium tomentosum* in wood of *Cupressus* spp., leg. D. Mifsud

Sclerodermus species are specialized in predated the larvae of wood-boring beetles. The females traded the possession of wings millions of years ago in favor of a perfectly streamlined body that enables them to enter even the narrowest larval galleries in dead wood. Males are fully winged and look so different from their female counterparts that they are virtually impossible to match without evidence like copulation records or DNA analysis. Much is yet to be discovered about this genus, and at the moment only the most common species can be positively identified.

According to GORDH & MÓCZÁR (1990), 23 species are known to occur in Europe, of which 17 are restricted to the Mediterranean area. Records from North Africa are scarce. The only Scleroderminae recorded from Sicily, the closest large European landmass near Malta, is the minute, translucent yellow *Sclerodermus brevicornis* Kieffer 1906. This species is known from several other locations in the Mediterranean area, including North Africa.

Sclerodermus domesticus is one of the most common species of its genus in Europe. As a parasitoid of the much feared House longhorn beetle, *Hylotrupes bajulus*, it is often found amongst infested timber and old buildings. Its size can vary considerably, but in general the females are relatively large for Bethylidae. Females of most *Sclerodermus* species can be recognized by a lamellar clypeus, which is horizontally projected as a reversed swallow-tail at the front of the head. *S. domesticus* is entirely coloured reddish-brown. Many other red species have a somewhat darker head or scutellum. *Sclerodermus* males are recognized by a single, thick T-shaped nerve in each forewing. Keys to the species are out-dated and incomplete.

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At least five Cerambycidae species are known as hosts of *S. domesticus*, but also a few Anobiidae and Bostrychidae were reported. There is, however, a chance that some micropterous *Cephalonomia* females were mistaken for *Sclerodermus* when Anobiidae and Bostrychidae hosts were recorded.

Hosts (according to GORDH & MÓCZÁR, 1990): Anobiidae: *Anobium punctatum* DeGeer; *Ernobius mollis* (Linnaeus). Bostrychidae: *Dinoderus minutus* (Fabricius); *Heterobostrychus aequalis* (Waterhouse). Cerambycidae: *Arhopalus rusticus* (Linnaeus); *Callidium violaceum* (Linnaeus); *Chlorophorus annularis* (Fabricius); *Gracilia minuta* (Fabricius); *Hylotrupes bajalus* (Linnaeus); *Phymatodes testaceus* (Linnaeus); *Xylotrechus quadripes* Chevrolat.

More bethylids are expected to be present on Malta, including some other *Sclerodermus* species. Their hidden lifestyle will be the reason that Bethylidae are rarely found. Most specimens have been collected with malaise traps or pitfall traps, but sweeping grasses with a strong butterfly net can also be an effective way to find specimens of this family. On Sicily, at least 10 bethylid species have been recorded. More research might reveal that the Maltese bethylid fauna is actually richer than suspected.

REFERENCES

GORDH, G. & MÓCZÁR, L. (1990) A World Catalogue of the Bethylidae (Hymenoptera – Aculeata). Associated Publishers, *Memoir Series* 46: 374 pp.