



Conference Abstract

# Behavioural adaptations of cave orb spiders

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Received: 18 Sep 2018 | Published: 19 Sep 2018

Citation: Hesselberg T (2018) Behavioural adaptations of cave orb spiders. ARPHA Conference Abstracts 1: e29845. <https://doi.org/10.3897/aca.1.e29845>

## Abstract

Given the low abundance of flying insects in subterranean habitats, it is surprising that troglophile orb spiders in the genus *Meta* (family Tetragnathidae) are relatively abundant in subterranean habitats, especially in the twilight zone of European caves. As is the case for most subterranean invertebrates, we know very little about their behaviour. However, they have been reported to possess a number of specific behavioural adaptations to the cave environment. These include modifications of the traditional orb web such that webs do not have frame and anchor threads, but instead have the radii (the spokes in the web) attaching directly to the cave walls, and that cave spiders, unlike epigean orb spiders, allegedly engage in off-web foraging as well as on-web foraging. Here I review the evidence for these claims and compare these to the behaviour of epigean spiders in the related *Metellina* genus including preliminary comparative data on both morphology and web characteristics. In addition, I will discuss the potential of using the cave *Meta* spiders, especially *M. menardi* and *M. bourneti*, as model organisms for studying search behaviour, mate finding behaviour and sexual selection, as these spiders show an interesting life cycle with young instars leaving the cave environment to spend an instar in the epigean environment before returning. It is currently not known how spiderlings locate subterranean habitats, how males find female webs or whether the level of sexual selection is lower in the resource-limited subterranean habitat compared to the epigean habitat.

**Keywords**

cave spider, orb web, Tetragnathidae, behavioural flexibility, off-web foraging

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**Presented at**

24th International Conference for Subterranean Biology in Aveiro, Portugal