



First record of the spider family Symphytognathidae in Europe and description of *Anapistula ataecina* sp. n. (Araneae)

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Abstract

The spider family Symphytognathidae has never been recorded from Europe, being mostly present in tropical regions. Different collecting trips to a cave system in Portugal revealed several specimens of a new species of Symphytognathidae here described, *Anapistula ataecina* sp. n. This is one of the smallest spiders described to date. The species is almost exclusively known from the Frade Cave System in Portugal which is partly endangered by limestone quarries. No males were found to date despite many collecting trips to the caves during more than three years. Parthenogenesis could therefore be responsible for the species reproduction. Its web, with a sheet-like structure, seems atypical for the family and for the genus. Details on the eggsacs and spinneret morphology are also given.

Key words: Araneoidea, cave, endangered species, morphology, new species, parthenogenesis, Portugal, spider, spinnerets, troglobite

Introduction

The spider family Symphytognathidae, with its limits defined by Griswold *et al.* (1998) and Schütt (2003), currently comprises six genera and 61 species (Lin & Li 2009; Miller *et al.* 2009; Platnick 2009). It includes minute, lungless spiders, with the chelicerae fused wholly or in part, female pedipalp reduced or absent, reduced number of eyes, reduced colulus, and the sternum broadly truncated posteriorly (Forster and Platnick 1977; Griswold 1987; Griswold *et al.* 1998; Schütt 2003; Miller *et al.* 2009). This combination of characters will diagnose the family, but most characters are shared with other spider families, so good synapomorphies for the family as currently circumscribed are still to be found and defined. Griswold *et al.* (1998) described the spinnerets of symphytognathids in details and pointed out that the two aggregate spigots (AG) on the posterior lateral spinnerets (PLS) share a common basis, and Miller *et al.* (2009) suggested that the AG spigots on a shared base could be a potential synapomorphy for the family.

To this family belong the smallest spiders ever described, the male of *Patu digua* Forster & Platnick, 1977 with a total body length of only 0.37 mm and the females of *Anapistula caecula* Baert & Jocqué, 1993, *A. bifurcata* Harvey, 1998 and *A. jerai* Harvey, 1998, all with a total body length of 0.48 to 0.55 mm. Symphytognathids are mainly distributed in the tropics, but can also be found in south temperate regions (Fig. 1), where they live in the litter of rainforests and similar moist habitats. They are rarely collected, but due to their minute size they are easily overlooked and more species should certainly be expected from all parts of the world.

A relatively low carapace and the existence of posterior tracheal spiracles set the genus *Anapistula* apart