

## First record of anaxyelid woodwasps (Hymenoptera: Anaxyelidae) in Lower Cretaceous Spanish amber

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### Abstract

A new species of the family Anaxyelidae (*Eosyntexis parva* n. sp.) is described. This is the first record of the family from Lower Cretaceous Spanish amber. The specimen is mostly well preserved, except for dorsally. This makes it possible to identify several important details rarely or never observed in compression fossils. *Eosyntexis* spp. and the closely related genus *Cretosyntexis* are confined to the Eurasian Lower Cretaceous, whereas the extant monotypic genus *Syntexis* is restricted to western North America. The morphology of this new species suggests xylophagous habitus, and its relation with *Syntexis libocedrii* implies a possible relationship with burned wood, apparently a frequently available resource in northern Spanish forests of the Lower Cretaceous.

**Key words:** “Symphyta”, Albian, Peñacerrada, Basque Country, Spain

### Introduction

The new species is placed into the Anaxyelidae that was defined by Martynov (1925) for fossil specimens from the Jurassic of Turkestan within the “Symphyta”.

To date, 12 genera and 27 species of the family Anaxyelidae have been described. Of these, there is only one extant species, the incense cedar wood wasp *Syntexis libocedrii* Rohwer, 1915, recorded from southwestern USA (California, Idaho, Oregon). All previous extinct taxa were found as compression fossils in sedimentary rock, mainly carbonate deposits, but also tuffaceous siltstones and mudstones in Daohugou (China) (Rasnitsyn & Zhang 2004a), and detritic siltstones in Yixian (China) and Kempenday (Russia) (Sinitshenkova, 1992). This is the first species of Anaxyelidae to be found as an amber inclusion and, together with a few orussid fossils (*sensu* Vilhelmsen 2004; Engel 2008), it is the only non-apocritan fossil found in Mesozoic amber (Rasnitsyn 1977; Zhang & Rasnitsyn 2006).

*Syntexis libocedrii* can be found in the northwestern USA (California, Idaho, Oregon) (Rohwer 1915; Benson 1935). The incense cedar wood wasp has very unusual ovipositing behaviour: it lays its eggs into recently burnt or even still burning wood of some cupressacean conifers, such as *Libocedrus decurrens*, *Juniperus occidentalis*, and *Thuja plicata* (Middlekauff 1964). The male was first described, the host plants identified and the life cycle found to be annual, only much later (Middlekauff 1964, 1974).

Rohwer (1915) described *Syntexis libocedrii* based on two female individuals and initially placed the species in the Cephidae, but also noted some similarities with the Xiphydriidae. *Syntexis* resembles Cephidae in the morphology of the thorax and the basal part of the abdomen, but is more like Xiphydriidae in the structure of the palpi, the antennae, long malar space, ventral elongation of the cheek, wing venation, elongate female