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Hyptia deansi sp. nov., the first record of Evaniidae (Hymenoptera) from Mexican amber

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Abstract

Hyptia deansi sp. nov. represents the first record of Evaniidae (Hymenoptera) from Lower Miocene to Upper Oligocene Mexican amber, Simojovel, Chiapas, Mexico and is described based on a well preserved female specimen. Phylogenetically relevant morphological characters are discussed with reference to fossil and extant genera of Evaniidae. The new fossil is placed in the extant New World genus *Hyptia* Illiger 1807, based on the presence of just a single fore wing cell, the absence of tubular veins M+CU, 1CUa, 1Cub, and the presence of 11 flagellomeres.

Key words: amber, fossil, Lower Miocene, Upper Oligocene, Mexico, systematic palaeontology, Evanioidea

Introduction

Most Mexican amber originates from mines around Simojovel, Chiapas, Mexico. The amber-bearing strata extend from the Balumtun Sandstone of the Lower Miocene to the La Quinta Formation of the Upper Oligocene (Poinar & Brown 2002), with ages ranging from 22.5–26 Myr (Berggren & Van Couvering 1974). However, because the amber is found in secondary deposits, these dates only provide a minimum age.

Mexican amber remains relatively poorly studied, although Solórzano Kraemer (2007) recently provided an extensive account of the insect inclusions, including a list of undescribed specimens from many insect orders and families. Although over 650 hymenopteran inclusions are known, relatively few of these have been described (see Solórzano Kraemer 2007 for details). Solórzano Kraemer (2007) also indicated that an evaniid is known to occur as an inclusion, but to date, no evaniids have been described from Mexican amber.

Ensign or hatchet wasps (family Evaniidae) are distinctive solitary predators on cockroach eggs in oothecae. They have a hatchet-shaped metasoma with a tubular petiole and a shortened, laterally compressed gaster (*sensu* abdominal segments posterior to abdominal segment 2—Hymenoptera Anatomy Consortium 2012). The fauna comprises about 650 species concepts in 22 extant and 12 fossil genera (Deans 2005; Deans et al. 2012). Several species have been described from Mesozoic ambers ranging from the Early to Late Cretaceous (e.g., Rasnitsyn 1975; Basibuyuk et al. 2000a, 2000b; Basibuyuk & Rasnitsyn 2002; Deans et al. 2004; Engel 2006), in addition to relatively modern species in Tertiary ambers (e.g., Brues 1933; Nel et al. 2002a, 2002b; Sawoniewicz & Kupryjanowicz 2003)—see Table 1. Several other evaniids have been described from non-amber deposits, mostly early to late Cretaceous (see Table 1), while *Procretevania pristina* Zhang & Zhang 2000, from the Upper Jurassic Yixian formation of Beipiao, Western Liaoning, is the oldest fossil evaniid to date.

Herein we provide the description of a new species of Evaniidae from Mexican amber and contribute to the knowledge of the Miocene/Oligocene diversity of parasitoid wasps

Materials and methods

The amber specimen was immersed in 50% glycerol in distilled water and images were taken using a Visionary

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