



A new genus of Sycoracinae (Diptera: Psychodidae) from Upper Cretaceous amber of New Jersey



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ARTICLE INFO

Article history:

Received 28 December 2013
Accepted in revised form 2 May 2014
Available online 3 June 2014

Keywords:

Sycoracinae
Psychodidae
Xenosycorax
New Jersey
Amber
Cretaceous
Turonian
gen. nov., sp. nov.

ABSTRACT

We describe herein a new genus and species of Sycoracinae (*Xenosycorax engeli*). This new taxon is characterized, described, illustrated and its taxonomic position is discussed. This discovery is very interesting for the understanding of the evolution of this group.

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1. Introduction

Sycoracinae are tiny flies with some species bearing functional mandibles and having blood-feeding behaviour like phlebotomine flies. They constitute a small group within Psychodidae in modern fauna, represented by nearly forty species belonging to three genera.

Sycoracinae were first classified within the subfamily Trichomyiinae after the wing vein Rs three-branched with four radial veins instead of Rs four-branched and with five radial veins as in the psychodoids (R4 and R5 being fused and forming R4+5 in both Sycoracinae and Trichomyiinae). Edwards (1929) recognized the difference between *Sycorax* and *Trichomyia* Haliday, 1839 (Sycoracinae were only represented by that time by the genera *Sycorax*), and suggested that *Sycorax* should be classified in a separate tribe of the Trichomyiinae or preferably as a separate subfamily. Jung (1954, 1956) recognized a separate subfamily for *Sycorax*, but thereafter (Jung, 1958) he reverted to the single subfamily Trichomyiinae, like Hennig (1972). For Duckhouse (1972), Vaillant (1978) and Wagner (1997), Sycoracinae is considered as a separate subfamily.

Fossil record of Sycoracinae is scarce but still considerable when compared with Recent representatives of the subfamily. Thus

fossils belonging to this group have been described from French Cenomanian amber (*Sycorax neli* Azar, Tahchy and Perrichot., 2007), Baltic Eocene amber (*Sycorax tumultuosa* Meunier, 1905, and *Sycorax prompta* Meunier, 1905), Ukrainian Rovno Eocene amber (*Sycorax ukrainensis* Azar, Nel and Perkovsky., 2013) amber, Western Amazonian middle Miocene amber (*Sycorax peruensis* Petrulevičius et al., 2011). Other fossil records of this subfamily are known as well from Cretaceous Burmese amber (several undescribed species, pers. obs.), Canadian Campanian amber (Quate and Vockeroth, 1981), Japanese Pleistocene copal (Saigusa, 1974).

We describe herein a new genus and species (*Xenosycorax engeli* gen. et sp. nov.) of fossil psychodid fly from Upper Cretaceous Turonian amber of New Jersey, USA. Sycoracinae is probably an old group within psychodids. It seems that it was much more diversified in the past than in the Recent entomofauna.

2. Material and methods

This study is based on a single specimen n° NJ-63 (female) from New Jersey amber (Turonian Raritan Formation, (Grimaldi and Nascimbene, 2010; Grimaldi et al., 2000), at a locality named Sunrise Landing, New Jersey, USA, deposited in the American Museum of Natural History, New York, USA. The amber piece was prepared as proposed by Azar et al. (2003) between two cover slips, using Canada Balsam as mounting medium. The specimen was examined under a Nikon SZ10 stereomicroscope and a Leitz

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Fig. 1. Microphotograph of the habitus of *Xenosycorax engeli* gen. et sp. nov., holotype, female, specimen n° NJ-63.

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