



## ***Microphorites* (Diptera: Dolichopodidae) from the Lower Cretaceous amber of San Just (Spain), and the co-occurrence of two ceratopogonid species in Spanish amber deposits**

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### **Abstract**

A well preserved female specimen of the extinct genus *Microphorites* Hennig, 1971 (Diptera: Dolichopodidae) is known from San Just Amber (Lower Cretaceous, Albian, East Spain) and described as *M. utrillensis* nov. sp. In addition, ceratopogonids from the same deposit have been recognized as specimens of *Protoculicoides skalskii* Szadziewski & Arillo, 1998 and *Leptoconops zherikhini* Szadziewski & Arillo, 2003 two species known previously in Spanish amber from Álava. The new specimens make it possible to complete and emend the original description of *P. skalskii*. Palaeoecological and palaeobiogeographical comments are provided.

**Key words:** Insecta, Diptera, Dolichopodidae, *Microphorites*, new species, Ceratopogonidae, *Protoculicoides*, *Leptoconops*, Cretaceous, amber, Spain

### **Introduction**

San Just Amber was discovered only recently (Peñalver *et al.*, 2007), and only small numbers of specimens are currently known. Its Diptera fauna is represented by families Ceratopogonidae (two species), Mycetophilidae and Chironomidae (to be described elsewhere) and Dolichopodidae (Microphorinae). Other arthropod orders present are Acari, Araneae, Isoptera, Blattaria, Orthoptera, Homoptera, Thysanoptera, Coleoptera and Hymenoptera.

Dolichopodids (Empidoidea, Dolichopodidae), commonly called long-legged flies, are a cosmopolitan family. They are predators and include about 6,000 described species, perhaps about 15,000 species in the Recent biota (Grimaldi & Engel, 2005). The definition of the family Dolichopodidae was expanded by Sinclair & Cumming (2006) to include all genera formerly assigned to the Microphoridae *sensu* Chvála. Based on their cladistic analysis, the monophyletic family Dolichopodidae now includes the subfamilies Microphorinae and Parathalassiinae, and the Dolichopodidae *s.str.* The Microphorinae comprises approximately 60 described species (Grimaldi & Engel, 2005) and it includes two extant genera, *Microphor* Macquart and *Schistostoma* Becker, and the fossil genus *Microphorites* Hennig. Fossil microphorines are uncommon and of great importance for cladistic analyses; for this reason any new findings of fossil representatives of this group are of particular interest, especially if they are preserved in Cretaceous amber. This is the case of a new female specimen found in San Just Amber (Lower Cretaceous, Albian, East Spain).

Ceratopogonids (Culicomorpha, Ceratopogonidae), commonly called biting midges, are found world-