



First fossil *Litoleptis* (Diptera: Spaniidae) from the Lower Cretaceous amber of San Just (Teruel Province, Spain)

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Abstract

In this paper *Litoleptis fossilis* **sp. nov.** a new fossil species belonging to the family Spaniidae (Diptera) is described. This is the first time the genus *Litoleptis* has been described from the fossil record. A comparison with extant species of *Litoleptis* and other fossil rhagionoids is done. The fossil is also compared to not closely related Diptera but having convergent wing venation. Palaeoecological and palaeobiogeographical comments are provided.

Key words: Insecta, Diptera, Spaniidae, *Litoleptis*, new species, Lower Cretaceous, amber, Spain

Introduction

Litoleptis is an extant genus traditionally included in the family Rhagionidae (subfamily Spaniinae). Today, rhagionids in its traditional sense are considered a polyphyletic family and Spaniidae is considered as a family (Stuckenberg 2001). The genus *Litoleptis* was described by Chillcott (1963) from Alaska (*L. alaskensis* Chillcott). Hennig (1972) added a new species *L. chilensis* Hennig from Chile and transferred to *Litoleptis* the species *Hilarimorpha orientalis* Frey described from Luzon, Philippines (Frey 1954). Nagatomi (1982) recorded two new species from Japan and Nepal but did not describe them. Finally, Yang *et al.* (1997) recorded an undescribed species from Yunnan, China. The genus is believed to have an Asio-Nearctic disjunct distribution, probably a relict of the Arcto-Tertiary flora, which survived during the Pleistocene in glacier free areas in eastern Asia and America (Saigusa 2006). Although rhagionids appear frequently in the Mesozoic and Cenozoic fossil record, both in amber and compression outcrops, *Litoleptis* was never previously found to date (Evenhuis 1994; Nagatomi & Yang 1998; Grimaldi & Cumming 1999), including the Spanish amber site of Álava (Alonso *et al.* 1999; Delclòs *et al.* 2007), which has yielded a large amount of dipteran inclusions.

Below we describe the first fossil species belonging to the genus *Litoleptis*. It is represented by a single female specimen preserved in a piece of amber from San Just outcrop in the municipality of Utrillas, near the village of Escucha (Teruel Province, Spain).

San Just amber was discovered very recently (Peñalver *et al.* 2007; Delclòs *et al.* 2007), and for that reason the number of specimens yielded is scarce up to now. Arthropod orders present as inclusions are: Acari, Araneae, Orthoptera, Isoptera, Blattodea, Psocoptera, Homoptera, Thysanoptera, Diptera, Coleoptera and Hymenoptera. Most of these fossils are still undescribed and only some Diptera, an oribatid mite and a spider web with its prey have been described (Peñalver *et al.* 2006; Arillo *et al.* 2008, in press).