

Exploring the Cretaceous diversity of snakeflies

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Snakeflies are fascinating insects with a largely unknown evolutionary history. Their unusual appearance inspired their common name, that is, a very long 'neck' (prothorax) and ovipositor used by females to place the eggs within wood crevices. Whereas snakeflies were once diverse and distributed throughout the world in different habitats, today only about 260 species restricted to cold temperate regions from the Northern Hemisphere are known. Although snakeflies achieved their 'pinnacle' during the Mesozoic Era, many questions are still open, namely due to their incomplete fossil record. Under what circumstances did the different extinct snakefly groups appear and disappear in deep time? How different was their biology (ecology, behaviour...) when compared with their modern counterparts? The present project will contribute to tackle these questions and others through the study of new snakeflies exquisitely preserved in 105-million-year-old amber from Spain. This project will entail: (1) morphological study of fossil snakeflies contained in four amber preparations using the OUMNH's excellent microscopic equipment, including writing descriptions, taking high-quality photographs, and making illustrations with a drawing tube; (2) systematic study of the fossil snakeflies through comparisons with fossil species described in the literature and extant specimens from the world-class OUMNH's pinned insect collections; (3) study of additional fossils that might be preserved together with the snakeflies in order to extract information of palaeoecological significance; (4) preparation and submission of a manuscript to a specialised scientific journal. This project will allow gaining experience in fossil interpretation, insect morphology and taxonomy, classic palaeontological methodology, and paper writing through the study of high quality samples and supervision by OUMNH researchers, and it is particularly valuable for students seeking a career in palaeontology and/or zoology. Overall, this is an unparalleled opportunity to work with unique, unstudied fossil insects and make a real contribution to science.



An extant snakefly from the OUMNH's pinned insect collections (left) and a fossil snakefly formerly described from Spanish amber (right).