

The first evidence of palaeo-wildfire from the Late Cretaceous of North Africa

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ABSTRACT

Although the fossil record of plant macro- and mesofossils, including fossil charcoal, is by its nature patchy in space and time, such remains play an important role for the interpretation of palaeoenvironmental and palaeoclimatic developments in the continental realm. In Egypt, previous palynological studies on sediments from the Late Cretaceous suggested the presence of lush subtropical forests, which developed under warm and wet climatic conditions.

In the present study, the occurrence of palaeo-wildfires during the Late Cretaceous (Campanian) is witnessed for the first time based on material from a surface exposure in the vicinity of the Baris Oasis, south Western Desert, Egypt. Macroscopic charcoal was collected and subsequently analysed under a stereomicroscope and scanning electron microscope (SEM). The charred wood remains were identified as belonging to gymnosperms (most likely conifers), which were important components of the North African palaeoflora during the Cretaceous time. A literature survey of the Campanian-Maastrichtian palaeo-wildfire records in Africa confirms that the charcoal remains analysed here are the first verified occurrence of palaeo-wildfires in the Campanian, and only the second in the Campanian-Maastrichtian one all over Africa.

Keywords: Charcoal; palaeo-wildfire; Late Cretaceous; Baris Oasis; Egypt.