Late Cretaceous spores, pollen and dinoflagellates from two boreholes (Nuqra-1 and 3) in the Aswan area, southeast Egypt

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Abstract:

Abstract A well diversified Campanian/Maastrichtian palynoflora has been recovered from two wells situated in the Atmur Nuqra area of southeast Egypt. Pteridophytic spores, pollen of gymnosperms and angiosperms as well as dinoflagellates have been identified in addition to some fungal spores and freshwater algae. Angiosperm pollen include typical members of the Late Cretaceous Palmae Province such as Monocolpapollenites spp., Longapertites spp., Echitriporites trianguliformis, Scabratririopites simpiformis, Proteacidites sigalii and Spinizonocolpites baculatus. The Nuqra assemblages are similar to other West and East African assemblages and are outside (south) of a zone of intermixing with the northern hemispheric Normapolles Province. They are slightly different from the assemblages mentioned because of the absence of Mauritiidites, Ctenolophonidites, Tubistephanocolpites and others. Racemonocolpites is a pollen present at Nuqra and in coeval palynofloras in neighbouring Sudan, but it seems to be rare or absent elsewhere in the Late Cretaceous of northeast Africa. Among the identified palynomorph taxa are forms (Gabonisporis cristata, Echidiporites cf. barbeitoensis, Monocolpites marginatus, Racemonocolpites, Spinizonocolpites? kostinensis, Andalusiella mauthei) that are identified for the first time from Egypt. Based on the occurrence of biostratigraphically significant dinoflagellates such as Andalusiella, Cerodinium granulostriatum, Trichodinium castanea subsp. bifurcatum and Odontochitina operculata the studied sections are correlated with the Campanian Duwi (Phosphate) Formation although equivalents of the underlying Quseir and overlying Dakhla Formation may also be present. The upward increase in relative abundance of marine vs. terrestrial palynomorphs reflects a major marine transgression. Abundance of palm pollen and of pteridophytic spores related to water ferns (Ariadnaesporites) suggest a prevalence of humid tropical conditions during the deposition of the sediments examined.

Keywords:

Key-words Late Cretaceous, pollen and spores, dinoflagellates, palynological age, palaeoecology, palaeophytogeography, southeast Egypt.

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