Palynology and palynofacies of the Lower Cretaceous succession of the Matruh2-1X borehole, northwestern Egypt

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Abstract:

Abstract Palynological and palynofacies analyses were carried out on some Lower Cretaceous samples from the Matruh2-1X well, Northern Western Desert, Egypt. A refinement of the original chronostratigraphy has been suggested and the stages Barremian-Aptian, Aptian, Early and Late Albian are recognized. The palaeoenvironment was interpreted on the basis of the palynomorphs, in the light of their ecological preferences. It was fluctuating between marginal to open (inner-middle shelf) marine. A single horizon (at depth 2170 m) might reflect a continental condition and is thought to have occurred during the Early Albian. A warm/humid climate is thought to have mostly prevailed during deposition of the section. This is reflected in the palynofloras by abundance of ferns, and other hygrophilous spores, and rare xerophytes. Palms, as an important element in tropical humid lowlands of the coastal plains, dominate the terrestrial vegetation and associate petridophytes and other lowland inhabitants. Based on the recovered palynological organic matter two palynofacies are recognized. Data gathered from the theoretically estimated vitrinite reflectances, that are based on spore/pollen colouration, and visual petrographic kerogen analysis are used to define the source rock potentialities of the studied sediments.

Keywords:

Key words: Early Cretaceous, pollen and spores, dinoflagellate cysts, palynostratigraphy, palaeoecology, palynofacies, northwestern Egypt.

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