Paleocene Biostratigraphy and Sea Level Changes of the
northern Eastern Desert of Egypt

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with 6 figures

Abstract. Five foraminiferal biozones are established for the Paleocene sequence exposed in the northern Eastern Desert of Egypt. The biostratigraphic zonation proposed consists of (from bottom to top): the Morozovella trinidadensis, M. uncinata, M. angulata, Planorotalites pseudomenardii, and M. velascoensis Zones. Considerable quantities of reworked fossils have been discovered in certain horizons. The Paleocene Esna, Tarawan, and Dakhla Formations in Wadi Hawashiya section unconformably overly a succession of Early Maastrichtian age. In the Wadi Tarfa section the Paleocene Esna and Tarawan Formations unconformably overly a unit of Late Campanian age, announcing for the complete absence of the Dakhla Formation. Five unconformity surfaces are detected, two intra-Thanetian, a Thanetian-Danian, an intra-Danian, and a Danian-Cretaceous. Such gaps are due to later destruction rather than non-deposition. The eustatic nature of the Danian sea level changes is probably an echo of the Syrian Arc System. It is believed that local tectonic pulses caused the high oscillation of the sea level during the Thanetian time.

1. Introduction

The present study deals with two Paleocene sections from the southwestern extremity of the northern Eastern Desert of Egypt, covering the Wadi Hawashiya – Wadi Tarfa area. The study area is bordered by the slopes of El Galala El Quibliya Plateau to the north and by the watershed of Wadi Qena to the south (Fig. 1).

The Paleocene sections of the study area are composed of siliciclastic and carbonate rocks belonging to the Dakhla Formation (shale-facies), Tarawan Formation (carbonate-facies), and Esna Formation (shale-facies).


Paleocene biostratigraphy of the study area is included in few works: a micro-biozonation provided by Khalifa & El Sayed (1984) and a macro-biozonation proposed by Kassab (1990).

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