

Calcareous nannofossil biostratigraphy of the Cenomanian-Turonian interval (Cretaceous) from Jordan

Mohammad Alqudah

American University of Beirut, Department of Geology, Beirut, Lebanon; ma404@aub.edu

Mohammed Hail Hakimi

Taiz University, Geology Department, Faculty of Applied Science, 6803 Taiz, Yemen; ibnalhakimi@yahoo.com

Wan Hasiah Abdullah

University of Malaya, Department of Geology, 50603 Kuala Lumpur, Malaysia; wanhasia@um.edu

Mohammad Ali Hussein

Ministry of Energy and Mineral Resources, Geological Mapping Division, Amman, Jordan; Mohammad.AliHussein@rub.de

Ahmad Masri

Ministry of Energy and Mineral Resources, Geological Mapping Division, Amman, Jordan; aiamasri@yahoo.com

Jörg Mutterlose

Ruhr-Universität Bochum, 44801 Bochum, Germany; joerg.mutterlose@rub.de

During the Cenomanian, major shifts in the depositional environment of Jordan were associated with changes in the tectonic setting of the northwestern margin of the Arabian Plate. A detailed investigation of calcareous nannofossils was conducted on a carbonate section from Wadi Mujib (central Jordan). This section contains Cenomanian–Turonian deposits of the inner/mid shelf that overlie shallow subtidal to supratidal platform deposits of Cenomanian age (Abed, 1984; Alsharhan & Nairn, 1997; Schulze *et al.*, 2003). Twenty samples were analyzed for calcareous nannofossils, and the presence of *Microrhabdulus decoratus*, *Helena chiastia*, *Quadrum gartneri*, and *Lucianorhabdus maleformis* assigns the Wadi Mujib section an age of late Cenomanian to early Turonian.

The occurrence of *M. decoratus* and *Eiffellithus tur-riseiffelii* at the base of the section suggests a late Cenomanian age. The first occurrence (FO) of *Q. gartneri* marks the top of biozone CC 10 in sample 12 following Sissingh (1977) and Perch-Nielsen (1985). The top of biozone CC 11 is defined in sample 17 based on the FO of *L. maleformis*. Following the scheme of Burnett (1998), the last occurrence (LO) of *H. chiastia*, which was observed in sample 6, can be used to define the top of biozone UC 5.

References

- Abed, A. 1984. Emergence of Wadi Mujib (Central Jordan) during Lower Cenomanian time and its regional tectonic implications. *Geological Society, London, Special Publications 1984*, 17: 213–216.
- Alsharhan, A.S. & Nairn, A.E.M. 1997. *Sedimentary basins and petroleum geology of the Middle East*. Elsevier, Amsterdam: 843pp.
- Burnett, J.A. 1998. Upper Cretaceous. In: P.R. Bown (Ed). *Calcareous Nannofossil Biostratigraphy*. British Micropalaeontological Society Publication Series. Chapman and Hall/Kluwer Academic Publishers, London: 132–199.
- Perch-Nielsen, K. 1985. Cenozoic calcareous nannofossils. In: H.M. Bolli, J.B. Saunders & K. Perch-Nielsen (Eds). *Plankton Stratigraphy*. Cambridge University Press, New York: 427–545.
- Schulze, F., Lewy, Z., Kuss, J. & Gharaibeh, A. 2003. Cenomanian-Turonian carbonate platform deposits in west central Jordan. *International Journal of Earth Sciences*, 92(4): 641–660.
- Sissingh, W. 1977. Biostratigraphy of Cretaceous calcareous nannoplankton. *Geologie en Mijnbouw*, 56: 37–65.