Geophysical Research Abstracts
Vol. 14, EGU2012-1454-2, 2012
EGU General Assembly 2012

Stratigraphical and palaeontological characteristics of the Miocene deposits at Soluq area, NE Libya: First Results

E. O. Abdulsamad and S. M. El Zanati
University of Benghazi, Earth Sciences Department, Benghazi, Libya (esam000@yahoo.com)

The north-south scarp that runs in the middle of Soluq area, about 70 km southeast of Benghazi, attains altitudes towards the north, reaching a maximum of about 300 meters above sea level at wadi al Qattarah. The scarp fades gradually towards the south till at Antelat area and is represented by few meters high hills.
The plateau, however, extends eastwards rising to altitudes more than 450 meters above sea level. The plain (known as Soluq plain) extends westwards till near the Mediterranean coast with average width of about 50 kilometers.

Several outcrops along the main escarpment have been visited and spot sampled and two carbonate rock units separated by reduced deposits of clastic origin have been recognised based on lithology and faunal contents. The oldest rock unit is representing by the Benghazi Formation and the youngest rock unit is representing by Wadi al Qattarah Formation. Both rock units, nevertheless, are belonging to the Miocene Ar Rajmah Group and cover the greater part of the Soluq area.

The lower Benghazi Formation has been dated as Middle Miocene based on the presence of Lepidocyclina (Eulepidina) dilatat (Michelotti) and Borelis melo melo (Fichiteli). The latter taxon was recognized in different local areas of the same time-interval. The inconsistent occurrences and broken nature of tests of Borelis melo melo in some levels in the upper Wadi al Qattarah Formation, however, indicates that this taxon has been subjected to extensive reworking and Late Miocene age is ascribed to the major deposits of the later rock unit. This assumption may explain the occurrences of a number of lenses and irregular bodies of gypsum of the Messenian event in study region.

The high variety of the microfacies and fossil assemblages recognised in this study reflects (1) the variety of environmental settings and (2) the effect of the lithofacies on the fossil recovery. In general, larger and small foraminifera from the Miocene Ar Rajmah Group are a mix of infaunal and epifaunal taxa in which a prevalence of free, larger epifaunal types has been recorded. The depositional history of the studied sequence, however, has been interpreted in terms of Wilson standard carbonate facies belts and indicate an overall shallowing upward trend, from open platform (Benghazi Formation) to restricted platform and restricted lagoon-saline conditions (Wadi al Qattarah Formation).