

Basin Modeling of Margalla Hill Limestone (Hazara Basin), Pakistan and its Relationship with Equivalent Paleofacies in Potwar

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Abstract

Rumli area lies in the foothills of Islamabad, the capital territory of Pakistan. This area is traversed by the Main Boundary Thrust, whose eastern and western continuation on a large area is traceable in Indian occupied Kashmir, the disputed territory and Afghanistan, respectively. An attempt is made to find out the similarities between Margalla Hill Limestone of Hazara basin and the Sakesar limestone of Potwar basin. The study area in Hazara hosts Paleogene rocks namely Hangu, Lockhart, Patala formations, Margalla Hill Limestone, Chorgali and Kuldana formations. The Eocene Margalla Hill Limestone and the Chorgali Formation of Hazara basin were studied for the identification of microfossils and their depositional environments. Bio traces, depth ranges of fossils on slope and lithology variation on slope of deposition were taken as tools to correlate the Paleogene rocks of the Hazara and Potwar basins. The microfossil identification up to genus level and their distribution on the basin slope has been taken in consideration and used in interpretation for the depositional environment. Based on these studies, it is concluded that the Margalla Hill Limestone of Hazara basin and the Sakesar Limestone of Potwar basin are product of different environments of deposition. The analyses of benthic foraminifers suggest that the deposition of the Paleogene sequence has been deposited in shallow warm and shallow marine environments with varied microfossil record.