Journal of Himalayan Earth Sciences 43 (2010) 91-91

Depositional environments and diagenetic fabric of the Margalla Hill limestone Kohala-Bala area, Haripur, Hazara, Pakistan

Muhammad Azhar Farooq Swati[1], Muhammad Haneef[1], Shahid Jameel Sameeni[2], Yasir Naveed[3], Waseem Zeb [1], Naveed Akhtar [1] and Muhammad Owais [1]

[1] Department of Geology, University of Peshawar, Peshawar
[2]Institute of Geology, University of Punjab, Lahore
[3]Pakistan Petroleum Limited, Islamabad

This study deals with the microfacies and depositional environments of the Margalla Hill Limestone (Eocene) from the Kohala-Bala area, Haripur, in the southern Hazara Fold and Thrust belt. The stratigraphic succession of Hazara ranges in age from Pre-Cambrian to Holocene. In this study, Margalla Hill Limestone (Early Eocene) of Kohala Bala in southern Hazara is measured, sampled and described.

The Margalla Hill Limestone is 136m thick limestone with thin interbeds of clay/marls, and has conformable lower and upper contacts with Patala Formation and Chorgali Formations of the Eocene age respectively. The Margalla Hill Limestone is characterized by a wide variety of faunal and floral assemblages. These include larger benthic forams, planktic forams, echinoderms, mollusks and dasycladacean algae. Three microfacies identified include; 1) Miliolid *Lockhartia* Mud-Wackstone Microfacies, interpreted to have been deposited in a low energy, restricted circulation with slightly higher than normal salinity in a lagoonal environment of the inner shelf, 2) Nummulitic Wack-Packstone Microfacies, representing deposition in a subtidal conditions of the carbonate shelf, 3) Benthic Foraminiferal Wack-Packstone Microfacies, interpreted to have been deposited in the middle shelf area relatively offshore. These microfacies are repeated several times in the section reflecting fluctuating sea level conditions.The diagenetic overprinting of the rocks includes compaction, aragonite to calcite transformation, pressure dissolution, stylolites, vein-filling spar and development of nodular fabric.