

Sedimentology and diagenesis of Samana Suk Limestone and Sirban Formation exposed along Khote Di Qabar to Abbottabad road section, district Abbottabad, Khyber Pakhtunkhwa, Pakistan

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Abstract

The Sirban Hills represents the foot hills of the Himalayas trending in the north eastern direction. The Cambrian Sirban Formation of the Abbottabad Group and Jurassic Samana Suk Limestone are exposed along the Main Karakoram Highway from Khote-Di-Qabar upto Sirban Hills, Abbottabad, Southern Hazara. As a part of this research, samples were collected from the successions. Petrography and XRD analysis of the collected samples were carried and various facies, diagenetic fabric and depositional environments of the two lithologies were interpreted.

The Samana Suk Limestone composed of limestone, dolomitic limestone and chert is interpreted to have been deposited in shallow carbonate near shore inner shelf environment that records a set of post-depositional, diagenetic alteration marked by changes in fabric elements like micritization, neomorphism, dolomitization (non pervasive), selective silicification, pressure dissolution and formation of microstylolites resulting in the development of stylo-nodular fabric, tectonically-induced fracturing and generation of coarse spar. The Sirban Formation mainly comprised of dolomite, dolomitic limestone, chert, sandstone is interpreted to have been deposited in an evaporitic environment and records various stages of syn-depositional and post depositional changes resulting in the alteration of fabric, i.e., micritization, neomorphism, dolomitization (pervasive and non pervasive), pressure dissolution and insitu brecciation.