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Depositional environment and tectonics during the sedimentation of Jodhpur and Bilara Groups of Rocks, Marwar Supergroup of India

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The time span across the Precambrian-Cambrian boundary is very important in the history of Earth as the most significant changes have taken place in the lithosphere, biosphere, and atmosphere. Evidence of such changes is preserved only a few places where they are affected in general by post-depositional deformation and metamorphism resulting in modification and even total obliteration of the original syn-sedimentary signatures in the rocks. One such site is the deposits of the Marwar Basin which are more or less un-deformed and unmetamorphosed and represents a time period from Neoproterozoic to Lower Cambrian. The rocks of the Marwar Basin are designated as the Marwar Supergroup which attains a thickness of ca. 1000m (Chauhan, 1999). Malani igneous rocks, represented dominantly by rhyolites, form the basement rocks for the Marwar Basin. Pareek (1981, 1984) has subdivided the Marwar Supergroup into three groups: the Jodhpur Group, the Bilara Group, and the Nagaur Group. Each group has been further subdivided into formations. The Jodhpur and Nagaur Groups are represented by arenaceous facies and the Bilara Group is represented by a calcareous facies. The Jodhpur Group represents the oldest group of the Marwar Supergroup which unconformably overlies the Malani Igneous Suite. The Bilara Group represents the middle part of the Marwar Supergroup and is made up of calcareous facies with dominant lithology made up of dolomite, limestone and dolomitic limestone and shales. The outcrops of the Bilara Group are scanty and can be seen only in the southern part of the basin. The depositional environments of the Jodhpur & Bilara Groups are interpreted on the basis of the information derived from the outcrops during a field visit to the basin. According to our inferences, the Jodhpur group was deposited in the Fluvial environment whereas the Bilara group was deposited under Marine environment.

Biography

Vishavjeet Singh Goraya is a Geo Science Engineer and his area of expertise is he unconventional sources of energy from India and has presented many papers in the national and international conferences. The author is a very keen geo scientist from the University of Petroleum & energy studies.

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