SHORT COMMUNICATIONS

CARBON ISOTOPE OSCILLATIONS THROUGH THE MARWAR SUPERGROUP, WESTERN RAJASTHAN

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Marine limestones and dolostones faithfully record the carbon isotopic composition of the ocean water in which they formed (Wang et al. 1996). About 10 carbon isotopic oscillations that range from -6.2 to 5.4‰ (PDB) have been documented through the Early Cambrian (Ripperdan, 1994; Brasier et al. 1994a, 1996). Saltzman et al. (1998) investigated the carbon isotope stratigraphy of the well-dated carbonates of the Phanerozoic geological record and confirmed that large perturbations in the carbon isotope ratios of common carbonates may be used as a precise measure of time.

We have conducted close-spaced sampling of the carbonate sequence of Marwar Supergroup, western Rajasthan from different locations for geochemical studies including carbon isotopic compositions. We report new carbon and oxygen isotopic data for 23 carbonate samples collected around Bilara town (Fig.1). The results indicate the presence of multiple, short term negative (up to -10.31‰ PDB) and positive (up to +2.80‰ PDB) carbon isotopic oscillations in the studied sequence. A cursory examination of the data indicate that these short term oscillations appear to match with those reported for early lower Cambrian (Nemakit-Daldynian) carbonates world-wide. Detailed geochemical studies of the Marwar carbonates from other locations are, however, in progress.

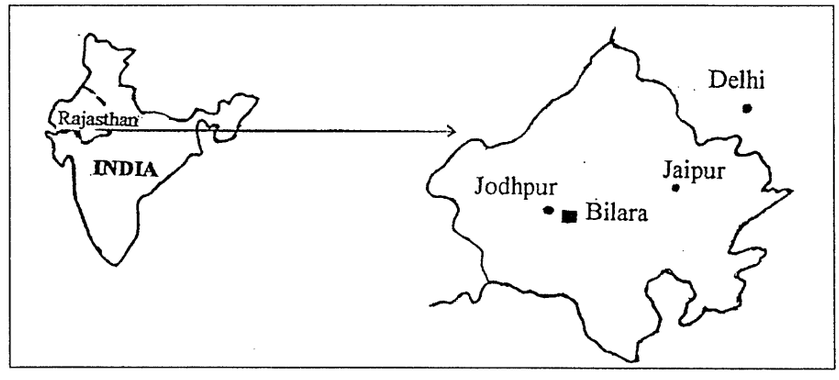

Fig.1. Location map of the study area.

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