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Lithofacies and Ichnology of Jumara Formation of Bharasar Dome, Kachchh, Western India

P. M. Solanki[1]*, N. Y. Bhatt[1] and S. J. Patel[2]

[1]*Department of Geology, M.G. Science Institute, Ahmedabad – 380 009, India*
[2]*Department of Geology, M.S. University of Baroda, Vadodara – 390 002, India*
[*]*E-mail: parassolankimg@yahoo.com*

Abstract

Bharasar dome of the Charwar hill range, south of Bhuj, Kachchh, western India, exposes ~180m thick rocks of the Jumara Formation (Callovian to Oxfordian). The Jumara Formation comprises clastic and non-clastic sediments from which six lithofacies are identified that include: intercalated calcareous shale-siltstone (ICSS), limestone (L), Intra-formational conglomerate (IC), massive feldspathic sandstone (MFS), grey shale (GS) and oolitic limestone (OL). The whole sequence is bioturbated frequently and consists of mono-dominant to diverse groups of ichnogenera. Total 24 ichnospecies of 17 ichnogenera were identified which represent wide range of behavioural activities, dominated by feeding structures (Fodinichnia). Maximum diversity and abundance of ichnogenera are found in ICSS lithofacies, whereas OL consists of dominant ichnogenus, *Zoophycos*. Trace fossils are poorly developed in limestone, MFS and IC lithofacies. Grey shale lithofacies does not reveal any trace fossil species. Preservation aspects, behaviour and morphology of these trace fossils are discussed to understand the depositional environment. The sedimentological characteristics and associated trace fossils indicate shoreface to offshore environment of deposition for the Jumara Formation of Bharasar dome.

Keywords: Trace fossils, Lithofacies, Environment, Bharasar Dome, Jurassic, Kachchh, Western India