

## **PERMIAN LACUSTRINE SEDIMENTS OF SATPURA GONDWANA BASIN: PALEOGEOGRAPHIC AND TECTONIC IMPLICATIONS**

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Late Permian Bijori Formation of the Satpura Gondwana basin comprise more than a km thick sediment package characterised by m - dm scale alternation of sandstone and carbonaceous shale. Abundant leaf impressions and rare vertebrate fossils have been noted from the succession. Three major facies have been recognised. 1. Distributory channel facies with plano-concave sandbodies dominated by unidirectional trough and planar cross-beds showing northward paleoflow. Sand bodies show thinning and fining upward trend. 2. Storm and wave reworked bar facies with bi-convex sandbodies laterally interdigitating with heterolithic sand- mud units. The sandbodies consist of a variety of wave and combined flow generated bedforms including hummocky and swaley cross-stratification. Root-turbation and desiccation features occur at several levels. 3. Open lacustrine facies of laterally extensive carbonaceous shale and interlayered fine sandstone. Thin laminations, wave ripple strata, bioturbation and rootlet horizons are common. East-west orientation of the wave-ripple crests, all through the formation, implies E-W trend of the lake shoreline. The north-flowing rivers traversed the southern shoreline to debauch in the lake and waves reworked these sediments into submerged, shore-parallel bars. Inferred E-W orientation of the lake matches well with the basin axis revealed by the gravity anomaly map. Development of an axial lacustrine system indicates rapid tectonic subsidence during late Permian. Unconformably overlying coarse, braided fluvial deposit of Pachmarhi Formation, on the other hand, signify a major paleogeographic reorganisation and base level fall in the Satpura basin during Permo-Triassic boundary event.