

Pictorial Geology of the Evolution of East Coast of India during Mesozoics with Special Reference to Krishna Godavari Basin

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The evolution of East Coast of India from Permian to end of Cretaceous is traced pictorially. Peninsular India had an imprint of Hercynian epiorogeny, manifested in the formation of regional geofractures and rift systems. East Coast basins -Bengal, Mahanadi, Krishna Godavari, Pennar, Palar and Cauvery are pericratonic with horst graben type of basin architecture upto Late Jurassic. Close of Mesozoic marked by regional transgression, basinal tilt and formation of monoclinical post-Mesozoic sedimentary cover.

Different continental fits offered by various authors are analysed to correctly depict evolution of Indian East Coast. Structural grain and basin architecture of pre and post drift basins of India are compared to that of western and north-west Australian basins of Canning and Carnarvon.

Basin evolved during Upper Jurassic due to drifting and rifting of the Indian plate from Gondwanaland. Horst and graben existed within KG from Mid Jurassic to Lower Campanian which gradually filled up by lacustrine and alluvial fan deposits along with fluvial sediments during Mid-Late Jurassic. Carbonates and fan deltas developed along periphery of highlands while turbidite sands in association with deep water shales were deposited on slopes and in basins by Cretaceous end. Two major transgressions, interrupted by regression during Upper Turonian are observed. Regular KG coastline and shelf/ slope system developed during Lower Campanian. Tertiary period commenced with Razole volcanics under sub-aerial and sub-marine conditions.

Inferences drawn are aided by wireline logs, core and cutting data, biostratigraphic data as well as formation thickness inferred from drilled wells and seismic data. These have been pictorially depicted at different ages and stages, each formation wise, by geological sections, paleostructural analysis, structure and isopach maps along with paleo-geography sketches and schematic depositional diagrams narrating the whole inferred story of the genesis of Mesozoic sequences of East Coast in general and KG Basin in particular.