

APPLICATION OF INDIAN CRETACEOUS STAGES IN THE SUBSURFACE OF JAISALMER BASIN, RAJASTHAN, INDIA.

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Micropaleontologists of Oil and Natural Gas Corporation Ltd. have come out in 1996 with a new chronostratigraphic subdivision of Cretaceous sediments suitable for Indian basins. The new classification was made with a broad vision of its usefulness throughout Indian sedimentary basins and a ready tie-up with standard stages of Europe. The designated type sections of Indian Cretaceous stages are the classical successions of Cauvery and the subsurface of Krishna-Godavari basins. The purpose of this paper is to demonstrate that the East-Coast stages are fully applicable to Rajasthan basins. The marine Cretaceous sediments penetrated by deep wells in the Jaisalmer Basin cover an interval from Hauterivian to Santonian. Five Indian stages were proposed for this time interval in East Coast basins. All the five of them can be applied to the Jaisalmer Basin. The Indian stages with the equivalent European stages in brackets include Musian (Hauterivian to Barremian), Kallakudian (Aptian to Albian), Nallurian (Albian to Cenomanian), Anaipadian (Lower to Middle Turonian), Trichinopolyian (upper Turonian to lowest Campanian). Of these the Musian stage in KG Basin was defined on the basis of Dinoflagellate cysts while other four are based on planktic foraminifera. One significance of sections of Ghotaru and other deep wells of Rajasthan is that they provide planktic foraminiferal control for defining the Musian stage. The biochronohorizons used in the definition of five Indian stages are: (i) The FAD of *G. hoterivica* at the base of Musian; (ii) FAD of *Hedbergella planispira* at the Lower boundary of Kallakudian; (iii) FAD of genus *Rotalipora* at the lower limit of Nallurian; (iv) LAD of *Rotalipora* at the base of Anaipadian; (v) LAD of *Helvetoglobotruncana helvetica* at the lower boundary of the Trichinopolyian and (vi) LAD of *Marginotruncana coronata*/*Dicarinella asymmetrica* at the upper limit of Trichinopolyian. The two younger stages of the Cretaceous, namely Melmatturian (Campanian to Lower Maastrichtian) and Nagallurian (Middle to Upper Maastrichtian) are represented by a major hiatus in the Jaisalmer Basin. The oldest interval of the Cretaceous, probably equivalent to the Mannerian stage, are represented by unfossiliferous sands.