Early Eocene plant megafossil assemblage of western India: Paleoclimatic and paleobiogeographic implications

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Early Eocene plant megafossil assemblage of western India: palaeoclimatic and palaeobiogeographic implications

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ABSTRACT

The early Eocene is characterized by a warmer phase, even at high latitudes. The CO_2 level ranged from 1,000 to 2000 ppm due to the increase in volcanic activity. The climate dynamics of the Indian subcontinent and biotic exchange between the neighbouring continents can be traced by studying the Eocene fossil assemblages which are nicely preserved in the rock records. Fossil records from early Eocene sites are important for their potential contribution in our understanding of interactions between climate and biota. In western part of the Indian subcontinent, extensive lignite deposits are known in the states of Gujarat (Kutch and Cambay basins) and Rajasthan (Barmer and Bikaner-Nagaur basins). These lignite deposits have been investigated for their faunal and floral content. Based on the nearest living relatives (NLRs), it has been concluded that a highly diversified tropical evergreen forest was present in most of the basins of western India and this fact has been supported by the equatorial position of the Indian subcontinent during the early Eocene. Fossil records of Rhamnaceae, Combretaceae and Lythraceae known since the Late Cretaceous in India indicate their possible Gondwanan origin.

Keywords: Biotic exchange; early Eocene; Gujarat; Rajasthan; Palaeoclimate