

# Palaeoclimatic Clue of Central India during Maastrichtian Period

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**Abstract:** In the central India late Cretaceous or Tertiary system of volcanic rock formation is known as Deccan Traps. In peninsular region of India, these traps spread about a very large area of 5, 20,000 km covering almost all of Maharashtra, Madhya Pradesh, part of Gujarat and Andhra Pradesh marginally. In these beds, besides to all groups of plants, Ostracodes, Molluscus, fishes & other vertebrates flourished. The important fossiliferous localities of Maharashtra includes Malabar and Worli hills of Mumbai and Vidarbha region which includes Buldana, Amravati, Chandrapur, Kondhali, Mahurzari, Phutala tank, Takli and Sitabuldi near Nagpur; Nawargaon, Maragsur near Wardha; Jhargad, Sibla near Yeotmal. Fossil localities of Madhya Pradesh includes Singhpur, Mohgaonkalan, of Chhindwara Districts, Parapani, Shahpura, Ghugua, of Mandala district.

The important flora of Central India divided into two assemblages as follows:

I) The Vidharbha-Chhindwara Assemblage

II) Fossil assemblage from Mandla-Dindori district

From the analysis of fossil flora of both assemblage the following habitats and climatic conditions can be suggested (i) Coastal or estuarine – *Sonnertioxylon*, *Palmocarpus*, *Areoidocarpus*, *Cocos*. (ii) Mangrove and Saline habitat - indicated by *Acrostichum*, *Pandanaceoxylon*, *Palmoxylon*, *Viracarpus* and *Nipa*. (iii) Fresh water - indicated by fresh water algae. (iv) Marshy – Fungal forms which grew luxuriantly. *Acrostichum* and *Aeschynomene* a plant of marshy habitat. (v) Terrestrial and upland- indicated by conifers and other arborescent angiosperms. (a) The wet Evergreen to Semi-evergreen forest: - *Conifers*, *Cocos*, *Aeschynomene*, *Elaeocarpus*, and *Ailanthus*. (b) Dry deciduous forest – *Phoenix* (*Palmoxylon* sps.), *Grewia*, *Anacardioxylon*, and *Ebenoxylon*.

**Keywords:** Megaflora, Diversity, Fossils, Deccan Intertrappean beds, Maastrichtian

## REFERENCES

- [1]. Agashe, S.N. (1995). Paleobotany, Plants of the past, their evolution, Paleoenvironment and application in exploration of fossil fuels. Oxford and IBH publishing Co. Pvt. New Delhi.
- [2]. Barlinge, B.G. and Paradkar, S.A. (1979). Record of new fossil algal and Fungal forms from the Deccan Intertrappean Beds of India. The Botanique : 163-174.
- [3]. Bande, M.B. and Prakash, U. (1982). Palaeoclimate and Palaeogeography of Central India during the early Tertiary. Geophytology, 12(2): 152-165.
- [4]. Bande, M.B. Prakash, U. and Bonde, S.D. (1981). Occurrence of *Peyssonnela* and *Distichoplax* in the Deccan Intertraps with remark on the age of Chhindwara Traps and palaeogeography of the region. Geophytology, 11(2): 182- 188.
- [5]. Bande, M.B. and Shaila Chandra (1990). Early Tertiary vegetational reconstructions around Nagpur, Chhindwara and Mandla, Central India. In: Vistas in Indian Palaeobotany. Palaeobotanist, 38:196-208.
- [6]. Bande, M.B. Chandra, A. Venkatachala, B.S. and Mehrotra, R.C. (1988). Deccan Intertrappean floristic and its stratigraphic implications, in H. K. Maheshwari, (Eds). Palaeocene of India. Ind. Assoc. Palynostratigraphers, Lucknow: 83-123.
- [7]. Champion, H.G. and Seth, S.K. (1968). Forest Types of India. Delhi. Cook, C.I.E. (1958). The flora of the Presidency of Bombay. Vol. I-III. Botanical survey of India.

- [8]. Kapgate, D.K. (2005). Megafloral analysis of Intertrappean sediments with focus on diversity and abundance of flora of Mohgaonkalan, Mandla and adjoining areas of Madhya Pradesh. - Gond. Geol. Mag., 20(1): 11-24.
- [9]. Kapgate, D.K. (2012). Vegetation Succession and Environmental changes during Deccan volcanism (Late Cretaceous-Early Paleocene) in Vidarbha region. National Conference on “ Innovative Research Trends in Biological Sciences ” *Proceedings*, Akola : 1-4.
- [10]. Kapgate D.K. (2012). Paleovegetation and Paleoenvironmental Analysis of Deccan Intertrappean series of Vidharbha region. *Conf. on recent trends in Biosciences-Khamgaon*: 18-21.
- [11]. Kapgate, D. K. (2012). Plant Diversity of Deccan Intertrappean beds of Central India: *National Conf. on Biodiversity and its Conservation-Buldana*: 26-30.
- [12]. Kapgate D.K. (2013). Vegetation Succession and Environment changes in Central India during the Early Cenozoic. *Chinese Science Bulletin*, 58: 1-7.
- [13]. Kapgate, D.K. (2015). Climate and Diversity of the Geological Past: A case study from Central India. In: *Global Warming and Climate Change* ( 2015) Dashrath Kapgate (Asha Gupta, Editor) Akansha Publishing House, New Delhi: 167-195.
- [14]. Lakhanpal, R.N. (1970). Tertiary floras of India and their bearing on the historical geology of the region. *Taxon*, 19 (5): 675-694.
- [15]. Mahabale, T.S. (1979). Some interesting features of the flora of Deccan with special references to Western Ghats-The Sahyadris. *J. Indian bot. Soc.*, 58(3): 197-207.
- [16]. Mahabale, T.S. and Deshpande, J.V. (1957). The genus *Sonneratia* and its fossilallies. *Palaeobotanist*, 6(2): 51-64.
- [17]. Prakash, U. (1972). Palaeoenvironmental analysis of the Indian Tertiary floras. *Geophytology*, 2(2):178-205.
- [18]. Jain, R. K. (1974). A fossil fungi in Aspect and Appraisal of Indian Palaeobotany. *B. S. I. P. Lucknow* : 328.
- [19]. Ramanujam, C.G.K. (1974). Tertiary Angiospermous Pollen, in K.R. Surange, R.N. Lakhanpal and D.C. Bharadwaj (Eds.). -Aspects and Appraisal of Indian Palaeobotany, Lucknow: 332-340.
- [20]. Stewart, W.M. and Rothwell, W.G. (1993). *Paleobotany and the Evolution of Plants*. Cambridge Univ. Press, Cambridge.
- [21]. Trivedi, B.S. Verma, C.L. (1972). Fossil member of Musaceae in the Deccan Intertrappean beds of M.P. India. *Current Science*, 41(7): 265-266.