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Study of Modern Pollen Assemblages to Interpret Palaeoclimate in Tropical Deciduous Forests of Chhattisgarh, Central India

M.F. Quamar* and S.K. Bera

Birbal Sahni Institute of Palaeobotany, Lucknow-226007, India
** E-mail: quamar_bot@yahoo.co.in*

Abstract

The present paper seeks to establish relationship between modern pollen assemblages and present-day vegetation through pollen analysis of surface samples/moss polsters collected from Manendragarh Forest Range in Koriya District of Chhattisgarh State, Central India. The palynoassemblages revealed the dominance of non-arboreal pollen taxa (herbs) over the arboreal pollen taxa (trees and shrubs). The trees constitute average 35% pollen in the total pollen rain, whereas the average contribution of shrubs is only 3%. The prominent tree taxa are *Madhuca*, *Terminalia*, *Emblica* and Sapotaceae. Acanthaceae and *Rungia* are well-known shrubs. Among herbs, Poaceae (grasses) have relatively high frequencies followed by Cerealia, Cheno/Am and Tubuliflorae. *Xanthium*, *Evolvulus alsinoides* are other important herbaceous constituents. However, Liguliflorae, Malvaceae, *Justicia*, *Tribulus*, *Pedalium etc.* are comparable with their scanty presence in the herbaceous complex, constituting 61.78% average terrestrial pollen in the total pollen rain. Cerealia, Cheno/Am, Caryophyllaceae, Brassicaceae, *Artemisia* and *Alternanthera* document the agrarian activities in the study area. Cyperaceae, *Chlorophytum*, *Hydrocotyl*, *Solanum* sp., *Pimpinella* is suggestive of the marshy condition around the sampling site. *Typha*, *Lemna* and *Potamogeton* reflect some sort of aquatic nature of the study area too. *Pinus*, *Cedrus*, *Abies*, *Picea*, *Alnus* and *Betula* (in low frequencies) advocate their exclusive wind transportation from the Himalayas. Trilete and monolete (meagre) fern spores and lycopods indicate humid climatic condition. The comparative database generated on pollen rain/vegetation relationships will serve as modern analogue for the precise appraisal of the pollen sequences from the sediments in terms of past vegetation and climate.

Keywords: Pollen analysis, Pollen rain, Pollen assemblage, Vegetation, Tropical deciduous forests, Koriya, Chhattisgarh, Central India