Non-Pollen Palynomorphs from the Late-Holocene Sediments of Majuli Island, Assam (Indo-Burma Region): Implications to Palaeoenvironmental Studies

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Abstract A total 31 sediment samples from a 150 cm deep sedimentary core was examined for the Non-Pollen Palynomorphs (NPPs) analysis from the Sakali wetland in order to provide an overview of palaeoenvironment in Majuli Island (world largest river island), Assam for the late Holocene. About 25 varieties of non-pollen palynomorphs were reported, out of which fungal spores were at high abundance along with scanty occurrence of zoological remains reflecting the past climate vegetation and faunal interactions in the region. The dominance of coprophilous fungi like *Sordaria, Podospora, Ascodesmis, Coniochaeta* (almost 40%) indicates the past occurrence of vast open-land areas with grazing activities of herbivorous animals. Some non-coprophilous fungi like *Tetraploa, Dictyosporium, Cookeina* indicates the rich floral diversity around the study site. Other fungal remains like *Valsaria, Alternaria, Geastrum* and *Diploidia* along with the presence of zoological remains like *Neorhabdocoela* are indicative of the freshwater ecosystem with diversified rich flora indicating warm and humid climate conditions in the region. The presence of *Entophlyctis lobata* at the bottom of the sedimentary core indicates the relatively dry climatic conditions in the island because this fungal spore is specific of the temperate region. The frequent soil erosional activities could be evident through the dominance of branched and solitary *Glomus*, attributable to the high flood-prone region resulting in the mixing of local vegetation with the outlandish vegetation. The scanty occurrence of *Botryococcus*, supports the high energy levels in wetland water, attributed to frequent flood activities. All these NPP varieties of fungal, algal and zoological affinities collectively display the past forest cover, palaeo-depositional environment, past climatic conditions, anthropogenic response and grazing activities in Majuli Island of Assam.

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