



DIVERSITY OF FOSSIL ECHINOIDS (ECHINODERMATA) IN THE INDIAN SUBCONTINENT DURING THE LATE CRETACEOUS–PALAEOGENE

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ABSTRACT

The diversity of fossil echinoids in the Indian subcontinent with respect to the Late Cretaceous–Palaeogene palaeobiogeographic changes is discussed. The echinoid diversity in the Indian subcontinent shows an Eocene peak bounded by much lower diversities during the Cretaceous and the late Palaeogene (Oligocene) periods. The diversity remained very low through out most of the Oligocene epoch, indicating prolonged environmental deterioration related to climate cooling. Later, in the younger periods, it again increases considerably. Though the earliest report of echinoids in India and Pakistan is from the Permian sediments of Karakoram and Salt Range, they appear in appreciable numbers (from north to south) in the sediments of Jurassic succession of Himachal Pradesh, Rajasthan and Kachchh. Their prolific and diversified developments, however, is noticed in the Cretaceous and lower Palaeogene sediments in many parts of the Indian subcontinent. The majorities of the fossil elements constitute the Indo-Madagascar endemic center and express affinity with the fauna of European (western) Tethys. The increased faunal diversity from the Late Cretaceous onward points to the availability of the large number of ecological niches created possibly due to the increasing influence of tropical conditions. The closeness of the Indian echinoid fauna with that of the European (western) Tethys seems to be the result of palaeobiogeographic changes brought about by the northward drift of India during the Meso-Cenozoic times.

Keywords: Echinoids, Late Cretaceous–Palaeogene, Indian subcontinent, Taxonomic significance, Stratigraphic significance and Distribution