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The Microvertebrate fauna from the Palaeocene – Eocene of Akli Formation of Barmer Basin, Western Rajasthan, India

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The Palaeocene-Eocene Akli Formation is covering central part of the Barmer basin in the Barmer district, western Rajasthan, India. The Akli Formation consist mainly of argillaceous, siliciclastic and lignite facies, occur in form of continuous to discontinuous flat ridges and hillock. The interbedded clay-lignite sequences of Akli Formation occurs mainly at Giral, Jalipa, Shivkar, Sonari, Bhadres, Bishala and Kapuradi areas of the Barmer Basin. There are about 13 lignite seems separated by clay beds. The Clay - Lignite lithofacies comprises wide assemblage of mega and micro fauna. The clay horizon below lignite seam (LS-06) contain numerous shelly and skeletal material, comprising bones, teeth vertebrate, spicules spines and scales of fishes with calcareous biogenic debris. The biogenic material is fine grained and appears as cloudy clusters on outcrops possibly, formed due to intense bioturbation. As such some times this horizon lacks internal stratification. This horizon also contains gastropod remains. The carbonaceous clay occurring above LS-06 and below LS-05 also contains numerous microvertebrate and gastropod remains. The whole horizon is marked by the *in situ* gastropod burrows. The burrows cavities are filled with clay. The presence of pebble layers interbedded with carbonaceous clay indicating high energy environment or channels lag deposits. It seems that gastropod shells were dissolved and carbonate rich solution percolated and made coating around the sand pebbles to form carbonate rich pebble layers.

The Akli Formation is one of the most fossiliferous sequences in the Palaeocene – Eocene geological history of the India outside the Deccan-Volcanic Province. A large number of diverse groups of microvertebrates and reptilians and some unidentified specie of fauna and flora, were collected from clay - sand facies of the Akli Formation. Recovered well preserved mostly isolated teeth, but also include spines, scales and vertebrae from the Giral section of Akli Formation. The pisces assemblage are referable to *Odontaspis*, *Lamna*, *Eogaleus*, *Galeorhinus*, *Raja*, *Dasyatis*, *Lepisosteus*, *Pycnodus*, *Osteoglossidae incertae sedis*, *Apateodus*, *Enchodus*, *Siluriformes* indet. and *Crocodylidae* indet and suggest Palaeocene- Early Eocene age for the Akli Formation.

