

**PALYNOSTRATIGRAPHY OF MANIYARA FORT FORMATION (OLIGOCENE) IN THE DISTRICT OF KUTCH, WESTERN INDIA**

Palynological fossils obtained from the exposures at the cart-track junction of the village Goela-Walasar and Fulai-Ramania, on the southern side of the village Sarangwara (Sanosra), and in the nala near the vicinity of Maniyara Fort and the village Ber Mota have been studied. The miospore assemblage consists of pteridophytic spores, gymnospermous and angiospermic pollen, fungal hyphae, spores, microthyriaceous ascostromata, and microplanktons. Out of the total 39 genera and 33 identifiable species, 12 genera and 11 species belong to pteridophytes, 1 genus and 1 species to gymnosperms, 12 genera and 9 species to angiosperms, 7 genera and 6 species to fungi, and 7 genera and 6 species to microplanktons.

The palynological assemblage recovered from Sarangwara is dominated by angiospermic pollen, and the pteridophytic spores rank second; at Goela-Walasar and Fulai-Ramania cart junction and also at the nala cutting near the village Ber Mota, the microplanktons are very abundant.

On the basis of palynomorphs, the assemblages recovered from Maniyara Fort Formation have been divided into 3 cenozones :

- (3) *Aplanosporites robustus* Cenozone
- (2) *Trisyncolpites ramanujamii* Cenozone
- (1) *Polysphaeridium microtriainum* Cenozone

The reference locality of *Polysphaeridium microtriainum* Cenozone is near the cart-track junction of Goela-Walasar and Fulai-Ramania villages. Characteristic species of this cenozone are : *Polysphaeridium cephalum*, *Cleistosphaeridium heterocanthum*, *Membranilarnacia delicata*, *Homotryblium* sp., *Inapertusporites kedvessii* and *Phragmothyrites eocaenicus*.

The reference locality of *Trisyncolpites ramanujamii* Cenozone is at the Barkhana nala cutting, near the village Sarangwara. The followings are the characteristic species of this cenozone : *Leptolepidites chandrae*, *Striatriletes susannae*, *Laevigatosporites lakiensis*, *Polypodiaceasporites chatterjii*, *Polypodiisporites constrictus*, *Podocarpidites cognatus*, *Proxapertites scabratus*, *Palaeosantalaceasporites ellipticus*, *Dyadosporonites constrictus* and *Lacrimasporonites longus*.

The reference locality of *Aplanosporites robustus* Cenozone is the nala cutting near the village Ber Mota and Maniyara Fort. This cenozone is characterized by the following species : *Polysphaeridium microtriainum*, *Polysphaeridium cephalum*, *Cleistosphaeridium heterocanthum*, *Membranilarnacia delicata*, *Homotryblium* sp., *Inapertusporites kedvessii* and *Phragmothyrites eocaenicus*.

The Oligocene miospore assemblage is easily distinguished from the Lower Eocene palynoflora described by SAH AND KAR (1969, 1970) and VENKATACHALA AND KAR (1968, 1969a, 1969b) in the absence of *Cryptopolyporites*, *Umbelliferopollenites*, *Polybrevicolporites*, *Sastriipollenites*, *Pseudonothofagidites*, *Sonneratioipollis*, *Lakiapollis*, *Verrucolporites*, *Pellicieropollis*, *Meliapollis*, *Striacolporites*, *Ghosiacolpites* and *Thymelaepollis*.

The microfossils from Oligocene sediments described by BAKSI (1962, 1965) from Assam, and also from Bengal reported by the same author (BAKSI, 1972) do not show close similarity to the present assemblage.

## REFERENCES

- BAKSI, S. K. (1962). Palynological investigation of Simsang river Tertiaries, South Shillong Front, Assam. *Bull. geol. Soc. India.* **26**: 1-21.
- BAKSI, S. K. (1965). Stratigraphy of Barail Series in southern part of Shillong Plateau, Assam, India. *Bull. Am. Assoc. Petr. Geol.* **49**: 2282-2288.
- BAKSI, S. K. (1972). On the palynological biostratigraphy of Bengal basin. *Proc. Sem. Palaeopalynol. Indian Stratigr. Calcutta*, 1971: 188-206.
- SAH, S. C. D. & KAR, R. K. (1969). Pteridophytic spores from the Laki Series of Kutch, Gujarat state, India. *J. Sen mem. Vol.:* 109-121.
- SAH, S. C. D. & KAR, R. K. (1970). Palynology of the Laki sediments in Kutch. 3. Pollen from the bore-holes around Jhulrai, Baranda and Panandhro. *Palaeobotanist.* **18**: 127-142.
- VENKATACHALA, B. S. & KAR, R. K. (1968). Fossil pollen comparable to pollen of *Barringtonia* from the Laki sediments of Kutch. *Pollen Spores.* **10**: 335-339.
- VENKATACHALA, B. S. & KAR, R. K. (1969a). Palynology of the Tertiary sediments of Kutch-1. Spores and pollen from bore-hole no. 14. *Palaeobotanist.* **17**: 157-178.
- VENKATACHALA, B. S. & KAR, R. K. (1969b). Palynology of the Tertiary sediments in Kutch-2. Epiphyllous fungal remains from the bore-hole no. 14. *Palaeobotanist.* **17**: 179-183.

R. K. KAR

*Birbal Sahni Institute of Palaeobotany, Lucknow*