MEMBRANILARNACIA DONAENSIS SAXENA & RAO 1984, A JUNIOR SYNONYM OF *TUBERCULODINIUM VANCAMPOAE* (ROSSIGNOL 1962) WALL 1967

Saxena and Rao (1984) recorded a dinoflagellate cyst assemblage from the Oligocene and Lower Miocene sediments exposed along the Sonapur-Badarpur road section in South Shillong Plateau, northeastern India. They identified fifteen species belonging to nine genera, assigning two of them as new.

While going through the descriptions and illustrations of their dinocyst account, we realised that the illustrations of the holotype specimen of *Membranilarnacia donaensis* Saxena & Rao (1984; pl I-8-9) and that of *Tuberculodinium vancampoae* (Rossignol) Wall emend. Wall & Dale 1971 (in Saxena & Rao 1984; pl. II-24) are morphologically similar but are assigned to two different taxa This led us to re-examine the type and figured slides available at the museum, Birbal Sahni Institute of Palaeobotany, Lucknow.

Our restudy of the above specimens, and some other present in the assemblage in general and the holotype of *M. donaensis* in particular, under the Nomarski Differential Interference Contrast microscopy (rephotographed and documented here, figs. 1-3), revealed that the cysts are oblate to subspherical in shape characterised by a thick autophragm bearing several short, stout, barrel shaped, slightly distally expanded, pillar-like projections in the ectocoel supporting a thin enclosing ectophragm. The ectophragm is partly broken due to its fragile nature. The tubercles or pillars are more than 20 in number and are apparently arranged in latitudinal rows. Archaeopyle is antapical having a distinctive polygonal outline with one long and two short straight margins joined by a zig-zag fourth margin, though not very clear in the holotype.

The above features suggest the placement of *Membranilarnacia donaensis* Saxena & Rao 1984 under *Tuberculodinium vancampoae* (Rossignol 1962) Wall 1967, rather than to *Membranilarnacia* Eisenack emend. Williams & Downie 1966 which has a subspherical cavate cyst with apical archaeopyle and has the slender rods, pillars or processes within pericoel. Thus *M. donaensis* is considered a junior synonym of *T. vancampoae*.

Tuberculodinium vancampoae is a stratigraphically significant species ranging in age from Late Oligocene to Recent (Williams & Bujak, 1985). In India, it has been recorded from Oligocene of Kutch (Kar 1979, 1985; Jain 1980, 1982) and Early Miocene of South Shillong Plateau (Saxena & Rao 1984); Kutch (Kar 1985) and Kerala Basin (Jain 1980).

References

JAIN, K. P. (1980). Reallocation of some dinoflagellate cysts from Kutch, western India. *J. palaeontol. Soc. India*, **23, & 24 :** 140-143.

JAIN, K. P. (1982). Cenozoic dinoflagellate cysts and acritarchs from sedimentary formations of India : A critical review. *J. palaeontol.Soc. India, Spl. Publ.*, **1 :** 50-56.

KAR, R. K. (1979). Palynological fossils from the Oligocene sediments and their biostratigraphy in the district of Kutch, western India. *Palaeolotanist*, **26** (1) : 16-49.

KAR, R. K. (1985). The fossil flora of Kachchh IV. Tertiary palynostratigraphy. *Palaeobotanist*, **34 :** 1-280.

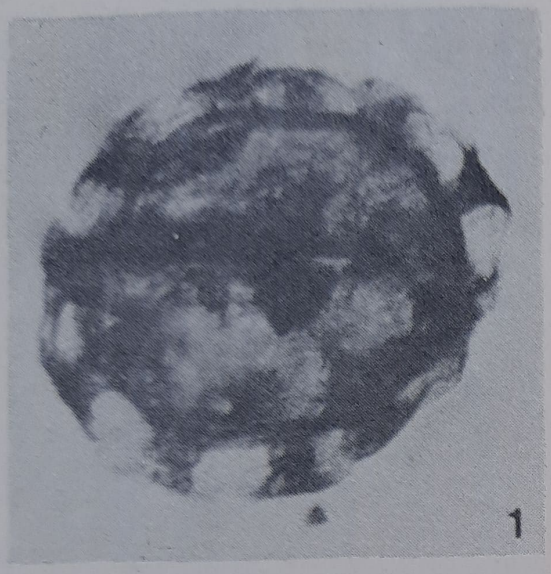
SAXENA, R. K. & RAO, M. R. (1984). Palynology of the Barail (Oligocene) and Surma(Lower Miocene) sediments exposed along Sonapur-Badarpur Road section, Jaintia Hills (Meghalaya) and Cachar (Assam). Part-I. Dinoflagellate cysts. *J. palaeontol. Soc. India*, **29 :** 52-62.

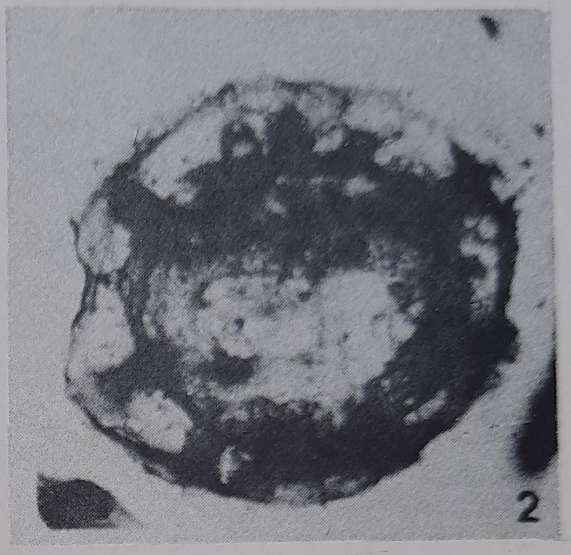
WILLIAMS, G. L. & BUJAK, J. P. (1985). Mesozoic and Cenozoic dinoflagellate cysts. *In : Plankton Stratigraphy* Bolli, H. M. *et al.* (eds)—Cambridge Univ. Press, 847-964.

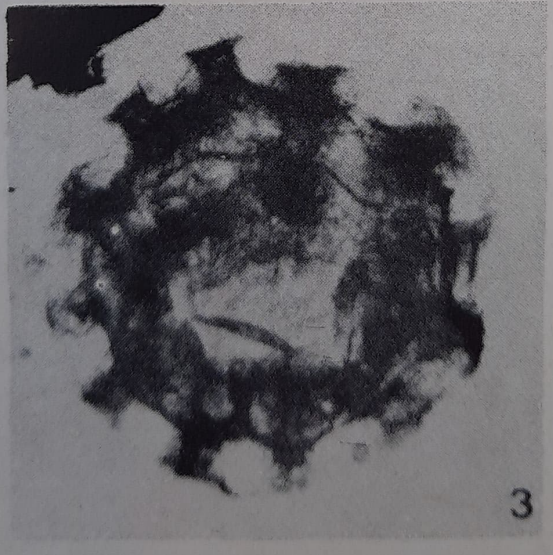
K. P. JAIN & RAHUL GARG

Birbal Sahni Institute of Palaeobotany, 53, *University Road, Lucknow* 226007, *India*

Figures 1—3. 1. *Tuberculodinium vancampoae* (Rossignol) Wall 1967; Slide No. BSIP 8374; Coordinates : 162.6×16.5; ×500. (Holotype of *Membranilarnacia donaensis* Saxena & Rao, 1984). **2.** *T. vancampoae* (Rossignol) Wall 1967; Slide no. BSIP 8375; Coordinates : 162.8×2.4; ×500. **3.** *T. vancampoae* (Rossignol) Wall 1967; Slide no. BSIP 8375; Coordinates: 142.9×14.3; ×500. (All coordinates refer to Olympus AH_2 Vanox microscope).


1


2


3