

OCCURRENCE OF EOCENE PALYNOFOSSILS IN SUBSURFACE TERTIARY SEDIMENTS OF KERALA

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Abstract

Eocene palynofossils are reported for the first time from a bore hole core drilled near Ambalapuzha in Alleppey District, Kerala between the depths of 400-571 m. Characteristic pollen genera recovered are: *Palmaepollenites*, *Couperipollis*, *Proxapertites*, *Meliapollis*, *Striacolporites*, *Retistephanocolpites* etc.

Introduction

The coastal Tertiary sediments of Kerala were first described by King (1882) and Foote (1883) were mainly considered to be of Early to Middle Miocene age and by Paulose and Narayanaswamy (1968). Recent investigation of subsurface sediments by Raha *et al* (1983) pointed out that the calcareous Quilon Formation occurs as a wedge in between the two sedimentary sequences, mainly of continental characters. Raha and Rajendran (1982) recovered some planktonic foraminifera including a species of *Hantkenina* from the lower part of the Quilon Formation indicating Lower Oligocene-Eocene age. The present note deals with the occurrence of Eocene palynofossils from a 600 m deep bore hole core drilled near Ambalapuzha in Alleppey District, Kerala.

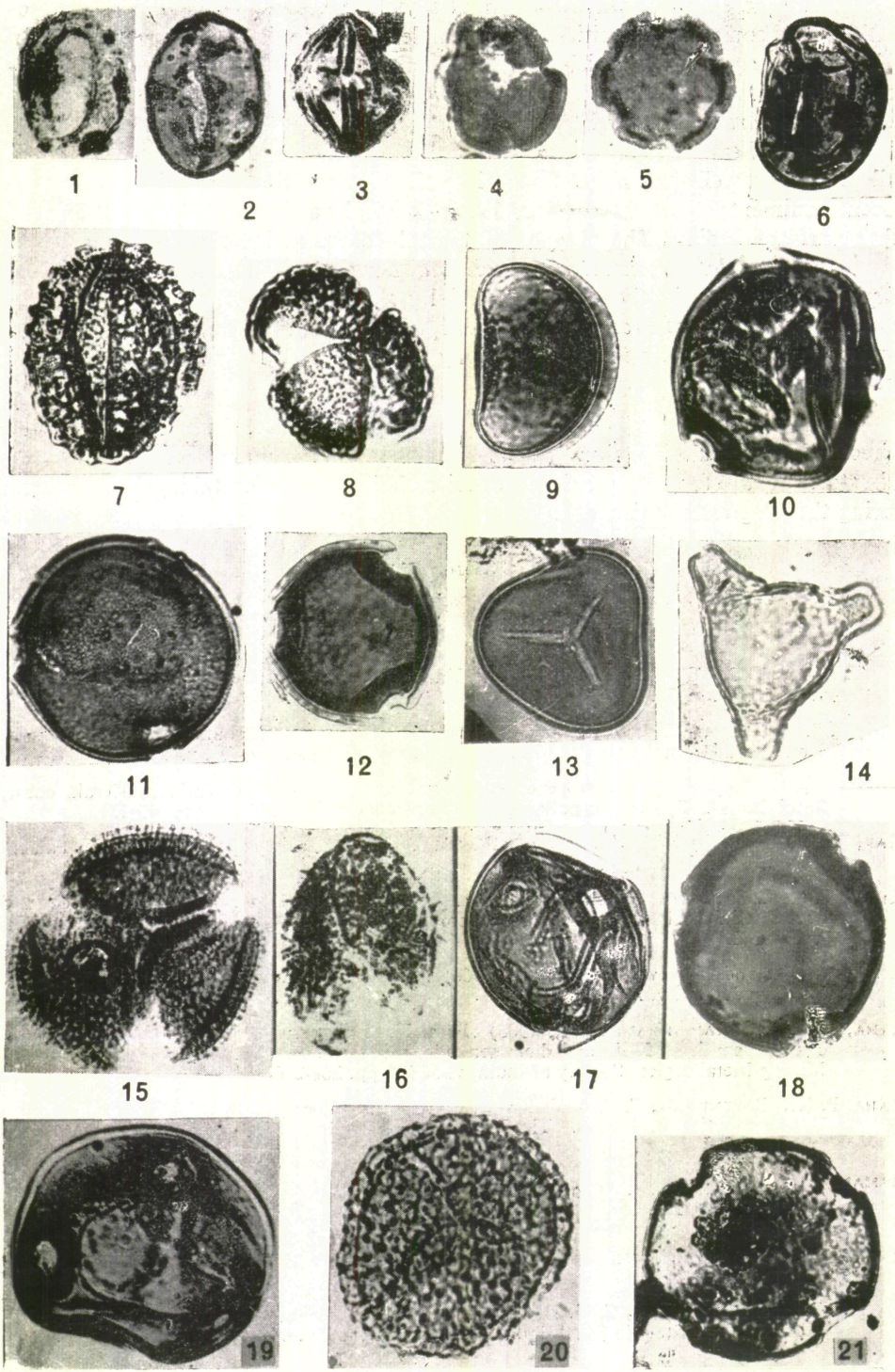
Palynology

The palynological investigation on the subsurface sediments of Kerala have been carried out by Rao (1959), Ramanujam and Rao (1973), Rao and Ramanujam (1975), Jain and Kar (1979), (1981) and others. For the present study one

EXPLANATION OF PLATE

(All photomicrographs are enlarged *ca.* × 500)

- 1-2. *Palmaepollenites kutchensis* Venkatachala & Kar
3. *Paleosantalaceaepites ellipticus* Sah & Kar
- 4-5. *Retistephanocolpites kutchensis* Sexena
6. *Laevigatosporites cognatus* Sah & Kar
- 7-8. *Tricolpites crassireticulatus* Dutta & Sah
9. *Laevigatosporites lakiensis* Sah & Kar
- 10-11. *Tribrevicolporites eocenicus* Kar
- 12, 18. *Dermatobrevicolporites dermatus* (Sah & Kar) Kar
13. *Cyathidites minor* Couper
14. *Triangulorites bellus* (Sah & Kar) Kar
15. *Retitrescolpites* sp.
16. *Couperipollis brevispinosus* (Biswas) Venkatachala & Kar
- 17, 19. *Lakiapollis ovatus* Venkatachala & Kar
20. *Cheilanthoidspora monoleta* Sah & Kar
21. *Meliapollis ramanujamii* Sah & Kar



hundred and sixty-six samples were macerated covering the entire depth of 600 m of the bore-hole of which 89 samples yielded spores, pollen grains, microplankton and some fungal entities. The samples from the depth range of 400-571 m yielded a rich assemblage which also include *Palmaepollenites*, *Couperipollis*, *Proxapertites*, *Retistephanocolpites*, *Meliapollis*, *Verrutricolporites*, *Retitribrevicolporites*, *Striacolporites*, *Triangulorites*, *Paleosantalaceapites*.

Palmaepollenites, *Couperipollis* and perhaps *Proxapertites* represent palm pollen. It is a well known fact that palm pollen are mostly restricted to Paleocene-Eocene sediments of Kachchh (Kar, 1985), Meghalaya (Dutta and Sah, 1970) and other parts of India. The absence of typical Paleocene index spore taxa such as *Dandotiaspora dilata*, *Dandotiaspora telonata*, *Dandotiaspora auriculata* and *Dandotiaspora densicarpa* in the present material, precludes an age assignment of Paleocene. The presence of *Proxapertites*, *Meliapollis*, *Triangulorites*, *Verrutricolporites*, *Retitribrevicolporites*, *Striacolporites* along with palm pollen are suggestive of an Eocene age.

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