PALYNOLOGY OF CORE 25, EUMERALLA No.1 (T.D. 10,308')

Six samples of core 25 (10,300 - 05 feet) have been examined palynologically in an attempt to date the sediments with reference to the spore-pollen zonation scheme of Dettmann and Playford (1969) and Dettmann (1969a,b). The sediments are from "Unit 2 " of the Eumeralla formation (White and Ribis 1969) and on the basis of their previously documented spore-pollen content (Dettmann 1963) are considered to be of Lower Cretaceous age. Further, Dettmann (1963, 1968) indicates a horizon within the Cyclosporites hughesi Subzone of the Dictyotosporites speciosus Zone, but notes that insufficient diagnostic criteria were obtained to ascertain which unit of the Subzone is represented.

In the present investigation two of the samples were found to contain good concentrations of poorly preserved (carbonized) spores and pollen grains. Species represented include Dictotosporites speciosus, Cyclosporites hughesi, Murospora florida, and Rouseisporites reticulatus. This data supports the view expressed previously (Dettmann 1969b) that an "unclassified unit" exists between the Murospora florida and Rouseisporites reticulatus Units of the Cyclosporites hughesi Subzone. On present knowledge the unit is characterized by the concurrence of Rouseisporites reticulatus and Murospora florida, and elsewhere is has been recognized only in Heathfield No.1 well (5990-6390 feet) within "Unit 2" of the Eumeralla formation.

On this basis it would appear that sediments at 10,300-05 feet in Eumeralla No.1 well are correlative with those between 5990 - 6390 feet in Heathfield No. 1 well. In proposing this correlation, it is assumed that none of the species cited above has been reworked from older horizons; such a possibility is not remote in view of the widespread distribution of reworked early Cretaceous forms thus far detected in the Otway Basin.

If in fact Murospora florida represents a secondarily deposited form in the Eumeralla and Heathfield horizons, then the sediments could be referred to the Rouseisporites reticulatus Unit of the Cyclosporites hughesi Subzone.

Spore-pollen Content of Eumeralla No.1 well, core 25

The following is a compilation of species identified in samples examined of core 25 (10,300-05 feet) from Eumeralla No.1 well. As noted previously the contained plant microfossils are poorly preserved (compressed and carbonized).

Spores:
Aequitriradites spinulosus (Cookson & Dettmann)
Baculatisporites comaumensis (Cookson)
Ceratosporites equalis Cookson & Dettmann
Cicatricosisporites australiensis (Cookson)
C. ludbrooki Dettmann
Coronatispora telata (Balme)
Cyclosporites hughesi (Cookson & Dettmann)
Cyathidites australis Couper
C. minor Couper
Dictyophyllidites crenatus Dettmann
Dictyotosporites speciosus Cookson & Dettmann
Foraminisporis dailyi (Cookson & Dettmann)
F. wonthaggiensis (Cookson & Dettmann)
Klukisporites scaberis (Cookson & Dettmann)
Leptolepidites verrucatus Couper
L. major Couper
Lycopodiumsporites austroclavatidites (Cookson)
L. circolumenus Cookson & Dettmann
Murospora florida (Balme)
Neoraistrickia truncata (Cookson)
Rouseisporites reticulatus Pocock
Stereisporites antiquasporites (Wilson & Webster)

Pollen:
Alisporites grandis (Cookson)
A. similis (Balme)
Araucariacites australis Cookson
Classopollis cf. classoides Pflug
Cycadopites nitidus (Balme)
Microcachryidites antarcticus Cookson
Podocarpidites cf. ellipticus Cookson

References

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4th June, 1970.

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