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INTERPRETATIVE

PALYNOLOGY REPORT

ON

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BY

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PALYNOLOGICAL REPORT ON SIDEWALL CORES FROM BETWEEN
7785 FEET AND 9514 FEET IN ESSO
GIPPSLAND SHELF No.3 WELL

COD No. 1 well.

Seven sidewall cores taken from between 7785 feet and 9514 feet in Esso Gippsland Shelf No.3 well form the basis of this report. All of the samples yielded plant microfossils, the preservation and concentration of which varied from fair in some samples to good in others. These contained microfossils comprise microfloral assemblages that have been described by Harris (1965) and Cookson and Eisenack (1965) from Lower Tertiary deposits in western Victoria. Moreover, the microfloral evidence obtained from the present investigation substantiates the belief (Dettmann 1965a,b) that horizons at 8356-7 feet are uppermost Cretaceous or Lower Tertiary in age and that the deposit at 6425 feet is of Upper Paleocene age.

The occurrence of selected spore, pollen, and microplankton species in each of the samples investigated is documented in Table 1 and a discussion of the individual microfloral assemblages is presented below.

Microfloral Assemblages and Correlations

The sample from 9514 feet yielded Triorites edwardsii Cookson & Pike which Cookson (1954) and Harris (1965) recorded from Middle and Upper Paleocene strata in western Victoria. Evans (1962) has also observed T. edwardsii in Paleocene deposits but notes that the species may extend into the uppermost Cretaceous (Senonian or later). The absence of Duobolollis orthotrichus (Cookson & Pike) from the sample may indicate that the microflora conforms with Harris's (1965) Triorites edwardsii Assemblage. As such the microflora is equivalent to that obtained from Gippsland Shelf No.1 well at 8695 feet. It has already been indicated (Dettmann 1965a)

that this deposit is similar in age to that from 8356-7 feet in Gippsland Shelf No.3 well.

The sample from 8360 feet contains Dacrydiomites balnei Cookson and Dublonollis orthoteichus. These species were not found associated together by Harris (1965) who states that the former species occurs only in his Triorites edwardsii Assemblage, whilst D. orthoteichus first appears in stratigraphically higher deposits in western Victoria. The two species exhibit similar preservation in the residues from 8360 feet, but it may be possible that D. orthoteichus is a contaminant from higher horizons.

The two succeeding samples from 8038 feet and 7946 feet yielded microfloras composed of spores and pollen grains that are Lower Tertiary in aspect. However, none of the diagnostic species of Harris's Assemblages was present.

Microplankton were observed in samples from 7856 feet and 7845 feet. These include the following species of Cookson and Eisenack (1965): Baltisphaeridium taylori, Kenlevia leptocerata, K. lobophora, and Wetzelliella hyperacantha. A similar association has been described by Cookson and Eisenack (1965) from the Dartmoor Formation in western Victoria. This formation is considered to be equivalent to the Rivernook Member of the Dilwyn Clay, to which a Middle to Upper Paleocene age has been ascribed (see Harris 1965, p.100) and from which Harris (1965) recorded his Triorites edwardsii - Dublonollis orthoteichus Assemblage. Very few spores and pollen were observed in the Gippsland Shelf No.3 samples that contain microplankton, but D. orthoteichus is present at 7856 feet. Thus, sediments between 7856 and 7845 feet in Gippsland Shelf No.3 well can be regarded as Middle to Upper Paleocene in age.

The deposit from 7785 feet provided a diverse microfloral assemblage

composed of spores and pollen. These include Proteacidites grandis Cookson which Harris (1965) records only from horizons containing his Upper Paleocene Duplopollis orthoteichus Assemblage. An Upper Paleocene age was suggested (Dettmann 1965b) for the deposit at 6425 feet in Gippsland Shelf No.3 well and horizons between 6935 and 7150 feet in Bass No.1 well.

References

- Cookson, I.C. 1964. A palynological examination of No.1 bore, Birregurra, Victoria. Proc. Roy. Soc. Vict., 66, 119-128.
- Cookson, I.C. and Eisenack, A. 1965. Microplankton from the Dartmoor Formation, SW. Victoria. Proc. Roy. Soc. Vict., 79, 135-137.
- Dettmann, M.E. 1965a. Palynological Report on Esso Gippsland Shelf No.3 well at 8336 and 8337 feet. Unpublished report submitted to Esso Exploration Australia, Inc. 8/11/65.
- Dettmann, M.E. 1965b. Palynological report on Esso Gippsland Shelf No.5 well at 6425 feet. Unpublished report submitted to Esso Exploration, Australia, Inc. 1/11/65.
- Evans, P.R. 1962. Palynological observations on F.B.H. Flaxman's Hill No.1 well. Bur. Min. Resour. Aust. Rec. 1962/57.
- Harris, W.K. 1965. Basal Tertiary microfloras from the Princetown area, Victoria, Australia. Palaeontographica, 115B, 75-106.

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Depth (feet)	Species	7783'	7836'	7843'	7946'	8038'	8360'	9514'
Spores	1. <i>Cyathidites australis</i> and/or <i>C. minor</i>	+	+	+	+	+	+	+
	2. <i>Cyathidites splendens</i>		+	+	+	+	+	+
	3. <i>Gleicheniidites cercinidites</i>	+	+	+	+	+	+	+
	4. <i>Laevigatosporites ovatus</i>	+	+	+	+	+	+	+
	5. <i>Trilites tuberculiformis</i>	+						
Pollen	6. <i>Microcachyridites antarcticus</i>	+	+					
	7. <i>Podocarpidites ellipticus</i>	+	+					
	8. <i>Dacrydiumites balmei</i>							
	9. <i>Dacrydiumites florinii</i>							
	10. <i>Phyllocladidites mawsonii</i>							
	11. <i>Triorites edwardsii</i>							
	12. <i>Nothofagidites exarctica</i>							
	13. <i>Duplopollis orthoteichus</i>							
	14. <i>Proteacidites cf. P. similis</i>							
	15. <i>Proteacidites annularis</i>							
	16. <i>Proteacidites subscabratus</i>							
Microplankton	17. <i>Proteacidites grandis</i>							
	18. <i>Proteacidites dilwynensis</i>							
	19. <i>Tricolporites prolata</i>							
	20. <i>Tricolporites scabratus</i>							
	21. <i>Myrteacidites eugenioides</i>							
	22. <i>Baltisphaeridium taylori</i>							
	23. <i>Kenleyia leptocerata</i>							
	24. <i>Kenleyia lophophora</i>							
	25. <i>Wetzelliella hyperacantha</i>							
	26. <i>Hystriochosphaeridium</i> sp.							

Table 1: Distribution of selected spore, pollen, and microplankton species in Esso Gippsland Shelf No.3 well between 7783 feet and 9514 feet.

+ - species present