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**INTERPRETATIVE**

**PALYNOLOGY OF EMPEROR-1,  
GIPPSLAND BASIN**

by

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INTRODUCTION

Samples from Emperor-1 were received for analysis during June and July, 1970. The following notes summarize determinations derived by the end of July.

SUMMARY

<u>Sample</u>	<u>Depth (ft.)</u>	<u>Age</u>	<u>Zone</u>
swc 11	4992	U. Eocene	<u>N. asperus</u>
c. 1	5055-85	L. Eocene	u. <u>M. diversus</u>
c.	5131	"	"
c.	5210	Eocene/Paleocene	<u>M. diversus</u> undiff.
swc 30	5320	Paleocene	<u>L. balmei</u>
cutt.	5600	"	"
swc 19	5623	"	"
cutt.	5700	"	"
swc 18	5742	"	"
" 16	5806	"	" (basal)
" 12	5930	Indeterminate	
" 10	5980	U. Cretaceous	<u>T. lilliei</u>
" 9	6030	L. Cretaceous	undet.
" 8	6108	"	"
" 5	6311	"	"
" 4	6403	"	"
" 3	6446	"	no older than <u>C. hughesi</u>

COMMENT

The Upper Eocene N. asperus Zone is well represented at 4992 feet by a glauconitic silty sandstone. Rare dinoflagellates of an as yet undetermined zone are present.

The Upper M. diversus Zone is relatively well represented between 5055 and 5131 feet. Whether or not core at 5210 feet should also be referred to the Upper M. diversus Zone cannot be decided on available evidence, although it appears probable this is so.

The proximity of the M. diversus Zone at 5055-85 feet to the N. asperus Zone at 4992 feet suggests a break exists between the zones. Furthermore, if 5210 feet does represent the Upper M. diversus, an hiatus may occur between the diversus and L. balmei Zones. The latter probability is heightened by the fact that uppermost L. balmei Zone (=Pla) has not been detected.

The L. balmei Zone may be grouped into two parts: 5320-5742 feet is typical L. balmei; 5806 feet is of "basal" L. balmei type, to be linked with the T. lilliei Zone below, rather than the "typical" balmei above.

The sample at 5980 feet of the T. lilliei Zone yielded an abundant assemblage. Some confusion about its designation remains because of very sparse evidence to indicate possibly a basal balmei age.

The Lower Cretaceous, although represented by five fossiliferous samples, cannot be allocated to accepted zones due to the lack of diagnostic fossils. However, sufficient are present to indicate the base of the hole is no older than the C. hughesi Zone (Aptian) and that probably the section in fact represents the hughesi Zone.

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The uppermost two samples assigned to the Lower Cretaceous, 6030 and 6108 feet, are so dated by stratigraphic position only and a complete lack of Upper Cretaceous microfloras.

Recycling of older fossils into younger strata is evident at 6311 feet where Triassic spores were recognized. Again, in the L. balmei Zone at 5742 feet, Late Devonian spores were found.

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