

Appendix 1

THE PALYNOLOGY

OF COBIA-1

GIPPSLAND BASIN

bу

A.D. Partridge

### THE PALYNOLOGY OF COBIA-1

#### SUMMARY

The following spore-pollen zones are identified in Cobia-1:

Zone	Depth in Feet	<u>Age</u>
Proteacidites tuberculatus	7817	Early Oligocene
Malvacipollis diversus	7821 - 7882	Early Eocene
Lygistepollenites balmei	8012 - 8150	Paleocene

#### COMMENTS

The palynology does not indicate any time break between the  $\underline{L}$ .  $\underline{balmei}$  and Lower  $\underline{M}$ .  $\underline{diversus}$  Zones. The samples referred to the  $\underline{L}$ .  $\underline{balmei}$  Zone are from near the top of the zone, while the Lower  $\underline{M}$ .  $\underline{diversus}$  section appears to represent the oldest portion of the zone.

The <u>L</u>. <u>balmei</u> Zone is only identified in two samples. The presence of the dinoflagellate <u>Wetzeliella</u> <u>homomorpha</u> in both samples and the rare occurrence of <u>Cupanieidites</u> <u>orthoteichus</u> and <u>Tricolporites</u> <u>paenestriatus</u> in the higher sample at 8012 feet suggest that only the upper part of the zone has been penetrated.

The Malvacipollis diversus Zone contains assemblages which are fairly well preserved but are of low diversity. The assemblages are dominated by the pollen Proteacidites grandis but contain few other key species. The lack of other key forms indicates that the section in Cobia-1 represents the oldest portion of the M. diversus Zone. The sample at 7821 feet contains a good M. diversus Zone assemblage without the presence of any younger fossil to suggest that it could be a reworked assemblage. The palynology data therefore indicates that the unconformity at the top of the Latrobe Group in Cobia-1 is between the P. tuberculatus Zone at 7817 feet and the M. diversus Zone at 7821 feet.

The <u>Proteacidites tuberculatus</u> Zone is identified by the presence at 7817 feet of the spore <u>Cyatheacidites annulatus</u>, associated with Oligocene dinoflagellate.

### SAMPLES EXAMINED

Sample	Depth (in feet)	Zone
SWC 19	7817 *	P. tuberculatus
SWC 18	7821 *	M. diversus
SWC 17	7830 *	M. diversus
SWC 16	7836 *	Indeterminant (Very poor preservation)
Core-1	7842 (Coal)	M. diversus
Core-1	7845눌	M. diversus
Core-2	7876 *	M. diversus
SWC 13	7876 (Coal)	M. diversus
Core-3	7882 *	M. diversus
Core-3	7894	Barren
SWC 9	7912	Barren
SWC 8	7920	Barren
SWC 6	7960	Barren
SWC 5	8012	L. balmei
swc 3	8150	L. balmei
swc 1	8390	Barren

<sup>\*</sup> Dinoflagellates present

## SPORE-POLLEN & DINOFLAGELLATE

# DISTRIBUTION CHART

COBIA	-1
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COB	<u>-1</u>	
	7817 7821 7830 7836 7842 7842 7876 7876	8/50
Aglaoreidia qualumis Araucariacites australis Baculatisporites disconformis Banksieaeidites elongatus Cupanieidites orthoteichus Cyatheacidites annulatus Cyathidites splendens Dilwynites granulatus D. tuberculatus Foveotriletes palaequetrus Gleicheniidites cercinidites Haloragacidites harrisii Ilexpollenites angulaclavatus Latrobosporites crassus Lygistepollenites balmei L. florinii Malvacipollis diversus M. subtilis Myrtaceidites parvus Nothofagidites deminutus N. falcatus N. falcatus N. falcatus N. flemingii N. brachyspinulosus Periporopollenites polyoratus Phyllocladidites mawsonii Podosporites anarticus Podosporites langstonii Proteacidites adenanthoides P. annularis P. grandis P. incurvatus P. obscurus R. tenuiexinus Rugulatisporites mallatus Simplicepollis meridianus Stereisporites phillipsii Verrucosisporites kopukuensis		
Cyclonephelium retiintextum Deflandrea dartmooria D. obliquipes Diphyes colligerum Epicephalopyxis indentata Hystrichokoploma rigaudae Hystrichosphaera spp. Lingulodinium machaerophorum Operculodinium centrocarpum		