

  
PE990526

APPENDIX 1

THE PALYNOLOGY OF  
MORWONG - 1,  
GIPPSLAND BASIN.

by.

A. D. PARTRIDGE

21st February 1973

## INTRODUCTION

The spore-pollen zonation is based on well preserved and diverse assemblages from the sidewall cores. The same assemblages were recognised in the cuttings examined but these were not used in delimiting the zones because of the uncertainty of the depths owing to incorrect lag times.

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

Zone	Depth in Feet		Age
	Highest data	Lowest data	
<u>Triporopollenites bellus</u> Zone	5370	- 5418	Miocene
<u>Malvacipollis diversus</u> Zone	5460	- 5746	Early Eocene
<u>Lygistepollenites balmei</u> Zone	5876	- 7920	Paleocene

## COMMENTS

The palynological evidence indicates that the top of Latrobe Group unconformity lies between 5418 and 5460 feet and represents a time break from Early Eocene to Early Miocene.

Dinoflagellates dominate the palynological assemblages from the Lakes Entrance Formation and are absent or rare to common in assemblages from the Latrobe Group. In the latter those assemblages in which contain a high proportion of dinoflagellates are generally dominated by only a single species, either Cyclonopelium retintextum or Wetzeliella homomorpha. Dinoflagellates were the only marine fossils found in the Latrobe Group and are probably indicative of only a very marginal marine environment.

Reworked Early Cretaceous spore-pollen are present in the L. balmei and T. bellus Zones. Paleocene and early Eocene spore-pollen derived from the underlying Latrobe Group were also observed in the T. bellus Zone.

At total depth Morwong-1 was still within the L. balmei Zone based on well preserved and diverse assemblages containing common Lygistepollenites balmei. The top of the zone is taken at the extinction of Polycolpites langstonii, Gambierina rudata and the last common occurrence of

Australopollis obscurus and L. balmei.

The M. diversus Zone is recognised by the occurrence of Spinizonocolpites prominatus, Intratiporopollenites notabilis, Proteacidites grandis Polycolpites esobalteus and the absence of any younger species. The occurrence of L. balmei and A. obscurus, indicator species for the underlying zone in the lowest sample (5746 feet) from the M. diversus Zone is considered to reflect the closeness of the zone boundary. The possibility of reworking is discounted because of the absence of other L. balmei Zone species while sample contamination has been checked for by reprocessing the sample.

The palynology assemblages between 5370 and 5418 feet are dominated by long ranging Oligocene-Miocene spore-pollen and dinoflagellate species which are referred to the T. bellus Zone on the basis of the occurrence of the spore Rugulatisporites micraulaxus.

Sample	SAMPLES EXAMINED	
	Depth (in feet)	Zone
SWC 24	5370* B D	<u>T. bellus</u> Zone
SWC 23	5386*	"
SWC 22	5410* K, B	"
SWC 21	5418*	"
SWC 20	5460*	Lower <u>M. diversus</u> Zone
SWC 19	5603	"
SWC 18	5746*	"
SWC 17	5876*	<u>L. balmei</u> Zone
SWC 16	5947*	"
SWC 15	6018* K	"
SWC 14	6148*	"
SWC 13	6279* K	"
SWC 12	6378*	"
SWC 11	6492*	"
SWC 10	6636	"
SWC 9	6752	"

Sample	Depth (in feet)	Zone
SWC 7	7044	<u>L. balmei</u> Zone
SWC 6	7148 K	"
SWC 5	7284*	"
SWC 4	7390*	"
SWC 3	7526	"
Core - 1	7551½	Barren
Core - 1	7552	<u>L. balmei</u> Zone
SWC - 2	7704*	"
SWC - 1	7920	"

\* Dinoflagellates present.

Reworked spore-pollen present in the samples are indicated by the following letters after the depth

K= Early Cretaceous

B= L. balmei Zone reworking

D =M. diversus Zone reworking

Rotary cutting samples were also examined from the following depths:

5380 - 400 ft (coal), 5460 - 70 ft, 5600 - 10 (coal) ft,

5810 - 20 ft, 5950 - 60ft, 6000 - 10 ft (coal),

6150 - 60 ft and 6200 - 10 ft.





