

1.2. THE PALYNOLOGICAL SEQUENCE

IN PISCES # 1.

PE990789

Fifty sidewall cores from Pisces # 1 were examined for palynological content. On the basis of that examination, the following breakdown of the sequence was noted:-

Depth (m)	Age	Dinoflagellate Zone	Spore-Pollen Zone	Paleoenvironment
1796.5 to 1812.5	Indet -barren	?	?	?
1816.5	Indet			
1820.5 to 2161.0	Maastrichtian	<i>I. druggii</i> Zone	<i>T. longus</i> Zone — 2081 — ?	marginal
2179 to 2490	Early Maastrichtian -Late Campanian	<i>I. korojonense</i> Zone — — 2379.5 —	— 2320 — <i>T. lillei</i> Zone	marine
2509 to 2554.5	Campanian			Continental
2564.5	? Campanian		? <i>T. lillei</i> Zone	

The zonation scheme used is that established by Stover & Partridge (1973) and further updated in unpublished reports.

A list of the sidewall cores studied is shown on tables 1 and 2. The five shallowest sidewall cores, from 1796.5 to 1812.5, were barren and the sample at 1816.5 yielded insufficient information for dating purposes.

The section studied yielded an excellent well preserved Late Cretaceous marine dinoflagellate sequence. A detailed examination is beyond the scope of this report, but further examination is warranted as this sequence should provide valuable input into the clarification of a biostratigraphic Zonation

for the Late Cretaceous.

The preservation of the palynomorphs, particularly in the predominantly marine samples, is poor and the ranges of some of the species appear to be at variance with their known ranges. This may be the result of probable Oligocene/Miocene contamination, which was also mentioned in the foraminiferal report and is probably due to drilling mud contamination. Data provided by the spore-pollen assemblage allowed for zone determinations to be made, however the boundary between the *T. longus* and *T. lillei* Zones is rather indistinct, being somewhere between 2081m and 2320m.

The boundary at 2161m is based on the upper limit of the dinoflagellate *Isabelidinium korojonense* which is known to have a limited vertical range in the late Campanian/early Maastrichtian. The correlation of the dinoflagellate Zones with the European Stages is based on unpublished ranges for Western Australian sequences. However the *I. korojonense* /*I. druggii* boundary in W.A. is marked by a major disconformity. There is no evidence for a disconformity at that horizon in PISCES # 1, which leaves open the question of the age of the *I. korojonense*/*I. druggii* boundary in PISCES # 1.

The occurrence of Late Cretaceous dinoflagellate assemblages older than the *I. druggii* Zone, in the Gippsland Basin has not been previously reported and makes this an important sequence for further study.

#### REFERENCES.

HELBY, et al, in prep: Palynologic Zonation of the Mesozoic.

STOVER, L.E. & PARTRIDGE A.D., 1973: Tertiary and Late Cretaceous Spores & Pollen from the Gippsland Basin, South Eastern Australia.  
*Proc. R. Soc. Vict. Vol. 85, Pt. 2.*

SIDENHILL CORE Depth in metres	DINOFLAGELLATES	KEY • <20 specimens x >20 specimens D Dominant >60% R Recycled	DIVERSITY L = low (1-7) M = moderate (8-14) H = high (15-19) VH = very high	YIELD VP 1-19 P 20-99 F 100-499 per 22mm cover slip	PRESERVATION VP = very poor P = poor F = fair G = good	ENVIRONMENTAL DATA														
						DINOFLAGELLATE ZONE	AGE	Total Count	% Marine	Preservation	Yield	Diversity	Maturation							
1796.5	<i>Heterosphaeridium</i> cf. <i>H. difficile</i>																			
1799.0	<i>Isabelidium</i> cf. <i>I. pellucidum</i>																			
1803.0	<i>Impagidinium</i> sp.																			
1808.5	? <i>Alterbia acutula</i>																			
1812.5	? <i>Amphitadema tectangulata</i>																			
1816.5	<i>Canningsia</i> cf. <i>C. colliveri</i>																			
1820.5	<i>Isabelidium</i> cf. <i>I. bakeri</i>																			
1823.0	<i>Cyclonephelium distinctum</i>																			
1825.0	<i>Cleistosphaeridium</i> sp.																			
1827.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
1834.0	<i>Heterosphaeridium</i> sp.																			
1863.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
1881.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
1906.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
1919.3	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
1932.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
1940.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
1944.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
1968.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
1985.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2053.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2057.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2060.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2081.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2097.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2107.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2112.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2161.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2179.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2183.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2249.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2260.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2274.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2281.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2287.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2295.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2305.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2320.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2360.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2379.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2388.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2391.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2432.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2435.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2466.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2490.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2509.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2516.0	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2554.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			
2564.5	<i>Isabelidium</i> cf. <i>I. beifasense</i>																			

TABLE 2: DINOFLAGELLATE DISTRIBUTION CHART & ENVIRONMENTAL DATA - PISCES # 1.  
Paltech Report 1982/20

Kerogens were not prepared but maturation for all samples did not exceed 1-1.5 d.e. marginally mature

SPORES/ POLLEN

KEY:

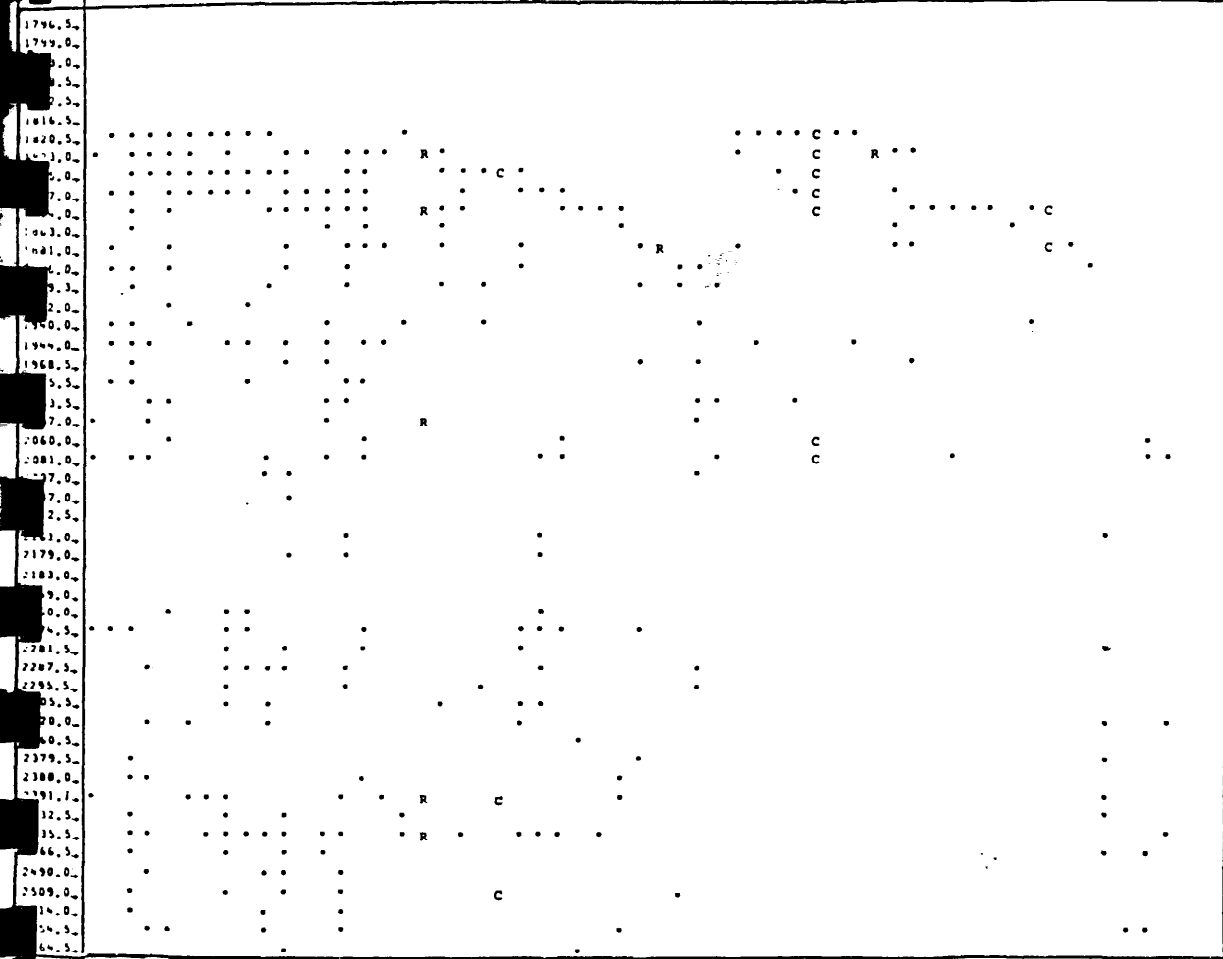
- <20 specimens
- x >20 specimens
- D Dominant >60%
- C Downhole contamination
- R Recycled

Depth in metres

- Proteacidites angulatus
- Lygistepollenites florindii
- Podocarpidites ellipticus
- Tricolpites sectilis
- Gambierina nudata
- Gambierina edwardsii
- Periporipollenites polygonatus
- Pinuspollenites globosacculus
- Pinuspollenites parvisacculus
- Triolites minor
- Phyllocladites mawsonii
- Osmundacidites wellmanii
- Lycopodiumsporites spp.
- Tricolpites gilli
- Microcachyridites antarcticus
- Proteacidites s-abriatus
- Dictyophyllidites sp.
- Kraeuselisporites jubatus
- Proteacidites palisadus
- Stereisporites antiquasporites
- Podosporites microsacculus
- Holopogonacidites harrisi
- Nothofagidites senectus
- Nothofagidites endurus
- Simplicipollis meridianus
- Cyathidites australis
- Parvisacculus castatus
- Ceratoporesites equalis
- Densifosporites vellatus
- Kraeuselisporites majus
- Rouseisporites reticulatus
- Proteacidites amolesezinus
- Lygistepollenites balmei
- Tricolpites confusus
- Tricolpites cf. T. fissilis
- Stereisporites (tripunctisporis) sp.
- Tricolpites pachyterinus
- Proteacidites latrobensis
- Clavifera tripler
- Rouseisporites simplex
- Biretisporites spectabilis
- Tricolpites lillei
- Camarozanospores oblaensis
- Ornametifera sentosa
- Ishuaporites punctatus
- Rugulatisporites sp.
- Cicatricosisporites ludbrookii
- Latrosporites crassus
- Foraminisporis cf. F. monthaggiensis
- Peromonoletes vellosus
- Tricolpites pannosus
- Foveosporites cf. F. canalis
- Alisporites similis
- Dacrycarpites australiensis
- Tricolpites longus
- Dilepites granulatus
- Tricolpites sabulosus

SPORE - POLLEN ZONES  
after  
STOVER & PARTRIDGE (1973)

AGE



MAASTRIC

T. longus Zone

EARL MAASTRIC - CAMPA

T. lillei Zone

TABLE 1: SPORE/POLLEN DISTRIBUTION CHART - PISCES # 1.

Paltech Report 1982/20