

OIL AND GAS DIVISION

TL 26-10-79

VDUE

Page 1 of 6



A PALYNOLOGICAL ANALYSIS OF GANNET-1, GIPPSLAND BASIN

by

H.E. STACY

ESSO AUSTRALIA LIMITED  
PALEONTOLOGY REPORT 1979/27

SEPTEMBER 26, 1979

INTRODUCTION

GANNET - 1.

2/6

Ten sidewall cores and eleven cutting samples were collected from the Victorian Mines Department's core store and processed for palynology. Recovery was fair to poor, but most (18 out of 21) samples could be assigned to a stratigraphic age with fair confidence.

Zones and lithological/facies subdivisions of the Latrobe and Strzelecki groups are summarised below. All samples summarised in Table 1 and each occurrence of individual species is tabulated in the distribution chart.

L. N. asperus  
676.65 - 701.04m

SUMMARY

<u>Unit/Facies</u>	<u>Zone</u>	<u>Depth (Feet)</u>
Latrobe Group	Lower <u>N. asperus</u>	2220'-2300'
UNCONFORMITY		
Strzelecki Group	<u>C. striatus</u>	2295'?-2380'
	<u>E. asymmetricus</u>	2420'-4760'
	<u>C. striatus</u>	T.D. 4786'
	699.52? - 725.4m	
	<u>E. asymmetricus</u>	
	737.6 - 1450.8m	
	T.D. = 1458.8m	

GEOLOGICAL COMMENTS

- As was true with Albatross-1, only Middle Eocene (N. asperus zone) sediments were identified in the Tertiary part of the section. Although the floras were generally poor, accessory species, found in both the top and bottom samples, strongly suggested that only Lower N. asperus beds are present.
- Sidewall cores #11 (2295') and #25 (2312') are reversed in age and one or the other, or perhaps both, samples are mislabelled and out of place. Sidewall core #11 from 2295' is good Crybelosporites striatus zone of the Lower Cretaceous, while the assemblage recovered from SWC #25 from 2312' is Tertiary in age, although the exact palynologic zone could not be identified. This means that the major unconformity that separates the Tertiary from the Early Cretaceous can only be located palynologically somewhere between the Tertiary sample at 2288' and the top of the consistent Cretaceous at 2360', almost a 1000' interval.

DISCUSSION OF ZONES

GANNET-1

3/6

The presence and distribution of individual species is tabulated on the distribution sheet. The basis for zonation is discussed below.

Foraminisporites asymmetricus zone : 2420' to 4760'

A well-developed spore flora which includes Pilosporites notensis, Contignisporites cooksonii, Dictyosporites speciosus and Cyclosporites hughesi is indicative of the F. asymmetricus zone of the Lower Cretaceous.

Crybelosporites striatus zone : 2295'? to 2360'

The sidewall core #11, labelled 2295', contains a well-developed C. striatus zone assemblage. The only problem is that the sidewall core immediately below (SWC #25, 2312') contains an equally positive Tertiary flora. So the question is not whether the C. striatus zone is present, but at what depth it actually occurs. The sample from 2360' also partially belongs to the C. striatus zone, although the index species was not found.

Lower Nothofagidites asperus zone : 2220' to 2288'

The presence of Phthanoperidinium eocenicum, P. coreoides and Nothofagidites asperus are considered indicative that the enclosing sediments are N. asperus in age. In addition, the occurrence of A. diktyoploteus at 2220' and S. cainozoicus and S. prominatus in the sample from 2290' demonstrate that only the Lower part of the N. asperus zone was encountered.

REFERENCES

STACY, H., 1979, Paleontological analysis of Albatross-1, Gippsland Basin, Ezzo Australia Paleo. Report, 1979/26.

Table 1: SUMMARY OF PALEONOLOGICAL ANALYSIS, GANNET-1, GIPPSLAND BASIN

SAMPLE	DEPTH (m)	DEPTH (ft.)	ZONE	AGE	CONFIDENCE RATING	YIELD	DIVERSITY	COMMENTS
Ctngs	671-74	2200-10	Indeterminate	-	-	Low	Poor	
"	677-80	2220-30	Lower <u>N. asperus</u>	Middle Eocene	3	Fair	Moderate	<u>Phthanoperidinium eocenicum</u> , <u>A. diktoplokus</u>
"	680-83	2230-40	Lower <u>N. asperus</u>	Middle Eocene	3	Fair	Moderate	<u>Phthanoperidinium eocenicum</u> , <u>A. diktoplokus</u>
SWC 30	688	2256	Lower <u>N. asperus</u>	Middle Eocene	4	Low	Poor	<u>N. asperus</u>
SWC 29	692	2269	Indeterminate	-	-	Low	Poor	
Ctngs	695-701	2280-2300	Lower <u>N. asperus</u>	Middle Eocene	3	Fair	Moderate	<u>T. simatus</u> , <u>S. prominatus</u>
SWC 27	697	2288	Indeterminate	-	-	Low	Poor	Probably Tertiary
SWC 11	700	2295	<u>C. striatus</u>	Early Cretaceous	2	Fair	Moderate	Mislabeled?
SWC 25	705	2312	Indeterminate	Tertiary	3	Fair	Moderate	Mislabeled?
Ctngs	719-25	2360-80	<u>C. striatus</u> / <u>F. asymmetricus</u>	Early Cretaceous	3	Fair	Moderate	Some Tertiary from above.
SWC 9	738	2420	<u>F. asymmetricus</u>	Early Cretaceous	1	Fair	Moderate	
SWC 24	739	2423	<u>F. asymmetricus</u>	Early Cretaceous	1	Fair	Moderate	
Ctngs	759-62	2490-2500	<u>F. asymmetricus</u>	Early Cretaceous	3	Good	High	
SWC 8	873	2864	<u>F. asymmetricus</u>	Early Cretaceous	2	Low	Poor	
Ctngs	878-81	2880-90	<u>F. asymmetricus</u>	Early Cretaceous	3	Good	High	
"	991-94	3250-60	<u>F. asymmetricus</u>	Early Cretaceous	3	Good	High	
SWC 6	1052	3452	<u>F. asymmetricus</u>	Early Cretaceous	1	Fair	Moderate	
Ctngs	1137-50	3730-40	<u>F. asymmetricus</u>	Early Cretaceous	3	Fair	Moderate	
"	1271-74	4170-80	<u>F. asymmetricus</u>	Early Cretaceous	3	Good	High	
SWC 17	1350	4428	<u>F. asymmetricus</u>	Early Cretaceous	2	Low	Poor	
Ctngs	1448-51	4750-60	<u>F. asymmetricus</u>	Early Cretaceous	3	Good	Moderate	

GANNET-1

4/6

PALYNOLOGY DATA SHEET

GANNET-1.

5/6

BASIN: GIPPSLAND

ELEVATION: KB: 32 feet GL: 128 feet

WELL NAME: GANNET-1

TOTAL DEPTH: 4786 feet

AGE	PALYNOLOGICAL ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time
NEOGENE	<i>T. pleistocenicus</i>										
	<i>M. lipsis</i>										
	<i>C. bifurcatus</i>										
	<i>T. bellus</i>										
	<i>P. tuberculatus</i>										
PALEOGENE	Upper <i>N. asperus</i>										
	Mid <i>N. asperus</i>										
	Lower <i>N. asperus</i>	2220'	3	2280'	3		2290'	3			
	<i>P. asperopolus</i>										
	Upper <i>M. diversus</i>										
	Mid <i>M. diversus</i>										
	Lower <i>M. diversus</i>										
	Upper <i>L. balmei</i>										
	Lower <i>L. balmei</i>										
	LATE CRETACEOUS	<i>T. longus</i>									
<i>T. lilliei</i>											
<i>N. senectus</i>											
U. <i>T. pachyexinus</i>											
L. <i>T. pachyexinus</i>											
<i>C. triplex</i>											
<i>A. distocarinatus</i>											
EARLY CRET.	<i>C. paradoxus</i>										
	<i>C. striatus</i>	2295'	2	2360'	3		2360'	3		2	
	<i>F. asymmetricus</i>	2380'	3	2420'	1		4760'	3			
	<i>F. wonthaggiensis</i>										
	<i>C. australiensis</i>										
PRE-CRETACEOUS											

COMMENTS: Sidewall Core #11 from 2295' contains a good *C. striatus* (Early Cretaceous) flora, while the sidewall core #25 (2312') below this carries an exclusively Tertiary assemblage. The depth and labelling is highly suspect. All depths in feet.

- CONFIDENCE RATING:
- 0: SWC or Core, Excellent Confidence, assemblage with zone species of spores, pollen and microplankton.
  - 1: SWC or Core, Good Confidence, assemblage with zone species of spores and pollen or microplankton.
  - 2: SWC or Core, Poor Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.
  - 3: Cuttings, Fair Confidence, assemblage with zone species of either spores and pollen or microplankton, or both.
  - 4: Cuttings, No Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: H.E. STACY

DATE: SEPTEMBER 14, 1979

DATA REVISED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

SAMPLE TYPE *	DEPTHS																					
	T	T	T	S	S	T	S	S	S	T	S	S	T	S	T	T						
<b>PALYNOMORPHS</b>	2200-20	2220-30	2230-40	2256	2269	2280-300	2288	2295	2312	2360-80	2420	2423	2490-500	2864	2880-90	3250-60	3452	3730-40	4170-80	4428	4750-60	
<i>Dil. tuberculatus</i>																						
<i>H. harrisii</i>																						
<i>Isch. gromius</i>																						
<i>L. florinii</i>																						
<i>Noth. brachyspinulosus</i>																						
<i>Noth. emarcidus/heterus</i>																						
<i>Noth. falcatus</i>																						
<i>Simpl. meridianus</i>																						
<i>System. placacantha</i>																						
<i>Achom. ramulifera</i>																						
<i>Ling. machaerophorum</i>																						
<i>Operc. centrocarpum</i>																						
<i>Cupan. orthoteichus</i>																						
<i>Dil. granulatus</i>																						
<i>L. balmoi</i>																						
<i>Myrat. parvus</i>																						
<i>Noth. deminutus</i>																						
<i>Noth. flemingii</i>																						
<i>Phyl. mawsonii</i>																						
<i>Areosph. diktyoplokus</i>																						
<i>Hystr. tubiferum</i>																						
<i>Phthan. coreoides</i>																						
<i>Phthan. eocenicum</i>																						
<i>Apteod. australiense</i>																						
<i>Protod. simplex</i>																						
<i>Spin. ramosus</i>																						
<i>Noth. asperus</i>																						
<i>Prot. adenantoides</i>																						
<i>Noth. goniatus</i>																						
<i>Prot. annularis</i>																						
<i>Sant. cainozoicus</i>																						
<i>Spinizon. prominatus</i>																						
<i>Tricolp. simatus</i>																						
<i>Verruc. kopukuensis</i>																						
<i>Isch. irregularis</i>																						
<i>Class. classoides</i>																						
<i>Lepto. verrucatus</i>																						
<i>Crybel. striatus</i>																						
<i>Lycopodium facetus</i>																						
<i>Osmund. wellmanii</i>																						
<i>Cerato. equalis</i>																						
<i>Couper. tabulatus</i>																						
<i>Cicatricosi australiensis</i>																						
<i>Crybel. stylosus</i>																						
<i>Dictyo. filusus</i>																						
<i>Phelodinium Sp.</i>																						
<i>Odontochitina Sp.</i>																						
<i>Dictyo. speciosus</i>																						
<i>Cyath. asper</i>																						
<i>Lycopodium. nodus</i>																						
<i>Lycopodium. circolumenus</i>																						
<i>Cylo. hughesi</i>																						
<i>Neoraist. truncatus</i>																						
<i>Cyath. minor</i>																						
<i>Cyath. australiensis</i>																						
<i>Kluk. scaberis</i>																						
<i>Aequit. spinulius</i>																						
<i>Tsuga. trilobatus</i>																						
<i>Alisporites similis</i>																						
<i>Podocarp. multesimus</i>																						
<i>Foram. wonthaggiensis</i>																						
<i>Jan. spinulosus</i>																						
<i>Crybel. punctatus</i>																						
<i>Contig. cooksonii</i>																						
<i>Rouse. reticulatus</i>																						
<i>Pilo. notensis</i>																						
<i>Cook. variabilis</i>																						
<i>Aequit. verrucosic</i>																						
<i>Lycopodium. espinulus</i>																						
<i>Balmci. holoedictus</i>																						
<i>Cicatricosi lubbracki</i>																						
<i>Dictyo. complex</i>																						
<i>Lycopodium austroclavatoides</i>																						
<i>Tsuga. dampieri</i>																						
<i>Cicatricosi hughesi</i>																						

\*C=core; S=sidewall core; T=cuttings.