

by: David Taylor

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Twenty three side wall cores were examined between the interval 7635' and 4650'. No fauna was found in the side wall core at 7635' and side wall cores at 4650' and 6370' contained sparse, indeterminate faunas.

OLIGOCENE to EARLY MIOCENE - 7450' to 6695'.

The oldest fauna represented typically Zone J-1 at 7450'. This was succeeded by faunas of Zone I-1 without the presence of I-2; the absence of I-2 is consistent with other sequence on the Kingfish structure. The Oligo-Miocene boundary fauna of Zone H-2 is a cool temperate "Novozealandic" one without any tropical elements, yet quite diagnostic of this biostratigraphic interval. Therefore the Oligocene was deposited between 7450' and 7137' and the Oligo-Miocene transition (= H-2) between 7010 and 6780'. The sample at 6695' contained a very immature multi-apertured globigerinid that could either be designated Globigerina woodi connecta or Globigerinoides trilobus. As the latter classification is favoured the side wall core is placed within Zone G but at the boundary with Zone H-1. Although benthonic foraminifera are sparse in this Oligocene to early Miocene globigerinid ooze (Planktonic % above 98% in all samples), it will be seen from the benthonic distribution sheet that it contains a fauna distinct from the benthos higher stratigraphically; in fact there are only 5 species in common. The total assemblage, both specifically and statistically suggests a continental rise deposit.

POSSIBLE MISSING SECTION in vicinity of 6695' to 6550'.

On the planktonic distribution chart there is discordance in specific ranges between 6695' and 6550', with only 3 species extending across and beyond this interval; the initial appearance of Globigerinoides trilobus is at 6550' and is noted above as a very early form taxonomically distinct from those above. Normally one would expect a number of morphotypic transitions between the fauna of 6695' and 6550'. It is assumed that much of Zone G and all of Zones F & E are absent. Abrieviation of the biostratigraphic interval cannot be dismissed, but a failure to recognise Zones F & G were recorded by Taylor for Kingfish-1 and Kingfish-2, whilst Zones F & G occupied 750' in Kingfish-3, 500' in Kingfish B-1 and at least 300' in Kingfish A-1. In Kingfish-5 most of G and all of F and E would have to have been abrieviated into 145'. The discordance of benthonic faunas between 6695' and 6550' has often been recorded only at a generic level and this has considerable environmental significance. A similar benthonic taxonomic discordance has been recored in Kingfish-1 and Kingfish-2 where the absence of a biostratigraphic interval was suspected. Scouring or slumping may have removed Zone G to E sediment.

LATE MIOCENE (= mid Miocene) - 6550' to 4800' to ?4650' to ?.

The earliest appearance of Orbulina universa was at 6550' which marks the base of Zone D-2. This is deeper than in Kingfish-1 where the species appeared at 5600'. But in Kingfish -1 the pentultimate forms appeared at 5820' marking the base of Zone E and the base of the late Miocene. Zone D-2 extends up to 6050' and the planktonic fauna is most diverse at 6165'. The faunas are dominantly planktonic and it is suggested that pelagic sediment was beginning to fill the scour which is suspected on evidence cited above. Faunas at and above 6000' represent Zone

numerical

D-1 with both ~~numerical~~ and specific sparsity. Both the planktonic and benthonic elements are shape and size sorted. The average diameter is .25mm. and the shape tends towards the spherical or lenticular. The benthonic species are a mixture of shelf and slope inhabitants. It is assumed that deposition was the result of high energy outer shelf and down slope currents. These sediments rapidly filled in the scour. Diagenesis of specimens between 6000' and 4650' is obviously, to the extent that specimens at 4650' could not be distinguished, even at a generic level.

BASIN GIPPSLAND

BY David Taylor

WELL NAME KINGFISH-5

DATE 5-7-74

ELEV. \_\_\_\_\_

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A	Alternate					
	B	Alternate					
	C	Alternate					
	D	4650	2		6000	1	
	D <sub>1</sub>	Alternate 4950	0				
	D <sub>2</sub>	Alternate 6050	0		6550	1	
	E	Alternate					
	F	Alternate					
	G	6695**	1		6695**		
	H	Alternate					
OLIGOCENE	H <sub>1</sub>	Alternate					
	H <sub>2</sub>	Alternate 6780	1		7010	0	
	I <sub>1</sub>	Alternate 7137	1		7165	1	
	I <sub>2</sub>	Alternate					
EOC.	J <sub>1</sub>	Alternate 7450	0		7450	0	
	J <sub>2</sub>	Alternate					
	K	Alternate					
	Pre K						

S.W.C. 7635' + no fauna found. S.W.C.'s at 4650' & 6370' contained indeterminate faunas.

\*\* S.W.C. at 6780 is at base of G and hard to distinguish from H-1

COMMENTS: There is a possible missing section between 6550' and 6695' with Zones E & F absent due to scouring.

Note: If highest or lowest data is a 3 or 4, then an alternate 0, 1, 2 highest or lowest data will be filled in if control is available.

If a sample cannot be interpreted to be one zonule, as apart from the other, no entry should be made.

- 0 SWC or Core - Complete assemblage (very high confidence).
- 1 SWC or Core - Almost complete assemblage (high confidence).
- 2 SWC or Core - Close to zonule change but able to interpret (low confidence).
- 3 Cuttings - Complete assemblage (low confidence).
- 4 Cuttings - Incomplete assemblage, next to uninterpretable or SWC with depth suspicion (very low confidence).

Date Revised \_\_\_\_\_

By \_\_\_\_\_