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PALYNOLOGY OF BATFISH-1 GIPPSLAND BASIN

by

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INTRODUCTION

Samples from Batfish-1 were examined on a routine basis during April - June 1970. The well's position between Tuna to the north and Flounder to the south and within the region of the "Flounder channel" lead to specific interest in:

1. The age of sediments overlying the "channel fill".

2. The thickness, age and dinoflagellate content of the "channel fill".

3. The position of the top of the lilliei Zone.

The following report outlines the results of this study. Other reports relevant to the biostratigraphy of the region around Batfish and in preparation are a review of the Tuna field (Palyn. Rept. 1970/29), of the Flounder field (1970/31) and a review of correlations between Tuna, Batfish, Flounder and Trevally (1970/32).

COMMENT

The samples at 4765 and 4768 feet from the Oligocene foram unit J yielded abundant dinoflagellates and a specimen of the spore C. annulata which is confined to Oligocene and younger strata on-shore.

Sidewall cores from 4778 and 4844 feet were cut from a sandy section overlying the more typical "channel fill", but yielded insufficient fossils to indicate an age. The residues differed from the overlying Oligocene in lacking dinoflagellates.

The twelve samples of sidewall cores and cuttings from the upper M. diversus Zone, which is equated with the Eocene "channel fill" contained various proportions of dinoflagellates, but none in abundance and none with species of Wetzeliella which were identified in Flounder to the south and Tuna to the north. The cuttings taken at 50 feet intervals between 5110 and 5260 feet were examined on the premise that the section thus covered resembled the zone with W. thompsonae in Flounder-1. Although dinoflagellates were seen, the zone fossils have not yet been detected.

Previous analysis of the Flounder wells showed a marked increase of T. Lorrisii in proportion to Nothofagidites and to the remainder of the assemblage within and towards the top of the W. thompsonae dinoflagellate zone. Counts of these forms taken from sidewall cores only showed such an increase at 5230 and 5004 feet. However, the underlying samples at 5396 and 5530 feet gave unsatisfactory yields for such analysis and not until 5690 feet where the ratio has reverted to about 1:1 was a satisfactory count possible. Very tentatively, therefore, the W. thompsonae Zone or its non-dinoflagellate-bearing equivalent may occur at about 5200-5300 feet.

The base of the diversus Zone is taken to 6022 feet with confidence and to 6102 feet with some uncertainty. The sidewall core at 6102 feet yielded very few fossils, none diagnostic of the upper diversus Zone, but several indicative of the diversus Zone in general were present. It is only assumed that the sample is from the upper diversus Zone.

Subdivision of the balmei Zone has not been attempted in detail, although the numerous samples available from the zone, both processed and unprocessed, make Batfish a useful section for further study of the zone.

Common dinoflagellates were noted at 6760 feet and rare ones at 7926 feet.

The top of the lilliei Zone is chosen on the basis of parameters used in the Tuna region (Palyn. Rept. 1970/29). However, it cannot be defined to a closer interval than the 362 feet between 8040 and 8402 feet. The basal sample at 9691 feet is probably close to the base of the lilliei Zone, but cannot be placed in that zone with certainty.

SUMMARY OF DETERMINATIONS

Sample	Depth(ft.)	Age	Zone
swc 14a	4765	Oligocene	Unit J
swc 13a	4768	"	"
swc 12a	4778	Indet.	
swc 10a	4844	"	
swc 9a	5004	Eocene	U. M. diversus
Cutt.	5110	"	"
"	5160	"	"
"	5210	"	"
swc 8a	5230	"	"
Cutt.	5260	"	"
swc 7a	5396	"	"
" 6a	5530	"	"
" 30	5690	"	"
" 29	5856	"	"
" 28	5956	"	"
" 27	6022	"	"
" 26	6102	"	"
" 23	6309	Paleocene	L. balmei
" 21	6351	"	"
" 19	6410	"	"
" 18	6462	"	"
" 17	6517	"	"
" 16	6580	"	"
" 14	6740	"	"
" 4a	7000	"	"
" 3a	7332	"	"
" 5	7439	"	"
" 4	7527	"	"
" 2a	7653	"	"
" 3	7806	"	"
" 2	7890)*	"	"
" 1a	7910)		
" 1	7926	"	"
" 30	8040	"	"
Cutt.	8100	Indeterminate	
Cutt.	8320	"	
Swc 8	8402	Upper Cretaceous	T. Lilliei
" 47	8464	"	"
" 45	8504	"	"
Cutt.	8520	"	"
swc 44	8562	"	"
" 43	8604	"	"
" 37	8963	"	"
" 36	8976	"	"
" 35	9067	"	"
" 5	9691	"	T. lilliei or N. senectus

* Combined sample.

INTERPRETATIVE