

## Biostratigraphic logs of four bores (Birregura 1, Cressy 1, Cundare 1 and Warrion 5) in the northeastern part of Port Campbell Embayment (Otway Basin)

Samples from the Birregurra 1, Cressy 1, Cundare 1, and Warrion 5 bores have been examined micropaleontologically by the writer during the last few years, largely in order to determine the age of deposition of the strata on the basis of foraminiferal evidence. Only parts of the Tertiary sequences penetrated by these bores are sufficiently fossilferous (i.e. deposited in oper-marine environment) for this purpose.

The conclusions are expressed in terms of numbered zones based on A.N.Carter's numbered "Faunal Units". These zones, though recognized largely on the basis of paleontclogic evidence, are regarded as informal chronostratigraphic rather than biostratigraphic units. In terms of Australian stages as redefined by Carter, Janjukian is represented by zones 4 and 5, Longfordian by 6-8, Batesfordian by 9, Balcombian by 10 and Bairnsdalian by 11.

The placement of the boundaries between the zones is tentative, subject to modification as the foraminiferal faunas are investigated in greater detail in the future. Though no species (e.g. Chiloguembelina cubensis) definitely characterizing zone 4 were observed, the presence of this zone near the base of the open-marine sequence in bores located at some distance from the marging of the embayment is strongly suspected, since this zone has been definitely recognized in the Doraq 2 bore. Similarly, recognition of zone 9 (and Zone 10 in Cundare 1 bore) is based largely on non-paleontologic criteria; species definitely characterizing zone 9, such as Lepidocyclina, were not observed.

The presence of some of the most significant planktonic foram species (largely those of the Orbulina lineage) is indicated in the appropriate column. Vertical positions of samples examined are also indicated (NF= no forams observed; rr= rare; vrr= very rare).

Lithostratigraphic and lithologic observations are also summarized to give a framework for reference to the biostratigraphic conclusions. To some extent the lithologic data are based on the work of previous authors (for Birregurra 1 bore, A.N.Carter in I.C. Cookson, 1954, "A palynological examination of No.1 Bore, Birregurra, Victoria", Proc.Roy.

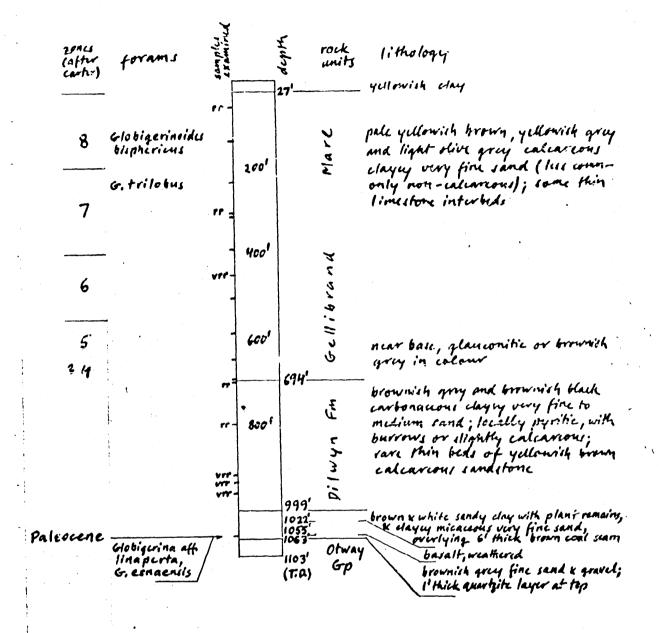
Soc.Vict. 66: 119-128; for Cressy 1 Bore, K.J.Reed, unpubl. rept. 1960-54, also in P.E.Bock, R.C. Glenie and K.J.Reed, unpubl. rept. 1964-32). Electric logs of Cundare 1 and Warrion 5 hores have also assisted in recognition of some stratigraphic boundaries.

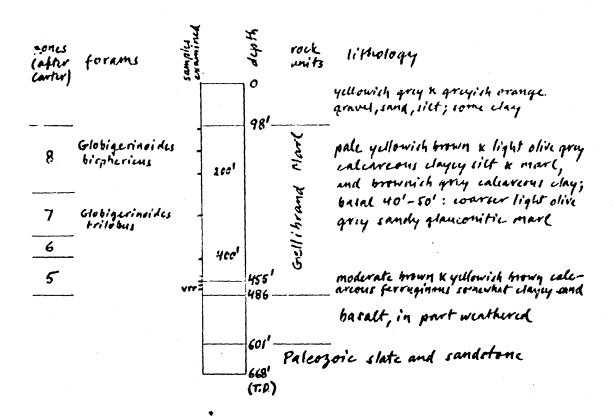
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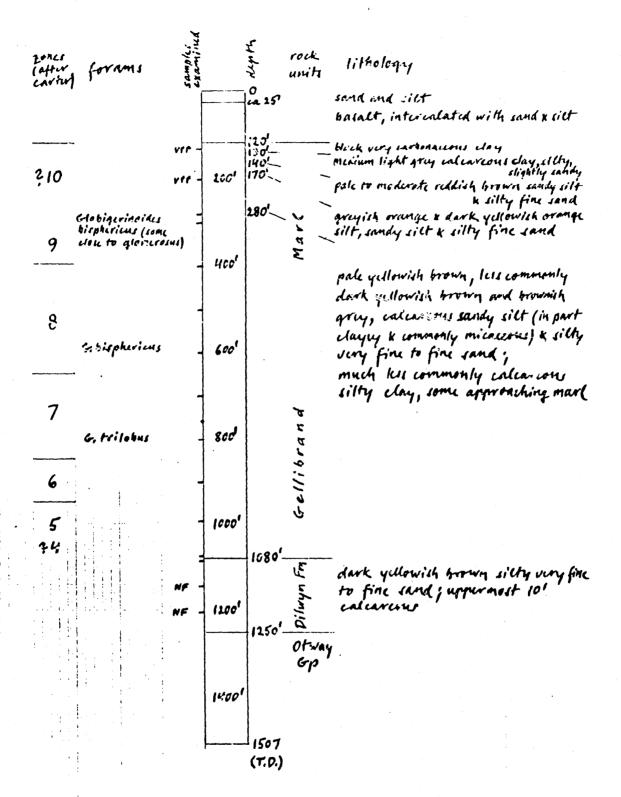
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17.6.70.

## BIRREGURRA







2 mc1 (effor carbr)	forams	samples	depth	rock units	lithology
			10' 62'—		silf; class basalt
<del></del>		,!! = 'A'	100'-		pull yellowish brown a brownish gray silty sand a gravel; at 70° dark gray silty clay, locally calcarcous
11	Orbulina universa	100		7,1	pale to dark yellowish brown calcarcons sandy silt k silty very fine sand; commonly commonly
10		400	,	2	clayly, glauconitic & micaceous
9					
8	Globiqueinoid bisphericus	£000	(50'		pale to dark yulowith brown silt k fine sand, me accous, slightly calcarcous
7		800	780'		olive gry, lus commonly pale to
6		100	01	brand	dark yellowith brown ealcarcous silty very fine sand & sandy silt, locally marl; usually somewhat clayey, commonly glaucomitic & wica ceous
5		120	01	Gelli	lower 200' locally darker, pyritic k with burrows
<b>?4</b>		rr 6 14	(300)	Dilwyn Fm	brownish grey to brownish tlack silty sand (mostly fine) sandy silt k mud; commonly pyritic, carbonacious k with burrows; locally slightly calcarcous
		160	1652 (T. P.	Otwa (-p	y