

Ballangeich-1, Otway Basin, ONSHORE
WCR

AGE IN Ma	PERIOD	EPOCH	AGE (After Hartland et al., 1982)	SUPERZONE	Helby et al., 1987		Dettman and Playford, 1969	Dettman, 1986	Morgan, 1980	Morgan, 1985 Otway Basin Review	Morgan, 1989 (Katnock 1 & 2)	Morgan, 1983	Burger, 1980	Evans, 1966, 1971	CSR/APG Consultants pre-1985 terminology	APG Consultants Eromanga/Surat terminology	This Volume	Key spore/pollen events* ← First appearance	Key micro plankton events ← Last appearance				
					DINOFLAGELLATE ZONES	SPORE-POLLEN ZONES																	
80	CRETACEOUS	LATE	80.2	ISABELINIAN		<i>Lygistopollenites balmei</i>													<i>Quadrifolius brossus</i>				
			DANIAN																		<i>Grapnelopora evansi</i>		
70		LATE	65	ISABELINIAN		<i>M. druggii</i>														<i>Forcipites (al. Tricolporites) longus</i>			
			MAASTRICHTIAN																		<i>Grapnelopora evansi</i>		
			73			<i>I. koronense</i>	<i>Tubuliflorites (al. Tricolporites) illiei</i>															<i>Tubuliflorites (al. Tricolporites) illiei</i>	
80		LATE	83	ISABELINIAN		<i>X. australis</i>	<i>Nothofagidites senectus</i>														<i>Nothofagidites senectus</i>		
			SANTONIAN			<i>N. aceris</i>	<i>Tricolporites apoxyeanus</i>															<i>Tricolporites apoxyeanus</i>	
			87.5			<i>I. cretaceum</i>	<i>Tricolporites apoxyeanus</i>															<i>Ornamentifera santosa</i>	
90		EARLY	87.5	MUDRONGIAN		<i>C. striatocornus</i>	<i>Phyllocladites mawsonii</i>														<i>Phyllocladites mawsonii</i>		
			CONIACIAN			<i>U. parisi</i>																<i>Cibicides mawsonii</i>	
			88.5			<i>P. infusorioides</i>																<i>Protoceras spp.</i>	
100		EARLY	LATE	97.5	HETEROSPHAERIDIAN		<i>D. multispinum</i>	<i>A. distocarinus</i>	<i>A. distocarinus</i>	<i>A. distocarinus</i>	<i>A. distocarinus</i>	<i>A. distocarinus</i>	<i>A. distocarinus</i>	<i>A. distocarinus</i>			<i>A. distocarinus</i>	APK7		<i>A. distocarinus</i>			
				VRACONIAN			<i>X. asperatus</i>	<i>Phimopollenites pannosus</i>	<i>P. pannosus</i>	<i>P. pannosus</i>	<i>P. pannosus</i>	<i>P. pannosus</i>	<i>P. pannosus</i>	<i>P. pannosus</i>	<i>P. pannosus</i>	<i>P. pannosus</i>			<i>P. pannosus</i>	APK6		<i>Coptospora paradoxa</i>	<i>Cybelosporites of C. brenneri</i>
			ALBIAN			<i>P. ludbrookiae</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>			<i>C. paradoxa</i>	APK5	APK5.2	<i>C. paradoxa</i>	<i>Phimopollenites pannosus</i>		
						<i>C. denticulata</i>	<i>Coptospora paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>	<i>C. paradoxa</i>			<i>C. paradoxa</i>	APK5	APK5.1	<i>C. paradoxa</i>	<i>Asian dinoflagellate assemblage</i>	
	ALBIAN					<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>			<i>C. striatus</i>	APK4		<i>C. striatus</i>	<i>Cybelosporites striatus</i>			
					<i>M. tetraacantha</i>	<i>Cybelosporites striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>	<i>C. striatus</i>			<i>C. striatus</i>	APK4		<i>C. striatus</i>	<i>Cybelosporites striatus</i>		
	EARLY		113	MUDRONGIAN		<i>D. davidi</i>	<i>Cyclosporites hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>			<i>C. hughesii</i>	APK3	APK3.2	<i>C. hughesii</i>	<i>Cockosporites variabilis</i>			
			APTIAN			<i>O. operculata</i>	<i>Cyclosporites hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>	<i>C. hughesii</i>			<i>C. hughesii</i>	APK3	APK3.1	<i>C. hughesii</i>	<i>Phimopollenites notensis</i>	
120	EARLY		119	MUDRONGIAN		<i>A. cinctum</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>			
			BARREMIAN			<i>M. australis</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>	
130	EARLY	125	MUDRONGIAN		<i>M. testudinaria</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>				
		HAUTERIVIAN			<i>P. burgeri</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>		
140	EARLY	131	MUDRONGIAN		<i>S. tabulata</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>				
		VALANGINIAN			<i>S. areolata</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>		
140	EARLY	138	MUDRONGIAN		<i>E. torvum</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>				
		BERRIASIAN			<i>B. reycyanum</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>		
140	EARLY	144	MUDRONGIAN		<i>C. australensis</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>				
		TITHONIAN			<i>D. jurassicum</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>		
150	EARLY	144	MUDRONGIAN		<i>R. watheroensis</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>				
		TITHONIAN			<i>U. montgomeryi</i>	<i>Dicyclosporites speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>	<i>D. speciosus</i>			<i>D. speciosus</i>			<i>D. speciosus</i>	<i>Phimopollenites notensis</i>		

* Different ranges may occur in the western and northern part of the continent

FIGURE 1 Tabulation of existing zonation schemes with zonation scheme used herein at right hand end (from Morgan et al 1995)