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Palynostratigraphic Data

Mocamboro #11 (reinterpreted from Price, 1998)

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Sample Sample Number Depth Preparation Number	Palynostratigraphic Unit Palynofacies Index Species	Inferred Lithostratigraphic Unit (Log interpreted Unit)	Inferred Depositional Environment Lithology	Palynomorph			Remarks
				Preservation	Yield (Organic yield)	Diversity	
Core 9.8 - 12.8m	APK5 Top <i>C. paradoxa</i>	Eumeralla Formation					Not examined in this study; assemblage data form Morgan, 1991
Core 25.9m - 28.8m	APK52 Base <i>P. grandis</i>	Eumeralla Formation					Not examined in this study; assemblage data form Morgan, 1991
Core 96.7m - 103.0m	APK5 ?APK51 Base <i>C. paradoxa</i>	Eumeralla Formation					Not examined in this study; assemblage data form Morgan, 1991 <i>C. paradoxa</i> is recorded from lower in the section but is considered to be contamination.
Core 360m	APK4 Base <i>C. striatus</i>	Eumeralla Formation					Not examined in this study; assemblage data form Morgan, 1991
SWC 550	APK32 ?APK321 Top <i>F. wonthaggiensis</i> "lunaris"	Eumeralla Formation					Not examined in this study; assemblage data form Morgan, 1991
Core 705.1m - 706.3m	APK32 ?APK321 Base <i>F. wonthaggiensis</i> "lunaris"	Eumeralla Formation					Not examined in this study; assemblage data form Morgan, 1991
Core 777.8m - 778.0m	APK32 APK321 <i>P. parvispinosus</i>	Eumeralla Formation					Not examined in this study; assemblage data form Morgan, 1991



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				Preservation	Yield (Organic yield)	Diversity	
FHC16 s6584 779.0m P19375	APK122 - APK3 possibly APK3 <i>Ruffordiaspora - Cyathidites</i> Palynofacies [<i>R. australiensis</i> , <i>D. filiosus</i>]	Eumeralla Formation (lower Eumeralla Formation)	Fluvial <i>Siltstone, gm gry</i>	Poor corroded	Very low <i>0.1mL/5mL</i> Extremely low	Very low	Unoxidised residue only Sparse restricted palynoflora dominated by spores remnants. Fern spores prominent; mostly <i>Cyathidites</i> and <i>Ruffordiaspora australiensis</i> . Lycopod spores notable; mostly <i>Retitriteles</i> . Saccate pollen remnants subdominant; few fragments identifiable.
FHC16 s6585 782.3m P19376	APK321 probably lower APK321 <i>Pilosporites - Cyathidites</i> Palynofacies [<i>P. notensis</i> , <i>P. parvispinosus</i> , <i>P. ingramii</i> , <i>P. "neograndis"</i> , <i>C. variabilis</i> , <i>F. wonthaggiensis</i> , <i>C. hughesii</i> , <i>C. stylosus</i>]	lower Eumeralla Formation (Lower Eumeralla Formation)	Fluvial - lacustrine <i>Siltstone, lt olv gry,</i> <i>mottled</i>	Good	High <i>0.1mL/5mL</i> Extremely low	High	Palynoflora dominated by fern spores; mostly <i>Cyathidites</i> ; <i>Osmundacidites</i> notable <i>Pilosporites</i> conspicuous and diverse. Bryophyte spores notable; mostly <i>Aequitriradites</i> , <i>C. variabilis</i> and <i>F. wonthaggiensis</i> . Saccate pollen conspicuous. Cheirolepidiacean pollen notable. Algal forms notable; mostly leiospheres and <i>S. reticulata</i> .
FHC18 s6594 814.5m P19377	APK22 - APK321 possibly lower APK321 <i>Pilosporites - Cyathidites</i> Palynofacies [<i>P. notensis</i> , <i>P. ingramii</i> , <i>P. "neograndis"</i> , <i>C. variabilis</i> , <i>F. wonthaggiensis</i> , <i>C. hughesii</i> , <i>C. stylosus</i> , <i>M. evansi</i>]	lower Eumeralla Formation (Lower Eumeralla Formation)	Fluvial <i>Siltstone, lt gry, pyrite vein</i>	Fair	High <i>0.1mL/5mL</i> Extremely low	High	Palynoflora dominated by fern spores; mostly <i>Cyathidites</i> ; <i>Osmundacidites</i> notable <i>Pilosporites</i> notable and moderately diverse. Bryophyte spores scarce; <i>V. "pseudoasymmetricus"</i> and <i>Januasporites</i> notable. Lycopod spores scarce. Saccate pollen conspicuous; <i>Alisporites</i> notable. Cheirolepidiacean pollen notable. Algal forms scarce.
FHC18 s6595 816.8m P19378	APK321 probably lower APK321 <i>Pilosporites - Osmundacidites</i> - Palynofacies [<i>P. notensis</i> , <i>P. parvispinosus</i> , <i>P. ingramii</i> , <i>P. "neograndis"</i> , <i>C. hughesii</i> , <i>C. stylosus</i>]	lower Eumeralla Formation (Lower Eumeralla Formation)	Fluvial <i>Siltstone, lt gry</i>	Fair	High <i>0.1mL/5mL</i> Extremely low	Moderate	Palynoflora dominated by fern spores; mostly <i>Cyathidites</i> and <i>Osmundacidites</i> . <i>Pilosporites</i> and <i>Ruffordiaspora</i> notable. Saccate pollen scarce; Bryophyte spores scarce and restricted in diversity. Lycopod spores scarce but moderately diverse. Few algal forms
	Base <i>P. parvispinosus</i>						



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				Preservation	Yield (Organic yield)	Diversity	
FHC19 s6596 832.6m P19379	APK31 - lower APK321 possibly APK31 <i>Pilosisorites - Osmundacidites</i> Palynofacies [<i>P. notensis</i> , <i>P. ingramii</i> , <i>P. "neograndis"</i> , <i>F. wonthaggiensis</i> , <i>F. asymmetricus</i> , <i>C. hughesii</i> , <i>C. variabilis</i> , <i>C. stylosus</i>]	lower Eumeralla Formation (Lower Eumeralla Formation)	Fluvial - lacustrine <i>Siltstone, lt gry</i>	Fair	High <i>0.2mL/5mL</i> Very low	High	Palynoflora dominated by fern spores; mostly <i>Cyathidites</i> and <i>Osmundacidites</i> . <i>Pilosisorites</i> and <i>Ruffordiaspora</i> notable. Bryophyte spores conspicuous and moderately diverse; <i>Foraminisporis</i> notable. Lycopod spores scarce but moderately diverse. Conifer pollen remnants conspicuous but poorly preserved; large bisaccate pollen notable. Algal spores conspicuous; <i>Microfaster evansii</i> notable
Windermere Sandstone Member 835m							
FHC19 s6597 833.3m P19380	APK22 - lower APK321 probably APK31 <i>Pilosisorites - Osmundacidites</i> Palynofacies [<i>P. notensis</i> , <i>P. ingramii</i> , <i>P. "neograndis"</i> , <i>F. wonthaggiensis</i> , <i>C. hughesii</i>]	lower Eumeralla Formation (Lower Eumeralla Formation)	Fluvial <i>Siltstone, lt gm gry</i>	Fair	Moderate <i>0.1mL/5mL</i> Extremely low	Moderate	Palynoflora dominated by fern spores; mostly <i>Cyathidites</i> and <i>Osmundacidites</i> . <i>Pilosisorites</i> and <i>Ruffordiaspora</i> notable. Bryophyte spores notable; <i>Foraminisporis wonthaggiensis</i> notable. Lycopod spores scarce. Conifer pollen remnants prominent but poorly preserved; large bisaccate pollen notable. Algal spores scarce; Isolated <i>Microfaster evansii</i> .
Deepest <i>Pilosisorites notensis</i> recovered in this study							Morgan 1991, recorded <i>P. notensis</i> at 905.9m
FHC20 s6598 852.3m P19381	APK2 - APK321 possibly APK31 <i>Ruffordiaspora - Cyathidites</i> Palynofacies [<i>F. wonthaggiensis</i> , <i>D. speciosus</i> , <i>C. hughesii</i>]	lower Eumeralla Formation (Lower Eumeralla Formation)	Fluvial <i>Siltstone, lt gry, carb lam,</i>	Fair	Moderate <i>0.19mL/5mL</i> Very low	Low - moderate	Palynoflora dominated by fern spores; mostly <i>Cyathidites</i> ; <i>Osmundacidites</i> conspicuous; <i>Ruffordiaspora</i> notable. Bryophyte spores notable; <i>Foraminisporis wonthaggiensis</i> notable. Lycopod spores scarce and restricted in diversity. Conifer pollen remnants conspicuous but poorly preserved; large bisaccate pollen notable. Algal spores scarce; mostly leiospheres note change in organic facies relative to overlying section
FHC21 s6599 869.5m P19382	APK31 - APK321 probably APK31 <i>Ruffordiaspora - Osmundacidites</i> Palynofacies [<i>F. wonthaggiensis</i> , <i>F. asymmetricus</i> , <i>C. hughesii</i> , <i>D. speciosus</i>]	lower Eumeralla Formation (Lower Eumeralla Formation)	Fluvial - lacustrine <i>Siltstone, lt gry</i>	Fair	Moderate <i>0.19mL/5mL</i> Very low	High	Palynoflora dominated by land plant spores; Conifer pollen subdominant. Fern spores prominent; mostly <i>Osmundacidites</i> and <i>Cyathidites</i> ; <i>L. verrucatus</i> conspicuous; <i>Ruffordiaspora</i> notable. (<i>Pilosisorites</i> could be found despite an extensive search of additional material). Lycopod spores conspicuous; mostly <i>Retitriteles</i> , <i>C. equalis</i> and <i>D. speciosus</i> conspicuous. Bryophyte spores scarce. Algal spores notable; mostly <i>S. reticulatus</i> (in unoxidised and >80µ fractions) and leiospheres (in <20µ fraction)



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				Preservation	Yield <i>(Organic yield)</i>	Diversity	
	Base <i>F. asymmetricus</i>						
FHC21 s6600 870.6m P19383	Indeterminate	Indeterminate	Indeterminate <i>Siltstone, lt grn gry</i>	—	Almost nil <i>0.04mL/5mL Extremely low</i>	Almost nil	Unoxidised residue only; Extremely low organic recovery consisting mostly of fine (?fusinitic) opaque palynodebris; minor highly corroded cuticle sheets; few spore remnants.
Core 905.9m	APK22 - APK31 probably APK22 <i>P. notensis, R. australiensis</i>	basal Eumeralla Formation or uppermost Laira Formation					Not examined in this study; assemblage data form Morgan, 1991
FHC22 s6601 906.55m P19384	Upper APK21 - APK31 possibly APK22 <i>Ruffordiaspora - Cyathidites</i> Palynofacies <i>[F. wonthaggiensis, D. speciosus, R. ludbrookiae, F. “burgeri”, T. reticulatus, M. evansii]</i>	basal Eumeralla Formation or uppermost Laira Formation <i>(Eumeralla Formation)</i>	Fluvial <i>Siltstone, lt gry</i>	Good - fair	High <i>0.04mL/5mL Extremely low</i>	High	Palynoflora dominated by fern spores; mostly <i>Cyathidites</i> , <i>Osmundacidites</i> conspicuous; <i>Ruffordiaspora</i> and <i>Fisciniasporites “burgeri”</i> notable. (Neither <i>Pilosporites</i> nor <i>F. asymmetricus</i> could be found despite an extensive search of additional material). Inaperturate and saccate conifer pollen subdominant. Lycopod spore notable but somewhat restricted in diversity; <i>C. equalis</i> notable. Bryophyte sores notable; <i>T. reticulatus</i> notable. Few algal forms; isolated <i>M. evansii</i> . [This association is reminiscent of the association at 1184m and 1211m in Gordon #1 and 1364m in Digby #1]
	Base consistent, notable & modestly diverse <i>Ruffordiaspora spp</i>						<i>The section between 832m and 943m is equivalent to the APK22 - APK31 interval in Gordon #1.</i>
FHC23 s6610 942.7m P19385	APK21 - APK31 probably APK2 tentatively APK22 <i>Osmundacidites - Retitriteles</i> Palynofacies <i>[F. wonthaggiensis, C. hughesii, C. berberioides, R. ludbrookiae, R. australiensis, C. stylosus, D. speciosus, M. evansii (notable)]</i>	basal Eumeralla Formation or uppermost Laira Formation <i>(basal Eumeralla Formation)</i>	Fluvial - lacustrine <i>Siltstone, lt gry</i>	Fair - good	High <i>0.05mL/5mL Extremely low</i>	Moderate	Palynoflora dominated by fern spores; mostly <i>Cyathidites</i> and <i>Osmundacidites</i> , <i>Ruffordiaspora</i> present but rare. (Neither <i>Pilosporites</i> nor <i>F. asymmetricus</i> could be found despite an extensive search of additional material). Conifer bisaccate and trisaccate pollen subdominant. Lycopod spores prominent; <i>C. equalis</i> and <i>Retitriteles</i> conspicuous. Bryophyte spores scarce. Algal spores notable; <i>M. evansii</i> notable (in unoxidised residue) [Morgan, 1991 records <i>P. notensis</i> in SWC 965m]



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				Preservation	Yield (Organic yield)	Diversity	
FHC23 s6611 943.0m P19386	APK122 - APK31 possibly APK2 very tentatively APK22 <i>Osmundacidites - Retitriteles</i> Palynofacies [<i>Cycto. hugesii</i> , <i>D. speciosus</i> , <i>R. ludbrookiae</i> , <i>R. australiensis</i>]	basal Eumeralla Formation or uppermost Laira Formation (basal Eumeralla Formation)	Fluvial - lacustrine; Paralic <i>Siltstone, lt gry</i>	Fair - good	High <i>0.07mL/5mL</i> <i>Extremely low</i>	Moderate	Palynoflora dominated by fern spores; mostly <i>Osmundacidites</i> , <i>Cyathidites</i> prominent. <i>Ruffordiaspora spp</i> present but scarce (3 specimens). (Neither <i>Pilosporites</i> nor <i>F. asymmetricus</i> could be found despite an extensive search of additional material). Conifer bisaccate and trisaccate pollen subdominant. Lycopod spores prominent; <i>C. equalis</i> and <i>Retitriteles</i> conspicuous. Bryophyte spores scarce. Algal spores notable; <i>M. evansii</i> notable; isolated spinose acritarch. [Morgan, 1991 records <i>P. notensis</i> in SWC 965m] <i>The Mocamboro Core 23 associations are similar to that at SWC53 1275m in Gordon #1 assigned to APK21. The placement of the Mocamboro associations into APK22 reflects the presence of P. notensis in SWC 965m. The equivalent association in Digby #1 (SWC 41 1318.1) is also assigned to APK22: the Digby association at 1220.8m is similar florally but has isolated P. notensis and overly a distinctive Cyathidites Palynofacies thought to restricted to APK22 - APK321.</i>
SWC 965m	APK21 - APK31 possibly APK22 <i>P. notensis</i> , <i>R. australiensis</i>	basal Eumeralla Formation or uppermost Laira Formation					Not examined in this study; assemblage data from Morgan, 1991 The record of <i>P. notensis</i> by Morgan 1991 from SWC 965 is a little puzzling. It seems to below the <i>Ruffordiaspora</i> associations and does not fit well with the log correlation
	Base consistent but scarce <i>Ruffordiaspora spp</i>						
	Crayfish Sub Group (Laira Shale equivalent) 1000m						<i>There is an indication of APK21 associations being preserved in Bus Swamp #1, Gordon #1, Mocamboro #11 and Digby #1 which suggests that there is a hiatus within the upper Crayfish Sub Group (Laira Formation) perhaps in addition to the regional unconformity between the Eumeralla Formation and Crayfish Sub Group. This contrasts with the Penola Trough upper Crayfish section where the upper Crayfish section is truncated with the progressive loss of the APK212 and APK211 section towards the Trough margins as in Katnook tp Sawpit to Robinson and possibly Heathfield to Tullich to McEachern.</i>
FHC25 s6612 998.8m P19387	APJ4 - APK7 Indeterminate [<i>C. cooksoniae</i> , <i>L. verrucatus</i>]	Indeterminate (upper Laira Shale)	?Fluvial <i>Siltstone, lt gry</i>	Very poor	Extremely low <i>0.02mL/5mL</i> <i>Extremely low</i>	Extremely low	Low organic recovery of mostly fine opaque palynodebris. Very few palynomorphs; <i>Contignisporites</i> , <i>Cyathidites</i> and leiospheres notable
FHC25 s6613 999.8m P19388	APJ3 - APK7 Indeterminate [<i>L. verrucatus</i>]	Indeterminate (upper Laira Shale)	?Fluvial <i>Siltstone, lt gry; sandy</i>	Extremely poor	Almost nil <i>0.03mL/5mL</i> <i>Extremely low</i>	Almost nil	Low organic recovery of mostly fine opaque palynodebris. Almost no identifiable palynomorphs.



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				Preservation	Yield (Organic yield)	Diversity	
FHC26 s6614 1016.7m P19389	Middle APK21 - APK22 probably Middle APK21 <i>Osmundacidites</i> - <i>Retitriletes</i> Palynofacies [<i>F. wonthaggiensis</i> , <i>T. reticulatus</i> , <i>M. evansii</i> , <i>D. speciosus</i>]	upper Laura Formation (upper Laura Shale)	Fluvial - lacustrine <i>Siltstone, lt gry; sandy</i>	Poor	Low 0.09mL/5mL Extremely low	Moderate	Palynoflora dominated by fern spores; mostly <i>Osmundacidites</i> , <i>Cyathidites</i> prominent. Conifer saccate pollen subdominant. Lycopod spores conspicuous; mostly <i>Retitriletes</i> , <i>D. speciosus</i> notable. Bryophyte spores relatively scarce but moderately diverse. Algal spores notable; <i>M. evansii</i> notable [Morgan, 1991 records <i>F. asymmetricus</i> in SWC 1006m; however, the palynoflora from 1016.7 in the same litho-unit (this study) is typical of the upper Laura APK212 associations and does include " <i>Verrucosporites</i> " " <i>pseudoasymmetricus</i> " and none of the APK3 associates]
	Lowest <i>T. reticulatus</i> , (in this study) Base <i>F. wonthaggiensis</i>						Morgan, 1991 records <i>T. reticulata</i> from Core 1061m
FHC26 s6615 1021.0m P19390	Indeterminate	Indeterminate (Laura Shale)	Indeterminate <i>Siltstone, v lt gry</i>	Extremely poor	Almost nil 0.13mL/5mL Very low	Almost nil	Low organic recovery of mostly fine opaque palynodebris. Few cuticle remnants. Almost no identifiable palynomorphs. [Morgan, 1991 records <i>Triporeletes reticulatus</i> to 1061m]
Core 1061m	Middle APK21 - APK22 possibly middle APK21 <i>T. reticulatus</i>	upper Laura Shale (Laura Shale)					Not examined in this study; assemblage data from Morgan, 1991
	Sample Gap Pretty Hill Formation 1095m						The thinness of the APK212 section (in relation to Katnook) and its proximity to the APK122 Pretty Hill Formation (particularly the McEachern Sandstone) suggests that there is a hiatus within the Crayfish Sub Group accounting for the lower Laura Shale (APK211 and APK122 part) and upper Pretty Hill Formation.
FHC37 s6616 1318.8m P19391	APK12 - APK21 tentatively upper APK12 ? <i>Osmundacidites</i> - <i>Retitriletes</i> Palynofacies [<i>A. Spinulosus</i> , <i>C. hughesii</i> , <i>C. equalis</i> , <i>F. dailyi</i>]	basal Laura Formation or Pretty Hill Formation (Pretty Hill Formation)	Fluvial <i>Siltstone, mid gry; sandy</i>	Very poor	Low 0.25mL/5mL Low	Low	Restricted palynoflora of mostly corroded unidentifiable remnants. Fern spores prominent; mostly <i>Osmundacidites</i> . Saccate pollen remnants conspicuous.



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