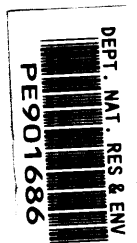


BASIC DATA

+

Palynological Data

SHERBROOK - 1



57-60 Fm 6
 60 Fm 5
 72 Fm 3-4
 92.5 Fm 1-2
 168 Fm 1-2

GROUNDWATER DATA: (T.D.S., screened intervals, S.L., Drawdown, Yield)

STRATIGRAPHY: Formation	Depth(m)	FROM	TO	Comments	
Heytesbury Group (CMM)	Newer Basalt	CXNV			
	Whalers Bluff Fm	CQWB			
	Moorabool Viaduct Sds.	CXMO			
	PortCambell Lst Fm	CMPA			
	Gellibrand Marl	CMAM	0		
	Clifton Fm.	COCL	67		
Nirranda Group (CON)	Narrawaturk Marl	KONM	79		
	Mepunga Fm	CEME	155		
Wangerrrip Group (CPW)	Silwyn Fm (Easter View)	CPDI	186		
	Elder Volcanics	CEEV	95		
	Pember Mudstone	CPPM	378		
	Pebble Point Fm.	CPPP	457		
Sherbrook Group (MCS)	Paaratte Fm		585		
	Timboon Sd (Skull Ck)	MCPA			
	Nullawaare Fm	MCTS	902		
	Belfast Mudstone	MCNB	1000		
	Flaxmans Fm	MCSM	1048		
	WaarreSnds Fm	MCFL	1143		
Stway Group (MCOZ)	Summeralla Fm	MCWA	1149		
	Pretty Hill Sds (GALTSWOOD BEACH)	MCEU	1216		
	Palaeozoic mudstones	MCPH	1612	1650	
			PSMV		

OTHER DATA: (Velocity survey, seismic line, gas/oil show, tests)

DATA SOURCE, REFERENCES, COMMENTS

57-60 Fu 6
 60 Fu 5
 72 Fu 3-4
 92.5 Fu 1-2
 168 Fu 1-2

D.T.R. Popen

GROUNDWATER DATA: (T.D.S., screened intervals, S.L., Drawdown, Yield)

S. T. Keel 17/7/89
 depths below ground level

STRATIGRAPHY: Formation		Depth(m)	FROM	TO	Comments
	Newer Basalt	CXNV			
	Whalers Bluff Fm	CQWB			
	Moorabool Viaduct Sds.	CXMO			
Heytesbury Group (CMM)	PortCambell 1st Fm	CMPC			
	Gellibrand Marl	CMAM	0	0	
	Clifton Fm.	COCL	67	60-60	219.9'
Nirranda Group (CON)	Narrawaturk Marl	KONM	79	73.7 SL	259.3'
	Mepunga Fm	CEME	155	150.8 SPX UM 164.5 MM 182.5 LM	508.7'
Wangerrrip Group (CPW)	Bilwyn Fm (Easter View)	CPDI	186	224.0 8	610.5'
	Older Volcanics	CEEV	2		
	Pember Mudstone	CPPM	378	376.0 SL	
	Pebble Point Fm.	CPPP	454	435.5 SL	
Sherbrook Group (MCS)	Paaratte Fm		585	590.4 SL	1920'
	Timboon Sd (Skull Cr)	MCPA	902		
	Nullawaare Fm	MCTG			
	Belfast Mudstone	MCNG	1000	989.3 8	
	Flaxmans Fm	MCSM	1048	1123.8 8	
	Waarye Snds Fm	MCFL	1143		
Otway Group (MCOZ)	Summeralla Fm	MCEU	1149	1146.9 8	
	Pretty Hill Sds (GELTWOOD BEACH)	MCPH	1216	1211.2 8, SP	
	Palaeozoic mudstones	PSMV	1612	1656	
				TD 1652.3	

OTHER DATA: (Velocity survey, seismic line, gas/oil show, tests)

DATA SOURCE, REFERENCES, COMMENTS

Comp. Rept → Petrology

PALEONTOLOGY: Foraminifera Det. by

Palynology Det. by

GROUNDWATER DATA: (T.D.S., screened intervals, S.L., Drawdown, Yield)

Datum = K.B.

STRATIGRAPHY: Formation	30/12	Depth(m)	R.L.	Thick	Comments
Gellibrand Marl	4	0			
Clifton	65	60.6			
Narrawahuk	78	73.7			
Mepunga	155				
Lower Skerress Pt	172	164.5			u. 150.8(52), M 64.5(48), L 132.5(8)
Dilwyn (Esker View)	191	224.0			
Pember	386	374.0			
Pebble Pt.	442	435.5	439.5		} s. Tickell, 4/90.
Timboon Sand	—		530		
Paaratte	→ 528	504 512	—		
Nullavare	997	989.3			
Belfast	1134	1123.8			
Warre	1158	1146.9			
Emerald	1222	1211.2			

OTHER DATA: (Velocity survey, seismic line, gas/oil show, tests)

S. Tickell, 17/7/89

DATA SOURCE, REFERENCES, COMMENTS

901686 007

OTWAY BASIN

S. Tickle

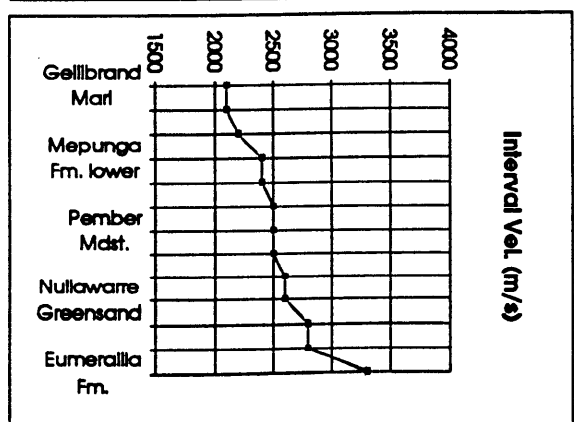
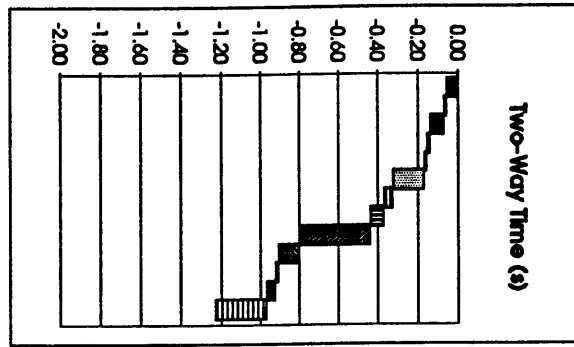
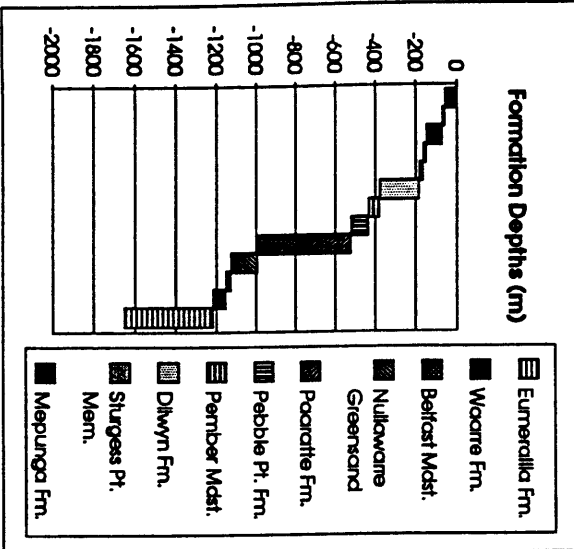
Strat. log by -
 Lot: -38.62583
 KB Elev. (m ASL) 146.3

Long: 143.12111
 Grd. Elev. 142.33

143.12111
 142.33

SHERBROOK NO. 1

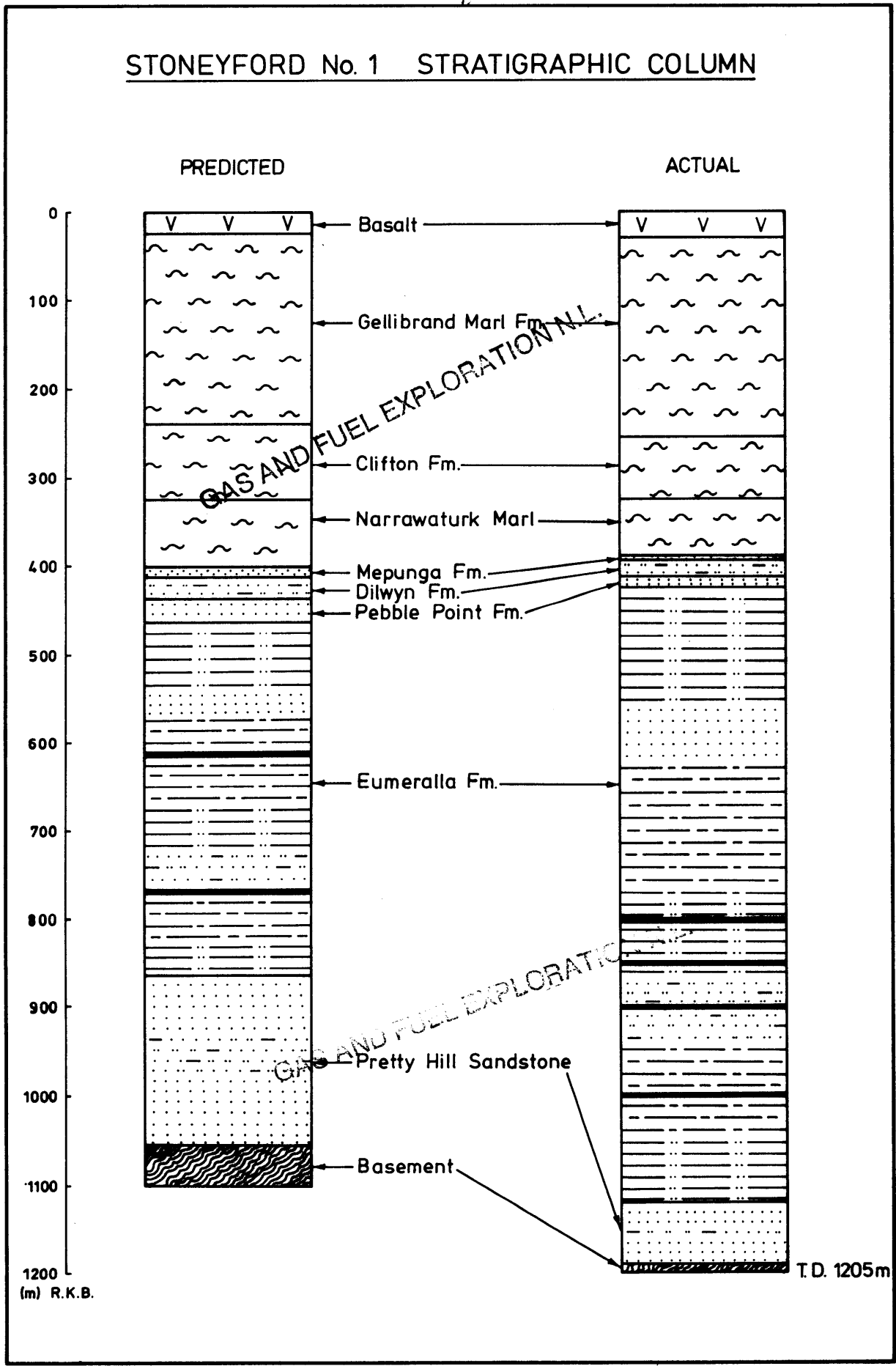
Age	Unit	Remarks	Depth (m)	Thickness	Int. Vel (m/s)	T-time (s)	2-T-time (s)	TWT Fm. top (s)
Miocene	Gellibrand Marl	Heytesbury Gp.	-4	-01	2100	-0.03	-0.06	0.00
	Clifton Fm.		-45	-13	2100	-0.01	-0.01	-0.06
Eocene-Oligocene	Narrawatchuk Marl	Niranda Gp.	-76	-77	2200	-0.04	-0.07	-0.07
	Mepunga Fm. lower		-155	-17	2400	-0.01	-0.01	-0.14
	Sturges Pt. Mem.		-172	-19	2400	-0.01	-0.02	-0.15
Paleocene-Eocene	Dikwyn Fm.	Wangerip Gp.	-191	-195	2500	-0.08	-0.16	-0.17
	Pember Mdst.		-386	-56	2500	-0.02	-0.04	-0.33
	Pebble Pt. Fm.		-442	-86	2500	-0.03	-0.07	-0.37
	Porartie Fm.	Sherbrook Gp.	-528	-469	2600	-0.18	-0.36	-0.44
L. Cret.	Nulkawara Greensand		-997	-137	2600	-0.05	-0.11	-0.80
	Belcast Mdst.		-1134	-24	2800	-0.01	-0.02	-0.91
	Woorne Fm.		-1158	-44	2800	-0.02	-0.05	-0.92
E. Cret.	Eumeralla Fm.	Ohwuy Gp.	-1222	-494	3300	-0.13	-0.26	-0.97
	ID		-1656					



Lat 38° 21' 6.1" S
Long 143° 18' 47.3" E

FIGURE 3

STONEYFORD No. 1 STRATIGRAPHIC COLUMN



Stoneyford No. 1

901686 010

Depth.

Temp.

Max Rec Temp. 162° F
6 hrs + 12 hrs after Circulation

BHT @ 1205m (10)

~~16 hrs~~
16 hrs after Circulation
Max Rec Temp.

72° F

BHT @ 1205m

Max Rec Temp.
5 hrs after Circulation

100° F

~~BHT~~ @ 352m

SHERBROOK I. 480

B-215 BM

215-257 CF

257-509 NM

509-?575??

MF

cases 1+2 upper Eocene
575' in center of core 1.
check cores

575-1241 DiF

-1241-1450 PMM (?-1470 Terns)

1450-1707 PPF

1707-2728?? TSM

2728-3230 PF -1

3230-3780?? NGM ≡

NGM 3250-3475
BMM. ~~3475~~
to 3780.

3780-3988 WF

3988- RC

check
cores

SHERBROOK 1

Location

Lat. 38° 37' 25" Long. 143° 06' 45"

Elevation

R.T. + 480 feet Gr.L. + 467 feet

Depth (feet)

Lithology

25 ft
5 ft
25

13 - 212	GM. Marl.
212 - 285	C = Sandy limestone
285 - 508	Marl - glauconitic
508 - 1240	DF Sand, sandy siltstone, siltstone
1240 - 1440	pebbly conglomerate, siltstone
1440 - 1490	numerical PA
2000 - 2900	Sand, sandy siltstone, thin coal bands.
2900 - 3278	Sand, sandstone, siltstone, micaceous carbonaceous and glauconitic towards base
3278 - 3378	Dark green chloritic glauconitic sandstone.
3378 - 3780	Siltstone sandstone Glauconitic sandy siltstone-mudstone.
3780 - 3910	Clear sand.
3910 - 4598	Siltstone-mudstone, sand.

Pebbly congloms

1490 - 1630	Pebbly PA	Cuttings 1710 - 1945
1630 - 1950	Current	Core ③ 1778 - 1785
1950 - 2480	Paraffin	Core ⑤ 2280 - 2293 Loose pebbles
2480 -		Core ⑥ 2902 - 2921 Pebbly conglom.

RG ? 4049 Lense
3940 Klaver

4049
1630
480
1150

508
1630
508
1122

Index	Interval	Thickness	Description	Notes
1	565-585	20	MUDSTONE, DKB NISIL GREY, SOFT, UNBEDDED, FORAMS, FOFOIDS.	MF
2	585-685	8	DITTO TO GRAVELLY MUDSTONE (POLISHED BTZ GRANULES)	ME, DF, ENK, TSM
3	1309-1329	20	MUDSTONE, MED BROWNISH GREY, UNBEDDED, FOSSILS, FOFOIDS & MUDSTONE, light grey, soft.	TSM, PF
4	1778-1785	4	MUDDY GRAVELLY SAND, med grey, NON BEDDED. up to 2cm pebbles.	PF, NB, NBM, BM
5	2280-2293	1	VARIOUS CHUNKS OF MUDSTONE - UNRELIABLE	WF, KG, WGS, K6
6	2902-2921	15	SHALE, dark to light grey, laminated, med.	
7	3046-3066	14	SHALE - poorly bedded coarse SILTSTONE non bedded.	
8	3281-3301	10	SANDSTONE (brown, green, glauconitic, silty) non bedded	
9	3365-3378	13	SANDSTONE - grey green & glauconitic, silty non bedded.	
10	3596-3602	5	MUDSTONE, dark green grey, glauconitic, hard	
11	3825-3845	1	SANDSTONE, pale grey, massive, coarse quartz.	
12	4042-4049	6		
13	4049-4064	2	MUDSTONE, med grey, soft; SANDSTONE, pale grey, calcareous, arboresc	
14	4064-4070	5		
15	4189-4191	0		
16	4191-4200	0		
17	4316-4321	2		
18	4321-4327	6		
19	4598-4610	3		
20	4865-4877	12		
21	4879-4889	5		
22	4889-4896	7		
23	4896-4913	8		
24	4913-4931	16		
25	5216-5236	20		
26	5414-5431	10		
27	5431-5434	3		

901686 014

Additions by
S. Tickell

10/88

APPENDIX 4

CORE DESCRIPTIONS

by

Frome-Broken Hill Company Pty. Ltd.

CORE ANALYSIS

by

Bureau of Mineral Resources, Geology and Geophysics
Canberra

CORE DESCRIPTIONS

901686 015

- Core No. 1 ^{172.2 178.3} 565 to 585 feet. Recovered 20 feet. ^{silty sandstone} Sandy SILTSTONE; brown-~~grey~~, medium to dark grey, micaceous, pyritic. Sand is white, very fine to coarse, subangular to well rounded, set in a medium to dark grey silty matrix with a few carbonaceous fragments. ^{carbonaceous, burrowed, weakly burrowed} ?Fossiliferous. No evidence of oil or gas.
- Core No. 2 ^{184.4} 585 to 605 feet. Recovered 8 feet. ^{carbonaceous} Sandy SILTSTONE; medium to dark grey as for Core No. 1, apart from 6" of granule size sand in siltstone in middle of core. Granules are all white and milky quartz, and mostly well rounded, set in the silty matrix, rare fossils (possibly *Podocypris* and *Podoceras*) ^{burrowed, weakly bedded.}
- Core No. 3 ^{399.0 405.1} 1,309 to 1,329 feet. Recovered 20 feet. ^{carbonaceous} Top 5 feet SILTSTONE; brown to brown-grey soft, micaceous, ^{burrowed, weakly bedded, carbonaceous, non-carbonaceous, glauconitic} glauconitic, pyritic, minor carbonaceous fragments. 1 foot 6" SILTSTONE as above but very pyritic and slightly sandy. 13 feet 6" Silty SANDSTONE to sandy SILTSTONE; brown, soft, ^{glauconitic, pyritic,} as for top 5 feet. No oil or gas.
- Core No. 4 ^{541.9 544.1} 1,778 to 1,785 feet. Recovered 4 feet. ^{slightly carbonaceous} PEBBLE CONGLOMERATE grading to SILTSTONE-MUDSTONE; medium to dark grey. Pebbles are rhyolite, porphyry, quartzite, reef quartz, sandstone, mostly angular although some rounded set in a silty matrix. Pyritised wood present. ^{Core is tight and hard. = Pebble Point Formation. up to 4cm, angular - sub-rounded.}
- Core No. 5 ^{694.9 698.9} 2,280 to 2,293 feet. Recovered 1 foot. ^{very} SANDY SILTSTONE and MUDSTONE; brown grey to dark grey, with some loose conglomeratic pebbles of quartz and green chert. Core is slickensided.
- Core No. 6 ^{884.5 890.3} 2,902 to 2,921 feet. Recovered 15 feet. SANDSTONE; very fine to fine, light grey, tight. Interbedded with SILTSTONE, medium dark grey, micaceous, carbonaceous. Sandstone is made up of very fine to fine, subangular to sub-round, clean quartz, green, ^{glauconitic, micaceous, burrowed} glauconitic, micaceous, and pyritic. Siltstone is micaceous, dense, carbonaceous and pyritic. Core is finely interbedded and laminated, with four inch section of pebble conglomerate in centre. Pebbles are round to well rounded quartz set in a medium dark grey silty matrix. Core is slightly cross bedded and shows evidence of micro-faulting. Apparent dip: 15° to 20°. ^{laminated (fine), disrupted by long branching, minor well laminated siltstone/mudstone - white, clean silt - 1/4" of sand} No oil or gas. ^{laminae alternating with dk. bur, vac. det., clay silt -}
- Core No. 7 ^{928.4 934.5} 3,046 to 3,066 feet. Recovered 14 feet. ^{carbonaceous} SILTY SANDSTONE; grey to green-grey, made up of very fine to fine, mainly very fine, clear, white, angular to subangular fairly well sorted quartz set in a silty matrix. ^{glauconitic,} micaceous, pyritic and with plant remains. Core is cross bedded with apparent dip of 5° to 8°. A few concretions of brown, hard dolomite (ankerite) and pyrite and some coarse to very coarse quartz grains mainly towards bottom of core. Gas bubbles from the fresh core. No cut or fluorescence. ^{laminated carb. cl. / sand fine - silt; also laminated carbonaceous (prob. calc. take up silt) (clean s. (subordinate), highly burrowed, sub-horizontal laminae}

- Core No. 8 ^{1000.1} 3,281 to ^{1006.2} 3,301 feet. Recovered 10 feet.
 SANDSTONE; dark green, ^{fine to coarse} glauconitic, made up of 80% glauconite ^{with thin} and very fine to fine with occasional coarse grained quartz set in glauconite (or chlorite?) matrix. Core is soft, friable, slickensided without evidence of oil or gas. Dolomitic concretions and dolomite filling fractures. Core appears to be fairly tight. *glauconite pellets oxidized*
- Core No. 9 ^{1025.7} 3,365 to ^{1029.6} 3,378 feet. Recovered 13 feet.
 SANDSTONE; very dark green, ^{fine to coarse} subangular to ^{pebbles} round, poorly sorted quartz (approx. 60%), and 40% glauconite. Very dark green and black chloritic or glauconitic matrix. Core has porosity and is slickensided in places. Apparent dip: 10°. Dolomitic concretions and some carbonaceous matter. Gas bubbles evident from core. *glauconite pellets oxidized*
- Core No. 10 ^{1096.1} 3,596 to ^{1097.9} 3,602 feet. Recovered 5 feet
 SILTSTONE; glauconitic, sandy, made up of 50% silty chloritic?, dark grey matrix; 40% glauconite ^{pebbles} and/or chlorite and about 10% sand. Sand is clear (mainly) with few yellow (iron stained) fine to coarse, angular to subround. Glauconite associated with quartz. Core is tight and has some pyritic concretions. Slickensided. When hit splits at an angle of 25°. No oil or gas. Density: 2.6, *tends to mudstone*
- Core No. 11 ^{1165.9} 3,825 to ^{1172.0} 3,845 feet. Recovered 1 foot.
 Top 2" SILTSTONE; dark grey-green, glauconitic, dense. Glauconite makes up 50% of rock. Glauconitic pellets.
 Note: This may be caving from above.
 10" SANDSTONE; light grey, made up of clear, milky, *slightly carbonaceous* coarse to granule, angular to subrounded quartz with very little matrix. Sandstone has very high porosity *→ low porosity*
 No evidence of oil or gas. No cut.
- Core No. 12 ^{1232.0} 4,042 to ^{1234.1} 4,049 feet. Recovered 2 inches.
 SILTSTONE; medium to dark grey, ^{carbonaceous} dense, micaceous, fairly hard. No oil or gas. *also carbonaceous mudstone, dark brown, slickensided. Klp*
- Core No. 13 4,049 to 4,064 feet. Recovered 2 feet. *Weathered Klp*
 Top 8" SILTSTONE-MUDSTONE; medium grey, dense, tight, carbonaceous, pyritic with calcite concretions, *good leaf fossils*
 1' 4" SANDSTONE; light grey, fine to medium, angular to subrounded quartz, mainly with minor dark rock fragments (about 10% to 20%). Slickensided, tight, pyritic, few calcite concretions. Cross bedded.
 No oil or gas. No cut.
- Core No. 14 4,064 to 4,070 feet. Recovered 5 feet.
 Top few pieces SANDSTONE; light grey, angular to subrounded, very fine to fine quartz mainly, with minor dark rock fragments in clay matrix, tight. No cut.
 2' SILTSTONE; light grey to green-grey, blue-green, dense, micaceous, tight.
 1' MUDSTONE; light to medium grey to green-grey, carbonaceous, tight. *good leaf fossils*
 2' SILTSTONE as for top two feet.
 Density: 2.38. No evidence of oil or gas in core.

- Core No. 15 4,189 to 4,191 feet. Recovery: Nil.
- Core No. 16 4,191 to 4,200 feet. Recovery: Nil.
- Core No. 17 4,316 to 4,321 feet. Recovered 2 feet.
SILTSTONE-MUDSTONE; medium to dark grey and blue-grey, dense, compact, tight, micaceous, very carbonaceous at bottom. No evidence of dip. No hydrocarbons.
- Core No. 18 4,321 to 4,327 feet. Recovered 6 feet.
MUDSTONE; blue-grey, medium grey, grading into SILTSTONE in a few places. Dense, compact, fairly hard, tight. Slickensided with calcite on slickensided surface. Micaceous, carbonaceous, plant fragments. No evidence of oil or gas. Apparent dip: 25° to 30°.
- Core No. 19 4,598 to 4,610 feet. Recovered 3 feet.
Top 3" MUDSTONE-SILTSTONE; light grey, dense, carbonaceous.
1' 3" SANDSTONE; light grey to blue-grey, mottled with dark rock fragments, medium to coarse, angular to subrounded, dark rock fragments, feldspar, ?chlorite, micaceous and very minor quartz set in a soft, calcareous clay matrix. Tight, no cut or fluorescence.
4" SANDSTONE; same as above but finer grain size.
11" SANDSTONE; as for sandstone at top, medium to coarse grained.
Few gas bubbles in mud sheath but core generally tight, without fluorescence or cut.
Apparent dip: 5° to 15°.
- Core No. 20 4,865 to 4,877 feet. Recovered 12 feet.
SANDSTONE; light grey to grey to green grey, fine to medium, angular to subround, dark rock fragments, feldspar, minor quartz, micaceous, carbonaceous, in white silty, clayey calcareous matrix. Slickensided and fractured in places. Apparent dip: 25° to 45°.
Core has strong golden fluorescence along what appear to be fractures, and in some places bedding planes, in top foot and bottom foot. These parts are oil stained a yellowish brown colour and show good cut with solvent. Also good hydrocarbon odour in these parts. Soxhlet extraction yielded brown, oily residue with yellow fluorescence. However, the core is generally tight. Minor gas bubbles on mud sheath.
- Core No. 21 4,879 to 4,889 feet. Recovered 5 feet.
SANDSTONE; light grey, mottled with dark rock fragments, fine to medium, angular to subround, feldspar, dark rock fragments and minor quartz in a soft, white to light grey, silty clay matrix. Calcareous in parts. Carbonaceous, tight. Gas bubbles on mud sheath and strong oily odour throughout core. Staining, yellow brown in colour, and golden yellow fluorescence along bedding planes and fractured zones, are present. Apparent dip: 25°.

- Core No. 22 4,889 to 4,896 feet. Recovered 7 feet.
 5 feet SANDSTONE as for Core No. 21
 2 feet SANDSTONE as for Core No. 21, but with abundant lenses and beds of black carbonaceous plant remains.
 Some staining, odour and fluorescence as Core No. 21 except that in the bottom 2 foot interval fluorescence is scattered throughout. (Staining is not evident against the brown black carbonaceous matter.)
 Soxhlet extraction yielded good brown, oily residue, with bright yellow fluorescence.
- Core No. 23 4,896 to 4,913 feet. Recovered 8 feet.
 3 feet SANDSTONE; light grey, fine to medium (few coarse), subangular to round and few angular, dark rock fragments (50%), feldspar (40%) and less than 10% quartz. Light grey to light green, silty-clay matrix, calcareous in parts, micaceous in parts (biotite) and chlorite probably in matrix. Trace of magnetite. Thin seams of coaly matter.
 Density: 2.23. Apparent dip: 25°. Appears tight.
 3 feet MUDSTONE-SHALE; medium grey, dense, tight, carbonaceous, plant fragments. Density: 2.3.
 2 feet SANDSTONE as for top 3 feet except for higher content of mica and lower percentage of dark rock fragments, and generally tighter.
 Strong yellow fluorescence along bedding planes and fractures in sandstone and mudstone, and yellow brown oily staining in these places. Good hydrocarbon odour throughout core.
- Core 24 4,913 to 4,931 feet. Recovered 16 feet.
 11' 6" MUDSTONE; medium to dark grey, dense, tight, indurated, fractured and slickensided, carbonaceous plant fragments. Density: 2.53.
 1' 6" SILTSTONE-SANDSTONE; light grey, silty to very fine and few medium, angular to subround (mainly subangular), rock fragments, feldspar, quartz, minor chlorite and mica. Clayey matrix. Cross bedded, tight. Apparent dip: 23°. Density: 2.49.
 3' MUDSTONE as for top of core.
 No evidence of hydrocarbons throughout core.
- Core No. 25 5,216 to 5,236 feet. Recovered 20 feet.
 Top 4 feet SANDSTONE; medium grey to blue grey, very fine to medium, mainly fine to medium and fair sorting, tight, subangular to subrounded, dark rock fragments, feldspar, micaceous, carbonaceous fragments in noncalcareous matrix. Apparent dip: 25°.
 16 feet SILTSTONE-MUDSTONE; medium to dark grey and some green and blue-grey, sub-conchoidal fracture in mudstone, dense, micaceous and very carbonaceous in spots.
 No evidence of hydrocarbons throughout core.

- 5 -

- Core No. 26 5,414 to 5,431 feet. Recovered 10 feet.
SANDSTONE; light grey, slightly green-grey, and brown-grey,
made up of feldspar, quartz, dark rock fragments, very fine
to medium, angular to subround, poor sorting, micaceous and
?chloritic. Very slightly calcareous matrix (?dolomitic),
compact and tight. Slightly carbonaceous in parts.
Centre of core about 6 inches of intraformational pebble
breccia-conglomerate with round and angular fragments, and of
medium to dark grey and brown-grey MUDSTONE.
Apparent dip: 25°. No evidence of oil or gas.
- Core No. 27 5,431 to 5,434 feet. Recovered 3 feet.
SANDSTONE as for Core No. 26. No hydrocarbons.

* additions by S. Tickell.
10/87SIDEWALL CORES

- 594.4
1,950 feet 1½" SANDSTONE; light grey, clear and clean quartz, fine to very coarse, angular to subrounded, poor sorting. Very porous. Water sand.
- 2,000 " Lost in the hole.
- 2,042 " Misfire.
- 640.0
2,100 " 1¾" SANDSTONE; light grey, ^{white} clean and clear quartz, very fine to medium (mainly fine), very porous water sand with carbonaceous stringers. *white silt matrix*
- 655.3
2,150 " 1½" SANDSTONE as for 2,100 feet, but no carbonaceous matter.
- 2,300 " Misfire.
- 731.5
2,400 " 1¼" SANDSTONE; light grey, clean and clear quartz, very fine to coarse, poor sorting, angular to subround, very porous water sand.
- 762
2,500 " 1" SANDSTONE; medium grey and brown-grey, dirty, very fine to very coarse, very poorly sorted, subangular to round, not very porous dirty water sand.
- 2,510 " Misfire.
- 835.2
2,740 " 2" Half of core is SANDSTONE; light grey, very fine to medium, clean, angular to subround. Other half of core is SILTSTONE; medium to dark grey, dense, compact.
- 3,350 " Lost in hole.
- 1042.4
3,420 " 2" SANDSTONE; dirty green, fine to very coarse, subangular to subround, dirty quartz set in a dirty green, glauconitic matrix. Tight. *oxidized glauconite pellets*
- 1054.6
3,460 " 2" SANDSTONE; dirty green, fine to coarse dirty quartz, subangular to subround, set in a tight, dirty green, glauconitic and brown limonitic matrix.
- 1085.1
3,560 " 1¾" SANDSTONE; brown and green-brown, dirty, fine to very coarse quartz set in green and brown glauconitic and limonitic matrix. Tight, dense.
- 1143.0
3,750 " 2" SILTSTONE; green to medium green, dense, tight, soft, glauconitic with scattered quartz, fine to medium and carbonaceous matter in silty-clay matrix.
- 1151.5
3,778 " 1½" SANDSTONE; very pyritic and carbonaceous, fine to coarse, poorly sorted, clean quartz sand. Waarre contact. ~~by 1.~~
- 1152.1
3,780 " 1" SANDSTONE; light grey, clean and clear, very fine to very coarse, ~~poorly~~ poorly sorted, very porous, loose, angular to subround, *clear and gray quartz, silty matrix*

WARR 23

11528
3,782 feet 1 1/2" SANDSTONE; light grey, very fine to coarse as for 3,780 feet, angular to subround, very porous.

3,784 " Recovery nil.

1154-0
3,786 " 3/4" SANDSTONE; light grey, very fine to very coarse, angular to subround, loose, very porous quartz., *silty matrix*

1213-1
3,980 " 1/2" SANDSTONE as for 3,786 feet.

1217-7
3,995 " 1 3/4" SANDSTONE; green-grey to light grey, made up of quartz, feldspar, dark rock fragments, micaceous, fine to medium and some few coarse. Fair sorting, slightly calcareous matrix, tight.

4,011 " Lost in hole.

4,030 " Lost in hole.

1249-7
4,100 " 1 1/2" SANDSTONE; light grey, slightly mottled, very fine to medium (mainly fine), fair sorting, slightly calcareous, light grey silty matrix. Feldspar (some to clay), quartz and dark rock fragments.

4,400 " Lost in hole.

4,420 " 1 3/4" SANDSTONE; green-grey, dense, very fine to fine, same constituents as above. Tight, micaceous, dirty.

4,422 " 1 3/4" SILTSTONE to very fine SANDSTONE; green-grey, mottled, with dark rock fragments, feldspar and quartz. Tight, with patches of brown-grey, dense MUDSTONE.

4,424 " 1 1/2" SILTSTONE; medium grey, calcareous, dense, tight.

4,500 " 1 1/2" SANDSTONE; green-grey, feldspar, dark rock fragments, quartz, very fine to fine, fair sorting, micaceous.

Dettman 1964d

✓ PALYNOLOGICAL REPORT ON F.B.H. FERGUSONS HILL NO. 1 ANDF.B.H. SHERBROOK NO. 1 WELLS3/6/60
Dt 5

(26)

Cores retrieved from F.B.H. Fergusons Hill No. 1 well between 1554 feet and 11,432 feet and from F.B.H. Sherbrook No. 1 well between 3365 feet and 5424 feet yielded microfloras of Lower and Upper Cretaceous age. These microfloras provide a means by which the two bore sequences may be correlated, both with each other and with Cretaceous sequences at other localities in the Otway Basin.

The Fergusons Hill No. 1 well core samples provided fair or good concentrations of plant microfossils, with the exception of cores 2, 4, 7, 8 and 28-31 which are either barren or yielded extremely sparse microfloras. Microfossils extracted from the lower part of the well (core 22 and below) are poorly preserved, especially in the lowest cores (27-31) in which strongly compressed and often broken spore walls are present. The Sherbrook microfloras are not in general as well preserved or as varied as those from corresponding depths in Fergusons Hill No. 1 well. Moreover, cores 14, 19 and 20 from the former well yielded extremely low concentrations of microfossils.

The microfloral succession in the Fergusons Hill and Sherbrook wells is conformable with that recorded previously from other sequences in the Upper Mesozoic of the Otway Basin. The assemblages identified in the present investigation include, from oldest to youngest, the *Speciosus* (older and younger categories) and *Paradoxa* Assemblages of Dettmann (1963a) and Assemblages II and III first recognised in the Port Campbell wells (Dettmann 1964a). The presence of the older category of the *Speciosus* Assemblage in the lower horizons of Fergusons Hill No. 1 well indicates that these sediments are older (Valanginian-Aptian) than those of Upper Mesozoic age that have been investigated palynologically from the eastern portion of the Otway Basin. Further comments on the occurrences of the Cretaceous microfloral assemblages are documented below, and their distribution in Fergusons Hill No. 1 and Sherbrook No. 1 wells is tabulated in Tables 1 and 2.

The *Speciosus* Assemblage

(a) The older (Valanginian-Aptian) category, diagnosed by *Cyclosporites hughesi* (Cookson & Dettmann) together with *Dictyotosporites speciosus* Cookson & Dettmann, of the *Speciosus* Assemblage is recorded from between 7818 and 11,432 feet in Fergusons Hill No. 1 well. Thus, on microfloral evidence, these horizons are older than those Upper Mesozoic sediments previously investigated from the eastern portion of the Otway Basin. However, they are younger than the lowermost Cretaceous (Valanginian or older, on the basis of the *Stylosus* Assemblage) sediments that occur in Penola No. 1 well at 4766-76 feet, in the western portion of the basin. At least part of the succeeding Penola No. 1 sequence (3363-4618 feet) that contained *D. speciosus* in association with *C. hughesi* and equivalents of this sequence (Eumeralla No. 1, 7225-10,308 feet, etc. - see Dettmann 1963b) are probable correlatives of sediments in Fergusons Hill No. 1 well between 7818 and 11,432 feet. Within this interval in Fergusons Hill No. 1 well, cores 25 and 26 yielded *Cooksonites variabilis* Pocock, a spore species that possesses restricted vertical distribution in eastern Australia and western Canada. Its presence suggests correlation of cores 25 and 26 (9195-9631 feet) in Fergusons Hill No. 1 well with the following horizons in the western portion of the basin: Eumeralla No. 1 between 8459 and 8924 feet; Pretty Hill No. 1 between 5935 and 5947 feet; Penola No. 1 between 3715 and 3721 feet; and Robe No. 1 at 3860 feet.

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(b) Microfloras that conform with the younger (Aptian) category of the Speciosus Assemblage in containing Dictyotosporites speciosus and Crybelosporites striatus (Cookson & Dettmann) occur in cores 20 and 21 of Fergusons Hill No. 1 well. Equivalent microfloras are known (Dettmann 1963a, 1964b) from Flaxmans No. 1 well between 10,801 and 11,528 feet and in an outcrop sample from the Barrabool Hills in the eastern portion of the basin. These horizons have already been correlated on microfloral evidence with numerous deposits in the western portion of the basin (Dettmann 1964b).

Paradoxa Assemblage

Core 18 in Fergusons Hill No. 1 well contained the diagnostic species, D. speciosus and Coptospora paradoxa (Cookson & Dettmann), of both the Speciosus and Paradoxa Assemblages together with Dictyotosporites filiosus Dettmann. A similar occurrence of these three species is in Penola No. 1 well at 2790-98 feet. On the basis of D. filiosus core 18 in Fergusons Hill No. 1 well is correlated also with Flaxmans No. 1 at 10,492-502, Robe No. 1 at 3150 feet, Beachport No. 1 at 3946 feet, and Eumeralla No. 1 at 6242-52 feet.

Coptospora paradoxa was encountered in succeeding cores (9-17) in Fergusons Hill No. 1 well. Horizons represented by cores 7 and 8 in the same well contain impoverished microfloras not certainly identifiable with either the Paradoxa Assemblage or Assemblage II. In Sherbrook No. 1 well the Paradoxa Assemblage occurs in horizons between cores 13 and 25. Core 26 in this well is not certainly identifiable with either the Speciosus or Paradoxa Assemblages. However, the presence of Laevigatosporites ovatus Wilson & Webster which is known hitherto only from horizons containing the Paradoxa or younger assemblages suggests conformity with the Paradoxa Assemblage.

Thus, sediments between 4049 and 5424 feet in Sherbrook No. 1 well may be correlated with horizons between 3105 and 6423 feet in Fergusons Hill No. 1 well, between 7473 and 9135 feet in Flaxmans No. 1 well, and with equivalents of the latter sequence (Dettmann 1964b, c). The suggested age of these deposits is Aptian-Albian.

Assemblage II

Diagnostic components of this assemblage first appear in core 6 and continue into core 3 in Fergusons Hill No. 1 well. Microplankton also make their first appearance in core 6 and include Gonyaulax edwardsi Cookson & Eisenack and Odontochitina operculata Deflandre both of which range from the Albian to the Lower Turonian (Cookson and Eisenack 1958). Core 3 yielded Cyclonophelium clathromarginatum Cookson & Eisenack 1962 (?Upper Albian-Cenomanian) and Chlamydophorella nyei Cookson & Eisenack 1958 (?Aptian-Lower Turonian).

Core 11 in Sherbrook No. 1 well contains an impoverished microflora referable to Assemblage II. Microplankton make their first appearance at this level and include the Upper Cretaceous and Lower Tertiary species Hystriosphæridium heteracanthum Deflandre & Cookson (see Cookson and Eisenack 1961). Other strata containing the Upper Albian-Cenomanian/Turonian Assemblage II have been recorded from the Port Campbell, Flaxmans, and Timboon sequences (see Dettmann 1964c).

Assemblage III

The presence of cf. Gleicheniidites sp. indicates that Assemblage III is represented in core 1 of Fergusons Hill No. 1 well and cores 9 and 10 of Sherbrook No. 1 well. Associated microplankton obtained from the Sherbrook samples include Odontochitina cribropoda Deflandre & Cookson, Deflandrea cretacea Cookson, and Hexagonifera glabra Cookson & Eisenack indicating a Turonian-Senonian age. This microplankton suite may be compared with those occurring in Flaxmans No. 1 well at 5950-70 feet, Port Campbell No. 1 well at 5223-33 feet, Port Campbell No. 2 well at 7403-09 feet, and Port Campbell No. 3 well at 4400-10 feet. Horizons containing this microplankton suite either are absent or were not sampled in Fergusons Hill No. 1 well. However, Odontochitina porifera Cookson was identified in core 1; this species indicates an Upper Turonian-Senonian age (Cookson and Eisenack 1960).

REMANENT FOSSILS

Spores and pollen grains of Permian and Triassic age were observed in the following samples: Fergusons Hill No. 1 well, cores 1, 3, 5, 6, 9, 10, 15, 17, 18 and 22; Sherbrook No. 1 well, cores 11, 24, 25 and 26. Reworked specimens of lowermost Cretaceous (Aptian and older) microspore species were recovered from several samples (cores 1, 3, 6 and 9) in Fergusons Hill No. 1 well. These occurrences may indicate that lowermost Cretaceous strata provided some of the source material for horizons in the upper part of Fergusons Hill No. 1 well.

3rd June, 1964.

Mary E. Dettmann
Department of Geology,
University of Queensland,
St. Lucia, Queensland.

	Microspores	Mega spore	Pollen	Micro-plankton	
	1. <i>Cicatricosporites australiensis</i> 2. <i>Aequitriradites spinulosus</i> 3. <i>Rouseisporites reticulatus</i> 4. <i>Foraminisporis wonthaggiensis</i> 5. <i>Foraminisporis asymmetricus</i> 6. <i>Crybelosporites striatus</i> 7. <i>Rouseisporites radiatus</i> 8. <i>Coptospora paradoxa</i> 9. <i>Kraeuselisporites majus</i> 10. <i>Trilobosporites trioreticulosus</i> 11. <i>Trilites</i> cf. <i>T. tuberculiformis</i> 12. <i>Cicatricosporites hughesi</i> 13. <i>Pilosporites grandis</i> 14. <i>Laevigatosporites ovatus</i> 15. cf. <i>Gleicheniidites</i> sp.		16. <i>Balmeisporites holodictyus</i> 17. <i>Amospollis cruciformis</i> 18. <i>Tricolpites</i> sp. 19. <i>triporate</i> sp. A 20. <i>triporate</i> sp. B	21. <i>Hystriosphæroidium heteracanthum</i> 22. <i>Deflandrea</i> cf. <i>D. belfastensis</i> 23. <i>Deflandrea</i> cretacea 24. <i>Odontochitina cribropoda</i> 25. <i>Hexagonifera glabra</i>	
c.9 3565-78'					III
c.10 3596-3801'					
c.11 3825-26'					II
c.13 4049-51'	+				Paradoxa
c.14 4064-69'	+				
c.17 4316-18'					
c.18 4321-27'	+				
c.19 4598-4601'	+				
c.20 4865-77'	+				
c.23 4896-4904'	+				
c.24 4913-29'	+				
c.25 5216-36'	+				
c.26 5414-24'	+				

Table 2. Distribution of selected spore, pollen, and microplankton species in core samples from the lower part of Sherbrook No.1 well. + - species present; cf - specimens similar to, but not identical with, a particular species.

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and is enclosed within the document PE901686 at
this page.

Table 1. Distribution of selected spore, pollen, and microplankton species in Ferguson's Hill No. 1 well.

+ - species present; cf - specimens similar to, but not identical with, a particular species; ? - doubtful representatives of a particular species; R - reworked spores.

Sample No.	Species 1	Species 2	Species 3	Species 4	Species 5	Species 6	Species 7	Species 8	Species 9	Species 10	Species 11	Species 12	Species 13	Species 14	Species 15	Species 16	Species 17	Species 18	Species 19	Species 20	Species 21	Species 22	Species 23	Species 24	Species 25	Species 26	Species 27	Species 28	Species 29	Species 30	Species 31	Species 32	Species 33	Species 34	Species 35	Species 36	Species 37	Species 38	Species 39	Species 40	Species 41						
c. 3 2020-31																																															
c. 4 2090-2110																																															
c. 5 2427-37																																															
c. 6 2437-49																																															
c. 7 2741-60																																															
c. 8 3085-3105																																															
c. 9 3105-11																																															
c. 10 3419-30																																															
c. 11 3732-52																																															
c. 12 4092-412																																															
c. 13 4514-34																																															
c. 14 5077-97																																															
c. 15 5554-69																																															
c. 16 5934-50																																															
c. 17 6403-23																																															
c. 18 6555-67																																															
c. 19 7037-47																																															
c. 20 7220-30																																															
c. 21 7330-45																																															
c. 22 7818-32																																															
c. 23 8247-60																																															
c. 24 8758-73																																															
c. 25 9195-9211																																															
c. 26 9626-31																																															
c. 27 10,092-96																																															
c. 28 10,574-88																																															
c. 29 10,660-68																																															
c. 30 11,030-94																																															
c. 31 11,419-32																																															

Indet. II Paradoxa Speciosus

List of Palaeontological Reports Held in Basin Studies Section.

File No.	Dettmann 1969 Palynological Zonation of Lower Cretaceous Sediments of the Otway Basin Victoria.	
1.	Shell Development Australia (S.D.A.) Rept. R1817 1969	
	Planet Tullich -1	Oil Development Anglesea -1
	" Heathfield -1	VMD Timboon -5
	" Casterton -1	" Wangoom -2
	F.B.H. Pretty Hill -1	" Wangoom -6
	" Eumeralla -1	" Terang -1
	" Flaxmans -1	" Carpendeit -1
	" Port Campbell -1	" Tandarook -1
	" Port Campbell -2	" Mepunga -7
	" Port Campbell -3	" Corriejong -1
	" Port Campbell -4	" Panmure -2
	" Sherbrook -1	" Yangery -1
	" Fergusons Hill -1	" Laang -1
	Interstate Woolsthorpe -1	" Belfast -4
	" Carvoc -1	" Ecklin -3
	" Purrumbete -1	" Birregurra -1
	Shell Pecten 1 A	
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3. Dettmann 1969 Palynological Zonation of the Otway Group.

S.D.A. Report 1854

Crayfish A 1

South Australian Well

Robe -1

"

Beachport -1

"

Celtwood Beach -1

"

Kalangadoo -1

"

Penola -1

"

Comaum -1

"

4. Dettmann 1970. Palynological Zonation of Upper Cretaceous Sediments of the Otway Basin - SDA Report (unnumbered)
- | | | | |
|----------|--------------------------|------|----------------|
| S. Aust. | Esso Crayfish -1 | VMD. | Timboon -5 |
| " | Alliance Kalangadoo -1 | " | Wangoom -2 |
| Vic | Planet Heathfield -1 | | Wangoom -6 |
| | F&A Pretty Hill -1 | | Mepunga -7 |
| | " Eumeralla -1 | | Couriejong -1 |
| | " Flaxmans -1 | | Panmure -2 |
| | " Port Campbell -1 | | Yangery -1 |
| | " Port Campbell -2 | | Laang -1 |
| | " Port Campbell -3 | | Belfast -4 |
| | " Port Campbell -4 | | Heywood -10 |
| | " Sherbrook -1 | | Narrawaturk -2 |
| | " Fergusons Hill -1 | | Latrobe -1. |
| | Shell Voluta -1 | | |
| | " Pecten -1 | | |
| | " Nerita -1 | | |
| | Oil Develop. Anglesea -1 | | |
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Seaspray -1

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|----------|-------------------|-------|---------------------------------|
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| Planet | Casterton-1 | | The Nelson Bore (= Glenelg-1) |
| FBH | Eumeralla -1 | ODNL | Penola -1 |
| " | Fergusons Hill -1 | FBH | Port Campbell -1 and 2 |
| " | Flaxmans -1 | FBH | Pretty Hill -1 |
| B.P.N.L. | Celtwood Beach -1 | FBH | Sherbrook -1 |
| VMD | Heywood -3 | | Cape Otway, Outcrop, Colac Area |
| Planet | Heathfield -1 | | Outcrop. Casterton, Merino Area |
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BORE NAME : SHERBROOK 1 /

901686 035

DEPTH OF SAMPLE	TYPE	DETERMINATION	REFERENCES
3365-78 ft. 1025.6-1029.6m	CORE 9	T. PACHYEXINUS	DETTMANN 1964d
3596-601 ft. 1096.0-1097.5m	CORE 10	"	"
3825-26 ft. 1165.8-1166.1m	CORE 11	"	"
4049-51 ft. 1234.1-1234.7m	CORE 13	C. PARADOXA (UNNAMED UNIT)	"
4064-69 ft. 1238.6-1240.2m	CORE 14	"	"
4316-18 ft. 1315.4-1316m	CORE 17	"	"
4321-27 ft. 1317-1318.8m		"	"
4598-601 ft. 1401.4-1402.3 m		"	"
4865-77 ft. 1482.8-1486.4 m		"	"
4896-904 ft. 1492.2-1494.7 m		"	"
4913-29 ft. 1497.4-1502.3 m		"	"
5216-36 ft. 1589.8-1595.8 m		"	"

SOURCE :

BORE NAME : SHERBROOK 1.

DEPTH OF SAMPLE	TYPE	DETERMINATION	REFERENCES
5414-24 ft. 1650.1-1653.1m	CORE 26	C. PARADOXA	DETMANN 1964d.

SOURCE : DETMANN M.E (1970) PALYNOLOGICAL ZONATION OF UPPER CRETACEOUS SEDIMENTS OF THE OTWAY BASIN SDA FILING...

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BORE NAME : SHERBROOK 1

DEPTH OF SAMPLE	TYPE	DETERMINATION	REFERENCES
3365-78 ft. 1025.6-1029.6m	CORE 9	T. PACHYEXINUS	DETTMANN 1964D
3596-601 ft. 1096.0-1097.5m	CORE 10	"	"
3825-26 ft. 1165.8-1166.1m	CORE 11	"	"
4049-51 ft. 1234.1-1234.7m	CORE 13	C. PARADOXA (UNNAMED UNIT)	"
4064-69 ft. 1238.6-1240.2m	CORE 14	"	"
4316-18 ft. 1315.4-1316m	CORE 17	"	"
4321-27 ft. 1317-1318.8m		"	"
4598-601 ft. 1401.4-1402.3m		"	"
4865-77 ft. 1482.8-1486.4m		"	"
4896-904 ft. 1492.2-1494.7m		"	"
4913-29 ft. 1497.4-1502.3m		"	"
5216-36 ft. 1589.8-1595.8m		"	"

SOURCE :

BORE NAME : SHERBROOK 1.

DEPTH OF SAMPLE	TYPE	DETERMINATION	REFERENCES
5414-24 ft. 1650.1-1653.1m	CORE 26	C. PARADOXA	DETMANN 1964d.

SOURCE : DETMANN M.E (1970) PALYNOLOGICAL ZONATION OF UPPER CRETACEOUS SEDIMENTS OF THE OTWAY BASIN S.D.A FILING...

DETMANN M.E (1969) PALYNOLOGICAL ZONATION OF THE LOWER CRETACEOUS SEDIMENTS OF THE OTWAY BASIN, VICTORIA S.D.A FILING NO R 1817.

DETMANN M.E (1964 d.) PALYNOLOGICAL REPORT ON F.B.H. FERGUSO HILL NO 1 AND FBH SHERBROOK NO 1 WELLS. UNR REPORT SUBMITTED TO FROME-BROKEN HILL CO. PTY. LTD 3/6/64.

SAMPLE DEPTH (ft.)
 core 15 5152-67
 " 16 5456-76
 " 17 5754-70

SPORE-POLLEN ZONE
Appendicisporites distocarinatus
 not determinable
Tricolpites pannosus

Reference: Dettmann 1964h.

9 F.B.H. Sherbrook No.1

SAMPLE DEPTH (ft.)
 core 9 3565-78
 " 10 3596-601
 " 11 3825-26
 " 13 4049-51

SPORE-POLLEN ZONE
Tricolpites pachyexinus
 "
Appendicisporites distocarinatus
Coptospora paradoxa (unnamed unit)

Reference: Dettmann 1964d.

10 F.B.H. Fergusons Hill No.1

SAMPLE DEPTH (ft.)
 core 1 1554-74
 " 2 1767-87
 " 3 2020-31
 " 4 2090-110
 " 5 2427-37
 " 6 2437-49
 " 7 2741-60
 " 8 3085-105
 " 9 3105-11

SPORE-POLLEN ZONE
Tricolpites pachyexinus
 not determinable
Clavifera triplex
 not determinable
Appendicisporites distocarinatus
 "
 not determinable
 "
 ?Tricolpites pannosus

Reference: Dettmann 1964d.

11 Shell Voluta No.1

SAMPLE DEPTH (ft.)
 sidewall 4370
 core
 " 4566
 " 4587
 " 4620
 core 5 4631
 " 4648

SPORE-POLLEN ZONE
Triorites edwardsii of Harris 1965
 lowermost Tertiary - uppermost Cretac
 "
Nothofagidites
 "
 "

"Unit 1"	core 15	1850	6070-53	<u>Contospora paradoxa</u> (unnamed unit)	
	"	19	1737	6355-37	" "
	"	20	2031	6635-35	" "
	"	22	2187	7183-91	" "
	"	23	2344	7690-710	" "
"Unit 2"	"	24	2405	7332-907	<u>C. paradoxa (Dictyosporites filiosus)</u>
	"	25	2410	7907-10	" "
	"	26	2523	8273-39	<u>Crybelosporites striatus</u>
	"	27	2591	8500-20	" "

Reference: Dettmann 1964h.

Comments: During the course of this investigation Contospora paradoxa and Dictyosporites filiosus have been recovered from cores 24 and 25; thus, the horizons are believed to be within the Dictyosporites filiosus Unit. Dinoflagellates first appear in core 15 (Appendicisporites distocarinatus Zone).

3.11 F.B.H. Sherbrook No.1

SAMPLE	DEPTH (ft.)	SPORE-POLLEN ZONE	REMANENT FOSSILS
core 11	3825-26	<u>Appendicisporites distocarinatus</u>	Permian
"Unit 1"	" 13	<u>Contospora paradoxa</u> (unnamed unit)	
	" 14	" "	
	" 17	" "	
	" 18	" "	
	" 19	" "	
	" 20	" "	
	" 23	" "	Triassic
	" 24	" "	Permian
	" 25	" "	Triassic
	" 26	" "	

Reference: Dettmann 1964d.

Comments: The Ericolites pannosus Zone was not recognized in the sequence. Dinoflagellates first appear in the Appendicisporites distocarinatus Zone (core 11).

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