

**S
T
A
R
T**

PE990046



PALYNOLOGICAL EXAMINATION OF SAMPLES FROM THE
GIPPSLAND AND OTWAY BASINS, VICTORIA

BY

V ARCHER

UNPUBLISHED REPORT 1982/4

1982/4

COPY 2.

V. ARCHER

ABSTRACT

This report contains the results of palynological dating of VMD Bores, Warrion Warrion 5 in the Otway Basin and the following bores in the Gippsland Basin : Alberton East 5 and 9; Alberton West 159, 182, 197 and 202; Bruthen 10, Devon 22, Gippsland 1, 2 and 3; Welshpool 31 and 32; Won wron 84 and 85, Woranga 4, 5, 7, 8, 10 and 12; Woundellah 12, Yarram Yarram 14 and 15, Cranbourne 51, and several outcrop samples from the yallourn coal.

The majority of these samples were studied at the request of the Basin Studies Section.

116	116
910	910
Alb W 159	Alb W 159
Alb W 182	Alb W 182
Alb W 197	Alb W 197
Alb W 202	Alb W 202
Bruthen 10	Bruthen 10
Devon 22	Devon 22
Gippsland 1	Gippsland 1
Gippsland 2	Gippsland 2
Gippsland 3	Gippsland 3
Welshpool 31	Welshpool 31
Welshpool 32	Welshpool 32
Won wron 84	Won wron 84
Won wron 85	Won wron 85
Woranga 4	Woranga 4
Woranga 5	Woranga 5
Woranga 7	Woranga 7
Woranga 8	Woranga 8
Woranga 10	Woranga 10
Woranga 12	Woranga 12
Woundellah 12	Woundellah 12
Yarram Yarram 14	Yarram Yarram 14
Yarram Yarram 15	Yarram Yarram 15
Cranbourne 51	Cranbourne 51
Yallourn coal	Yallourn coal

1/1982/4

Fig 1

APPENDIX

- 1 Species Lists
- 2 Biostratigraphic Zonation

ABSTRACT

RESULTS

- APPENDIX 1 - Species Lists
 - APPENDIX 2 - Biostratigraphic Zonation
- REFERENCES

16.45
16.42
16.41
16.40
16.39
16.38
16.37
16.36
16.35
16.34
16.33
16.32
16.31
16.30
16.29
16.28
16.27
16.26
16.25
16.24
16.23
16.22
16.21
16.20
16.19
16.18
16.17
16.16
16.15
16.14
16.13
16.12
16.11
16.10
16.09
16.08
16.07
16.06
16.05
16.04
16.03
16.02
16.01
16.00

1982/4

Well Name

6.

BORE	DEPTH (m)	LITHOLOGY	CONFIDENCE	SPORE-POLLEN ZONE
Yarram Yarram 14	198.1	Lig. clay	2	Mid - Upper <u>N. asperus</u> Zone
" 15	155	Lig. clay	2	<u>P. tuberculatus</u> Zone
Moranga 4	64.7 - 66.1	Carb. sandstone	2	<u>T. bellus</u> Zone
"	118.8	Brown coal	2	Upper <u>P. tuberculatus</u> - <u>T. bellus</u> Zone
"	171.1	Carb. clay	1	<u>P. tuberculatus</u> Zone
Moranga 12	88 - 94	Carb. sandstone	1	Upper <u>T. bellus</u> Zone
"	270	Dark clay		Indet.
"	285	Carb. sandstone	2	Mid - Upper <u>N. asperus</u> Zone
"	290	Sandy clay	2	"
"	346.9 - 349.7	Brown coal	2	"
"	400.8 - 403.8	"	1	Middle <u>N. asperus</u> Zone
"	509.4 - 512	Lig. clay	2	Lower <u>N. asperus</u> Zone
"	565 - 567.5	"	1	<u>L. balmei</u> Zone
"	825	Grey sandstone		Indet.
Warrion Warrion 5	417 - 422.5	Coarse Lig. sand	1	Mid - Upper <u>N. asperus</u> Zone
"	454.7 - 458.5	Lig. sand	1	Mid. <u>N. asperus</u> Zone
Cranbourne 51	165 - 175	Lig. sand	1	<u>P. tuberculatus</u> Zone
YALLOURN OUTCROP SAMPLES				
Subseam clay	443500E 577100W	Carb. clay	1	<u>T. bellus</u> Zone
	Zone 55			
Near top of open cut	44300E 577100W	Brown coal	2	"
Above tree stump horizon	44300E 577100W	"	2	"
Yalourn North Ext. Level 13		"	2	"
2m from bottom 4 cut		"	2	"

1981

1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020

- 0; SWC or CORE, EXCELLENT CONFIDENCE, assemblage with zone species of spores, pollen and microplankton.
- 1; SWC or CORE, GOOD CONFIDENCE, assemblage with zone species of spores and pollen or microplankton.
- 2; SWC or CORE, POOR CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.
- 3; CUTTINGS, FAIR CONFIDENCE, assemblage with zone species of either spore and pollen or microplankton, or both.
- 4; CUTTINGS, NO CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.

022	27	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100
-----	----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

1/28/74

Well Name	SAMPLE TYPE	DEPTH	PALYNOFORMS
Alb. E-5	C	57.2	
Alb. E-9	C	76.1	
"	C	80.0	
"	C	87.0	
"	C	100.5	
"	C	113.0	
Alb. W-19	C	31.1	
"	C	34.2	
Alb. W-18	C	33.4-24	
"	C	40.4-44	
"	C	56.3-66.7	
Alb. W-17	C	50.7	
"	C	54.8	
"	C	58.6	
"	C	118	
"	C	111.6	
Alb. W-12	C	30.6	
"	C	68.9	
Alb. W-10	F	161.0	
DEVE-6	C	122.7	
"	C	155.9	
"	C	221.5	
Capp. 1	C	55-58	
"	C	135-137	
Capp. 2	C	156-159	
"	C	183-186	

* C - core, G - side-wall core, T - cuttings AB - abundant > 5% of total RW - reworked
 C - common 1 - 5% R - rare

Well Name	AKS	AG9					AW 159	AW 182		AW 197		AW 200	AW 1C	AW 22		Cipps 1	Cipps 2			
SAMPLE TYPE																				
DEPTH	572	761	800	87	100.5	105.0	117	130	135	143	147	150.5	158	162.7	155.9	181.5	155.8	135-137	155-159	183-186
PALYNOFORMS																				
<i>N. vansteenisii</i>																				
<i>P. orbicula</i>																				
<i>P. citreus</i>																				
<i>P. polytritus</i>																				
<i>P. vaticus</i>																				
<i>P. dominus</i>																				
<i>P. v. latus</i>																				
<i>P. masonii</i>																				
<i>P. polytritus</i>																				
<i>P. nanus</i>																				
<i>P. p. latus</i>																				
<i>P. microsacculus</i>																				
<i>P. esoboliticus</i>																				
<i>P. nitidus</i>																				
<i>P. tumulatus</i>																				
<i>P. schenckii</i> (Hof.)																				
<i>P. annulatus</i>																				
<i>P. citreus</i>																				
<i>P. obscurus</i>																				
<i>P. p. latus</i>																				
<i>P. pseudotumidus</i>																				
<i>P. testaceus</i>																				
<i>P. tectoniformis</i>																				
<i>P. reflexus</i>																				
<i>P. subulatus</i>																				
<i>P. tenuicollis</i>																				
<i>P. truncatus</i>																				
<i>P. tuberculatus</i>																				
<i>P. micus</i>																				
<i>R. escharus</i>																				
<i>R. minorus</i>																				
<i>R. militatus</i>																				
<i>R. microstylus</i>																				
<i>S. citreus</i>																				
<i>S. rotundus</i>																				
<i>S. oblongus</i>																				
<i>S. (T.) laticollis</i>																				
<i>S. australis</i>																				
<i>T. polytritus</i>																				
<i>T. thalassius</i> (C)																				
<i>T. rimatus</i>																				
<i>T. thalassius</i>																				
<i>T. adactylus</i>																				
<i>T. granulosus</i>																				
<i>T. levos</i>																				
<i>T. pumilio</i>																				
<i>T. laticollis</i>																				
<i>T. scabratus</i>																				
<i>T. sphaerica</i>																				
<i>T. similis</i> (C)																				
<i>L. (M.) laticollis</i>																				
<i>L. ambigua</i>																				
<i>L. bellus</i>																				
<i>L. chrysus</i>																				
<i>L. scabratus</i>																				
<i>L. antipodica</i>																				
<i>V. alpinus</i>																				
<i>V. altissimus</i>																				
<i>V. cristatus</i>																				
<i>P. laticollis</i>																				
<i>M. ramosus</i>																				
<i>P. despectans</i>																				
<i>T. p. latus</i>																				
<i>P. subulatus</i>																				
<i>P. (T.) venosus</i>																				
<i>L. subulatus</i>																				
<i>L. Media</i>																				
<i>L. symphymoides</i>																				
<i>L. lanceolatus</i>																				
<i>L. tubul. laticollis</i> sp.																				

* C = core; S = sandwell core; T = cuttings

Well Name	SAMPLE TYPE *	DEPTHS	Palynomorphs	Well Name	SAMPLE TYPE *	DEPTHS	Palynomorphs
Cripps 3	"	1145-1149		Wetkops 1	"	118	
Cripps 3	"	105-110		Wetkops 1	"	265.3	
Cripps 3	"	1176-1208		Wetkops 1	"	43	
Cripps 3	"	161-163.6		Wetkops 1	"	76.5	
Cripps 3	"	188		Wetkops 1	"	32	
Cripps 3	"	395		Wetkops 1	"	85	
Cripps 3	"	1039		Wetkops 1	"	123	
Cripps 3	"	173.5		Wetkops 1	"	1039	
Cripps 3	"	90-85		Wetkops 1	"	173.5	
Cripps 3	"	141.5		Wetkops 1	"	90-85	
Cripps 3	"	80		Wetkops 1	"	141.5	
Cripps 3	"	115-116.5		Wetkops 1	"	80	
Cripps 3	"	20		Wetkops 1	"	115-116.5	
Cripps 3	"	16.9		Wetkops 1	"	20	
Cripps 3	"	125		Wetkops 1	"	16.9	
Cripps 3	"	234		Wetkops 1	"	125	
Cripps 3	"	166.5		Wetkops 1	"	234	
Cripps 3	"	130		Wetkops 1	"	166.5	
Cripps 3	"	198.1		Wetkops 1	"	130	
Cripps 3	"	155		Wetkops 1	"	198.1	
Cripps 3	"	16.4		Wetkops 1	"	155	
Cripps 3	"	16.4		Wetkops 1	"	16.4	

* C - core, S - sidewall core, 1 - cuttings AB - abundant > 5% of total RW - reworked
 C - common 1 - 5% R - rare

Well Name	SAMPLE TIME	DEPTHS	PALYNOFORMS
Gepp 3	144-149		<i>C. acuminata</i>
	145-148		<i>C. acuminata</i>
	48		<i>C. acuminata</i>
	63		<i>C. acuminata</i>
	74-75		<i>C. acuminata</i>
	1176-1205		<i>C. acuminata</i>
	11-1636		<i>C. acuminata</i>
	258		<i>C. acuminata</i>
	374		<i>C. acuminata</i>
	423		<i>C. acuminata</i>
	1059		<i>C. acuminata</i>
	1735		<i>C. acuminata</i>
	9085		<i>C. acuminata</i>
	1415		<i>C. acuminata</i>
	80		<i>C. acuminata</i>
	1051-153		<i>C. acuminata</i>
	200		<i>C. acuminata</i>
	9609		<i>C. acuminata</i>
	120		<i>C. acuminata</i>
	256		<i>C. acuminata</i>
	646		<i>C. acuminata</i>
	130		<i>C. acuminata</i>
	1981		<i>C. acuminata</i>
	255		<i>C. acuminata</i>
	67410		<i>C. acuminata</i>

MICROPLANKTON

- Spiniferites* sp
- Pigafettaia* sp
- Genes* sp
- Phaeocystis* sp

* Culture, 5 x 10⁶ cells/ml, 11 cells/ml

Hydro 12/1/1982/Lj

Well Name	SAMPLE TYPE	DEPTH	PALYNOFORMS
118	C	118	
	C	121	
	C	124	
	C	127	
	C	135	
	C	140	
	C	146	
	C	148	
	C	150	
	C	155	
	C	165	
	C	175	
	C	187-192	
	C	194-198	
	C	195-197	
	C	198-200	
	C	201-202	
	C	204-205	
	C	205	
	C	207-208	
	C	209-210	
	C	211-212	
	C	213-214	
	C	215-216	
	C	217-218	
	C	219-220	
	C	221-222	
	C	223-224	
	C	225-226	
	C	227-228	
	C	229-230	
	C	231-232	
	C	233-234	
	C	235-236	
	C	237-238	
	C	239-240	
	C	241-242	
	C	243-244	
	C	245-246	
	C	247-248	
	C	249-250	
	C	251-252	
	C	253-254	
	C	255-256	
	C	257-258	
	C	259-260	
	C	261-262	
	C	263-264	
	C	265-266	
	C	267-268	
	C	269-270	
	C	271-272	
	C	273-274	
	C	275-276	
	C	277-278	
	C	279-280	
	C	281-282	
	C	283-284	
	C	285-286	
	C	287-288	
	C	289-290	
	C	291-292	
	C	293-294	
	C	295-296	
	C	297-298	
	C	299-300	
	C	301-302	
	C	303-304	
	C	305-306	
	C	307-308	
	C	309-310	
	C	311-312	
	C	313-314	
	C	315-316	
	C	317-318	
	C	319-320	
	C	321-322	
	C	323-324	
	C	325-326	
	C	327-328	
	C	329-330	
	C	331-332	
	C	333-334	
	C	335-336	
	C	337-338	
	C	339-340	
	C	341-342	
	C	343-344	
	C	345-346	
	C	347-348	
	C	349-350	
	C	351-352	
	C	353-354	
	C	355-356	
	C	357-358	
	C	359-360	
	C	361-362	
	C	363-364	
	C	365-366	
	C	367-368	
	C	369-370	
	C	371-372	
	C	373-374	
	C	375-376	
	C	377-378	
	C	379-380	
	C	381-382	
	C	383-384	
	C	385-386	
	C	387-388	
	C	389-390	
	C	391-392	
	C	393-394	
	C	395-396	
	C	397-398	
	C	399-400	

*Cecora, C= sidewall core, T= cuttings AB - abundant >5% of total RW - reworked
 C - common 1 - 5% R - rare

18.

REFERENCES

MARTIN H.A. 1973 ; Upper Tertiary Palynology in Southern New South Wales.
Spec. Pub. No.4 of the Geol. Soc. of Aust. pp 35-54.

STOVER L.E., & PARTRIDGE 1973 : Tertiary and Late Cretaceous Spores & Pollen
from the Gippsland Basin, Southeastern Australia. Proc. R Soc.
Vict. Vol.85 Pt2 pp 237 - 286.