Geological Survey of Victoria

A PALYNOLOGICAL EXAMINATION OF TWO SAMPLES FROM STRADBROKE 37 BORE, GIPPSLAND BASIN.

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Palynological examination of two samples from Stradbroke 37 bore- Gippsland Basin.

The samples examined come from depths of 36m and 345m. The slides prepared from both depths are over-oxidized and too heavily stained, and are currently being reprocessed.

Location and stratigraphy

Stradbroke 37 is located 10.5km south of Willung and 5.5km east of outcropping Mesozoic and Tertiary sediments and volcanics which form the western side of the generally north east trending Yarram Monocline. (West of Stradbroke 37 this monocline trends in a more north south direction.) The Wonwron Monocline is situated 5.5km to the south and trends in a north easterly direction.

Both samples are considered to come from the Latrobe Valley Coal Measures.

Sample 1- 36m (Slides 1066-1, 1066-2)

Lithology- soft brown coal and pale grey-brown slickensided mudstone.

The slides examined were poor in spore-pollen. Thirteen species were identified and of these 93% were Angiosperm pollen, 7% Gymnosperm pollen One spore was noted.

Age- the species present are not diverse enough to be reliably placed in a spore-pollen Zone. The frequency of species common to both samples is not the same so the assemblage must be younger than that at 345m- the sample is basal Oligocene or younger.

The sample at 36m includes the following species:-

Spores:	Cyathidites cf. minor Couper	R
Pollen:	Araucariacites cf. australis Cookson	C
	Haloragacidites harrisii (Couper) ex. Harris	C
	Milfordia Homeopunctatus McIntyre	R
	Myrtaceidites parvus Cookson & Pike	Ab
	Nothofagidites heterus-emarcidus Cookson	Ab
	N. sp.	C
	Microcachryidites antarcticus Cookson	R
	Phyllocladidites mawsonii Cookson	R
	Podocarpidites cf. ellipticus Cookson	R
	Propylipollis sp. Martin & Harris	R
	Proteacidites minimus Couper	C
	P. cf. obscurus Cookson	R
	P. cf. subscabratus Couper	R
	P. cf symphyonemoides Cookson	R
	P. sp.	
	Tricolporites sphaerica Cookson	R
	T. sp.	
	Tricolpites sp.	C
	aff. Triorites minor Couper	C

Sample 2- 345m (Slide 1067-1)
Lithology- pale grey mudstone with lenses and stringers of dark brown coal and an interbed of brown coal. The mudstone is slightly micaceous, occasionally slickensided and is microfaulted. The coal is likewise microfaulted and shows traces of cuticular material, resin and possible leaf striations. Disseminated and finely crystalline pyrite may also be present.

Essentially the two cores have a similar lithology. Spores and pollen are plentiful in the slides and the numbers counted indicate that this sample is seven times as rich in spore-pollen material when compared with the sample at 36m. The assemblage included some 45 species of which 9% are spores, 48% Gymnosperm pollen and 42% Angiosperm pollen.

Age and Zonation- in this assemblage Nothofagidites spp. is present in far greater numbers than Haloragacidites harrisii suggesting that the assemblage belongs to the Nothofagidites asperus Zone Stover & Evans. The presence of Simplicepollis meridianus narrows the zonation to the Lower N. asperus Zone. Stover & Partridge. The N. menziesii Group along with Proteacidites asperopolus and P. pachypolus are not present indicating that the bore at this depth has not reached the Proteacidites asperopolus Zone Stover & Evans.

It is considered that the age of this sample is late Middle Eocene to Late Eocene.

The sample at 345m includes the following species:-

Spores:	Baculatisporites comaumensis Cookson	R
	aff. Clavifera triplex Bolkhovitina	R
	Cyathidites australis Couper	C
	C. minor Couper	C
	C. spp.	R
	Deltoidospora acutus Partridge	R
	Gleicheniidites circinidites Cookson	R
	G. cf. circinidites	C
	Herkosporites elliottii Stover & Evans	R
	Laevigatosporites ovatus Wilson & Webster	C
	L. cf. ovatus	R
	Lycopodiumsporites eminulus Dettmann	R
	L. spp.	R
	Matonisporites cf.ornamentalis (Cookson) ex Partridge	R
	Rugulatisporites micraulaxus Partridge	R
	Verrucosisporites spp.	R
Pollen:	Dilwynites granulatus Harris	C
	D. cf. granulatus	R
	aff. Gothanipollis spp. Krutsch	R
	Gunnerites reticulatus Cookson	R

sample 345m cont.

Gephrapollenites cf. calathus Partridge	R
Gambierina edwardsii (Cookson & Pike) ex Harris	R
Haloragacidites cf. harrisii (Couper) ex Harris	R
Ephedra spp.	R
Ilexpollenites cf. clifdenensis McIntyre	R
Lygistepollenites florinii (Cookson & Pike) Stover & Evans	C
Malvacipollis cf. diversus Harris	R
Monosulcites cf. waitakiensis McIntyre	~~Ab~~
Myrtaceidites parvus Cookson & Pike	R
Microcachryidites cf. antarcticus Cookson	C
Nothofagidites emarcidus-heterus Cookson	Ab
N. sp.	C
aff. N. brachyspinulosus Cookson	R
Periporopollenites cf. vesicus Partridge	C
Phyllocladidites mawsonii Cookson	C
P. cf mawsonii	C
P. palaeogenicus (Cookson & Pike) ex Harris	~~R~~ Ab
Podocarpidites ellipticus Cookson	Ab
Podosporites microsaccatus (Couper) ex. Dettmann	Ab
Podocarpidites microreticuloidatus Cookson	R
Proteacidites cf. minimus Couper	R
P. cf. pseudomoides Stover	R
aff. P. tenuiexinus Stover	R
P. spp.	C
Simplicepollis meridianus Harris	R
Tricolpites incisus Stover	R
T. phillipsii Stover	R
T. spp.	C
aff. T. brevicolpus Couper	R
Tricolporites angurium Partridge	R
T. spp.	R
Triorites minisculus Couper	C
T. cf. minor	C
T. spp.	R

Indetermined bisaccates are abundant. Quantitative estimates of spore-pollen are expressed in the right hand column and are after M.E.Dettmann- Abundant(Ab) indicates that the numerical species total is equal to or greater than 5% of the total microflora.

Common(C) indicates that the species total ranges between 1% and 5% of total microflora.

Rare(R) indicates that the species total is less than 1% of total microflora.

A percentage breakdown of spores and pollen in this sample is as follows-

Spores	Gleicheniidites spp.	30%
	Cyathidites spp.	34%

Pollen	*Phyllocladidites mawsonii*	
a) Gymnosperms	Phyllocladidites mawsonii	10%
	Podocarpidites ellipticus	23%
	Podosporites microsaccatus	24%
b) Angiosperms	Nothofagidites emarcidus-heterus	34%
	Nothofagidites spp	41%
	Triorites minisculus	9%
	Periporopollenites spp.	9%
	Monosulcites spp.	13%
	Proteacidites spp.	7%

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See amended U.R. Sept '78

References

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