A PALAEONTOLOGICAL NOTE ON THE DERGHOLM NO. 1 WATER BORE.

INTRODUCTION:

This note has been compiled following an examination of samples from the Dergholm No. 1 bore sunk for underground water by the Victorian Mines Department.

EXAMINATION OF SAMPLES:

Mr. P. R. Kenley, Geologist found, in a sample from the 318'-23' level, portion of a leaf which he identified as Taeniopteris spatulata Oldham & Morris 1863. Another sample from the 337'-8' level also contains leaf fragments, probably of this Taeniopteris species.

This is characteristically a Jurassic species, with a world wide distribution. Medwell, (1953), claims that it is "the most abundant plant in the Victorian Lower Jurassic".

A palynological examination of samples from the above and other horizons reveals that the microspore Mohrioisporites australiensis Cookson, is a common component of the microflora at the 532' level.

This sporomorph, according to Cookson (1953), "so far.....has not been found in Jurassic deposits." We thus have what is regarded as a typical Jurassic fossil leaf overlying a typical Upper Mesozoic sporomorph. One of the three following possibilities therefore arises.

1. The method of drilling and sampling has in some way given rise to samples not truly representative of the strata at the depths indicated.
2. The time range of Taeniopteris spatulata in Victoria may be extended into the Cretaceous period.
3. Mohrioisporites australiensis may occur earlier than the Cretaceous period.

1. The samples containing Mohrioisporites were obtained by earth-socket apparatus from a percussion drill hole, and hence there is little likelihood of any contamination from above.
In addition the largest fragments of the sample had previously been washed, sieved, and boiled in alkali prior to an examination for Foraminiferal content by Mr. A.N. Carter, Geologist.
This would have the effect of removing any contamination, as only fine material and a little drilling sludge could possibly enter an earth-socket. The sample taken at 318'-23' could in no way actually have originated from a greater depth.

2. No evidence as yet to hand suggests that Taeniopteris spatulata extends into the Upper Mesozoic in Victoria, although Medwell(53) has recorded the species from the Mocomboro mudstone at Killara whichshe regards as Upper Jurassic. Walkom, in Queensland, has recorded this species from the Cretaceous.

3. Following the discovery of Mohrioisporites in the Dergholm material, preparations from other Mesozoic sediments have been examined.
This sporomorph has been found in a black coal sample from bore 134, Ph. of Woolamai, at a depth of 269'.
This then indicates that this sporomorph occurs earlier than the Cretaceous in Victorian sediments, as the Woolamai sediments are generally regarded as Jurassic in age.

Further examination of the microflora at 532' in the Dergholm No. 1 bore however indicates a close relationship with that of the 651'-708' samples in the Comaum (S.A.) bore.(Cookson 1953). Sporomorphs from this former bore at the 532' level have been compared with Trilites comaumensis Cookson, Lycopodium austroclavatidites Cookson, Microcachryidites antarcticus Cookson,

and other two- and three-winged grains referable to the Podocarpaceae.

This Comaum microflora has been compared with that of European Cretaceous sediments by Cookson.

Conclusions.

The evidence indicates that the time range of Mohrioisporites australiensis Cookson must be extended down into the Jurassic, or that the time range of Taeniopteris spatulata Oldham & Morris must be extended into the Cretaceous.

Further study may indicate that an extension of the time range of both species may be necessary.

Locality of Samples.

Ph: Dergholm. Dorodong Ck. 6 miles NW of Dergholm Township.

Bore: Vic. Mines Department. Bore No. 1.

Depths: 273'-8', 318'-23', 532'.

Rock Types: Grey siliceous mudstone.

Supplier: Mr. P. R. Kenley, Geologist.

Date: 3/6/57.

A representative sample from each of the above horizons was treated by the Hydrofluoric acid-Schulze's Soln. method.

Mohrioisporites was found only in the 532' sample, Very few microspores were present in the other samples, and no dicotyledonous pollens were recognized.

Ph: Woolamai, Allot. 97B.

Bore: 134.

Depth: 269'.

Rock Type: Black Coal with shale.

Supplier: Mr. J. L. Knight, Senior Geologist.

Date: 10/2/57.

A representative sample from this horizon was also treated by

the Hydrofluoric acid-Schulze's Soln. method.

REFERENCES:

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