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BUREAU OF MINERAL RESOURCES
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PLANT FOSSILS IN CORE SAMPLES FROM A.A.O. No.5
ROMA BORE, NORTH QUEENSLAND.

by

Mary E. White.

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

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Mines Administration Pty.Ltd., Brisbane, submitted five core samples from the Roma Bore (A.A.O. No.5) for palynological analysis. The samples contain carbonised impressions and casts of fragmental plant remains, some of which are determinate.

Core 3942' contains numerous stem impressions and small pieces of carbonised wood which are indeterminate. Two impressions of small portions of leaf venation show characteristic meshed arrangement of veins as in Glossopteris. The venation is similar to that of G.indica, a very common species of Permian and Lower Triassic occurrence.

Core 3989'. A stem impression (Figure 1) showing transverse wrinkling may be an impression of the discoid pith of a small stem of Cordaitan affinity. Cordaitales occur plentifully in Permian horizons and persist into Lower Mesozoic strata. Other stem impressions in the sample are not determinate.

Core 4027' contains an assemblage of considerable interest:-

- (a) Figures 2 and 3 show portions of leaves with characteristic Glossopteris venation. There are two venation types present, one with long, narrow meshing of secondary veins as in G.indica and one with wider meshes as in G.browniana. No species identification can be made in the absence of more complete specimens. Glossopteris leaves with venation of these types occur plentifully in Permian and Lower Triassic strata and G.browniana has been recorded by Lele (1955) from Parsora in India in beds of Middle-Upper Triassic age.
- (b) Figure 4 shows a cast of a stem probably referable to Vertebraria, the rhizome of Glossopteris plants. It has partial segmentation or nodding and the small nodules on the surface are presumably due to infilling of small cavities in the surface of the stem from which the cast was made.
- (c) ~~At point G. in Figure 2.~~ Two small pinnules are presented. They show no venation but in form resemble pinnules of Sphenopteris.
- (d) Figures 5 and 6 show both faces of a carbonised impression of a dichotomising frond which is referred to the genus Baiera. A petiole portion 1 cm. long and 2 cm. wide forks unevenly into a lamina of three segments, each of which dichotomises again. The frond appears to be almost complete and the maximum length of laminal segment from the top of the petiole is just over 1 cm. Veins in the laminal segments are parallel, no anastomosing is visible, and they are densely crowded with five or six to each penultimate segment of the frond. This frond is clearly of Ginkgoalean affinity. It is referred to Baiera on grounds of its appearance and venation, and in view of its association with Glossopteris. Baiera is an older genus than the typically Jurassic Ginkgoites, the other form-genus to which a frond of this type might be referred. (It might also be referred to Ginkgopsis if the Ginkgoalean affinity is considered to be in doubt.)

It is not possible to determine whether this is a new species of Baiera on the very meagre information available in this one specimen. In form it resembles B. Lindleyana and simple forms of B. gracilis, but in size it is not comparable. It may be a small leaf of a larger leaved species. However, the occurrence of any species of Baiera in association with species of Glossopteris is of interest. There is no record of Baiera in the "Permo-Carboniferous" rocks of Gondwanaland. A possibly related genus Psymphyllum occurs in the Ecca Series in South Africa (du Toit, 1939), and there is a doubtful record of Psymphyllum in the Glossopteris flora in Australia (Walkom, 1944).

Baiera is a very common genus in Rhaetic and Jurassic strata and there are several species which occur in Permian formations in Europe and America. In Australia Baiera is recorded from Rhaetic and Jurassic strata. (B. simmondsi in Ipswich Series, B. darleyensis in Triassic strata at Baldhead, Victoria, and B. australis and B. gracilis in Jurassic in Victoria (Gippsland).

The presence of Baiera in this Glossopteris assemblage would appear to indicate an Upper Permian or Triassic age for the fossil horizon. (A comparable association of Glossopteris with a species which is regarded as Triassic and not Permian occurs at Mount Mulligan in North Queensland (association of Glossopteris and Taeniopteris, (Record M.E.W. 1960, in preparation) and comparison was suggested with the Narrabeen Series in New South Wales in Passage Beds from Permian to Triassic.)

Core 4056'. Indeterminate.

Core 4066' Indeterminate stem impressions and carbonised wood.

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FIGURES



Figure 1.

Pith of Cordaites? (Magn. X 2).



Figure 2. Fragments of Glossopteris leaves. (Magn. X 3.)



Figure 3. Glossopteris venation. X 3.

Figure 4. Stem.



Figures 5 and 6:
Frond of Baiera.

