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RECORDS.

Records No.1957/71

By

Mary E. White.



LEPIDODENDROID PLANT FOSSILS FROM THE BASE OF THE  
GILBERTON FORMATION, NORTH QUEENSLAND

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Lepidodendroid plant fossils were collected by D.A. White in 1956 from ferruginous siltstone at the base of the Gilberton Formation from two localities. Specimens F.21608a, C.P.C. 2830, were collected at pt.3, run 4/5043 Gilberton, 4 miles NNW of Gilberton Station; and specimens F.21608b, C.P.C. 2831 - 2834, were collected at pt.2a, run 5/5017 Gilberton, 1 mile S of Gilberton Station.

All determinate specimens are referable to Leptophloeum australe (M'Coy). The fossils are in an excellent state of preservation and show a range of forms similar to that seen in collections from Upper Devonian strata in N.S.W. as illustrated by Feistmantel (1890) and referred by him to Lepidodendron nothum Unger and Lepidodendron australe M'Coy. (The two species later merged and considered closely related to Leptophloeum rhombicum Dawson. For synonymy see Walton, 1926).

A comparison of the specimens with photographs of the type specimens of Leptophloeum rhombicum Daws, shows close similarity but sufficient diversity to justify retaining the separate species.

Surface, near surface and more deeply decorticated forms of young and old stems are present in the material from the base of the Gilberton Formation. The range of forms is illustrated in Plates 1 and 2.

Leptophloeum australe (M'Coy), as seen in the typical range of forms here assembled, is a most characteristic plant fossil in beds of Upper Devonian - Lower Carboniferous age in Australia. At the present state of knowledge it is not possible to state that it does not range above these horizons. Any decorticated stem impressions with the very definite rhombic pattern, such as is seen as a form of Leptophloeum australe from undoubted Upper Devonian - Lower Carboniferous beds, tend to be assigned to the species without question. Where only isolated decorticated forms are present without the full range of forms diagnostic of the species, there is the possibility of error and confusion. The related Lycopodiopsis pedroanus Carr. (the Sigillaria Brardi of South Africa which occurs in the Glossopteris Flora there, see Seward 1897) has a decorticated form with a rhombic pattern which might easily be confused.

T.W.E. David records Leptophloeum australe from Upper Carboniferous beds in Queensland and from the Permian of Western Australia. It seems to me to be most probable that the latter reference represents a rhombic form which is referable to Lycopodiopsis pedroanus Carr. Research is necessary to investigate all known occurrences of the species concerned, and systematic collecting will have to be carried out to elucidate the problem.

In the present case there is no doubt of the identity of the species with that characteristic of Upper Devonian - Lower Carboniferous horizons.

The range of Leptophloeum australe (M'Coy) can be given tentatively as Upper Devonian - Carboniferous.

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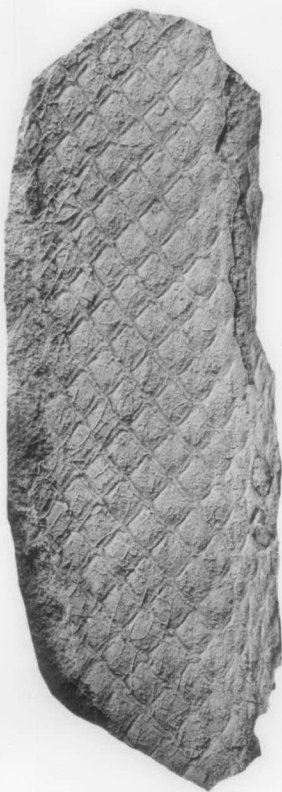


Fig. 1: Young stem.  
C.P.C. 2830.



Fig. 2: Knorria condition of  
large stem.  
C.P.C. 2831.

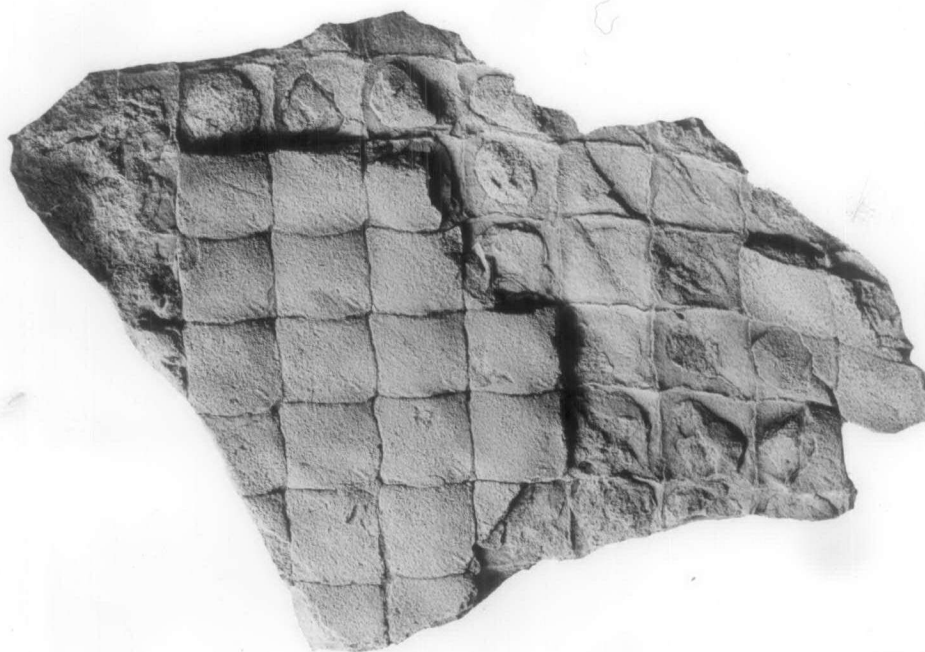


Fig. 3: Surface view of mature stem.  
C.P.C. 2832.

PLATE II.

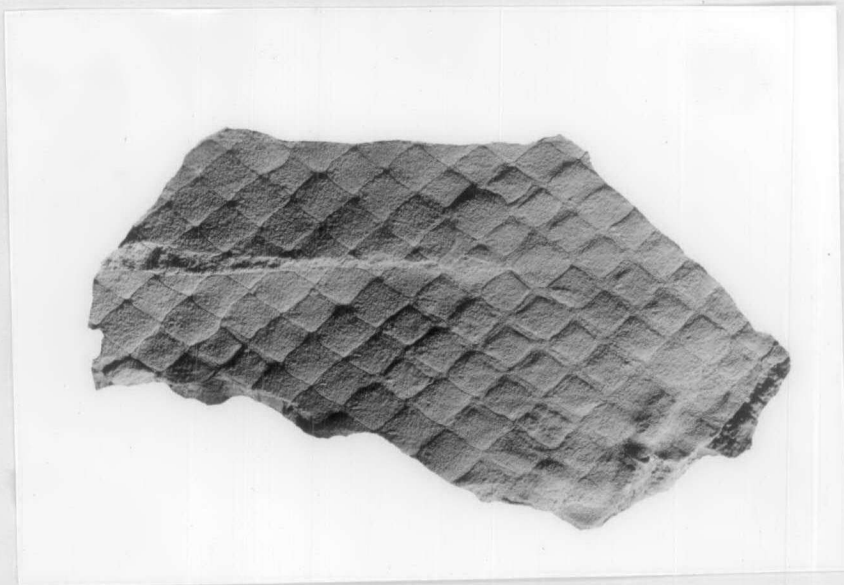


Fig.4: Young stem part somewhat decorticated.  
C.P.C. 2833.



Fig.5: Decorticated mature stem showing  
characteristic double margins of  
leaf cushions at this level.  
C.P.C. 2834.