DEPARTMENT OF MINERALS AND ENERGY

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

RECORD 1974/159

PLANT FOSSILS FROM THE GILBERTS RIVER AND WINTON FORMATIONS, AND THE PASCOE RIVER AREA, QUEENSLAND

by

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FIGURES

SUMMARY

Plant fossils collected from three Queensland localities indicate the following ages:

1. Gilbert River Formation - Lower Cretaceous
2. Winton Formation - Upper Cretaceous
3. Pascoe River area - Upper Devonian/Lower Carboniferous

PLANT FOSSILS FROM THE GILBERT RIVER FORMATION, CARPENTARIA BASIN

Sample No. 73793043 was collected from carbonaceous shale at the lower camp workings of the Wenlock Goldfield in 1973 by D. Gibson, Coen (D-54/8) 1:250 000 Map Sheet Grid reference 332631. The specimens contain fragmentary plant remains.

Some of the specimens contain stem impressions and carbonized casts of small stems. A few of the stems show irregular vertical striation, and some of the casts have minute surface pitting. No identification of these stems can be made. Specimens F 23743 have been selected to show stem casts and impressions. Figure 1 illustrates the types of stem present.

In specimen F 23744 is a large seed. It is pear-shaped and approximately 1 cm long (Figure 2).

In specimens F 23745 are large numbers of small seeds and microsporangia. Figure 3 illustrates a rosette of small seeds borne on sporophylls, and some much smaller microsporangia with a fragment of infloresence. These seeds and microsporangia appear to be identical to those described by Douglas (1969) from the Whitelaw Road cutting and from Sunnyside Road Beach, Mornington, illustrated in Plates 45, 46 and 47 from the Lower Cretaceous of Victoria.

The remaining specimens in the sample are numbered F 23746.

Conclusion:

The age of the plant assemblage in this sample from Gilbert River Formation is Lower Cretaceous.

Reference:

DOUGLAS, J.G., 1969 - Mesozoic floras of Victoria. Mem. geol. Surv. Vic. 28.

FIGURE 1

Specimens F 23743. Natural size.
STEMS showing pitting and striation.

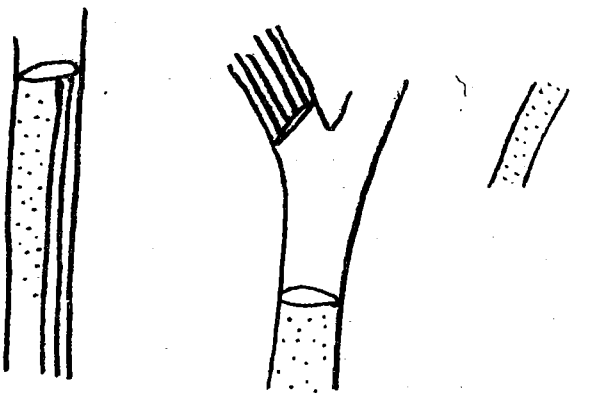


FIGURE 2.

Specimen F 23744. Natural size.
SEED.

FIGURE 3.

Specimens F 23745. Magn. X 2.
Rosette of SEEDS on megasporophylls.
MICROSPORANGIA.

PLANT FOSSILS FROM THE WINTON FORMATION, EROMANGA BASIN

A small collection of plant fossils was made from a locality 5 km east of Morney Plains homestead in the Canterbury Sheet area by B.R. Senior in 1973. The Sample No. is 73170020. The specimens are ferruginous labile sandstone identified in the field as Winton Formation.

The following fossils are identified:-

On specimen F 23740; illustrated in Figure 4.

(a) A large dicotyledonous leaf. Only part of the leaf is seen in in the impression. The midrib is pronounced (10 cm is preserved) and the lateral veins make an angle of approximately 45° with it. There is no indication of the full size or shape of the leaf. It was obviously more than 10 cm wide and more than 10 cm long. This leaf is referred to Artocarpidium stuartii Ett. Large leaves which are similar occur in the Tertiary Flora from Vegetable Creek, N.S.W. (Ettinghausen, 1888). They are equally well referred to Ficus sp.

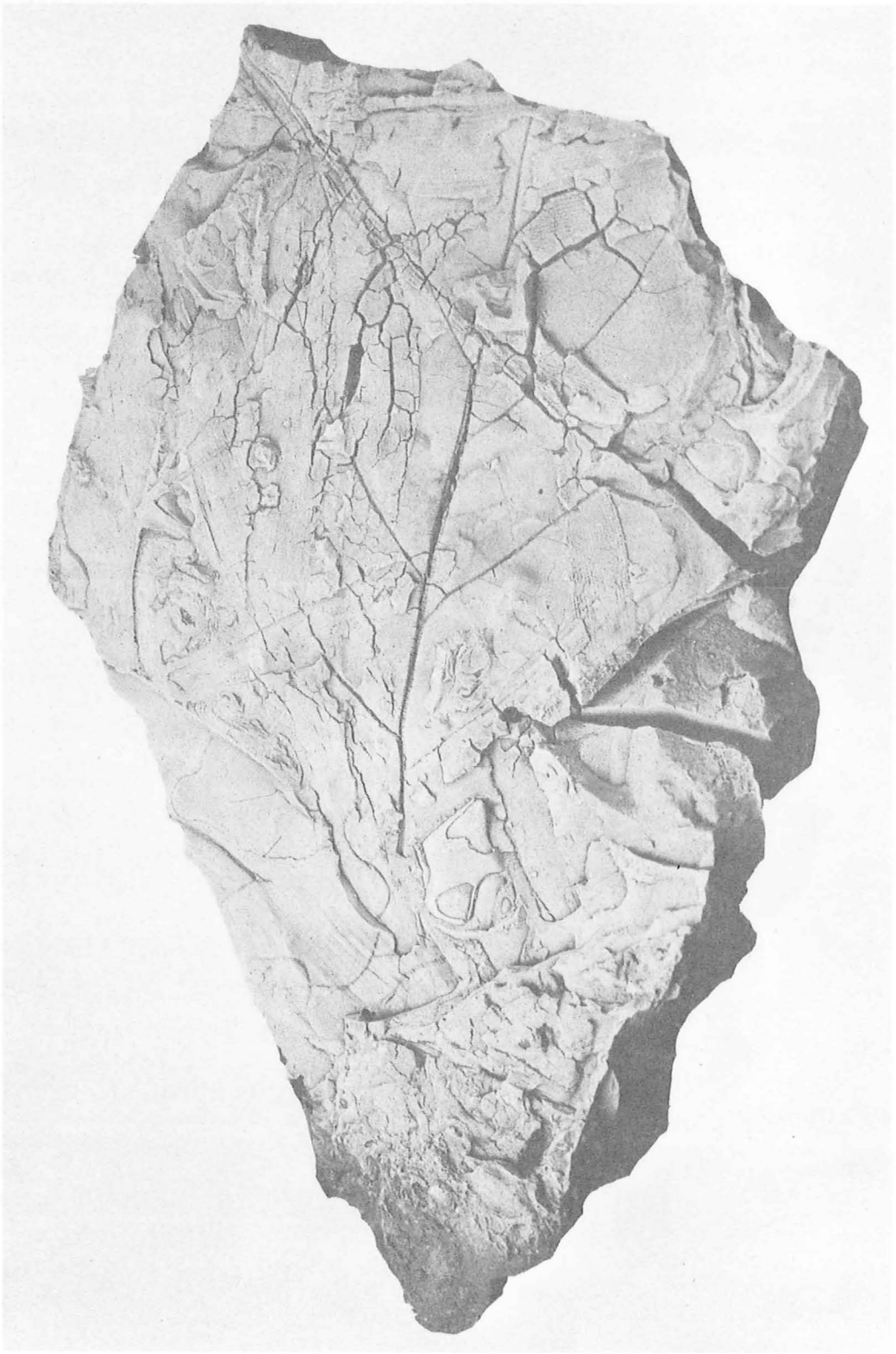
(b) Portions of a narrow rachis 3 mm wide, 8 cm long bearing a pair of opposite, lanceolate leaflets with fine parallel veins. This specimen is referable to Podozamites sp. It shows the attachment of a second pair of leaflets 4 cm above the first. In Australia and New Zealand two species of Podozamites are recorded in Jurassic and Cretaceous strata. The commonly occurring Podozamites lanceolatus has its leaflets closely arranged on the stem, and the less common Podozamites gracilis has narrower leaflets. This specimen closely resembles Podozamites distans Presl., which is described from Rhaetic and Jurassic strata in Europe.

Podozamites is believed to be a podocarpaceous conifer and not a cycad as the '-Zamites' would imply. The name 'Araucarites' may be used but where no fertile material is available, this would stress conifer affinity without evidence.

(c) An equisetalean stem 1.5 cm wide with fine vertical ribbing and two nodes. There is no alteration of ribs at nodes. Referable to Equisetites sp.

(d) On specimen F 23741 is a small portion of a conifer twig referable to Pagiophyllum peregrinum L. and H., a common Jurassic and Cretaceous form. This is a form-species and a stem impression of this sort could belong to a number of different conifer genera.

FIGURE 4.



Podozamites sp., Artocarpidium sp. and Equisetites sp.
Specimen F23740. Natural size

(e) On specimen F 23742 is another fragment of the large leaf referred to Artocarpidium stuartii.

The assemblage is a dicotyledonous leaf, a conifer twig, and an equisetalean with Podozamites sp. indicates an Upper Cretaceous age for the fossil horizon. Dicotyledonous leaves of this sort do not occur in beds older than Upper Cretaceous.

Age: Upper Cretaceous.

Reference:

ETTINGHAUSEN, C. VON, 1888 - Contributions to the Tertiary Flora of Australia. Mem. geol. Surv. N.S.W., Palaeont., 2.

PLANT FOSSILS FROM THE PASCOE RIVER AREA, CAPE YORK PENINSULA

Plant fossils were collected in the Pascoe River area of Cape York Peninsula, Sample No. 72794520, Lat. 12°37'S, Long. 143°04'E, west bank of Pascoe River, by S. Powell in 1972. A collection was previously made from the same formation in neighbouring areas in 1967 by D. Trail, and contained lower Carboniferous or Upper Devonian/Lower Carboniferous plants (Records 1969/53).

The 1972 collection consists of large quantities of fragmented coaly shale with abundant fragmental and largely indeterminate plant remains. There was also one large specimen which proved on splitting to be a mud-ball enclosed in coaly shale layers which exfoliated. In the unweathered and well preserved core of this specimen is a good example of the lycopod Protolepidodendron lineare Walkom (specimen F 23620) which is an Upper Devonian species not known to persist into the Carboniferous. (It was recorded from the Bulgonunna Volcanics in the Bowen Basin - White, 1961).

In the coaly specimens which form the bulk of the collection are examples of small stems with the characteristic markings of Protolepidodendron lineare, and others showing general lycopod features, with large numbers of other stem impressions which are indeterminate. (specimens F 23621). There is also an example of a portion of a leaf with the characteristic venation of Rhacopteris digitata Eth. fil. (Specimen F23622). This is a Lower Carboniferous species which probably ranges from Upper Devonian. The specimen is unsuitable for photography. Rhacopteris digitata occurs in the Scartwater Formation in the Drummond Basin (White, 1967) and of the Charters Towers region of Queensland (White, 1968).

The presence of Protolepidodendron lineare and Rhacopteris digitata in the 1972 collection from Pascoe River indicates that the age of the Formation is probably Upper Devonian, or may be transitional to Lower Carboniferous.

References:

WHITE, MARY, E., 1961 - Report on 1960 plant fossil collections from the Bowen Basin, Queensland. Bur. Miner. Resour. Aust. Rec. 1961/60 (Unpubl.).

WHITE, MARY, E., 1967 - Report on 1966 collections of plant fossils from the Drummond Basin. Bur. Miner. Resour. Aust. Rec. 1967.68 (unpubl.).

FIGURE 5.

Protolepidodendron lineare Walkom.

Natural size. F 23620.

WHITE, MARY, E., 1968 - Report on 1967 and 1963 collections of plant fossils from the Charters Towers region of Queensland. Bur. Miner. Resour. Aust. Rec. 1968/61 (unpubl.).

WHITE, MARY, E., 1969 - Report on 1967 collection of plant fossils from Cape York Peninsula. Bur. Miner. Resour. Aust. Rec. 1968/53 (unpubl.).