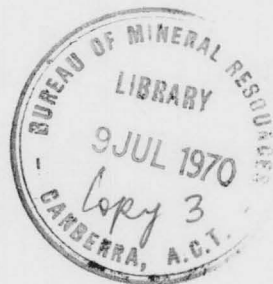


COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

Record No. 1969 / 53



Report on 1967 Collection of  
Plant Fossils from  
Cape York Peninsula

*by*

*Mary E. White*

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REPORT ON 1967 COLLECTION OF PLANT FOSSILS

FROM CAPE YORK PENINSULA

by

Mary E. White

Records 1969/53

Plant fossils were collected from two localities on the East coast of Cape York Peninsula, about 180 miles South of Thursday Island, by W.D. PalFreymen in 1967. At both localities elements of the same flora are present.

Stigmara ficoides Bgt., the root buttress of Lepidodendron is present associated with a species of Cardiopteris which shows diversity of pinnule form. A lower Carboniferous age is suggested by the flora.

Locality 1: In Hamilton Creek; 4 miles above its confluence with the Pascoe River and 22 miles West of Portland Roads. Field nos. of specimens 67480476 - 67480495 inclusive. Grid ref. E6492 N33912 on the Cape Weymouth 1:250,000. Sheet SD54/4.

Specimens no F 22963 - F 22984.

(F22963, F22966, F22969, F22970, G22976 Illustrated)

Two plant species are identified at Locality 1. Stigmara ficoides Bgt. the root buttress of Lepidodendron is present in a number of specimens. An example is illustrated in Figure 2 of Specimen F22966. The circular markings are attachment points for Stigmarian roots which had a central vascular strand. This appears as a spot in the centre of the rootlet scar in many cases. Among the stem-like impressions in the specimens are some smooth, ribbon-like impressions which may have a median sulcus. These are impressions of Stigmarian rootlets.

The other plant present is a species of Cardiopteris. The material consists of a great quantity of dissected leaf tissue impressions. In some instances specimens are almost a solid mass of plant impressions. Much of the leaf material is broken up into fragments of single

pinnules and this is misleading as on first inspection the fragments appear to be referable to Rhacopteris. Close examination shows that there is diversity of pinnule type depending on the position of the pinnule on the pinna, and further it is seen that the frond is a bipinnate one. This feature precludes it from Rhacopteris which is by definition once pinnate with alternate, often overlapping flabelliform pinnules which range from entire to deeply dissected.

Examples of pinnule type are illustrated in Figures 1, 3, 4, and 5. In Figure 1 is an example of a Cardiopteris type pinna. In Figure 3 are pinnules of Rhacopteris type. Figure 4 shows the bipinnate nature of the frond, and Figure 5 shows one Cardiopteris type frond and many pinnule fragments which look like Rhacopteris.

Figure 1.

Cardiopteris sp. Specimen F 22963. Negative F/5428

Stems and pinnules.



Figure 2.

Stigmara ficoides Bgt. Negative F/5434

Specimen F 22966.

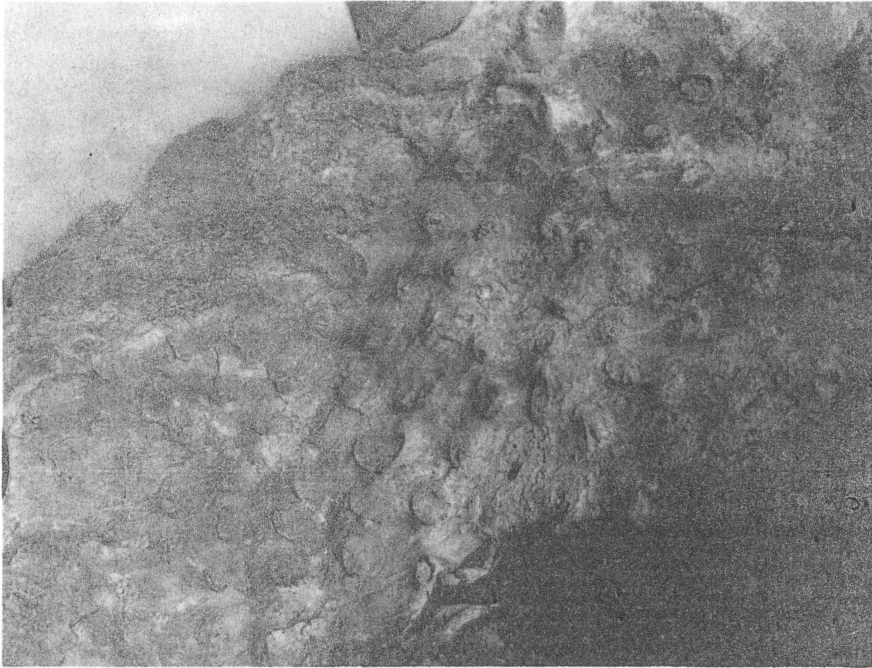


Figure 3.

Cardiopteris sp. Specimen F 22969. Negative F/5429

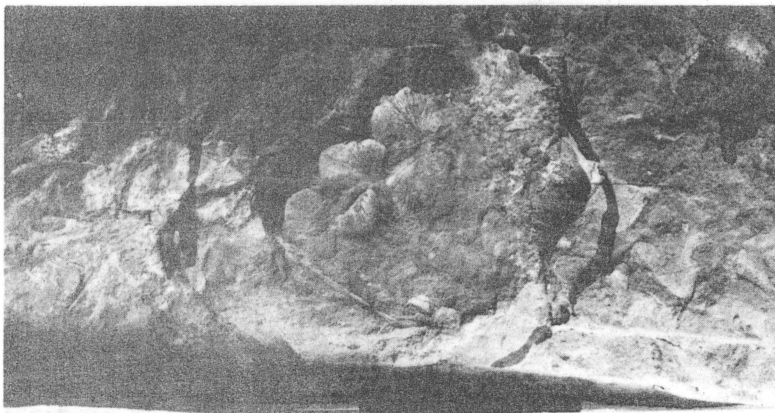




Figure 4.

Cardiopteris sp. Specimen F 22970. Negative F/5432

Magnification X2.

Showing bipinnate nature of the frond.



Figure 5.

Cardiopteris sp. Specimen F 22976. Negative F/5433



There are many stem impressions in the material. Some of these show regular pitting of the surface with a pattern of horizontally elongated depressions. Others have fine vertical striation. Some, as for example the forking stem in Figure 1, show both pitting and striation, having different decortication levels. The ornamentation of the fork has a strongly Psilophyte appearance. The stems are presumably referable to Cardiopteris sp.

Diversity of pinnule form is a well known phenomenon in Carboniferous plants of Cardiopteris type. It is difficult to classify plant fragments from the Carboniferous fern-like genera. If there are only a few specimens in a collection containing pinnule fragments with Rhacopteris appearance, natural they are determined as belonging to that genus. Therefore records of occurrences of the genera involved are far from reliable and determination of species even less so. A large collection showing the full range of variation of pinnule form as in the present case, is necessary before safe determination can be made. Even then the choice of a generic name remains somewhat arbitrary. It has been suggested that the Genus Utopteris should be used for plants bearing both Rhacopteris and Cardiopteris pinnules. It might be more useful to determine all examples in which the limitations in the size of the collection make it impossible to be certain as Utopteris. Positive identification to either of the other genera would take into account the bipinnate nature of the frond in Cardiopteris.

Cardiopteris in the form of examples of the most variable species Cardiopteris polymorpha Goeppert occurs in the Lower Carboniferous in Australia in abundance. C. polymorpha is a much larger and more robust plant than the species under investigation. All pinnules and pinnae of the species are delicate and fern-like and the plant must have been very different in gross form from the substantial Cardiopteris polymorpha.

The range of Cardiopteris is Carboniferous. There are references in literature to its presence in passage beds to Permian associated with Glossopteris. In view of the latest evidence on the presence of a

Glossopteris - Cardiopteris assemblage in Middle Carboniferous (Richards, Morgan and White, in press) there is reason to doubt its extension into Permian. It is not impossible that it may range from Upper Devonian.

Locality 2: In Pascoe River,  $1\frac{1}{2}$  miles above its confluence with Hamilton Creek and 24 miles West of Portland Roads. Field specimen nos. 67480496 - 67480507.

Grid ref. E 6473 N 33931, on the Cape Weymouth 1:250,000 SD 54/4.

Specimens F 22985 - F 22996.

The specimens from locality 2 are poorly preserved. Most have indeterminate plant remains in the form of stem impressions, minute branching filaments, and some macerated plant material. In specimens F 22990 and F22992 are fragments of Cardiopteris sp. the same as at locality 1. Some of the stem-like impressions are probably Stigmarian roots.

The specimens are of the same age as those at Locality 1.

Age: Plant evidence indicates a Carboniferous age for the fossil horizon.