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RECORDS.

1957/66

FOSSIL PLANTS FROM NEAR SELWYN, CLONCURRY DISTRICT, NORTH-WEST QUEENSLAND

by

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Fossil plants were collected by W.C. White from beds of Mesozoic Age 4 miles W.N.W. of Selwyn in North West Queensland, at Lat. 21°31'S, Long. 140°26'E. Specimens F21613, C.P.C. 2837 - 2839.

The material comprises two species of plants in a good state of preservation, and an indeterminate cycad seed.

1. Fern: Figures 1 and 2, Plate 1.

Portions of fronds of a delicate tripinnate fern showing characteristics of sterile and fertile pinnules are present. The fern has two types of foliage. Sterile fronds have pinnules larger and more foliose than fronds which bear fertile segments. (A and B in Text figure). The appearance of the sterile foliose pinnules is similar to Coniopteris hymenophylloides Brongn. but the venation of individual pinnules resembles more closely Ruffordia mortoni (Walk.). The sterile portions of fronds with the smaller type of pinnules are similar to small fronds of Sphenopteris polymorpha Feist . but the rachis is not winged.

Fertile segments are characterised by the reduction of the lamina to a stalk for the "receptacle" or sorus. (C and D in Text figure). The receptacle is crescent shaped and deeply impressed into the rock. Markings inside the receptacles suggest a row of five to eight sporangia inside. Smears of dusty contents unfortunately reveal no sporangia or spores. The nature of the fertile pinnules precludes the inclusion of this fern in the genera Coniopteris, Ruffordia and Sphenopteris. The arrangement is the same as that seen in Asplenioptéris pinnatifida Fontaine.

A generic description of Asplenioptéris Fontaine is as follows:-

> "Frond bipinnate or tripinnatifid; pinnules linear-lanceolate, or oblong, acute or obtuse, lobed or toothed, sori proportionately very large, elongate or narrowly elliptical in a row on either side of the midrib, one in each lobe or tooth, inserted on thick supports or segments, which represent the transformed segments or lobes, placed on the anterior margins of these, and running down nearly their entire length". (Berry, 1911).

The fern under discussion will be seen to fit more naturally into the genus Asplenioptéris than into any of the other genera to which it has superficial resemblance in the sterile state. It is quite likely that this fern in its sterile state has been recorded before from Australia under one or more of the other generic names.

The range of this fern cannot be more narrowly defined than Triassic or younger.

2. Cycadean Frond: Figure 3, Plate 1.

The portions of cycadean frond are of the Pterophyllum princens O. and M. form as seen in the Rajmahal beds in India. (Oldham and Morris, 1863), Three specimens show the attachment of the luminal segments to the rachis. A

terminal portion of frond, Figure 3, shows the rachis indistinctly as though it is covered by the lamina. This feature suggests that the frond is referable to Nilssonia princeps rather than Pterophyllum. The venation of the segments of the lamina is coarse, with all the veins parallel to the margins and very few dichotomising. There is no anastomosing of veins.

The range of Pterophyllum (Nilssonia) princeps O. and M. is considered to be Triassic - Jurassic, with the greatest profusion in Lower Jurassic times.

REFERENCES

ARBER, E.A.N., 1917 - The earlier Mesozoic floras of New Zealand. N.Z.geol.Surv. Palaeont.Bull. 6

BERRY, E.W., 1911 - Lower Cretaceous flora of Maryland. Maryland geol. Surv.Publ. Baltimore.

FEISTMANTEL, O., 1881 - The fossil flora of the Gondwana System, III. Palaeont.Indica, Ser. 12, 3.

OLDHAM, T. & MORRIS, J., 1863 - Fossil flora of the Rajmahal Series in Rajmahal hills. Palaeont.Indica, I, 1-52.

SEWARD, A.C., 1910 - "Fossil Plants" II. Camb.Univ. Pr.

_____, 1917 - "Fossil Plants" III. Camb.Univ. Pr.

WALKOM, A.B., 1919 - On a collection of Jurassic plants from Bexhill, near Lismore N.S.W. Proc.Linn.Soc.N.S.W. 44, pt I.

_____, 1928 - Fossil plants from Plutoville, Cape York Peninsula. Proc.Linn. Soc.N.S.W. 53, Pt.2.

PLATE 1

Fig. 1 : Asplenioptcris sp.

A. Foliose pinnules.
B. Fertile frond.

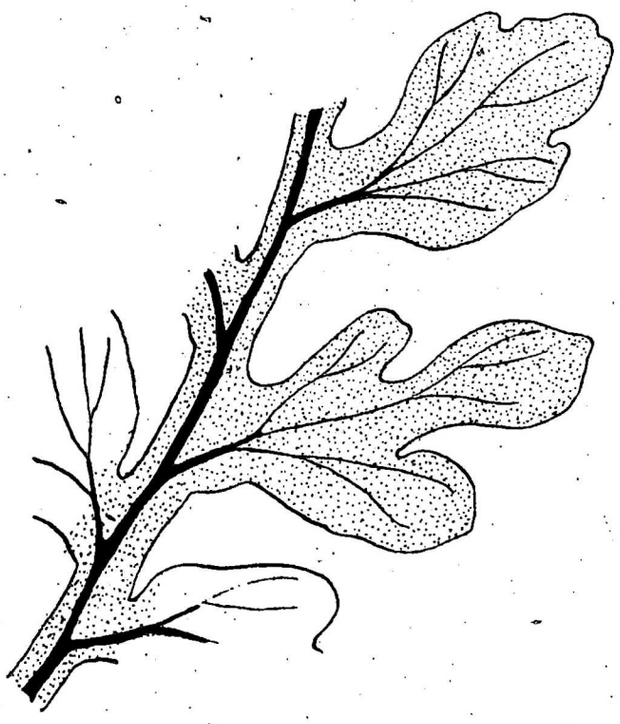
Fig. 2 : Asplenioptcris sp.

A. Sterile pinnules.
B. Terminal portions of fronds, fertile (left) and sterile (right).

Fig. 3 : Pterophyllum (Nilssonia) princeps O. and M.

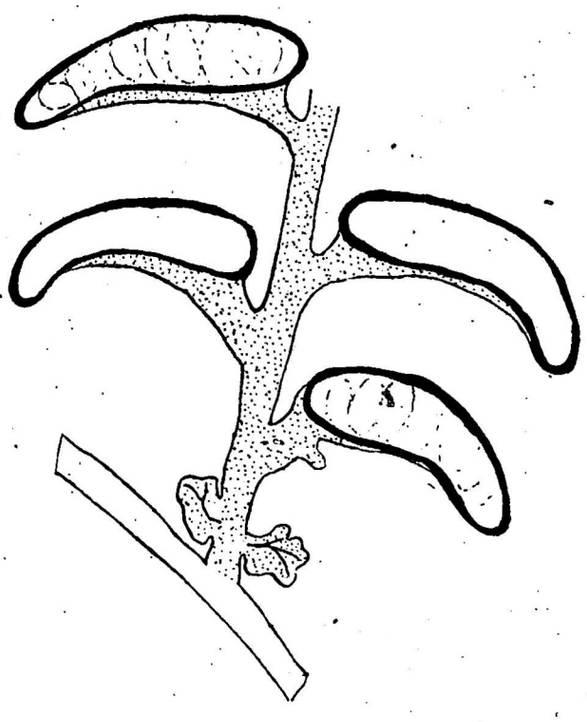
Text Figure.

Diagnostic features of Fern.

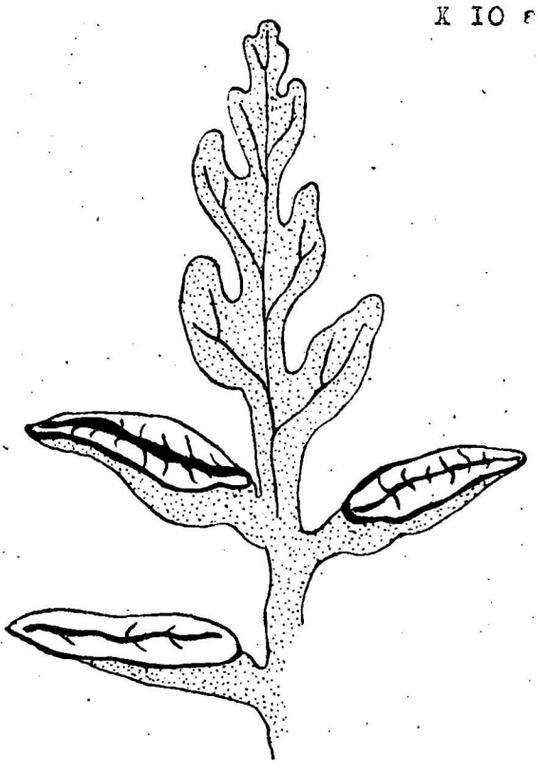


A. Sterile pinnules showing venation. Lamina decurrent.
X 10 approx.

B. Smaller pinnules of fronds which bear fertile segments.
X 10 approx.



C. Fertile pinnules.-
Crescent-shaped "receptacles".
Fern rachis not winged.
X 10 approx.



D. Terminal portion of fertile frond. The "receptacles" are closed by a ridged lid.
X 10 approx.