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RECORDS:

1966/111

REPORT ON 1965 PLANT FOSSIL COLLECTIONS

by

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PART I

Collection from Mt. Ramsay, Western Australia

Summary

Plant fossils were collected at five localities on the Mt. Ramsay 1:250,000 Sheet in 1964. Four localities are in Condren Sandstone and contain a Permian flora with two forms indicative of Lower Permian. At the fifth locality Leptophloeum australe (M'Coy) occurs, indicating Upper Devonian age.

LOCALITIES IN CONDREN SANDSTONE

Samples collected by H.G. Roberts

1. Locality MR 13-79-3B: Mt. Ramsay. Run 13, Photo 5179, Point 38
   Mt. Talbot 10½ miles W.N.W. Bohemia Downs Homestead.

Specimen no. F 22690.

Impressions of large leaves of Glossopteris communis Feist. are present. This species is not diagnostic of Upper or Lower Permian.

Age: Permian.

2. Locality MR 13-79-3A: Mt. Ramsay. Run 13, Photo 5179, Point 34
   Mt. Talbot 10½ miles W.N.W. Bohemia Downs Homestead.

Specimens F 22691 - F 22694.

The following plants are identified:-

Glossopteris indica Sch.
Glossopteris communis Feist.
Glossopteris ampla Dana.
Glossopteris angustifolia Bgt.
Gangamopteris cyclopteroides Feist.
Equisetalean fragment.

The Glossopteris angustifolia is of the type characterising the Agate Creek Volcanics Flora in Queensland (Records 1961/20) where it was associated with Gangamopteris and the same species of Glossopteris.

Gangamopteris cyclopteroides does not occur in Upper Permian.

Age: Lower Permian.

3. Locality MR 13-79-5: Mt. Ramsay. Run 13, Photo 5179, Point 5
9 miles west of Bohemia Downs Homestead, adjacent to Western Highway.

Specimen no. F 22695.

Large examples of Vertebraria indica Royle are present showing the segmented form of the species. Vertebraria occurs with Glossopteris throughout the Permian.

Age: Permian.

4. Locality MR 13-77-6: Mt. Ramsay. Run 13, Photo 5177, Point 6
6 miles west of Bohemia Downs Homestead adjacent to North Western Highway.

Specimen no. F 22696

An excellently preserved cast of Vertebraria indica Royle and impressions of the species indicate Permian age.

Age: Permian.

Fairfield Formation

Locality MR 13-71-1: Mt. Ramsay. Run 13, Photo 5171, Point 1, 13 miles east of Bohemia Downs Homestead.

Specimen no. F 22697

Casts and impressions of stems of Leptophloeum australe (M'Coy) show a range of decortication and surface forms.

Leptophloeum australe is a reliable indicator of Upper Devonian age and is very common in beds of this age throughout Australia. In rare instances it appears to have persisted into transitional beds to Lower Carboniferous. It is nowhere associated with Lower Carboniferous plants and where a Lower Carboniferous dating is made on marine forms there remains at present some doubt about the precise age of the plants.

Age: Upper Devonian.

PART 2

Two Samples from Helen Springs, Northern Territory

Summary:

Plant fossils were collected at two localities in the Helen Springs region of the Northern Territory in 1965. At the one locality delicate leaves of a Dipteridinous fern of Jurassic or Lower Cretaceous age occur. At the second locality indeterminate stem casts are the only fossil form.

1. Locality HS 915: Helen Springs 4-mile sheet, E53/10.
Run 8, photo 5199, pt. HS 915.
Lat. 18° 54.5' S; Long. 133° 55.2' E.

Collection data (M.A. Randal) "from the bottom stratum of "lake beds" in the western tributary of Morphett Ck. 10 miles a little S. of W. from crossing of Morphett Ck. by Stuart Highway."

Specimens F 22698 and F 22699 (illustrated specimen)

Figure 1 of specimen F 22699 shows a leaf of Hausmannia sp. in which the polygonal patterning of the leaf surface by ramification of veins is clearly evident.

Figure 1

Natural size. Negative No. F 4889

This species of Hausmannia appears to be the same as a fragment of leaf of "Hausmannia sp." recorded in the Lower Cretaceous flora of the Northern Territory described in Records 1961/146.

Hausmannia has a Jurassic and Lower Cretaceous distribution.

Age: Jurassic or Lower Cretaceous - Probably Lower Cretaceous.

2. Locality HS 749: Helen Springs 4-mile sheet. E 53/10.
Run 8, photo 5200. Pt HS 749.

Collection data (H.F. Doutch) "Western tributary of Morphett Creek, 9 miles a little S. of W. from the crossing of Morphett Creek by the Stuart Highway".

Specimens F 22700.

Indeterminate stem casts.

Age: Indeterminate.

PART 3

Sample submitted by Australian Aquitaine Petroleum Co. Ltd.

Sample SQ 749. MacDonald Run 17/5087 about 5 miles N.W. of the summit of the Sir Frederick Range.

Locality: 128°35'30" E, 23°56'30" S on the MacDonald Sheet, East Central Western Australia. On the eastern side of an elongated N. - S. trending outcrop of Bitter Springs Limestone.

Specimens F 22701.

Numerous dicotyledonous leaf impressions and one small fig-like fruit are present.

Identical leaves were collected by geologists of Ampol Exploration Ltd. in the Proserpine area of Queensland. In that instance the plant fossil horizon was accurately dated by marine fossils as Eocene. The fruit is probably referable to Ficus sp.

Text Figure 1.
Fig-like Fruit

Age: Approximately Eocene to Recent.

PART 4

Plant Fossils from the Great Artesian Basin

Summary:

Beautifully preserved Triassic/Lower Jurassic plants were collected from Moolayember Formation at locality G.A.B. 1816. At locality GAB 1822 in Adori Sandstone an Upper Triassic/Lower Jurassic occurs. Jurassic or Lower Cretaceous plants are present at locality GAB 809 from the base of the Winton formation.

1. Locality GAB 1816: Springsure sheet area. Moolayember Fm., at the unconformity with Precipice Ss. 2 miles E. of Tambo/Springsure Sheet boundary and 1 mile S. of the old Springsure/Tambo Road. (This is locality SP 664 collected in 1963)
Photo: Tambo, Run 12A, 5053. Collected by N.F. Exon.

Specimen nos. F 22702 - F 22708.

These specimens are excellently preserved. The fossils are in the form of grey or brown-iron-stained impressions on the fine grained purple sandstone.

The following plants are identified:-

Dicroidium odontopteroides (Morr.) Gothan
Pterophyllum nathorsti (Seward).
Otozamites obtusus L. & H.
? Otozamites queenslandi Walkom - terminal portion of pinnule only.
Dicroidium feistmanteli (Johnst.) Gothan.
Baiera bidens (Ten. Woods)

Figure 2 of specimen F22702 and Figure 3 of specimen F 22703 show all the diagnostic forms except Baiera bidens, which was identified on a lobe of the bifid pinna by its venation.

In the 1963 collection from the same locality (SP 664) Pterophyllum abnorme Eth. fil. and Dicroidium coriacium (John.) Townrow were identified.

The flora is a Trias-Jurassic flora indicating that the Moolayember Formation is either Triassic or Lower Jurassic or transitional between the two.

Age: Triassic or Lower Jurrasic.

Figure 2

Specimen F 22702. Natural size. Negative no. F 4886
Dicroidium odontopteroides and Pterophyllum nathorsti.

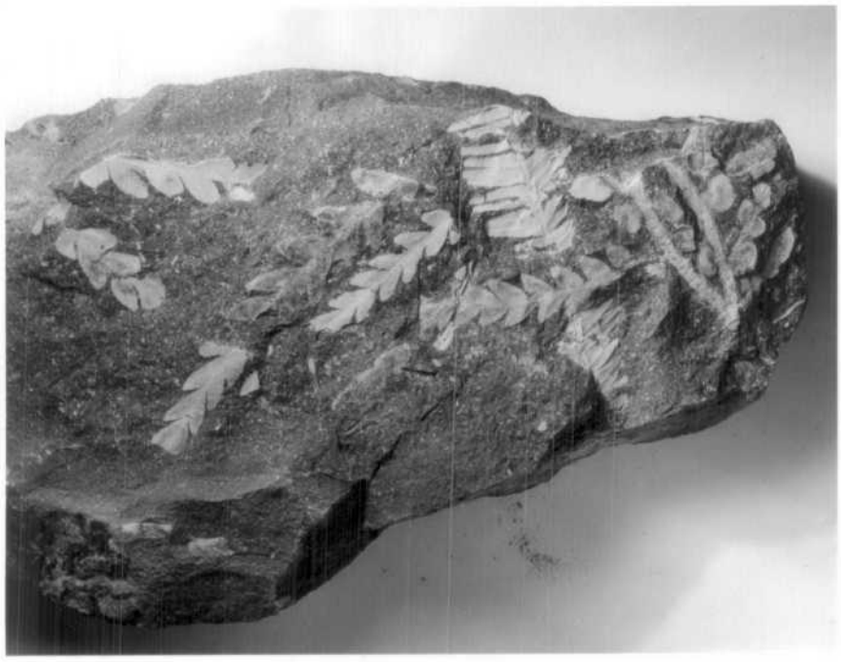
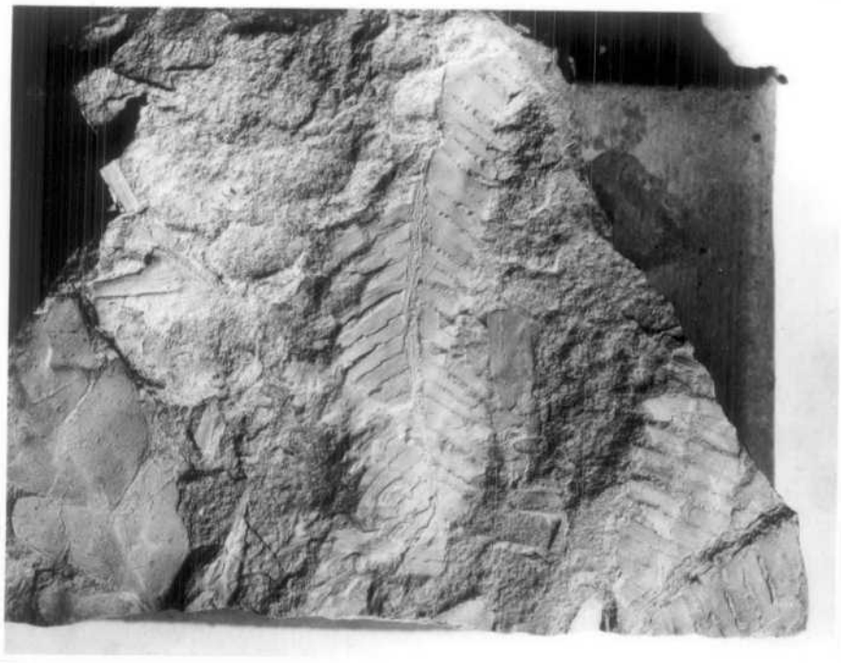


Figure 3

Specimen F 22703. Natural size. Negative no. F 4887
Dicroidium feistmanteli, Pterophyllum nathorsti, Otozamites obtusus and Otozamites queenslandi.



2. Locality GAB 1822: Tambo sheet area. From soft band about 100 feet from base of Adori Sandstone. On track between Myall Grove and Enniskillen, 2 miles west of Myall Grove.
Photo: Tambo Run 9, 5069. Collected by N.F. Exon
Specimens F 22709 - F 22716.

The fossils are in the form of excellently preserved impressions stained brown and red on pale grey, fine sandstone.

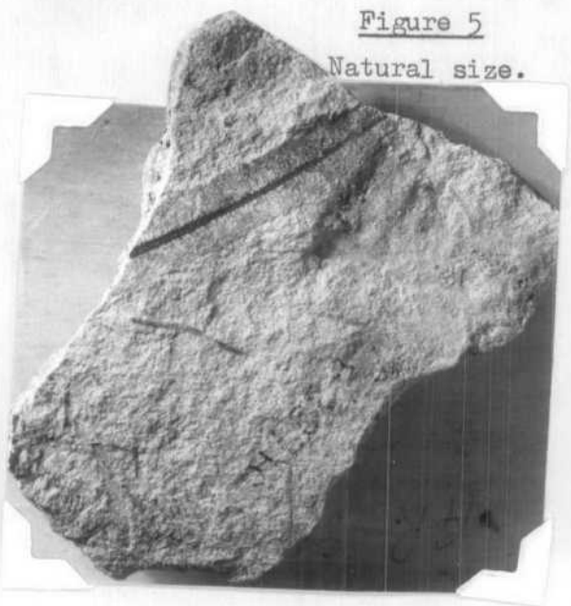
The following are identified:-

(a) Lepidopteris stormbergensis (Seward) nov. comb.
Illustrated in Figure 4 of specimen F 22709. This excellent specimen suggests that the form identified in SP 664 as Dicroidium coriacium (Johnst.) Townrow might be more accurately identified as Lepidopteris stormbergensis. Identification of these very similar forms from impressions only is not a simple matter.

Figure 4

(b) Taeniopteris spatulata McClelland. Illustrated in Figure 5 of specimen F 22710. Negative no. F 4891.

Figure 5
Natural size.



(c) Cladophlebis australis (Morr.) - the common fern which ranges from Triassic to Lower Cretaceous.

(d) Ptilophyllum pecten (Phillips). Illustrated in Figure 6 of specimen F 1

(e) Sphenopteris sp. cf. S. superba (Shirley).
Fragments of fern with sphenopteroid venation.

(f) Ginkgo antarctica Saporta, a small leaf illustrated in Figure 7 of specimen F 22715.

890

This is an Upper Triassic/Jurassic flora.
Age: Upper Triassic/Jurassic.

3. Locality GAB 809. (Collected in 1962).

Locality: Winton 1:250,000 sheet
Near bore registered number 4113
Approx. 7 miles S.E. of Enryb Downs Hs.
From near the base of Winton Formation. Collected by L.V. Bastian.

Specimens F 22717.

Fragments of fine Conifer foliage are present. These are of Araucarian type, with falcate leaflets with median keels. They are referable to Pagiophyllum peregrinum L.& H. which is a form species for sterile conifer material of this type. Range of the species is Jurassic to Lower Cretaceous.

There are two fragments of lamina with strong, parallel secondary venation. These are of Pterophyllum or Nilssonia type. Such forms have Jurassic/ Lower Cretaceous distribution.

Age: Jurassic/Lower Cretaceous.

PART 5

Plant Fossils from the Proserpine Region, Queensland
Submitted on 24/11/65 by A.G.L. Paine, North Bowen Party 1965.

Summary

Collection 1 from an erratic in the Andromache River contains Equisetalean remains only. No age determination can be made. Collection 2 contains an Upper Carboniferous or Lower Permian flora.

A. Collection 1: B.M.R. Reg. no. 6515 3000
Field no. 7/6129 Pr. (Photo 5029, Pt. 7, Run 6 Proserpine 1:85,000 photos.)
Collected by A.G.L. Paine from an erratic in the Andromache River.
13 miles S.S.W. of Proserpine. Military Grd. Ref E118200 N2422700
Specimen no. F 22718.

These specimens contain very large numbers of impressions of Equisetalean stems of all sizes. There is no alternation of ridges at the nodes. There are no leaf sheaths preserved and no identification can be made. There are no other plants associated with the Equisetalean fossils to give any indication of age. It is quite usual to get solid stands of equisetaleans in this manner as they grew as "reed beds" in swamps and were probably fossilised in situ.

Age: Indeterminate.

B. Collection 2. Collector A.W. Webb. B.M.R. Reg. no. 65153001
Field no. 10/5/15 Pr. Photo 5015, Pt. 10, Run 5 Bowen 1:85,000 photos 10 miles S.W. of Proserpine. Military Grd. Ref. E 681400 N. 2432500 (See footnote by A.G.L. Paine)
Specimens F 22719 - F 22721.

In specimens F 22719 impressions of stems and broad ribbon leaves with fine parallel venation occur. The stems are similarly veined. There is no noding visible. These specimens are referable to Cordaites australis (M'Coy), a Cordaitean of Upper Devonian and Carboniferous distribution which was also found in Lower Bowen in the 1961 collection (Records 1962/114).

In specimens F 22720 large seeds are present associated with the Cordaites australis. These seeds are up to 2 cm long, pear-shaped, with greatest width up to 1.5 cm. and with a narrow wing-like border. They are referable to Cordaicarpus and are assumed to be the seeds of Cordaites australis. They are, however, indistinguishable from the Samaropsis dawsoni seeds which are so characteristic of Lower Bowen.

In specimen F 22721 there are some ribbed stems which have definite nodes and are equisetalean.

The presence of Cordaites australis and Cordaicarpus seeds (which would be called Samaropsis Dawsoni if present in a Lower Permian flora without Cordaites) indicates that the age of the fossil horizon is Lower Permian at youngest, or more probably Upper Carboniferous. (There is increasing volume of evidence that the early Gangamopteris floras of Lower Bowen which contain the characteristic Lower Bowen type of Noeggerathiopsis (close relative of Cordaites australis) are Upper Carboniferous at least in part.)

Age: Upper Carboniferous or Lower Permian.

Field Geologist's Note:

These specimens (Collection 2) were collected from about 12,000 feet above the present base of the succession (original base is now replaced by intrusive granite). However near its base the succession consists largely of massive volcanics, and whether there is an unconformity or time-break within the succession is not known at present. There is no evidence of one, but two separate similar successions exist in the area, one U. Devonian to Lower Carboniferous, the other Lower Permian. Strike-faulting is known a short distance to the south.

A.G.L. Paine
16/6/66