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# Report on 1967 and 1963 Collections of Plant Fossils From the Charters Towers Region of Queensland

*by*

*Mary E. White*

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SUMMARY

Plant fossils were collected at nine localities in the Charters Towers region of Queensland by F. Olgers and party in 1967. At a tenth locality a fossil impression collected is believed to be of Fish scales and should be examined by a competent vertebrate palaeontologist.

In Mount Wyatt Beds at localities 205, 207 and 267, Leptophloeum australe, Lepidodendron mansfieldense and Psilophytites are present. Carboniferous species of Lepidodendron occur in the volcanics overlying the Mount Wyatt Beds at localities 199 and 200/1. At locality 255, regarded as Telemon Formation equivalent, a Carboniferous Lepidodendron is present, adding weight to the recent classification of Telemon Formation as a Carboniferous horizon for the predominantly Upper Devonian Leptophloeum australe. Carboniferous species of Lepidodendron occur at localities 256, 236/1 and locality 24. At locality 256 a Lower Carboniferous form Rhacopteris digitata limits the age of the horizon.

## INTRODUCTION

This large collection of almost exclusively Lepidodendroid plant fossils contains many which are excellently preserved and the evidence it provides on distribution of species in the Upper Devonian and Carboniferous in addition to that supplied by the large Drummond Basin collection of 1966 is of interest.

A representative selection of specimens is illustrated for comparison.

## A. Localities in Mount Wyatt Beds

### 1. LOCALITY 205

Locality: Pt. 205; Run 1, photo 0059. Mount Coolon Photo set.
1 mile west of Conway Homestead. Bowen Sheet area.

Field information: "Probably Mount Wyatt Beds".

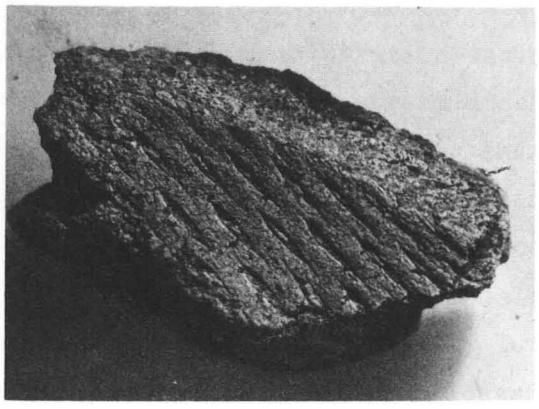
Specimens: F22928, F22929, F22930, F22931 and F22932 illustrated.
F22933 referred to in text.
F22927 remainder of collection.

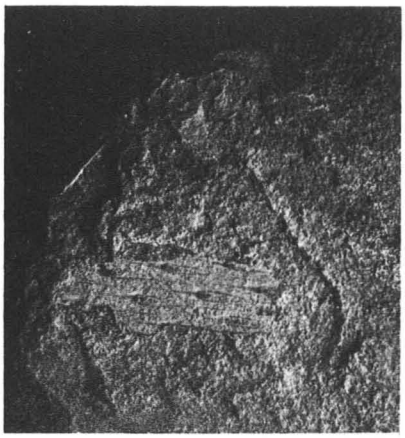
In these specimens there are numerous casts and impressions of decorticated Lepidodendron stems which are all similar. They show elongated, widely spaced leaf trace scars. There are also two surface impressions of Lepidodendron mansfieldense M'Coy, a most characteristic species with widely spaced, kite-shaped leaf bases. All the decorticated forms are readily referable to this species.

Figure 1 of specimen F22928 and Figure 2 of F22929 show the surface impressions of Lepidodendron mansfieldense.

Figure 1. F/5292 Figure 2. F/5305

Lepidodendron mansfieldense M'Coy
Natural size



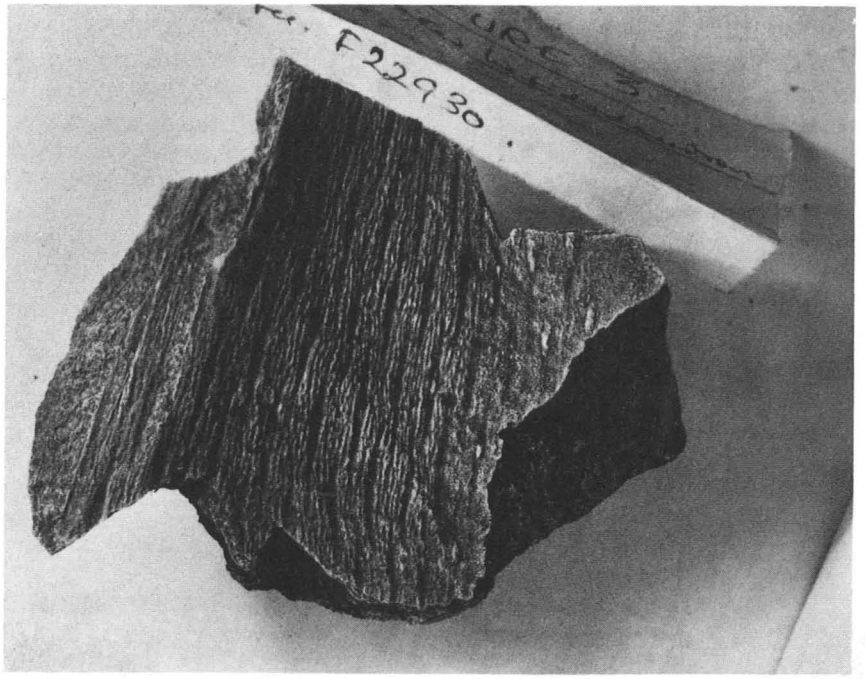


In Figure 3 of specimen F22930, a decorticated example is illustrated. It is typical of all the decortication forms present at this locality.

Figure 3. Neg. F/5295

Decorticated Lepidodendron mansfieldense

Natural size




Associated with the Lepidodendron mansfieldense are two examples of Psilophytites sp. These are illustrated in Figure 4 of F22931, a Psilophyte fork, and Figure 5 of F22932, a twig with a limited branch.

Figure 4 Neg. F/5303
Psilophyte fork

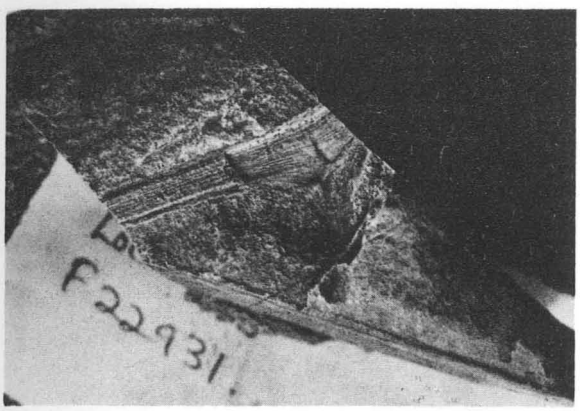
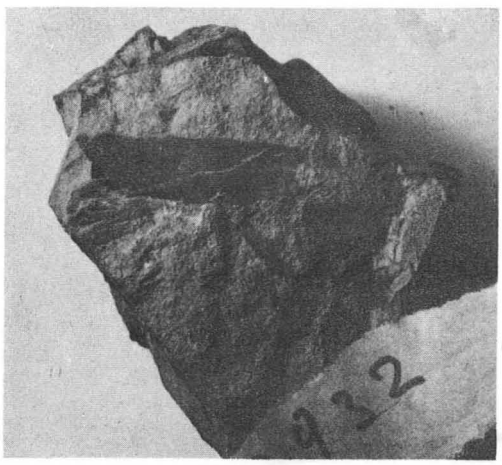



Figure 5. Neg. F/5310
Psilophyte twig



Age: The presence of Psilophytites indicates an Upper Devonian age. Lepidodendron mansfieldense is recorded from Lower Carboniferous strata, but on general botanical grounds it is more likely that its range is from Upper Devonian to Carboniferous than that a Psilophyte of this type persists far into the Carboniferous.

The age of the horizon on plant evidence is thus Upper Devonian or Lowermost Carboniferous.

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2. LOCALITY 207

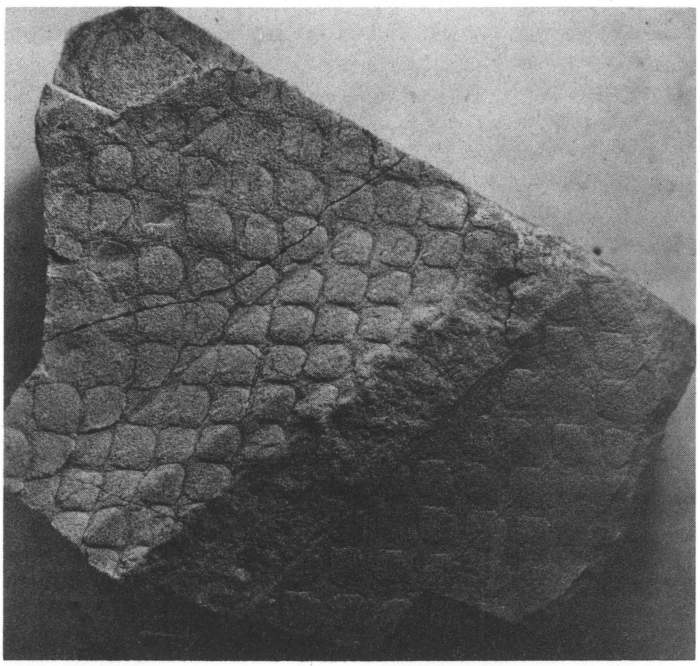
Locality: Pt. 207; Run 8, photo 5089, Bowen photo set.
1 mile north-west of Mount Wyatt, Bowen Sheet area.

Field information: "Mount Wyatt Beds".

Specimens: F22934 illustrated specimen.
F22935 referred to in text.
F22936 remainder of specimens.

Many examples of Leptophloeum australe (M'Coy) are present in these specimens. Some are surface impressions, others are characteristic decortication forms. Figure 6 of specimen F22934 illustrates the species.

Figure 6. Neg. F/5304
Leptophloeum australe.
Natural size



Equisetalean stem fragments are present in specimen F 22935. Leptophloeum australe is known to occur in Upper Devonian and in Lower Carboniferous horizons, being found more commonly in those of Upper Devonian age.

Age: Upper Devonian or Lower Carboniferous.

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3. LOCALITY 267

Locality: Bowen 1:250,000. Photo R8/5089.
Just north of Mount Wyatt. 1 mile east of Locality 207.

Field information: "Mount Wyatt Beds".

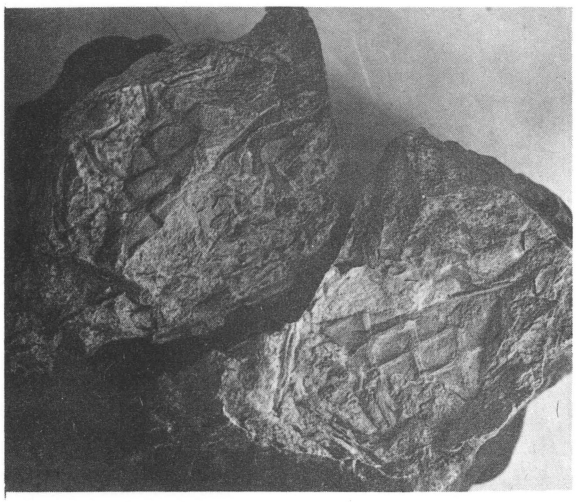
Specimens: F22949, F22950, F22951 illustrated.
F22952 remainder of specimens.

A great deal of carbonised plant material is present in these specimens. There are also many stem impressions and casts. Much of the carbonised material is probably derived from Lepidodendroid leaves. Some of the stems are referable to Leptophloeum australe (M'Coy) and among these are some examples of smaller stems with leaves attached to leaf bases. An example of an unattached narrow leaf showing expansion towards the base for attachment to the leaf cushion is illustrated in Figure 7 (specimen F 22949).

Some of the Leptophloeum stems are narrow and have only one complete rhombic pattern on the impression surface. Figure 8 of specimen F 22950 illustrates one of these.

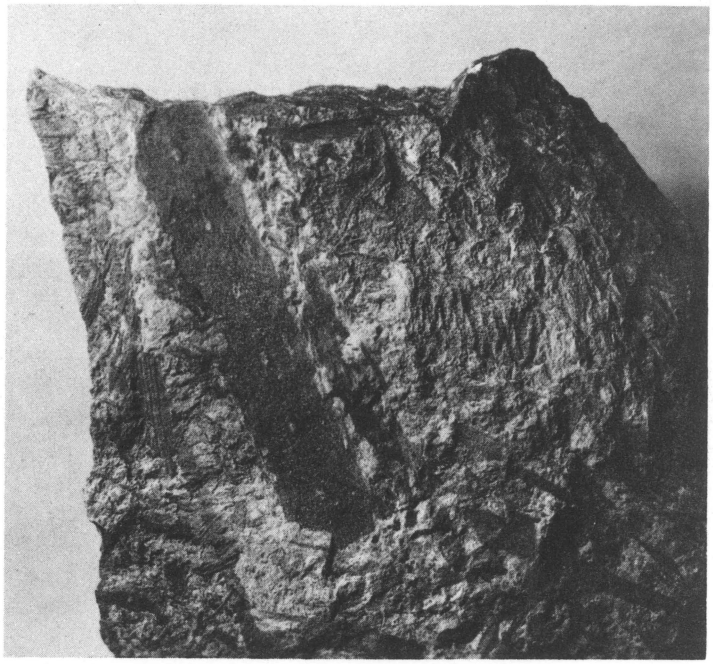
Figure 7. F/5299
Leaf blade expanded into broad base.

Figure 8. F/5302
Narrow stem of Leptophloeum australe with attached leaves.



A decorticated example of this type of stem is seen in Figure 9 where leaf traces appear as a line of spots down the centre of the stem. (specimen F 22951). Also in this specimen is an example of part of a stem of Leptophloeum showing crowded and wrinkled arrangement of leaf bases, which is a characteristic of the species. Bands of such wrinkled areas alternate with long areas of stem in which the leaf bases are normally expanded and clearly defined.

Figure 9. F/5314
Leptophloeum australe



A few examples of small ribbed stems with Equisetalean affinities are present, and a few small, forking stems may have Psilophyte affinities.

Age: On the presence of Leptophloeum australe, an Upper Devonian or Lower Carboniferous age is indicated for the fossil horizon.

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B. Localities in volcanics overlying Mt Wyatt Beds

4. LOCALITY 199

Locality: Pt. 199; Run 1, photo 0059. Mount Coolon photo set. 3 miles east-north-east of Rosetta Creek crossing of the Mount Coolon-Ukalunda Road, Mount Coolon Sheet area.

Field information: "From tuffaceous beds in a dominantly volcanic sequence previously mapped (Malone et al. 1964, Mount Coolon Report) as Devonian/Carboniferous Volcanics. Volcanics overly the Mount Wyatt Beds".

Specimens: F22918, F22919 illustrated.
F22920 remainder of specimens.

Casts and impressions of Lycopod stems, mostly young with leaves attached to leaf bases, are mainly poorly preserved in these coarse, gritty specimens. All determinate examples are of Lepidodendron veltheimianum Stbg. except for one, which though possibly within the scope of that species, is of the Lepidodendron dichotomum type. This specimen is illustrated in Figure 10 (specimen F 22918). A representative example of Lepidodendron veltheimianum is illustrated in Figure 11 of F 22919.

Figure 10. Neg. F/5291
Lepidodendron dichotomum Stbg.
Natural size

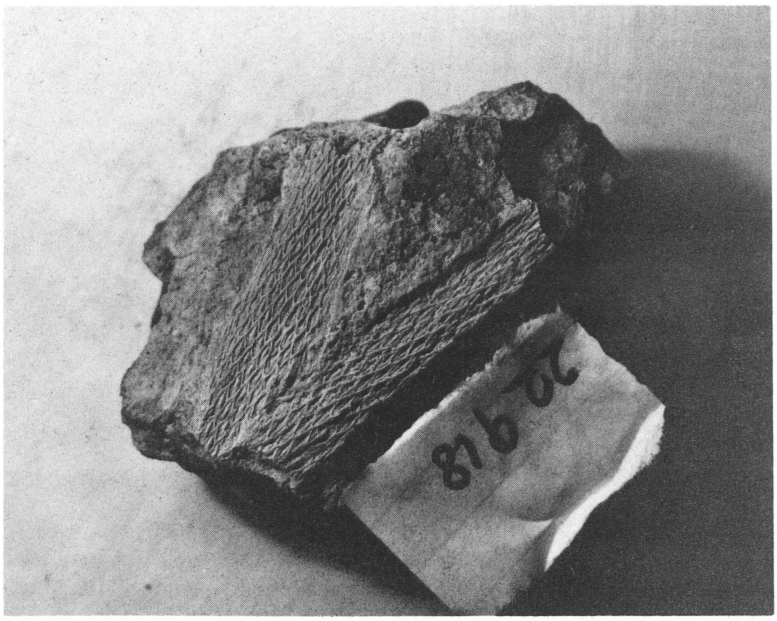
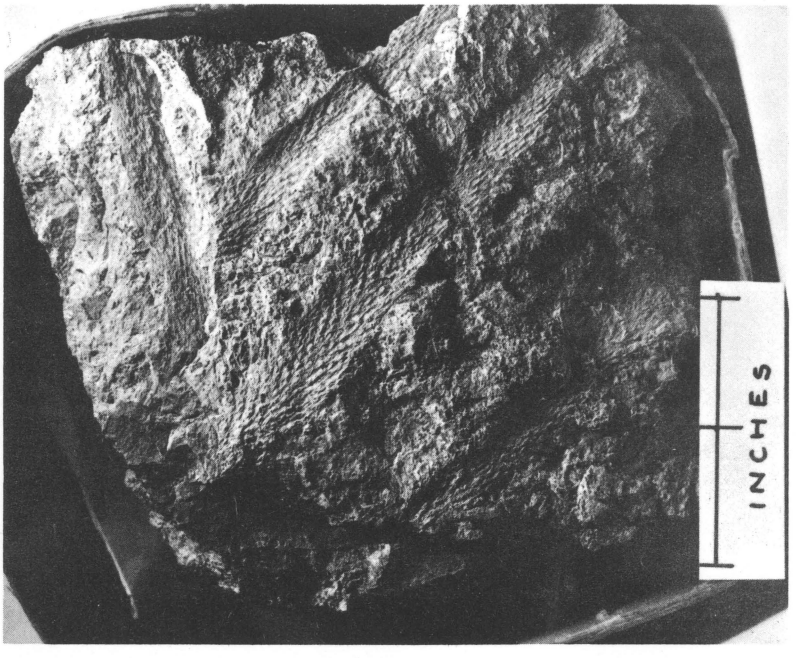


Figure 11. F/5294
Lepidodendron veltheimianum Stbg.




Age: Carboniferous.

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5. LOCALITY 200/1

Locality: Pt. 200/1; Run 1, Photo 0059. Mount Coolon Photo set. 5 miles north-north-east of Rosetta Creek Crossing of the Mount Coolon-Ukalunda Road. Mount Coolon Sheet area.

Field information: "From tuffaceous beds in a dominantly volcanic sequence previously mapped as Dev./Carb. volcanics, which overly the Mount Wyatt Beds".

Specimens: F22923, F22924, F22925 illustrated.
F22926 remainder of specimens.

There are many casts and impressions of Lepidodendroid stems, some poorly preserved, in these specimens. Determinate examples are referable to two species of Lepidodendrom. Well preserved examples of L. aculeatum Stbg. are present. Figure 12 of F 22923 shows one of these. Lepidodendron mansfieldense is seen in Figure 13 of specimen F 22924.

Figure 12. Neg. F/5298
Lepidodendron aculeatum Stbg.
Natural size

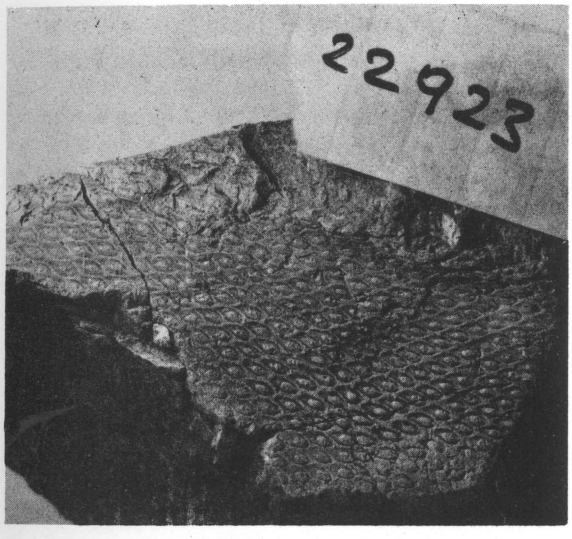
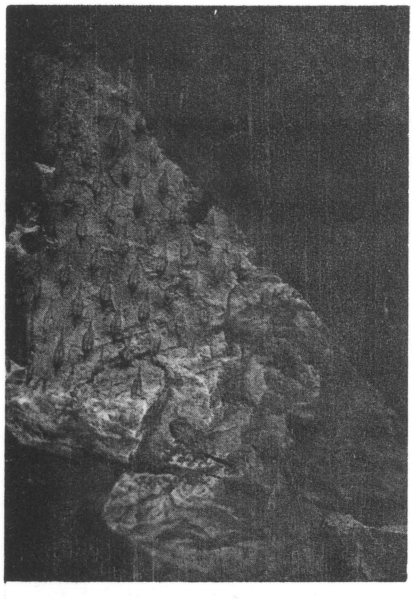


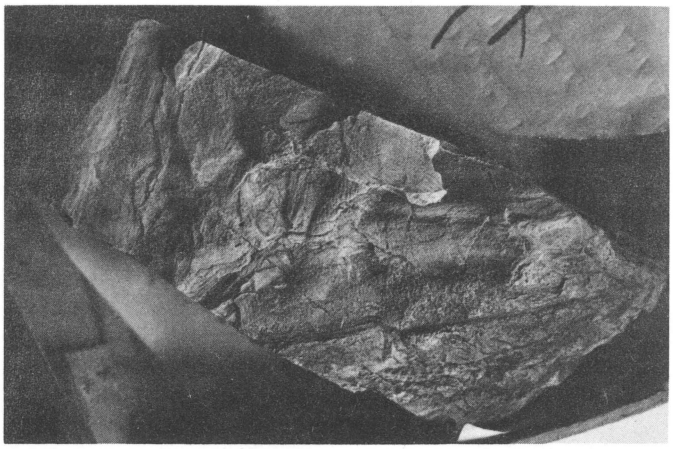

Figure 13. Neg. F/5307
Lepidodendron mansfieldense
Natural size



In specimen F22925, illustrated in Figure 14, is portion of a leaf with fine parallel venation of the Noeggerathiopsis general type. There is no indication of the shape or size of the complete leaf and there is room for speculation on the affinities of this specimen. It could be a Protoglossopterid leaf such as Plumstead has recorded from South Africa in Upper Carboniferous strata. The formation of a group of Protoglossopteridae is justified in Australia in my opinion. It could be used to accommodate the "Noeggerathiopsis of Upper Carboniferous/Lower Permian type" which I recognise as distinct from that of general Permian type.

The specimen under discussion is identified as ?Protoglossopterid and its occurrence associated with Lepidodendron may indicate Upper Carboniferous age.

Figure 14. F/5309
?Protoglossopterid venation
Natural size



Age: Carboniferous, ? Upper Carboniferous.

C. Locality in Telemon Formation.
Equivalent

6. LOCALITY 255

Locality: Clermont 1:250,000. Photo R3/51.
4 miles north-west of Logan Downs Homestead.

Field information: "Area previously mapped as 'volcanics at Mount Rankin' by Veevers et al. (Clermont Report). From sediments and tuffs probably equivalent to the Telemon Formation of the Emerald area".

Specimens: F22938 and F22939 illustrated.
F22940 referred to in text.
F22941 remainder of specimens.

Figure 15, of specimens F22938 and Figure 16 of F22939 illustrate two examples of surface view impressions of stems of Lepidodendron veltheimianum Stbg. These show a transverse wrinkling of the leaf base tissue such as was found in specimens from locality 436 of the Drummond Basin Collection, 1966.

Figure 15. F/5311

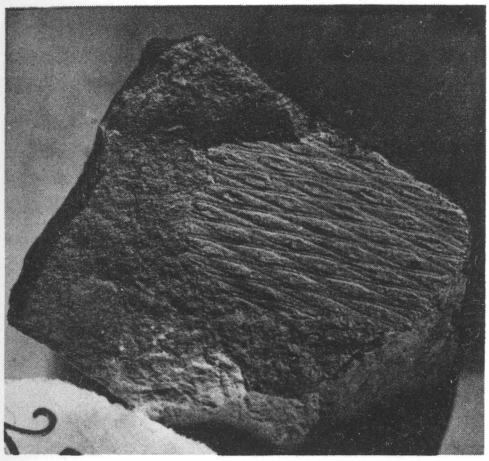
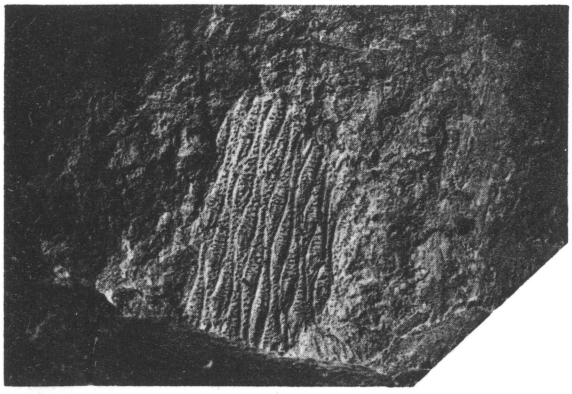


Figure 16. F/5313



Lepidodendron veltheimianum Stbg.

Specimen F22940 contains fragmentary impressions of Stigmaria, the root buttress of Lepidodendron.

Lepidodendron veltheimianum is a form species with a wide range of characteristics. When there is identical surface marking as in these specimens and those from locality 436 of the Drummond Basin, a definite equation can be made.

If these beds represent the Telemon Formation in the area, this is additional support for a Carboniferous age for the Telemon.

Age: Carboniferous.

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D. Locality in sandstone at base of Scartwater Formation

7. LOCALITY 256

Locality: Buchanan 1:250,000. Photo R3/5089.
4 miles west of St Annes Homestead.

Field information: "Collected from the base of the Scartwater Formation close to collection 359 of 1966".

Specimens: F22943, F22944, F22945, F22946, F22947, F22948 illustrated.
F22942 remainder of specimens.

An assemblage of Carboniferous species of Lepidodendron comprising L. veltheimianum, L. dichotomum and L. aculeatum with Stigmaria ficoides is associated with an unusually fine example of Rhacopteris digitata Eth. fil. and a fragment of venation probably of Cordaites australis.

Rhacopteris digitata is a Lower Carboniferous form. It is illustrated in Figure 17 of specimen F 22947. The Cordaites fragment is illustrated in Figure 18 of specimen F22948.

Figure 17. F/5300
Rhacopteris digitata Eth. fil.
Natural size

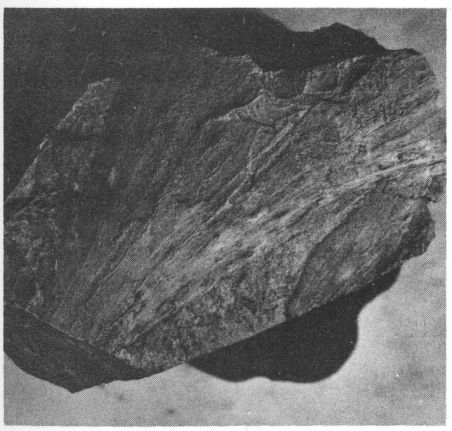
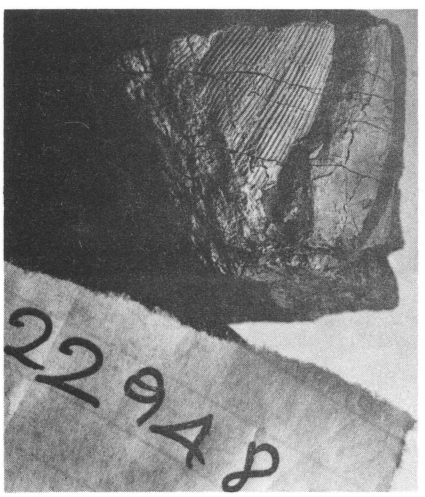


Figure 18. F/5296
Cordaites fragment




Young Lepidodendron veltheimianum Stbg. with attached leaves is illustrated in Figure 19 (F22944). Figure 20 of specimen F22945 illustrates Lepidodendron dichotomum Stbg.

Figure 19. F/5306
Lepidodendron veltheimianum

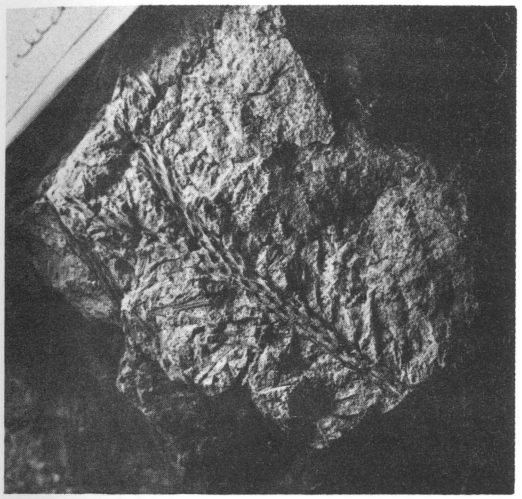


Figure 20. F/5297
Lepidodendron dichotomum

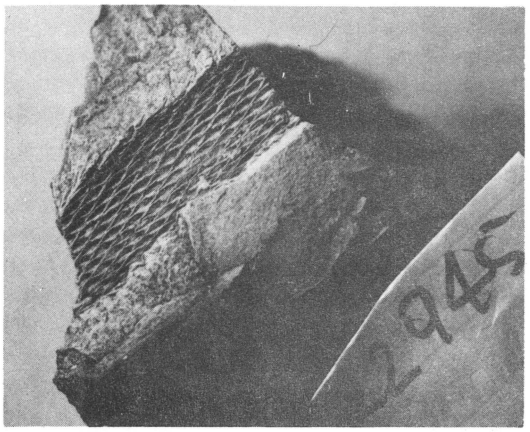


Figure 21 of specimen F22946 illustrates Lepidodendron aculeatum and Figure 22 of specimen F22943 illustrates Stigmaria ficoides.

Figure 21. Neg. F/5293
Lepidodendron aculeatum Stbg.
Natural size

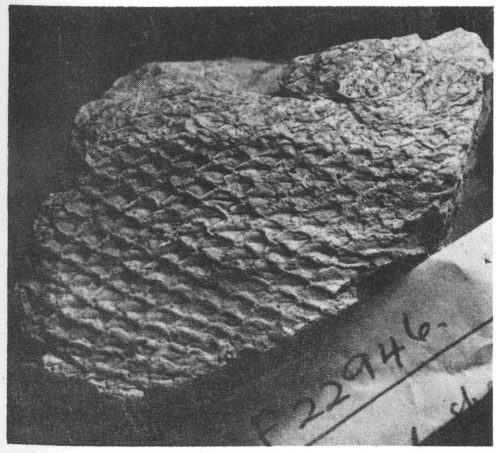
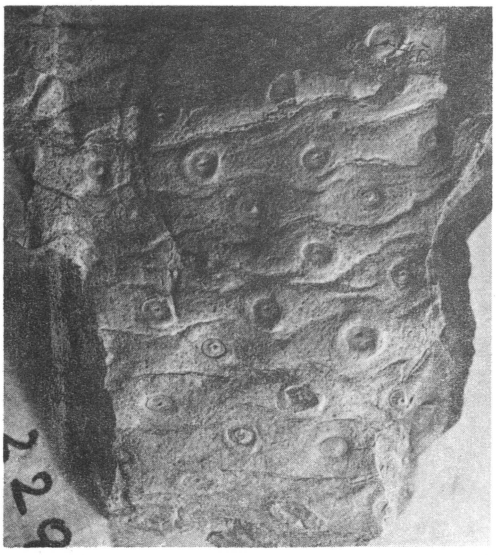


Figure 22. Neg. F/5312
Stigmaria ficoides Bgt.
Natural size



Age: The species of Lepidodendron present are of Carboniferous age. Rhacopteris digitata limits the age to Lower Carboniferous.

## E. Localities in undifferentiated Carboniferous

### 8. LOCALITY 236/1

Locality: Emerald 1:250,000. Photo R5/5076
2 miles north-east of Withersfield.

Field information: "From the Basal Sandstone of the Mount Hall Conglomerate".

Specimens: F22937.

Numbers of casts and impressions of decorticated lycopod stems are present. Some are stems of considerable size. None are determinate. It is not possible to say whether they are of Lepidodendron or Protolepidodendron. They are not decortication forms which are typical of Leptophloeum.

Age: A Devonian or Carboniferous age is indicated by the presence of Lepidodendron type decortication forms.

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### 9. LOCALITY 24

Locality: Charters Towers 1:250,000. Photo R8/5069.
5 miles east of Lornesleigh Homestead.

Field information: "Star of Hope Formation".

Specimen: F22922 illustrated.

This specimen, illustrated in Figure 23, shows a text-book example of Ulodendron. The oval with a central core and lines radiating from it is an absciss scar. Whether a branch has been shed or whether the scar was the point of attachment of a large cone is uncertain.

The stem on which the Ulodendron scar is situated has Lepidodendron veltheimianum Stbg. characteristics.

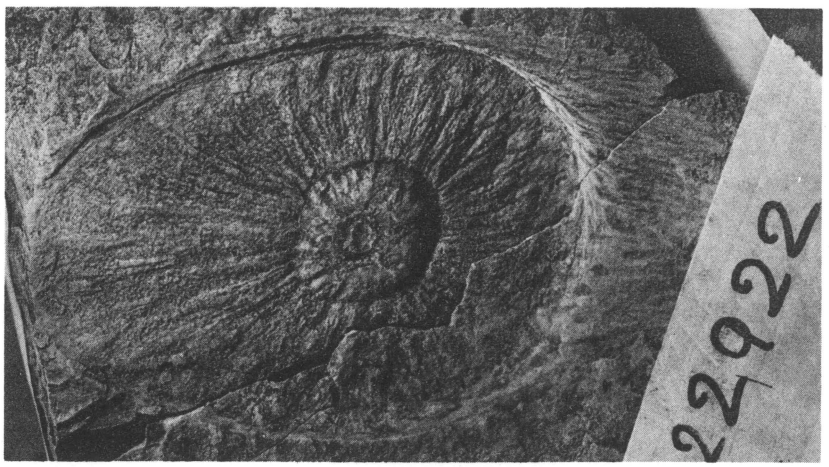
Ulodendron is the name given to absciss scars on Lepidodendron. The name was originally used generically before it was appreciated that the fossils were only branch scars. The name Ulodendron is now used as a useful descriptive term for scars set singly on either side of a stem. If there are many small scars arranged in a spiral the term Halonia is used to describe the state.

Age: The presence of Lepidodendron veltheimianum Stbg. (in Ulodendron condition) indicates Carboniferous age.

Figure 23. F/5308

ULODENDRON - Lepidodendron veltheimianum Stbg.

Natural size




10. LOCALITY 273

Locality: Charters Towers 1:250,000. Photo R7/5077.
2 miles north-north-west of Mount McConnell Homestead.

Field information: "Star of Hope Formation".

Specimen: F2291 illustrated.

This specimen, illustrated in Figure 24, shows what is presumed to be an impression of Fish scales. The specimen should be examined by a Vertebrate Palaeontologist.

Figure 24. Neg. F/5301

? Fish Scale Impression

Natural Size

10. LOCALITY 273

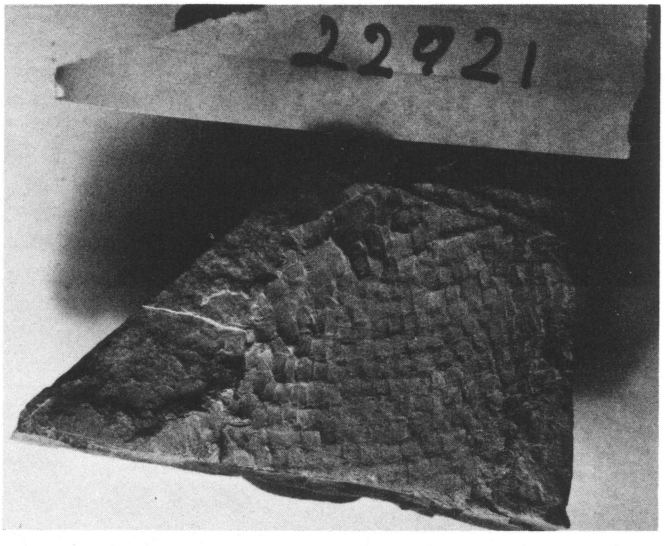
Locality: Charters Towers 1:250,000. Photo R7/5077.
2 miles north-north-west of Mount McConnell Homestead.

Field information: "Star of Hope Formation".

Specimen: F22921 illustrated.

This specimen, illustrated in Figure 24, shows what is presumed to be an impression of Fish scales. The specimen should be examined by a Vertebrate Palaeontologist.

Figure 24. Neg. F/5301
? Fish scale impression
Natural size



# REPORT ON THE 1963 COLLECTION OF PLANT FOSSILS FROM THE CHARTERS TOWERS REGION OF QUEENSLAND.

by

Mary E. White

SUMMARY:

Plant fossils were collected from ten localities in the Charters Towers region in 1963. Devonian plants are identified at three localities- 527, 531 and 528. Upper Devonian or Carboniferous fossils occur at localities 529 and 533. A Lower Carboniferous assemblage is present at locality 508, and at localities 509, 504 and 532 specimens with a general Carboniferous distribution are present. No age determination can be made for locality 507.

## INTRODUCTION

The fossils in the 1963 collection are mainly of Lycopod stems, and the same species are represented as were recorded and illustrated in the 1966 collection from the Drummond Basin (Records 1967/68). In addition Protolepidodendron lineare and an interesting species which, if plant, can only be referred to the Devonian genus Calamophyton are present. These are illustrated in this report, but species already illustrated in the 1966 collection are not illustrated again.

A description of the collection follows. The fossil numbers are those of the Geological Survey of Queensland who sent the specimens on loan from their palaeontological collection.

## I. LOCALITY 508 (Collection 1).

Locality: 1 mile N. of Cranbourne Hs.
Lat. 20°38'S, Long. 146°58'E.

Specimens F8762, F8763, F8764.

Plants identified:

Equisetalean stem with branch scars.

Portion of venation of Rhacopteris digitata Eth fil.

(R.G. McKellar identifies Crossopterygian fish scales cf. Strepsodus decipiens Woodward, indicating Lower Carboniferous age).

Age: Lower Carboniferous.

## 2. LOCALITY 509 (Collection 2).

Locality: ½ mile S. of Rockpool Lagoon, between St. Anne's Cross Range and Suttor River.
Lat. 20°48'S, Long. 146°55'E.

Specimens: F8759 - 61.

Plants identified:

Lepidodendron aculeatum Stgb.
Lepidodendron mansfieldense M'Coy.
Lepidodendron veltheimianum Stbg.
Stigmaria ficoides Bgt.

This is a Carboniferous assemblage of plants.

Age: Carboniferous.

## 3. LOCALITY 504 (Collection 3).

Locality: Approx. 6 miles NNW of Harvest Home Homestead.
Lat. 20°38'S, Long. 147°6'E.

Specimen: F8723.

Plants identified:

Lepidodendron veltheimianum Stbg. Form with horizontal striation of the tissue round the leaf bases. Specimen identical to F22777 illustrated as Fig.18 in Record 1967/68 from locality 436.
Stigmaria ficoides Bgt.
Age: Carboniferous.

## 4. LOCALITY 507 (Collection 4)

Locality: 8 miles West of Camp Oven Mt.
Lat. 20°23'S, Long. 146°43'E.

Specimen F8721.

Silicified wood.

Age: Indeterminate.

## 5. LOCALITY 527 (Collection 5)

Locality: 1.6 miles NW of Cranbourne Homestead.
Lat. 20°31'S, Long. 146°57'E.

Specimens F8940 - F8955.

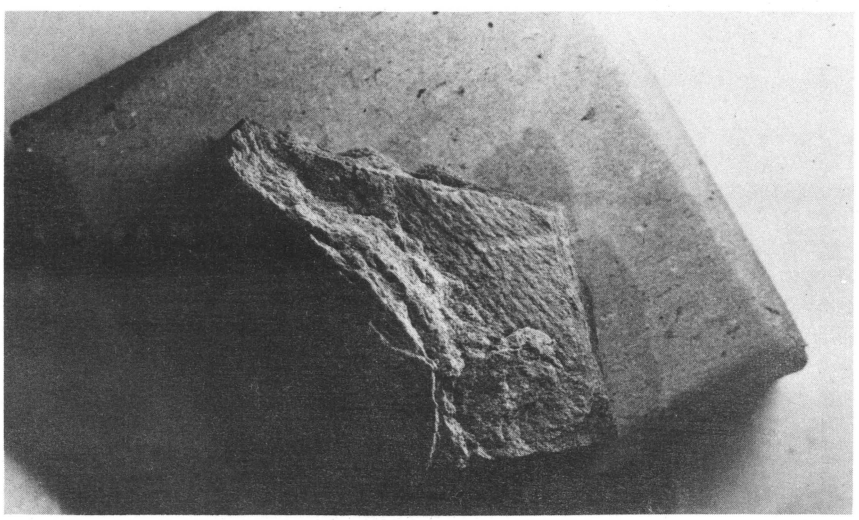
Plants identified:

Stigmaria ficoides Bgt. - good examples of young Stigmaria.

? Cordaites australis - poorly preserved. Leaves with parallel veins.

Protolepidodendron lineare Walk. Figure 1 shows this species. The leaf bases are arranged in vertical rows. The species was described by Walkom (1928) from Yalwal, N.S.W. from Devonian strata.

Figure I. Negative F5316
Protolepidodendron lineare Walk.
(natural size)



Lepidodendron mansfieldense McCoy

Young, decorticated Protolepidodendron sp.

? Psilophytites sp. Forking twig.

Lepidodendron volkmannianum Stbg. This specimen is similar to specimen F22786 illustrated in Figure 12 of Record 1967/68 from locality 446 in the Drummond Basin. L. volkmannianum is a Devonian/Lower Carboniferous form.

The assemblage of plants at locality 527 is of Upper Devonian age.

Age: Upper Devonian

## 6. LOCALITY 529 (Collection 6)

Locality: 4 miles NNE of junction of Suttor and Sellheim rivers.
Lat. 20°40'S, Long. 146°58'30"E.

Specimen F8916.

This specimen contains Lepidodendron mansfieldense M'Coy.

Age: Upper Devonian or Lower Carboniferous.

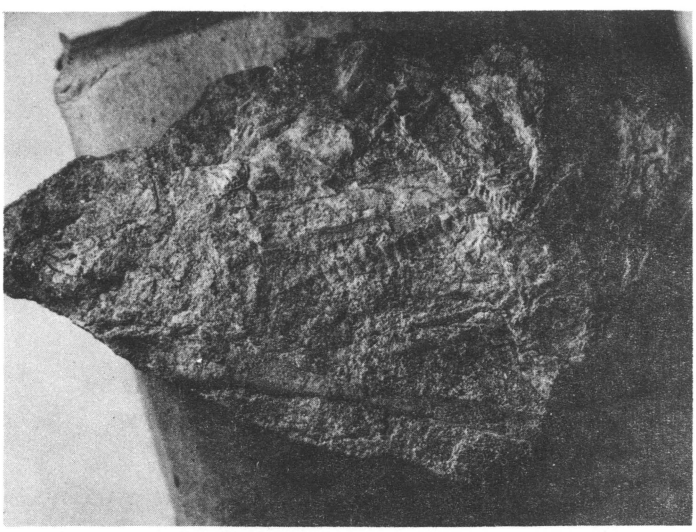
## 7. LOCALITY 531 (Collection 7)

Locality: 1.2 miles E. of Pallamana Hs.
Lat. 20°31'20"S, Long. 146°32'40"E.

Specimens F8917-18, F8936-37.

Segmented organs with septae close together (from .1 - .2 cm) are present, some with spine-like projections at the nodes. Figure 2 illustrates specimen F8337.

Figure 2. Negative F5315
Segmented stems.



These organs appear to be stems. If they are plant remains, they can only be referred to the Devonian genus Calamophyton. Their projections are consistent with their close relationship to the Psilophytes. Schopf (1964) illustrates similar stems from the Middle Devonian of Northern Maine. (Crinoid stems might look similar in this type of preservation and the organs may not be plant).

The presence of Calamophyton would indicate Middle or Upper Devonian age.

Age: Devonian.

## 8. LOCALITY 532 (Collection 8).

Locality: Mt. Elsie Hs.
Lat. 20°59'S, Long. 146°34'E.

Specimen: F8939.
Lepidodendron veltheimianum Stbg. is identified.
Age: Carboniferous.

## 9. LOCALITY 533 (Collection 9).

Locality: Bumble Ginny Waterhole, 4 miles S.E. of Nosnillor Hs.
Lat. 20°59'S, Long. 146°23'E.

Specimens: F8938, 880

Decorticated Lepidodendron sp.
Age: Devonian or Carboniferous.

## 10. LOCALITY 528 (Collection 10)

Locality: 3.8 miles SE of Pallamana Hs.
Lat. 20°34'S, Long. 146°34'E.

Specimens: F8910-15.

Several casts of decorticated Lycopod stems are present. These appear to be referable to Protolepidodendron but preservation is poor and they could be of Lepidodendron. There is one example of a very small, slightly decorticated stem showing linear leaf trace scars in straight vertical lines. This is referable to Protolepidodendron sp.

Segmented stems similar to those found at locality 531 are present. Preservation is poor. They are tentatively referred to the Devonian genus Calamophyton.

An association of Protolepidodendron and Calamophyton would indicate Devonian age.

Age: Middle or Upper Devonian.

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SCHOPF, J.M., 1964 - Middle Devonian plant fossils from Northern Maine. U.S.G.S. Prof. Pap. 501-D; pp.D43-D49.

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