Rept. Bk. No. 55/128
G.S. No. 2495
Pal. Rept. 18/62
D.M. 2175/62

DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY

PALAEONTOLOGY SECTION

PLANT REMAINS OF UPPER JURASSIC TO LOWER CRETACEOUS AGE FROM CADLAREENA MILITARY SHEET

by

W. K. Harris
Student Geologist

12th December, 1962

D.M. 2175/62

RB 55/128

DEPARTMENT OF MINES
SOUTH AUSTRALIA

PLANT REMAINS OF UPPER JURASSIC TO LOWER CRETACEOUS AGE FROM CADLAREENA MILITARY SHEET

by

W. K. Harris
Student Geologist

Rept. Bk. No. 59/128
G.S. No. 2495
Pal. Rept. 18/62
D.M. 2175/62

12th December, 1962

CONTENTS

DEPARTMENT OF MINES
SOUTH AUSTRALIA

PLANT REMAINS OF UPPER JURASSIC TO LOWER CRETACEOUS AGE FROM CADLAREENA MILITARY SHEET

1. INTRODUCTION

Plant impressions submitted for routine palaeontological examination by H. Wopfner and R. Heath, (Oil Section) are described. Samples were collected from surface outcrop 5 miles northeast of Box Creek siding, Grid H3, Cadlareena 1-mile military sheet (Lat. 28°41'S. Long. 136°01'E).

The flora is placed in the Upper Jurassic to Lower Cretaceous.

2. PRESERVATION

All specimens are leaf and stem impressions in quartzite with no organic matter. The preservation of detail is poor and specific determinations are only tentative.

3. SYSTEMATIC DESCRIPTIONS

Pterophyta

Filicinae

Filicales

? Osmundaceae

Cladophlebis australis (Morris) Seward

Samples F 176/62, F 169/62, F 167/62, F 162/62, F 161/62.

Sterile fronds are abundant in the material. Sample F 161/62 shows fertile pinnules with sori arranged on either side of the mid-rib. In the samples the species is represented only by detached pinnae. These are 4 to 5 cms. long and 1 cm. wide, gradually tapering towards the apex. Pinnules 5 mm. long 1.5 mm. wide, attached by whole base and usually with a prominent

midrib.

This is a widely distributed species and ranges from Rhaetic to Lower Cretaceous in all continents.

? Gleicheniaceae

Microphyllopteris gleichenioides (Oldham & Morris)

Samples F 176/62, F 167/62, F 174/62.

Only detached pinnae are present in the samples. Pinnae 4-5 cms. long, 4 mm. broad. Pinnules infertile, rounded and attached to the rachis by the whole base. Pinnules 2 mm. broad.

Microphyllopteris minuta Medwell

Samples F 174/62, F 164/62

Specimens are of bipinnate fronds with pinnae 2 cms. long and 2 mm. broad. Pinnules very small, rounded and attached by whole base, less than 1 mm. wide.

Polypodiaceae

Hausmannia cf. buchii Andrae

Samples F 175/62, F 172/62

Leaf rounded, orbicular. Venation open dichotomous, radiating, with finer cross veins at right angles to the main branches.

It is recorded from the Walloon Coal Measures, the Jurassic and Lower Cretaceous of Europe and the Canning Basin in Western Australia.

? Filicales incertae sedis

'Neorhacopteris minuta'

Sample F 170/62.

This name is only descriptive and refers to a species described by White (1961) from the Callawa Formation. The fern is morphologically similar to the genus Rhacopteris but is much smaller. Pinna 2 cms. long, 5 mm. wide. Pinnules 2.5 mm. long, 1.5 mm. broad.

Gymnospermae

Cycadales

Cycadites sp.

Samples F 170/62, F 177/62, F 168/62.

The species is represented by strong impressions of a frond resembling modern cycads. Frond 13 cms. long, 5 cms. broad. Pinnules oblique to the rachis, stout, 3.5 cms. long 1.5 mm broad. Rachis 2.5 mm. in diameter, rounded, gradually tapering towards the apex.

F 177/62 is an almost complete small frond 8 cms long, 2.5 cms broad.

? Bennettitales

Taeniopteris spatulata Oldham & Morris

Samples F 174/62, F 173/62

Fronds linear, spathulate, margins roughly parallel, apex rounded. A well defined midrib is present. Length 2-3 cms, width 3-5 mm.

Coniferales

Araucariaceae

Pagiophyllum cf. peregrinum Schimp

Sample F 169/62

The specimen is very similar to one figured by White (1961). The stem impression is deeply pitted in a regular pattern corresponding to scale-like leaf scars.

Brachyphyllum mamillare L & H

Samples F 160/62, F 167/62

These very narrow stems, 1.5 - 3 mm. in diameter, are very common in the samples.

Miscellaneous impressions

F 163/62, F 165/62, F 171/62, F 166/62

The specimens represent numerous indeterminable stem impressions.

4. AGE AND RELATIONSHIPS OF THE FLORA

The flora closely resembles that described by White (1961) from the Callawa Formation and the Broome Sandstone of the Canning Basin. These have been assigned an Upper Jurassic to Lower Cretaceous age.

The flora has close affinities with the Maryborough, Burrum and Styx Coal Measures of Lower Cretaceous age and flora from the Mt. Babbage area described by Glaessner and Rao (1955) assigned to the Lower Cretaceous. It has weak affinities in the Walloon Coal Measures (Jurassic), through Cladophlebis sp. and Taeniopteris sp., both being long ranging species.

The described flora is tentatively regarded as Upper Jurassic to Lower Cretaceous. The presence of ferns, cycads and members of the family Araucariaceae would indicate a moist cool-temperate to sub-tropical climate.

5. REFERENCES

ARBER, E.A.N. 1917.
The earlier Mesozoic floras of New Zealand.
N.Z. Geol. Surv. Pal. Bull. 6.

GLAESSNER, M.F. & RAO, V.R. 1955.
Lower Cretaceous Plant Remains from the Vicinity of Mount Babbage, South Australia.
Trans. Roy. Soc. S. Aust. 78, pp. 134-140.

MEDWELL, L.M.
A Review and Revision of the flora of the Victorian Lower Jurassic.
Proc. Roy. Soc. Vic. 65, pp. 6-111.

WALKOM, A.B. 1917 & 1918
1917 Mesozoic Floras of Queensland Pt. I.
Queensland Geol. Surv. Pub. 257.

1918 Mesozoic Floras of Queensland Pt. II
Ibid. Pub. No. 262

WALKOM, A.B. 1919.
Mesozoic Floras of Queensland Pts. II & IV
Ibid. Pub. No. 263.

WHITE, M.E. 1961
Plant Fossils from the Canning Basin, Western Australia.
in the Geology of the Canning Basin, Western Australia.
B.M.R. Geol. Geophys. Bull. 60.

W. K. Harris
Student Geologist

WKH:AGK
12/12/62