DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY
PALAEONTOLOGY SECTION

D.S. PANDIEBURRA NO. 1
PALYNOLOGICAL EXAMINATION OF
CORES AND CUTTINGS

by

W. K. Harris,
Geologist.

22nd July, 1963.

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ABSTRACT

A palynological examination of cores and cuttings from Delhi-Santos Pandieburra No. 1 revealed in the lower section of the well below the Cretaceous transition beds, 980 ft. of Upper Jurassic (4370' - 5552') 1420 ft. of ? Lower-Middle Jurassic (5352' - 6770') and 200 ft. of Upper Triassic sediments (6770' - 6970').

DEPARTMENT OF MINES
SOUTH AUSTRALIA

D.S. PANDIEBURRA NO. 1

PALYNOLOGICAL EXAMINATION OF CORES AND CUTTINGS

1. INTRODUCTION:

This report is restricted to an examination of cores and cuttings below the Cretaceous transition beds in D.S. Pandieburra No. 1, as requested by Delhi Australia Petroleum Ltd.

Due to the barren nature of most cores and the absence of sidewall cores, cuttings were relied upon to identify broad age relationships and unconformity boundaries. Many cuttings below the first casing (6130 ft.) were barren and those above were seriously contaminated with Cretaceous forms.

In general the preservation of spores and pollens was poor.

The lower section of the well has been divided into three broad units based on the palynological examination; Upper Triassic, Lower to Middle Jurassic and Upper Jurassic. These divisions are shown in Plan No. 63-633 with the ranges of some selected microflora. Where palynological evidence is lacking, the position of the boundaries is based on Electric Log data.

The co-operation of geologists of Delhi Australia Petroleum Ltd., throughout this investigation is appreciated.

2. STRATIGRAPHIC PALYNOLOGY:

a. Upper Jurassic 4370'-5352'

Core 1 4630-4640'

Cyathidites australis

Lycopodiumsporites sp

The specimens were badly corroded.

Core 2 5140-5150'

The following assemblage of well preserved sporamorphs was identified:

Araucariacites australis

Baculatisporites truncatus

Callialasporites dampieri

C. trilobatus

Cicatricosisporites cooksonii

Cingulatisporites sp.

Classopollis torosus

Cyathidites australis

C. crassiangularis

Foveosporites canalis

Inaperturopollenites limbatus

Ischyosporites crateris

Leptolepidites verrucatus

Lycopodiumsporites austroclavatidites

Murospora floridus

Osmundacidites sp.

Pityosporites sp.

Styxisporites majus

The presence of Murospora floridus and Cicatricosisporites cooksonii and the absence of C. australiensis indicates an Upper Jurassic age for this sample. Callialasporites spp. are very abundant. In addition, several predominantly Lower Cretaceous forms are present, e.g. Foveosporites canalis and Styxisporites majus. The former is known to occur rarely in the Upper Jurassic of Western Australia (Balme 1957).

b. Lower to Middle Jurassic 5352-6770'

The boundary between this unit and the Upper Jurassic is based on Electric Log data.

Sporomorphs in this section of the well were poorly preserved and not abundant until near the base of the unit. No attempt has been made to subdivide this unit into zones.

Core 3	5250 - 5259'	Barren
Core 4	6150 - 6160'	Barren
Core 5	6575 - 6585'	Barren

Cuttings from this section yielded the following assemblage:

Araucariacites australis

Callialasporites dampieri

Cavtoniopollenites sp.

Cingulatisporites sp.

Classopollis torosus

Cyathidites australis

Gleicheniidites circinidites

Lycopodiumsporites sp.

Osmundacidites sp.

Perotriletes sp.

Pityosporites sp.

Regulatisporites sp.

Sphagnumsporites sp.

Trilobosporites sp.

The assemblage contains few stratigraphically useful forms and is similar to Lower to Middle Jurassic microfloras elsewhere in the Great Artesian Basin. Classopollis torosus is very abundant in the lower samples and may suggest a Lower Jurassic age for these. On evidence from cuttings alone, the section is broadly classified as Lower-Middle Jurassic.

c. Upper Triassic 6770 - 6970'

Core 6 6847 - 6857' Barren

Cuttings from this interval yielded the following assamblage:

Alisporites spp.

Annulispora folliculosa

Baculatisporites sp.

Callialasporites denmeadi

Classopollis torosus

Leiotriletes sp.

Nathorstisporites sp.

Osmundacidites parvus

Punctatosporites walkomi

Rugulatisporites sp.

Verrucosisporites sp.

Verrucososporites ipsviciensis

Zonalasporites acusus

The assemblage was well preserved and the presence of the megaspore genus Nathorstiporites sp, Punctatosporites sp, Verrucososporites sp. and a great abundance of Alisporites spp. indicates an Upper Triassic age for the assemblage. (Portion of "zone 1" of Evans 1963).

The genus Nathorstisporites is known from the Leigh Creek coalfield and from Tasmania. It is known from the Rhaetic and Liassic of Greenland (Dettman 1961).

d. Palaeozoic

Core 7	7023 - 7025'	Barren
Core 8	7025 - 7029'	Barren
Core 9	7250 - 7253'	Barren

No palynological evidence as to the age of these beds is available.

W. K. HARRIS,
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PALAEONTOLOGY SECTION.

WKH:EMD
22.7.63.

3. REFERENCES:

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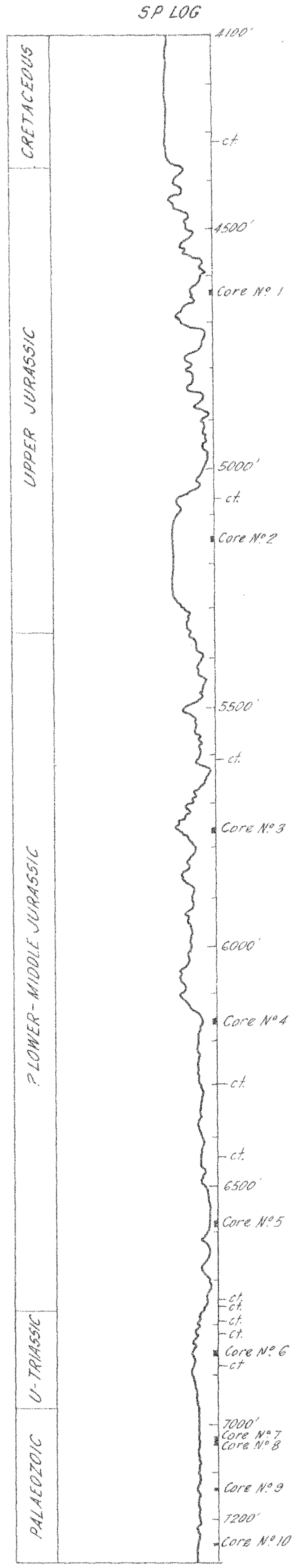

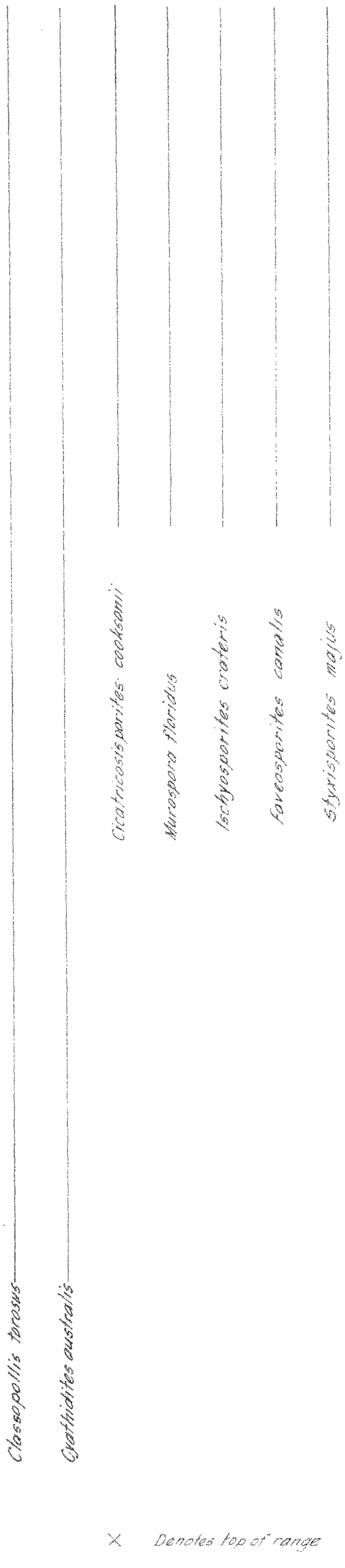

To accompany Palynological Report 5/63 by W. K. Harris.

S.A. DEPARTMENT OF MINES

DELHI-SANTOS PANDIEBURRA No. 1

DISTRIBUTION OF SELECTED MICROFLORA

No.	Amendment	Exd.	Date

Approved	Passed		Scale : Vert 200 to 1"
		Drn. WAH	63-633
		Tcd. MBL	
		Ckd.	Cb
Director		Exd.	Date 18-7-63