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MICROPALAEONTOLOGICAL EXAMINATION OF CORE SAMPLES FROM

B.M.R. MITCHELL NO. 11 (SCOUT BORE)

by

G.R.J. Terpstra

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INTRODUCTION

Seven cores from B.M.R. Mitchell No. 11 (Scout Bore) submitted by Mr N. Exon, have been examined for microfossils.

OBSERVATIONS

Scout Bore B.M.R. Mitchell No. 11. 14 miles, N.N.E. of Amby Township (Mitchell 1:250,000 Sheet area - 645, 723. Latitude $26^{\circ}22'$, longitude $148^{\circ}14'$).

Core No. 1 47'-48' (Minmi Member)

A few poorly preserved arenaceous foraminifera occur.

Ammobaculites sp.

The washed residues consist mainly of quartz, some lignite, glauconite and grey shale. No age determination.

Core No. 2 90' $1\frac{1}{2}"$ - 99' $4\frac{1}{2}"$ (Minmi Member)

Eight samples of this core have been examined, and arenaceous foraminifera occur from 96'8" to 98'8". The fauna in part is poorly preserved. Species identified are:

Ammobaculites exertus Crespin, 1963

Ammobaculites cf. implanus Crespin, 1963

Dorothia grandis Crespin, 1963

Haplophragmoides gigas Cushman, 1927

Haplophragmoides sp.

Spiroplectammina cf. enodis Crespin 1963

Spiroplectammina sp.

Trochammina raggatti Crespin 1944

Trochammina sp.

Fish tooth

The washed residues consist mainly of quartz, glauconite, glauconite, pyrite and some lignite. Age determination, Lower Cretaceous, probably Aptian.

Core No. 3 150'-157'6" (Nullawurt Sandstone Member)

Seven samples of this core have been examined. Some pyritised casts of microfossils exist but could not be identified, also Megaspores were found.

The washed residues consist of quartz, at 156'10" also some lignite grey shale and much pyrite. Age determination Lower Cretaceous.

Core No. 4 210'-212'6" (Nullawurt Sandstone Member).

Four samples of this core have been examined. No foraminifera were observed, but Megaspores occur right through.

The washed residues consist mainly of quartz with much lignite and occasional pyrite. Age determination Lower Cretaceous.

Core No. 5 272'½"-204'5½" (Kingull Member)

Nine samples have been examined of this core. No foraminifera were found. Megaspores occur from 275'-277' feet.

The washed residues consist mainly of quartz with much lignite and occasional whitish shale. Age determination Lower Cretaceous.

Core No. 6 347'2"-353'11" (Mooga Sandstone Member)

Nine samples of this core have been examined. No foraminifera were observed. Megaspores occur from 350'-353'11".

The washed residues consist of quartz with much lignite and some grey shale. Age determination Lower Cretaceous.

Core No. 7 391'-392'5" (Mooga Sandstone Member)

Two samples of this core have been examined. No foraminifera were observed. The washed residues consist mainly of quartz. No age determination can be made.

CONCLUSIONS

The identifications of the microfossils as given above, are based on comparing the material with the types of the B.M.R. collections described by Dr I. Crespin. The fauna (mainly occurring in Core No. 2, 90-99 feet) is not very rich and is in part poorly preserved.

The stratigraphical information on the species identified (Bull. 66) is as follows:

Ammobaculites exertus Crespin 1963 U.L.S.*

Ammobaculites implanus Crespin 1963 U.L.S. and L.W.*

Dorothia grandis Crespin 1963 U.L.S., R.*

Haplophragmoides gigas Cushman 1927 U.L.S., L.W.*

Spiroplectammina enodis Crespin 1963 U.L.S., R.*

Trochammina raggatti Crespin 1944 U.L.S.*

* U.L.S. = Upper part Longsight sandstone

* L.W. = Lower Wilgunya Formation

* R. = Roma Formation

In a recent publication on material of the Great Artesian Basin in South Australia Dr Ludbrook (1967) re-named some of these species and gave the following biostratigraphical information:

Ammobaculites implanus Crespin 1963. Aptian-Albian

Haplophragmoides gigas Crespin (non Cushman)

renamed Haplophragmoides audax Ludbrook sp. nov. Aptian to base Albian.

Spiroplectammina enodis Crespin 1963

renamed : Gaudryina enodis (Crespin) Lower Aptian?

Trochammina raggatti Crespin 1944 Lower Aptian

From the combined stratigraphical information available on these few identified species it would appear that the strata penetrated in core no. 2 are of a low Lower Cretaceous (presumably Aptian) age.

This is further supported by the fact that the material closely resembles the composition of the fossils described by Dr Crespin (Record 1961/35 page 13) from the Dribbling Bore (W. Queensland, Sandringham). The tests of the foraminifera are made up of quartz grains, crystals of zircon and particles of ilmenite. The assemblage of foraminifera of the Dribbling Bore is richer, but all the species observed in core no. 2 also occur in the samples of the Dribbling Bore at 470-489 feet. The Dribbling Bore sequence represents the Upper Longsight Sandstone; on microfossil evidence it is possibly Aptian or ?Neocomian.

The sediments represented by Cores no. 1 and no. 2 are from a marine deposit. Those of Core no. 3, where there are traces of pyritised casts of microfossils, are probably of a shallow marine nature.

The sediments represented by cores nos. 4, 5, 6 and 7 are non-marine. Some of these contain Megaspores known to occur in the Lower Cretaceous.

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