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DEPARTMENT OF NATIONAL DEVELOPMENT.
BUREAU OF MINERAL RESOURCES
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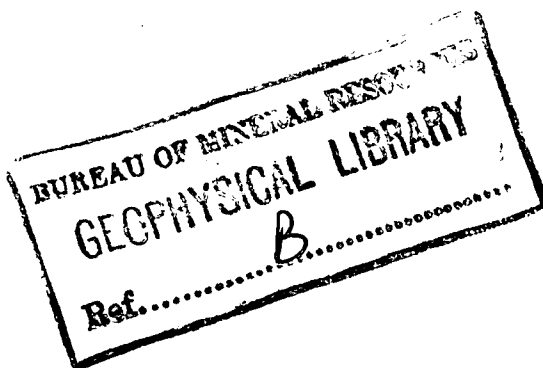
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CRETACEOUS MICROFOSSILS FROM THE HAY RIVER AREA
NORTHERN TERRITORY

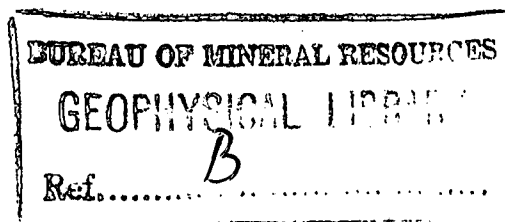
by

Irene Crespín & P.R. Evans



The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

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CRETACEOUS MICROFOSSILS FROM THE HAY RIVER AREA,
NORTHERN TERRITORY

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SUMMARY

Lower Cretaceous marine microfossils have been recovered from a bore on the Plenty River, Hay River 4-mile Sheet. Their presence demonstrates a westerly extension of the marine Lower Cretaceous below the sand cover of the Simpson Desert.

INTRODUCTION

Bore Ref. F53/16-19

Drain samples from No. 2 water bore on Grazing Lease 1843, on the bank of the Plenty River, Northern Territory (Photo ref. Hay River 4-mile F53/16 Run 9/5007: 2" N, 4" E) were submitted for micropalaeontological examination by Resident Geologist, Alice Springs. Lower Cretaceous foraminifera, microplankton and microspores were found in a sample from a depth of 180 feet. MFP1496
Fragments of foraminifera were found at 60 - 180 feet.

This discovery proves the extension of Lower Cretaceous beds below the sand cover of the Simpson Desert and compares with the Cretaceous age suggested by Crespin (in Smith, 1960) for associate beds to the east at Lake Caroline (Hay River 4-mile) where radiolaria were observed. No evidence of the total thickness of the Cretaceous in the area is available.

DESCRIPTION OF DITCH SAMPLES

The following description of the bore was supplied by the Resident Geologist, Alice Springs.

No. 2 Bore G.L. 1843

Depth (feet)

40 - 60	Salmon pink and yellow to cream shaly claystone.
60 - 180	White, with yellow and cream mottling, shaly mudstone.
180	Dark grey shaly siltstone.

- 180 - ? Very fine to fine grained grey glauconitic sandstone, with rounded to subrounded grains. Some chips of grey siltstone.
- ? - 246 Very fine to fine grained grey glauconitic sandstone, with rounded to subrounded grains of quartz dominating, some yellow clayey matrix; some chips of pink claystone and grey siltstone.

OBSERVATIONS

60 - 180 feet. The washed sample consisted of brown to ochreous siltstone with mica and fragments of tests of indeterminate arenaceous foraminifera.

180 feet. Sandstone with glauconite, carbonaceous fragments and the arenaceous foraminifera:

Ammobaculites fisheri Crespin
Haplophragmoides sp. A (Crespin M.S.)
Haplophragmoides sp. nov.
Haplophragmoides spp.
Trochammina cf. T. raggatti Crespin
 cf. Verneuilinoides kansasensis Loeblich & Tappan.

This small assemblage of arenaceous foraminifera is of Lower Cretaceous age. Haplophragmoides sp. A is referable to a species found in some water bores examined in northern New South Wales and in bores in north-eastern South Australia. Ammobaculites fisheri and Trochammina raggatti are widely distributed in the Lower Cretaceous beds in the Great Artesian Basin.

Palynological examination revealed: MFP 1496

Cyathidites australis
Gleicheniidites circinidites
Baculatisporites comaumensis
Apiculati spp.
 → Trilobosporites trioreticulatus
 aff. Balmeisporites glenelgensis
Pityosporites spp.
Podocarpidites spp.
Microcachryidites antarcticus
Classopollis torosus
Polypodiaceaidites sp. nov.

Gonyaulax spp.
Diconodinium cf. D. glabrum
Diconodinium sp.

B. glenelgensis was described (Cookson & Dettmann, 1958) from Cenomanian beds in Western Australia and has been observed at 900-910 feet in D.F.S. Innamincka No. 1 well ((?) U. Cretaceous Winton Formation), and in probable Cenomanian beds of F.B.H. Port Campbell No. 1 well (Evans, 1961b). T. trioreticulatus and the microplankton mark the upper of two divisions of the marine Cretaceous defined in Conorada Ooroonoo No. 1 (Evans, 1961a). It is suggested tentatively that beds equivalent in age to the Upper Wilgunya Formation were penetrated by the Plenty River bore. The Upper Wilgunya Formation is regarded as approximately Albian in age. The Plenty River deposit is likely therefore to be younger than that cropping out to the west around Rumbelara (Sullivan and Opik, 1951) which Skwarko (1962) considers to be Aptian in age.

REFERENCES

- COOKSON, I.C. & DETTMANN, M.E., 1958 - Some trilete spores from Upper Mesozoic deposits in the eastern Australian region. Proc. Roy. Soc. Victoria. N.S. 70 (2), 4-128.
- CRESPIN, I., - Lower Cretaceous Foraminifera of Australia. Bur. Min. Resour. Aust. Bull. 64 (in press).
- DICKINS, J.M., 1960 - Cretaceous marine macrofossils from the Great Artesian Basin, Queensland. Bur. Min. Resour. Aust. Rec. 1960/59 (unpubl.).
- EVANS, P.R., 1961a - A palynological report on Conorada Ooroonoo No. 1 well, Queensland. Bur. Min. Resour. Aust. Rec. 1961/22 (unpubl.).
- EVANS, P.R., 1961b - A palynological report on F.B.H. Port Campbell Nos. 1 and 2 wells, Victoria. Ibid. 1961/63 (unpubl.).
- LOEBLICH, A.R., and TAPPAN, H., 1950 - Foraminifera of the type Kiowa Shale, Lower Cretaceous of Kansas. Univ. Kansas, Pal. Contrib. Protozoa, Art. 3. 1-15.
- SKWARKO, S., 1962 - Notes on Australian Lower Cretaceous Palaeogeography. Bur. Min. Resour. Aust. Rec. 1962/11 (unpubl.).
- SMITH, K.G., 1960 - Summary of the Geology of the Hay River 4-mile sheet, Northern Territory. Bur. Min. Resour. Aust. Rec. 1960/73 (unpubl.).
- SULLIVAN, C.J., & ÖPIK, A.A., 1951 - Ochre deposits, Rumbelara, Northern Territory. Bur. Min. Resour. Aust. Bull. 8.
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