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MICROPALAEONTOLOGICAL EXAMINATION OF ROCK SAMPLES FROM THE VICINITY OF JERVIS BAY, NEW SOUTH WALES

by

I. Crespin

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A collection of rock samples from the Permian deposits in the vicinity of Jervis Bay was made by Messrs. Perry and Dickins during their geological survey of the area in July 1952, with the hope that microfossils may be present to assist in the correlation of the beds with Permian deposits north of Sydney. A detailed examination of the samples is given below. The samples from each locality are arranged in downward stratigraphic sequence.

Princes Highway in the vicinity of Tomerong, N.S.W.

A. Nowra Sandstone

J.B. 57. No microfossils

B. Wandrawandian Formation

J.B. 24 Foraminifera:

Ammodiscus multicinctus
Hyperamminoides acicula
? Tolypammina sp.
Trochammina sp.

J.B. 56 No microfossils.

J.B. 55 No microfossils. Bryozoa present.

J.B. 23. Foraminifera:

Ammodiscus multicinctus
?Ammobaculites
Haplophragmoides sp.
Hyperamminoides acicula

J.B. 54 Foraminifera; Ammodiscus multicinctus common.

Ammobaculites woolnoughi
Ammodiscus multicinctus
Crithionina cf. teicherti
Haplophragmoides sp.
Hyperamminoides acicula

Budgong Road, N.S.W.

Berry "Shale"

J.B. 1. Foraminifera:

Ammodiscus multicinctus
Hyperamminoides acicula

Nowra Hill, N.S.W.

Berry "Shale"

J.B. 13. No microfossils

J.B. 12 Foraminifera:

Frondicularia woodwardi
cf. Dentalina bradyi

Ostracoda:

Microkellinella aequivalvis
Cavellina kulnuraensis

J.B. 19 Foraminifera:

Hyperamminoides acicula

Ostracoda:

cf. Microkellinella aequivalvis

J.B. 17 Foraminifera poorly preserved.

Hyperamminoides acicula
cf. Crithionina

J.B. 16 Foraminifera:

Ammodiscus multicinctus
Hyperamminoides acicula

Steamer Beach, Jervis Bay Territory

Jervis Bay Sandstone

J.B. 36 No Microfossils.

J.B. 35 No microfossils

½ mile south of Stony Creek, Jervis Bay Territory

Jervis Bay Sandstone

J.B. 50 No microfossils

J.B. 49 No microfossils

J.B. 48 No microfossils

Turpentine Road about 1¼ miles west of Tomerong, N.S.W.

Nowra Sandstone

J.B. 37 No microfossils.

Wandrawandian Formation

J.B. 38 No microfossils

Redhead Point, St. George's Basin, N.S.W.

Wandrawandian Formation

J.B. 46 No microfossils

Sussex Inlet, N.S.W.

Wandrawandian Formation

J.B. 42 No microfossils

Notes on the Samples

The present micro-examination of rocks collected by Messrs. Perry and Dickins in the vicinity of Jervis Bay, is the first to reveal micro-fossils of Permian age in that area. The rocks were chiefly hard, which made the search for micro-fossils difficult. However, the crushings yielded an interesting assemblage of foraminifera and ostracoda in the sediments comprising the Berry "Shale" and the Wandrawandian Formation. No microfossils were found in the Nowra Sandstone nor the Jervis Bay Sandstone.

The foraminiferal assemblage in the Berry "Shale" and in the Wandrawandian Formation is dominated by the arenaceous species Hyperamminoides acicula which was described by Parr (1940) from the Wandagee beds, North-West Australia. This species is widely distributed in rocks belonging to the Upper Marine Series in the Hunter River District and elsewhere in Permian rocks north and west of Sydney. Other determinable species are Ammobaculites woolnoughi Crespin and Parr, Ammodiscus multicinctus Crespin and Parr and Frondicularia woodwardi Howchin. Ammobaculites woolnoughi is scarce but Ammodiscus multicinctus is common especially in the lowest sample (J.B. 54) collected from the Wandrawandian Formation along the Princes Highway near Tomerong. This species is well represented in the Bulbring Stage in the Hunter River District and less commonly in the Branxton Stage. (Crespin, 1947).

The most important form for correlative purposes is the calcareous species Frondicularia woodwardi described by Howchin from the Irwin River, Western Australia (1895) and which is present in sample J.B. 12 in the Berry "Shale" in the section at Nowra Hill. Chapman and Howchin (1905) recorded it from the Upper Marine (Branxton Stage) at Wollong, Hunter River District and the writer recognised it in material from the Upper Marine (Branxton Stage) at Pothanna Siding, west side of the railway cutting, Hunter River District (Crespin, 1947). It was also found, in some samples commonly, in the Kulnura Bore, 15 miles north-west of Gosford, between the depths of 3,840 feet and 4,123 feet, where it was associated with Hyperamminoides acicula and Ammodiscus multicinctus.

Associated with F.woodwardi in sample J.B. 12, were two species of ostracoda, Microkellinella aequivalvis (Crespin) and Cavellina kulnuraensis Crespin (Crespin, 1945), both of which were found with F. woodwardi in beds referred to the Upper Marine in the Kulnura Bore.

In the numerous samples examined from the Hunter River District and elsewhere in New South Wales, Frondicularia woodwardi has not been found in beds stratigraphically higher than the Branxton Stage. It is suggested, therefore that the beds comprising the Wandrawandian Formation and the Berry "Shale" are equivalent in age to the Branxton Stage of the Hunter River District and can be correlated also with beds in the Kulnura Bore between the depths of 3,840 feet and 4,272 feet.

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