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PERMIAN FOSSILIFEROUS ROCKS FROM NEAR THE SOUTH-WEST MARGIN OF THE CANNING BASIN, WESTERN AUSTRALIA

by

J.M. Dickins and G.A. Thomas.

CANBERRA.

PERMIAN FOSSILIFEROUS ROCKS FROM NEAR THE SOUTH-WEST MARGIN OF THE CANNING BASIN, WESTERN AUSTRALIA

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INTRODUCTION

Late Palaeozoic fossils have been recorded previously from near the south-west margin of the Canning Basin. Glauert (1926, p.43-48) records and lists brachiopods and a nautiloid collected by L.J. Jones from near No.27 Well, Canning Stock Route, north-east of Lake Disappointment. Reeves (1949, Appendix, p.34) records Ammodiscus nitidus collected by him from 4 miles north-east of No. 6 Well, Canning Stock Route. He considered that the rocks here were equivalent to the Noonkanbah Formation of the Fitzroy Basin.

During the 1954 field season J.N. Casey, a member of the Bureau Field Party operating in the Canning Basin composed of D.M. Traves, J.N. Casey and A.T. Wells, collected marine shelly fossils from two additional localities which were handed to the authors for identification and age determination. The two collections confirm the presence of marine Permian rocks in this area.

DESCRIPTION OF MATERIAL

T 1 - 4 miles east of the Central Portion of Lake Dora, 1 mile east-south-east of Dunn's Soak (Photo 5218, Run 1, Tabletop 4 mile sheet) - 319 miles south-east of Port Hedland.

The sediment enclosing the fossils from this locality consists of a predominantly fine grained micaceous brownish greywacke. The rock is considerably ferruginized and the fossils are preserved only as impressions and limonitic replacements. The fossils were found on a low ferruginous rise and consist only of mulluscs, predominantly of a single species of Astartila. The fossils can be identified as follows:-

Pelecypods

Astartila blatchfordi (Hosking) 1931
Pelecypoda gen. indet.

Gastropods

Warthia cf. micromphala (Morris) 1845
Ptychomphalina maitlandi Etheridge Junr. 1903

In the Fitzroy Basin Astartila blatchfordi is known only from the upper part of the Noonkanbah Formation and doubtfully from the lower Liveringa beds. Warthia cf. micromphala has a long range. Ptychomphalina maitlandi occurs in the Noonkanbah Formation of the Fitzroy Basin and in the Carnarvon Basin is not known with certainty below the Bulgadoo Shale or above the Norton Greywacke. The fossil evidence would thus indicate that this locality is equivalent in age probably to the upper part of the Noonkanbah Formation or possibly to the lower Liveringa beds.

P 1 - 9 miles east-south-east of Cuncudgerie Hill (Photo 5231, Run 1, Paterson Range 4 mile sheet) - 206 miles approx. east-south-east of Port Hedland.

The fossils occur in a 6 inch band 10 ft. from the top of the hill. The outcrop is elongated north-south with the "scarp"

side to the east, and continues to the west as low ferruginized rises. The rock enclosing the fossils is an ill-sorted fine-grained to medium-grained greywacke. Abundant mica and grains of a white kaolinitic material perhaps representing weathered felspar occur. As well as fragmentary and whole fossils "mud balls" of material similar to the body of the rock and also of finer material are included. The rock is very much weathered and partly ferruginized and silicified and the fossils, comprising abundant bryzoa, pelecypods, gastropods and a few brachiopods, are present as impressions and replacements. On the whole the fossils are rather fragmentary and although the number of specimens is considerable there are not many representatives of any one species.

The following forms can be identified:-

Brachiopods

cf. Pseudosyrinx sp.nov. Two incomplete specimens probably belong to this genus. One is a dorsal valve of a young specimen close to forms of the same growth stage from the basal Poole Sandstone in the St. Georges Range. The other is of a somewhat more mature ventral valve. A similar species occurs in the Callytharra Formation and upper part of the Lyons Group in the Carnarvon Basin.

Spiriferellina cf. papilionata Hosking. One incomplete internal mould of a dorsal valve probably belongs to this species which occurs in the Callytharra Limestone.

Neospirifer sp.ind. An incomplete impression of a ventral valve of Lower Permian type.

cf. Krotovia sp. Two specimens of spinose productids probably belong to this genus but are inadequate for closer comparison.

Pelecypods

Nucula sp. A (with a sharp apex) cf. N. sp. from the marine horizon near the base of the Poole Sandstone in the St. Georges Ra. and the Coyrie Fm. of the Carnarvon Basin.

Nucula sp. B (non-prominent apex) cf. N. sp.from St. Georges Ra.

Nuculana sp. cf. N. sp.nov. from Nura Nura Member of the Poole Sandstone.

Nuculana cf. N.lyonsensis Dickins MS from Lyons Group of the Carnarvon Basin.

Parallelodon sp. indet.

Astartila cf. A. danai (de Koninck) from the "Upper Marine" of N.S.W.

Stutchburia? sp.nov. cf. S. sp.nov. from St. Georges Ra.

Astartella? sp.nov. (this may be a new genus) cf. Astartella? sp.nov. from St. Georges Ra. and Nura Nura.

Streblochondria sp.nov.

Aviculopecten? sp. indet (non-specialized ribbing of two orders with filae).

Gastropods

Bellerophon sp. indet.

Bellerophontidae gen. indet.

Warthia? sp. indet.

Ptychomphalina sp.nov.

Pleurotomariidae gen. indet.

Platyceras sp.

Conulariidae

Conularia sp.

Unfortunately the preservation of the material is not good. However as shown above the pelecypods and brachiopods indicate that the fossiliferous bed at P 1 is close in age to the Nura Nura member of the Poole Sandstone and the marine horizon near the base of the Poole Sandstone in the St. Georges Ra. The brachiopods suggest also faunal links with the Callytharra Formation of the Carnarvon Basin of approximately the same age as the Nura Nura horizon and the marine horizon near the base of the Poole Sandstone in the St. Georges Ra. (Thomas and Dickins, 1954, p.219).

CONCLUSIONS

These samples confirm the occurrence of marine Permian beds near the south-west margin of the Canning Basin. The fossiliferous beds of T 1 are equivalent in age probably to the upper part of the Noonkanbah Formation or possibly to the lower Liveringa beds of the Fitzroy Basin and those of P 1 are very similar in age to the marine beds near the base of the Poole Sandstone.

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