

METAMORPHIC ROCKS IN TASMANIA

Since the report for the 1928 meeting, the metamorphic rocks have not been investigated to any great extent.

The greatest advance in knowledge has been gained in the Port Davey district where the writer carried out a field trip of two months. The following brief extract from a Departmental report described the Proterozoic schists of that district:-

"Proterozoic schists - The greater part of the district is occupied by schists and allied rock types. The most plentiful type is a white quartz schist, usually containing mica along the schists planes and which an increase in the mica content causes a gradation into the quartz-mica schist type. Another prominent type, and one which is usually associated with the quartz schist is a dense, compact white quartzite. These two types are hard, resistant types and form the major headlands along the coasts and the ranges trending inland from them.

Mica schists and argillaceous schists of many types are also plentiful. They may be light or dark in colour according to the mica content (muscovite or biotite). Graphitic and possibly talcose schists occur to a much less extent, being restricted apparently to the vicinity of Ketchem Bay.

Hard quartzite conglomerates occur at Mts. Barry, Misery, MacKenzie and Balmoral Hill. Soft argillaceous conglomerates occur north of Balmoral Hill and east of Mt. Beattie.

These rocks have strikes ranging from north and south to east and west, but the general one is north-north-west. The harder types such as quartzites &c. have more regular strikes than the softer types, which are much crumpled and have very irregular strikes. The dips are, with only a few minor exceptions to the south-south-west at high angles. The series, therefore, appear to be a thick uniformly dipping one, but unrecognised over-folding may be present.

The series occupy a tract of country at least 20 miles wide and extend in a northerly direction beyond the district examined. They, therefore, represent a very thick series of rocks, which judging by the types must have been almost entirely of sedimentary origin."

The points of most interest were:-

1. The discovery of conglomerates in the schist series. Of the two types the hard silicified schists occupy the hills and mountains while those with a soft matrix occupy the lower ground.
2. The discovery of structures in the white quartzites resembling ripple marks.

During the same field trip Mr. A. McIntosh Reid collected some water worn pebbles and boulders showing curious markings or depressions. Later similar markings were found in situ by the writer at two localities. The specimens of Mr. Reid were examined by Mr. F. Chapman, Commonwealth Palaeontologist, who reported as follows:-

"REPORT ON SUPPOSED FOSSILIFEROUS ROCKS OF UPPER  
PRE-CAMBRIAN AGE FROM PORT DAVEY, S.W. TASMANIA

Received through Home and  
Territories from McIntosh  
Reid, Esq. on 14th July, 1928.

DESCRIPTION:-

Three specimens (worn boulders) were received, measuring 4" x 3" x 2"; 5" x 4" x 1½" and 5" x 2½" x 1½". The first of these show on one face numerous polygonal depressions averaging 6mm. in diameter. They are moderately regular in the spacing. Since these depressions, if organic, would be negative, a positive squeeze in plastocene was taken. The evidence derived from this gives more definite information, and what appears to be a central columellar structure with occasional remnants of septation may be deciphered.

The rock has been so squeezed and folded that no vertical structural features of the supposed coral can be made out.

In the second specimen the weathered face of the rock shows occasional larger polygonal or subquadrate depressions, and these, from their rather sharply cut boundaries, may afford additional evidence of an organic nature. The floor of the depression shows a granulate quartz matrix, the boundaries filled in with a black mineral (? rutile).

MINERAL CHARACTER:-

The minute saccharoid characters of the quartz seems to indicate a replacement of original aragonite or calcite through dolomite into quartz, a sequence not unknown in calcareous fossil structures.

AGE:-

The ? fossil evidence throws no light on the exact age of the rock, but assuming it to be of the nature of an astraeoid Coral, could hardly be older than Ordovician. The field relations must therefore, be relied upon for conclusions in this direction."

"REPORT ON A FURTHER CONSIGNMENT OF SPECIMENS FROM  
PORT DAVEY, TASMANIA.

The shearing or crushed bedding planes show a little more of the problematic organic structure, but insufficient for determination of relationship. In addition to the structure referred to in the previous note as suggesting a coral, the platy and cellular character in some of the specimens in the present collection might suggest a form of the Archaeocyathinae group, but the evidence is still insufficient to give any definite pronouncement. It would be interesting to note if this rock is also found in situ."

It is evident therefore, that the specimens though interesting are too indefinite to enable any definite determinations to be made.

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Mines Dept.,  
Hobart. 9/5/30.