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COMMONWEALTH OF AUSTRALIA.



DEPARTMENT OF NATIONAL DEVELOPMENT.
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS.

RECORDS.

1955/104

FOSSILS FROM YANDANOOKA, WESTERN AUSTRALIA

by

A. A. "Opik and J. Gilbert-Tomlinson

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INTRODUCTION

Two samples were submitted for palaeontological examination by B.W. Logan, University of Western Australia, on 13th September, 1955. They were collected from the "Proterozoic Yandanooka Series" of Western Australia by B.W. Logan and R.L. Chase in "bouldery outcrops associated with quartz-sandstones which contain Collenia and abundant evidence of shallow water origin such as ripple-marks and mud cracks". The possibility that the structures might represent the worm Scolithus was considered by the collectors. The locality from which the samples were collected was not stated.

DESCRIPTION

The samples are completely silicified. The fossil consists of irregular tubes which are polygonal in cross-section. Details of the fine structure are largely obscured by the silicification, but it is possible to distinguish tabulae, septa, and columellae, and the fossil must be interpreted as a coral. The observed characters suggest the genus Tetradium, or a related, undescribed, genus.

AGE

The Yandanooka Series is generally believed to be of Proterozoic age, and Fairbridge (1950) records the Proterozoic alga Collenia from the Series. The presence of the coral, however, indicates a Palaeozoic age; Proterozoic and Cambrian are excluded.

The coral Tetradium is confined to Ordovician rocks, and the identification of the genus necessitates a re-evaluation of the age of at least part of the Yandanooka Series.

It is not clear whether the coral and the alga occur in the same bed, and the possibility of a major unconformity must be considered. On the other hand, the alga illustrated by Fairbridge strongly resembles a form from the Middle Cambrian of Beetle Creek, western Queensland, which has been identified with the Cambrian alga Cryptozoon, and the alga identified by Mr. Logan as Collenia needs critical examination.

It is requested that samples of the alga associated with the coral be submitted for further examination. Details of the occurrence, particularly sketches and photographs, as well as the exact locality, are also requested.

CORRECTION

Mr. Logan refers to a personal communication from D. Sampey in which the fossils are stated to resemble the "fossil worm Scolithus described by A. A. Opik from the Proterozoic succession in the Northern Territory." Better preserved material proved that the forms referred to were not worm-burrows but algae, provisionally referred to the Proterozoic genus Greysonia. This was corrected at an informal meeting of the Geological Society.

Scolithus forms straight vertical burrows (pipes) in sandstone; the pipes are crowded together, without walls, tabulae, columellae, or other skeletal structures. The Yandanooka fossil, consequently, is no Scolithus, but a massive corallum - an organic growth on a substratum. It was originally calcareous and not arenaceous.

REFERENCE

Fairbridge, R.W., 1950 - Pre-Cambrian algal limestone in Western Australia. Geol.Mag., 87, 324-330.

Canberra
Dec. 1955.