

and an X-ray examination showed that the soluble part consists mainly of sodium carbonate and the insoluble of calcium carbonate. The powdered lava melts at approximately 650° C.

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¹ von Knorring, O., and Du Bois, C. G. B., *Nature*, 192, 1064 (1961).

Archæocyathine Limestones of Antarctica

ONE of the problems in antarctic geology has been the uncertain stratigraphic position of the Cambrian Archæocyathid limestone found as erratics on the Beardmore Glacier^{1,2} and dredged from the Weddell Sea³. Probably the Beardmore erratics came from the Mt. Buckley limestone at the head of the glacier; but the field relationships of this limestone are

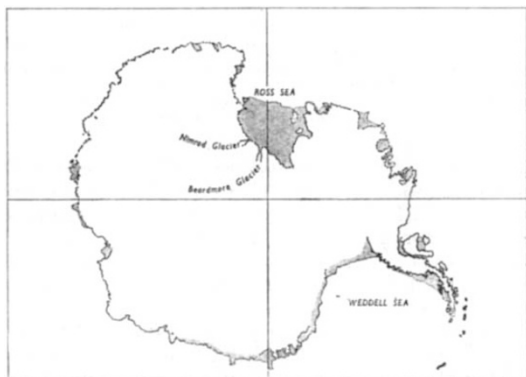


Fig. 1. Locality map of Antarctica

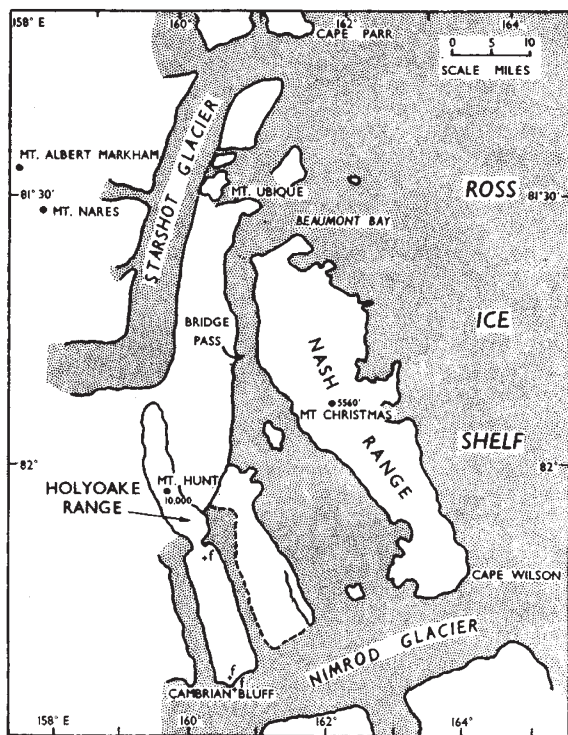


Fig. 2. The Nimrod glacier area, showing fossil localities in Cambrian limestone

uncertain. In recent syntheses by Fairbridge⁴ and Harrington⁵ the limestone is left in an uncertain position between the flat-lying Beacon Sandstone, and the underlying steeply dipping Ross System of Harrington. The Beacon Sandstone has yielded upper Palæozoic and Mesozoic fossils, and the Ross System is usually considered pre-Cambrian.

Field work during 1960-61 by a New Zealand Geological Survey team suggests that the Archæocyathid limestones belong to the top of the Ross System. Specimens of Archæocyatha were found in place near the Nimrod Glacier in the Holyoake Range (Figs. 1, 2) at three localities, 82° 25' S., 160° 40' E.; 82° 23' 27" S., 160° 36' 30" E.; and 82° 11' 35" S., 160° 18' E. From preliminary examination the fossils belong to several genera of Archæocyatha, chiefly in the families Coscinocyathidæ and Archæocyathidæ. They occur in steeply dipping, locally folded, recrystallized and partly recrystallized limestones. The limestones are presumed to overlie greywackes of the Nash Range, which have a similar strike and also dip steeply. These are invaded by plutonic rocks, and clearly belong to the Ross System. An unconformable contact between horizontal Beacon sediments and almost vertical limestone was seen on Mt. Hunt from a distance of six miles. Thus the Cambrian limestones agree with the Ross System in their steep attitude, high degree of folding and partial recrystallization and differ from the flat-lying unmetamorphosed Beacon Sandstone. The Cambrian limestones are therefore assigned to the Ross system, which evidently extends into the Lower Palæozoic.

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- ¹ David, T. W. E., and Priestley, R. E., *Brit. Antarct. Exped.* 1907-9, *Geol.* 1 (1914).
- ² Debenham, F., *Brit. Antarctic ('Terra Nova') Exped.* 1910, *Geol.* 1 (4), 101 (1921).
- ³ Gordon, W. T., *Trans. Roy. Soc. Edin.*, 52, 681 (1920).
- ⁴ Fairbridge, R. W., in *The Antarctic Today*, edit. by Simpson, F.A. (A. H. and A. W. Reed, Wellington, 1922).
- ⁵ Harrington, H. J., *Nature*, 182, 190 (1958).

METEOROLOGY

A Trend Towards a Longer Dry Season in South-western Nigeria

STEBBING¹ has stated that the climate of West Africa was becoming increasingly drier, and that the Sahara was advancing southwards at an alarming rate. The ensuing controversy, which developed in the late 1930's, has been summarized by Jones². During the past 50 or 100 years there has been a distinct degeneration of the vegetation in many parts of West Africa; but most workers considered this to be caused by human activity rather than by a change in climate and pointed out that there was no meteorological evidence for a progressive, rather than a cyclical, climatic change.

The Olokemeji Forest Reserve, in south-western Nigeria, lies across the forest/derived savanna boundary. The general features and vegetation of the reserve have been described³, and the seasonal changes in the environment are being analysed in order to compare them with the seasonal changes observed in the vegetation. The rainfall data, in particular, are being analysed in some detail. Records are available from 1906 until 1927 and from 1953 to the present day. The mean annual rainfall is 1,232 mm.,