

Dampier Ridge, Tasman Sea, As a Stranded Continental Fragment

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Abstract

Dredging of the Dampier Ridge recovered small fragments of granite, gabbro and sandstone. Dating of the igneous samples by the U-Pb, K-Ar and Rb-Sr methods yielded precise ages mainly in the range 250 to 270 Ma, mid-Permian. An imprecise Sm-Nd mineral age of approximately 310 Ma might reflect slightly earlier emplacement of the gabbro. A granitic fragment has a composition approximating that a manimum melt. Taken together with the Late Palaeozoic emplacement ages and other geochemical and geophysical data, the evidence strongly supports the conclusion that the Dampier Ridge is a continental fragment, formerly part of eastern Australia, with its present location a consequence of continental rifting and opening of the Tasman Basin by sea-floor spreading.