

EARLY ANTARCTIC ICE-SHEET HISTORY RECONSTRUCTED FROM EXOTIC CLASTS IN GLACIGENIC ROCKS, KING GEORGE ISLAND.

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Oligocene to early Miocene glaciomarine deposits exposed on southeastern King George Island (South Shetland Islands) include the earliest known terrestrial records of Cenozoic glaciation in West Antarctica. A variety of glaciogenic facies are represented, most of which contain abundant exotic clasts of diverse lithologies. Results will be presented from an investigation of the provenance and transport history of these clasts based on detailed analysis of clast lithologies, shapes and surface features. From a database of 1600 clasts, distinct clast assemblages have been detected in units of differing age. These assemblages reflect variations in ice-sheet extent, ice transport pathways and clast transport mode. The clast data have been combined with facies analysis and some new age data from the deposits to gain insight into mid-Cenozoic variations in West Antarctica ice sheet history and palaeoclimate. The findings will be compared with results emerging from the Cape Roberts Drilling Project in East Antarctica to provide a broader picture of early Antarctic ice-sheet history, the previous understanding of which has mainly been inferred from deep-sea proxies.