

THE DEVONIAN OF THE FALKLAND ISLANDS: A HIGH LATITUDE RECORD OF GONDWANAN PALYNOLOGY, SEA-LEVEL AND CLIMATIC CHANGE

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The 'mid' Palaeozoic Gran Malvina (West Falkland) Group on the Falkland Islands has a thickness of over 3 km. Invertebrate fossils (Malvinokaffric) are only common within the Emsian Fox Bay Formation. Elsewhere the section is essentially undated although referred to the Devonian-Carboniferous.

A section has been studied in West Falkland. This section is, to date, the best high latitude palynostratigraphic reference section. There is nothing comparable within 30° of palaeolatitude.

These Falkland Island assemblages contain a number of readily identifiable spores and chitinozoans which are known from both Laurasia and/or north Gondwana. However, assemblage composition differs in comparison to north Gondwana and Laurasia and the inception of key marker spores can be much delayed. This can be seen from comparison of macrofossils, chitinozoans and spores. Within the West Falkland Group the key correlative horizons are the transgressive shales. As such the West Falkland Group can be correlated with the Bokkeveld and Witteberg groups in South Africa. As in South Africa, these shale horizons represent elements of a sea level curve. Within each marine incursion the spore assemblages become more diverse and show the inception of species known from lower Devonian latitudes. As such, a linkage between sea level and climate change can be inferred. This high latitude observation is potentially very significant in our understanding of the mechanism for Devonian sea level change.