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EOCENE TO MIOCENE VEGETATION HISTORY AND CLIMATE, ROSS SEA REGION, ANTARCTICA

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New analyses of spores and pollen from the Cape Roberts Project (CRP-1, -2, -3) and CIROS-1 drillholes, McMurdo Sound glacial erratics, and Sirius Group cropping out in the Beardmore Glacier area add to an emerging picture of vegetation history and climate for coastal Victoria Land from the mid-Eocene to Early Miocene. Progressive loss of mesothermal and appearance of microthermal taxa are consistent with increasing intensity of glaciation recorded in the sediments.

Middle to Late Eocene spore-pollen assemblages are characterized by diverse and common *Nothofagus* pollen, along with that of podocarps, diverse Proteaceae and other angiosperms, and rare cryptogam spores, and reflect a temperate *Nothofagus*-broadleaf-podocarp forest. The Early Oligocene saw a reduction in diversity, with loss of most ferns, some previously important podocarpaceous conifers, *Casuarina*, the previously diverse Proteaceae, the *Brassospora* group of *Nothofagus*, and other angiosperms. Early Oligocene vegetation likely resembled present-day Magellanic *Nothofagus* woodland, with cold temperate to periglacial climatic conditions.

Late Oligocene and Early Miocene assemblages from the drillholes are typified by one or more species of *Nothofagus* and podocarp conifers, with distinctive angiosperms and bryophytes comprising a new and increasing component. Close similarity of Sirius Group spore-pollen floras suggests a similar age. The Sirius plant macrofossils support interpretation of the pollen assemblages coming from extensive low diversity mossy tundra vegetation, with woodland in more protected locations, and a more severe climate than that of the Early Oligocene.

Colder general Early Miocene conditions contrast with the widely accepted warmer interval from 26 to14 Ma inferred from deep-sea isotope records, which may be an artefact of data selection.