

# **CONVERGENCE AND BREAKUP ON THE CAMBRIAN GONDWANA MARGIN: THE ROSS-DELAMERIAN OROGENY OF AUSTRALASIA-ANTARCTICA AND ITS POSSIBLE EXTENSION INTO SOUTH AMERICA**

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The Ross-Delamerian Orogen extends from northern Australia through Antarctica to the Weddell Sea and may extend into South America. In Australia and Victoria Land, Neoproterozoic and Cambrian rocks of shelf and continental margin aspects were deposited on the edge of the Gawler and Mawson cratons. Deformation started near the end of the Lower Cambrian and continued until the earliest Ordovician, accompanied by syn- and post-tectonic magmatism. Accretion of a parautochthonous backarc assemblage in northern Victoria Land is marked by a zone of ultra-high pressure metamorphism. In the central Transantarctic Mountains, Early Cambrian carbonate shelf deposits were followed by Middle Cambrian folding and succeeded by a conglomeratic molasse that was folded before latest Cambrian magmatism. To the south in the Queen Maud and Pensacola Mountains, two bimodal volcanic suites of Early and Middle Cambrian age respectively, suggest a different tectonic setting, although the timing of deformation is similar to that further north.

Westward directed subduction, driven by sinistral-oblique convergence, appears to fit the available evidence. In Tasmania, rocks with typical Delamerian ages of deformation and magmatism are controversial, and it has been suggested recently that Tasmania is an exotic crustal fragment that has become embedded in the Australian margin. Cambrian rocks in New Zealand, Marie Byrd Land and the Ross Sea region appear to be fragments of the Ross Orogen embedded in the younger Ordovician-Devonian Lachlan Orogen.

The presence of rocks with Ross Orogen affinities in Patagonia poses interesting questions. Are they an autochthonous part of the continental margin succession, or is it an allochthonous fragment similar in origin to New Zealand and Marie Byrd Land?