Windemere Supergroup, Southern Uplands and Isle of Man

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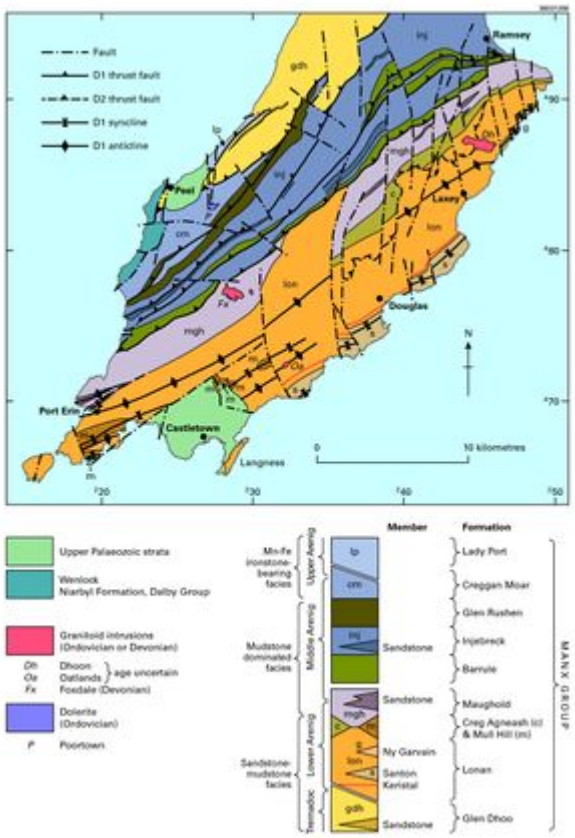
Introduction



Outline geology of the Manx Group in the central and southern parts of the Isle of Man. P916042.

Some lithostratigraphical components of the Windermere Supergroup crop out well to the south of the Lake District in the Craven inliers and are described in the British Regional Geology Guide to the Pennines and adjacent areas. An extensive sequence is present there, ranging upwards from equivalents of the Dent Group into the lower part of the Coniston Group. Although not formally part of the Windermere Supergroup, regionally associated strata also crop out in northern England within the southernmost inliers of the Scottish Southern Uplands terrane and in a recently discovered thrust slice on the Isle of Man.

The Scottish Southern Uplands terrane developed at the northern, Laurentian margin of the Iapetus Ocean as an accretionary thrust belt. Its construction spanned the Caradoc to Wenlock interval, driven by the subduction of Iapetus Ocean crust beneath Laurentia. Sandstone turbidites with intervening mudstones are the dominant lithologies, and the youngest such strata still preserved, containing a graptolite fauna indicative of the *lundgreni* Biozone, crop out along the southern margin of the terrane. That southern margin extends south of the Anglo–Scottish border in an inlier of Wenlock turbidites on the south-west flank of The Cheviot. The rocks present are associated with the Raeberry Castle Formation of the Riccarton Group and contain an acritarch microflora in addition to the *lundgreni* Biozone graptolites. A noteworthy feature of the Riccarton Group is the presence within it of laminated hemipelagic interbeds identical to those seen at the same stratigraphical level in the Brathay Formation. Clearly, by late in the Wenlock, the Iapetus Ocean had narrowed sufficiently to allow development of a common background lithofacies right across its remaining width.

The recent discovery of another *lundgreni* Biozone fauna, on the north-west coast of the Isle of Man close to Peel (P916042), provoked a radical re-interpretation of the local geology since the fauna was contained in a unit whose supposed correlation with Arenig strata elsewhere on the island had underpinned a previously proposed, large-scale structural model. The Wenlock rocks, designated the Niarbyl Formation (Dalby Group), comprise over 1000 m of turbiditic sandstone and siltstone, laminated hemipelagite and rare bentonite. The similarities to the Brathay–Birk Riggs division of the Tranaerth Group are striking. The base of the Niarbyl Formation is cut out by a major thrust and shear zone that has emplaced it structurally above the Manx Group.

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