

CNOC AN DROIGHINN

OS Grid Reference: NC263226

Description

This is a classic region of structural complexity in Assynt, overlooking Inchnadamph (Figure 7.2), in which the Glencoul Thrust brings Cambrian quartzites over thick duplexes (imbricated lenses) of Durness Group dolomitic limestones. The reader is referred to figure 15 of Elliott and Johnson (1980), and the accompanying text, for a modern structural interpretation. Numerous 'hornblende porphyrite' sills are structurally repeated in the duplexes beneath the Glencoul Thrust, but sills were also demonstrably emplaced repeatedly at several levels in the quartzites above the thrust. They may be seen in various stages of cataclastic deformation ranging from highly sheared to unshaped. Sabine's map (1953, figure 5) records the relative amount of deformation he observed. 'Gorudite' dykes and sills also occur in this site, but only above the Glencoul thrust plane.



Figure 7.2: Map of the Assynt district showing the major thrusts, the two major alkaline intrusions, and the distribution of two of the six types of minor intrusive rocks. BA is the critical locality, at Bad na h-Achlaise, where nepheline-syenites and pyroxenites of the Loch Borralan intrusion are intruded into one of the klippen (the Cam Loch Klippe) of the Ben More Nappe. GCR sites in the thrust zone related to minor intrusive rocks are shown by circled numbers. 'Gorudite': 1, Glen Oykel South; 2, Creag na h-Innse Ruaidhe. 'Hornblende porphyrite': 3, Cnoc an Droighinn; 4, Luban Croma. 'Vogesite': 5, Allt nan Uamh; 6, Glen Oykel North (diatreme). 'Nordmarkite': 7, Allt na Cailliche. (After Sabine, 1953 and Johnson and Parsons, 1979, fig. 3.)

Interpretation and conclusions

Cnoc an Droighinn is a structurally complex GCR site close to Inchnadamph, providing a major concentration of 'hornblende porphyrite' (and 'grorudite') sills cutting various Cambro-Ordovician rock types. Some sills are repeated structurally, others are emplaced at different levels in the succession. The 'hornblende porphyrites' are clearly pre-deformational and, despite structural repetition on the lower part of Cnoc an Droighinn, they were emplaced repeatedly at various levels in the quartzites above the Glencoul Thrust. The area is an object lesson in the difficulties of achieving correlations of igneous bodies in a region which, while largely non-metamorphic, is nonetheless structurally complex. The distribution of the 'hornblende porphyrites' provides a very useful marker of relative structural displacements in the thrust belt.

Reference list

- Elliott, D. and Johnson, M. R. W. (1980) Structural evolution in the northern part of the Moine thrust belt, NW Scotland. *Transactions of the Royal Society of Edinburgh: Earth Sciences* **71**, 69–96.
- Sabine, P. A. (1953) The petrography and geological significance of the post-Cambrian minor intrusions of Assynt and the adjoining districts of north-west Scotland. *Quarterly Journal of the Geological Society of London*, **109**, 137–71.