

BEINN GARBH

OS Grid Reference: NC227222

Description

The view of Beinn Garbh (540 m) from the north, across Loch Assynt, is one of the most celebrated in British geology (Figure 7.14), showing the striking contrast between unbedded Lewisian gneisses at the base, horizontal, well-bedded Torridonian sandstones resting on them, and both being overstepped by Cambrian quartzites dipping to the east at about 15°, the so-called 'double unconformity'. The implications of the different dips has intrigued generations of students. The dips are in fact brought out by two parallel major sills, 6–20 m in thickness, of Canisp Porphyry on Beinn Garbh (Figures 7.14, 7.15), of which the upper forms an extensive plateau on the flat-lying Torridonian sandstones and an extensive easterly-dipping exposure on the dip-slope of the Cambrian quartzites to the east, extending almost to the Sole Thrust south of Inchnadamph. There are no sills in the Lewisian.

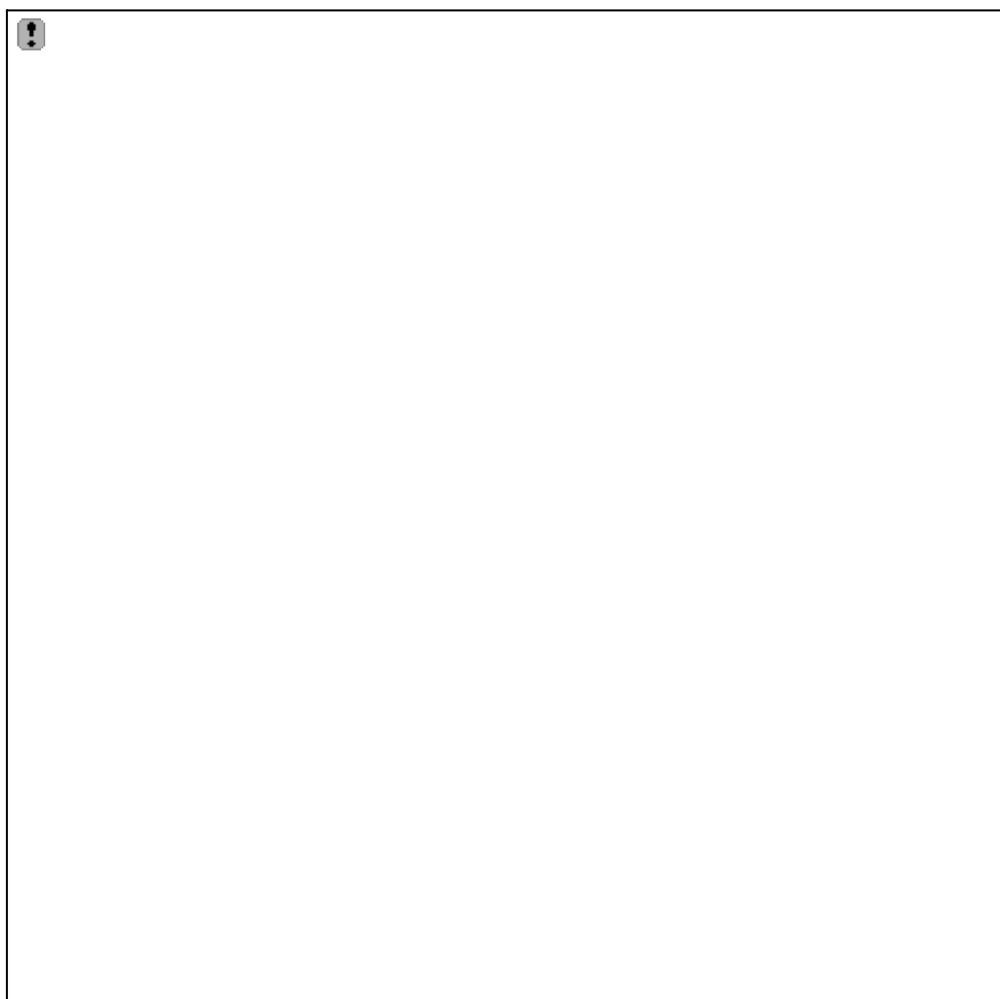


Figure 7.14: Beinn Garbh (540 m, left) and Canisp (846 m, right) from Loch Assynt. The plateau of Beinn Garbh and the steps in the skyline of Canisp are formed of sills of Canisp Porphyry. (Photo: I. Parsons.)

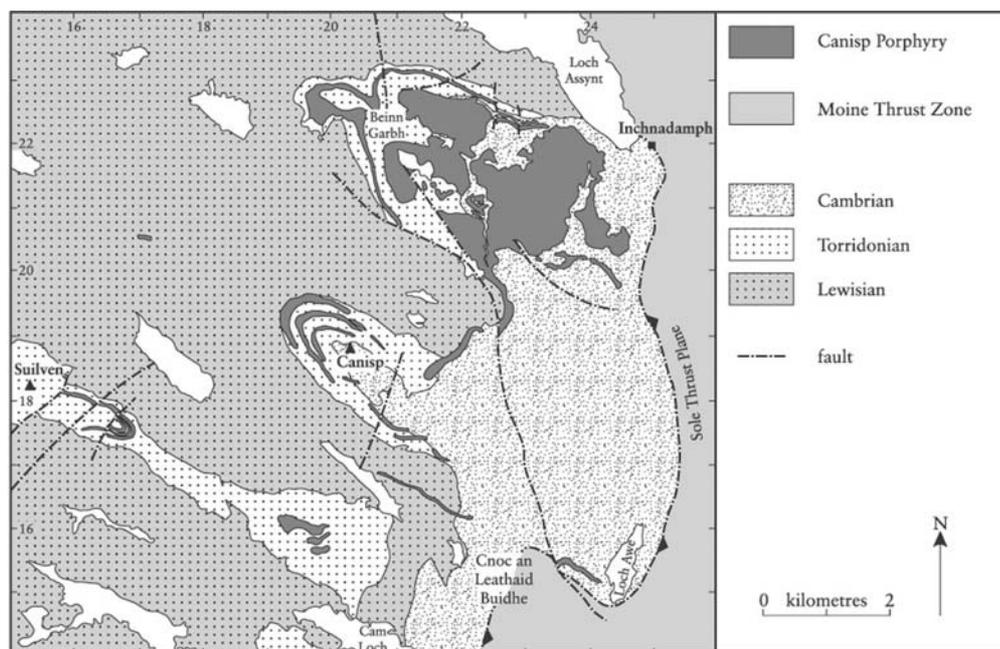


Figure 7.15: Distribution of sills and dykes of Canisp Porphyry in the Foreland. The dyke at the Laird's Pool, Lochinver, is farther to the west (see Figure 7.13). Only faults that affect Canisp Porphyry are shown. (After the Geological Survey special sheet for Assynt, 1923.)

Interpretation

The sills have clearly followed the bedding of the Torridonian and Cambrian rocks, and change dip as they cross the unconformity. The relatively slow-weathering Canisp Porphyry forms a conspicuous plateau on Beinn Garbh, and Sabine (1953, fig. 4) illustrates how the sills can be correlated with conspicuous topographical steps on Canisp.

Conclusions

Beinn Garbh is a visually outstanding GCR site providing the most extensive exposures of a unique and celebrated hypabyssal alkaline rock type, and excellent examples of the influence of rock type on topography and scenery. The outcrop of the Canisp Porphyry shows the structural control of the emplacement of the sills in the vicinity of the famous 'double unconformity' of Cambrian on both Torridonian and Lewisian rocks.

Reference list

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.