
Traligill Burn

[NC 265 213]–[NC 271 209]

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Introduction

Although the Stronchrubie Cliff GCR site provides an insight into the structural geometry of imbricate stacks, the individual thrust surfaces are not accessible. However, at the neighbouring Traligill Burn GCR site, 2 km ESE of Inchnadamph, the seasonally dry river-bed has excavated an actual thrust surface within the lower imbricate zone of the central Assynt area (Figure 5.24), (Figure 5.27). This is one of the best-known and most frequently visited localities within the Moine Thrust Belt, but the site is also famous for its karst geomorphology, whereby the course of the river runs underground for 400 m (Waltham *et al.*, 1997).

Description

On the northern side of the dry valley of the River Traligill is a bedding-plane surface of dolostones, which dips at 20°–25° to the southwest (Figure 5.27). These pale-grey dolostones belong to the Eilean Dubh Formation of the Durness Group and form the footwall to the Traligill Thrust. The thrust itself is marked by readily eroded carbonate gouge and a few centimetres of breccia, and also dips at 20°–25° to the south-west. In contrast, the hangingwall to the thrust is marked by more gently inclined (10°–15°) dark-grey dolostones of the Ghrudaidh Formation, which is stratigraphically below the Eilean Dubh Formation. These relationships are indicative of a hangingwall-ramp upon footwall-flat fault geometry, and the older-upon-younger stratigraphical separation is diagnostic of thrusting.

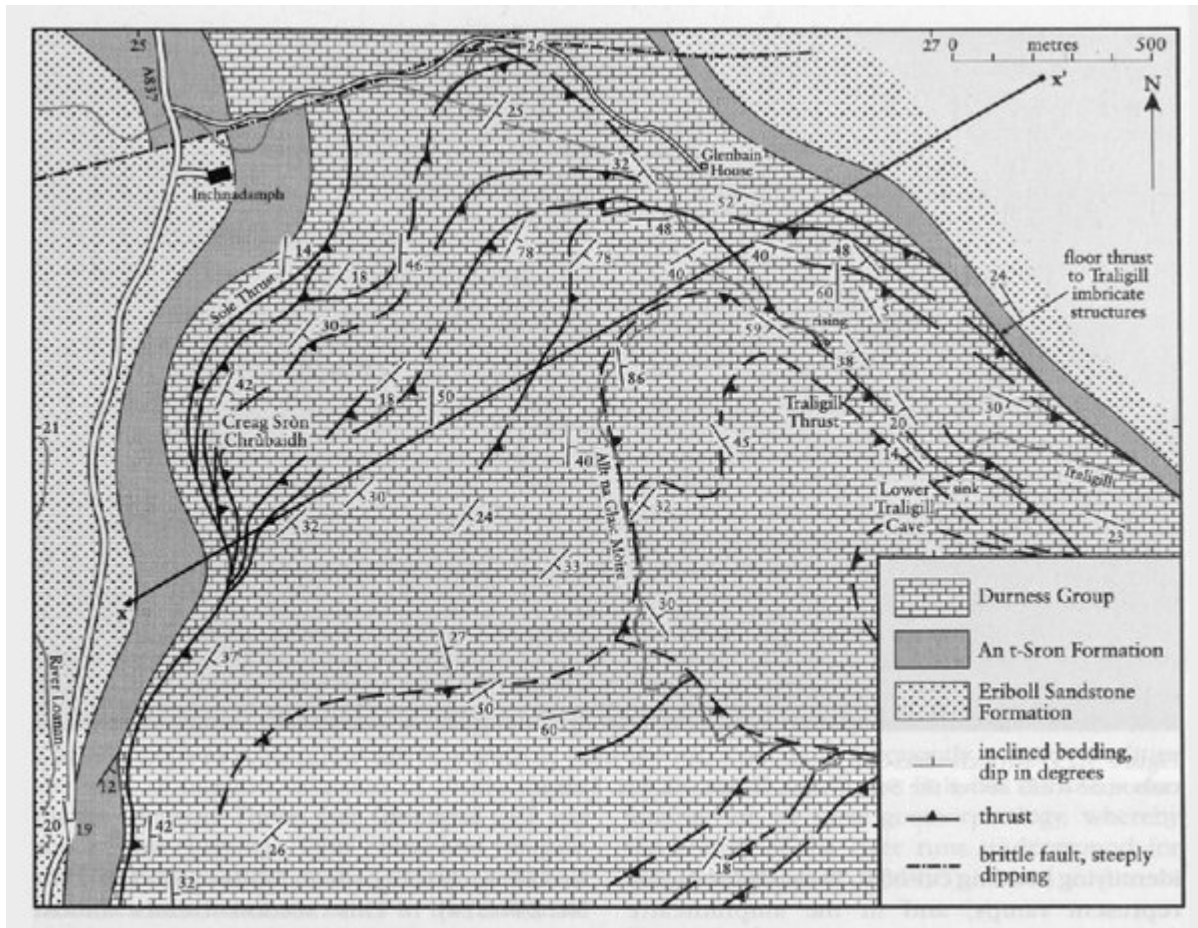
Interpretation

Although the basic description of the imbricate thrust at Traligill is straightforward, there are complexities. The strike trend is north-west–south-east, and the area forms part of a WNW-trending zone of oblique structures traced by Coward (1984b) and interpreted as having formed by major sinistral wrench faulting. The zone can be traced though to the Sole Thrust at Loch Assynt (Figure 5.24), and links with the similar structural trend at the Skiag Bridge GCR site. The relationships of the strata at the imbricate thrust are more compatible with oblique back-thrusting than with simple WNW-directed thrusting. The south-west dips suggest that the structure overlies the cover to the Lewisian gneisses of the Glencoul Thrust Sheet. These features are indicated on the cross-section (Figure 5.25), which is constructed normal to the thrusting direction. It shows the Glencoul Thrust transferring displacement laterally into the imbricate zones of Durness Group carbonate rocks such as those exposed in the Stronchrubie Cliff GCR site. In essence, this is the model of Elliott and Johnson (1980), although (Figure 5.25) also shows the back-thrust nature of the Traligill thrust systems. This arrangement has the advantage of being able to explain local field relationships more adequately and account for the large displacements across this part of the thrust belt, as implied by offset correlations in the Glencoul Thrust Sheet (Coward *et al.*, 1980).

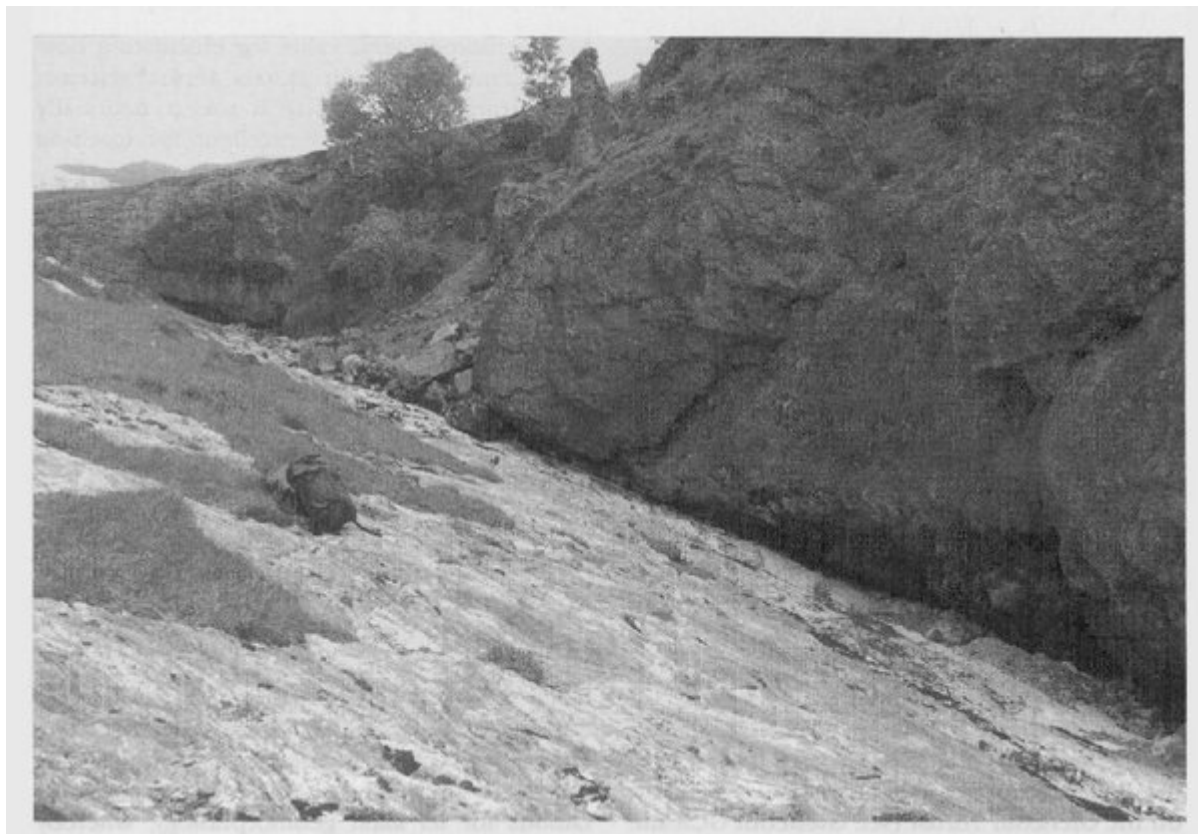
Conclusions

The Traligill Burn GCR site, together with the nearby GCR site at Stronchrubie Cliff, is representative of the most westerly and structurally lowest imbricate structures in Assynt. It is nationally important in that it provides ready access to the surface of a thrust plane, which separates carbonate rocks belonging to different formations of the Durness Group. Clay-rich gouge material and breccia associated with the thrusting can be seen. The structures can be traced into those of the Stronchrubie Cliff GCR site, and together the two sites enable the three-dimensional geometry of these imbricate structures and their relationship to the major Glencoul Thrust to be determined.

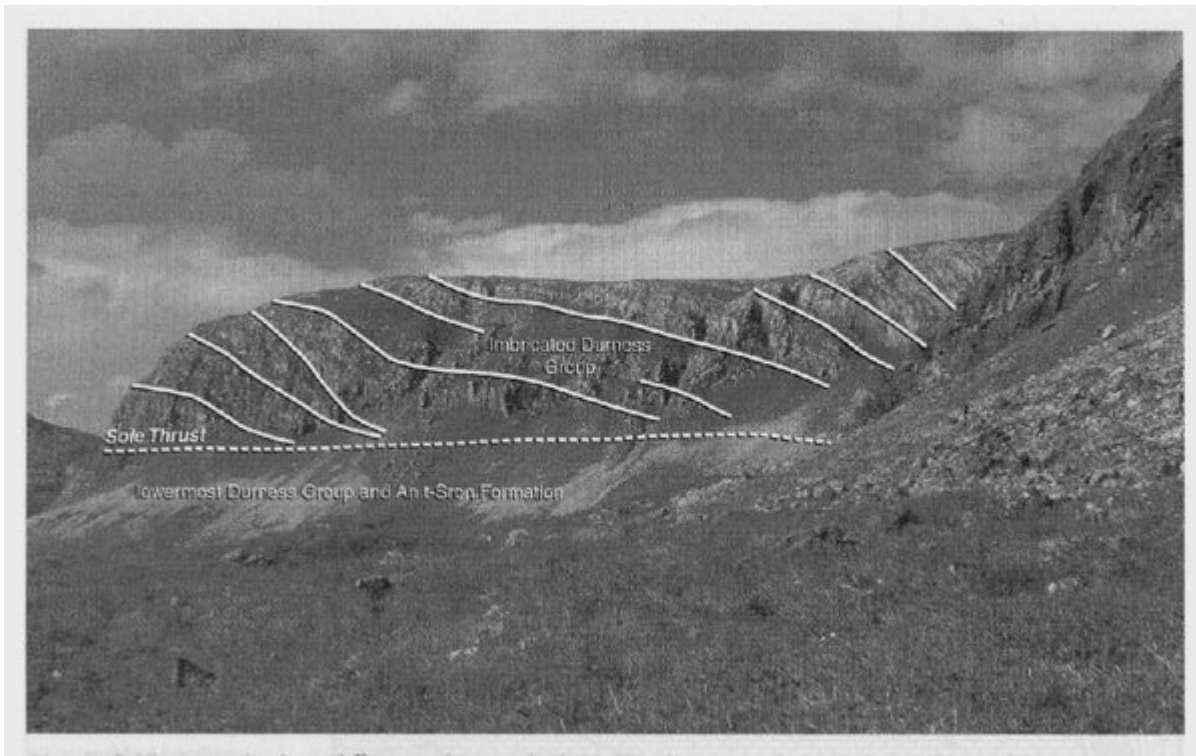
References



(Figure 5.24) Map of the area south-east of Inchnadamph showing the relationship between the Stronchrubie Cliff and Traligill Burn GCR sites. Structure in Durness Group rocks modified from British Geological Survey (2007).



(Figure 5.27) Thrust at Traligill Burn, carrying dark dolomites of the Ghrudaidh Formation onto pale carbonate rocks of the Eilean Dubh Formation. Viewed looking along strike towards the ESE. (Photo: R.W.H. Butler.)



(Figure 5.25) Stronchrubie Cliff, viewed towards the NNE, showing imbricate thrust slices of Durness Group carbonate rocks above the Sole Thrust. (Photo: R.W.H. Butler.)