
11 Roman Steps (Bwlch Tyddiad)

This popular tourist haunt is easily accessible by car, though it is possible to pick a route to it along the numerous public footpaths leading out of Llanbedr. The woodlands provide a habitat for a wide variety of birds, including woodpeckers. During the summer, if there is heavy traffic, walking along the road may not be pleasant.

The road runs east from Victoria Inn on the A496 at Llanbedr along the north bank of the Afon Artro, to Cwm Bychan at the head of the valley, where a small fee is charged for parking [SH 64730 31524]. The walk to the top of the col is about 2.5 km and rises 280 m. From there paths lead eastwards to Bronaber, about 5.5 km away, or back to the car park on rough paths round Rhinog Fawr (p. 59).

The course of the River Artro is controlled by faults over much of its length, and for most of the route the Rhinog Formation crops out on the hills to the south-east while the Rhinog, Hafotty and Barmouth formations occur in a generally NW dipping sequence to the north-west of the faults. Approaching Cwm Bychan the road curves east, passing over massive greywackes of the Rhinog Formation. The lake lies along the line of a small fault in a deep basin carved into gently dipping sandstones of the Rhinog Formation.

From the car park, follow the footpath across the Afon Artro (Figure 29). The flat wet ground to the east is probably lacustrine alluvium, the rock bar which carries the footpath having once acted as a dam ponding the river in the basin which has now been silted up with sediment.

Locality 1 [SH 64665 31326] The greywackes of the Rhinog Formation are thickly bedded, jointed, coarse-grained and pebbly, consisting of quartz, feldspar and rock fragments. Most of the beds show a graded lower part and fine-grained top (intervals 'at', p. 15). The main fracture cleavage consists of closely spaced, parallel fracture planes. Cleavage refraction (p. 52) is well displayed: in the coarse-grained graded part of the bed, cleavage is almost at 90° to bedding, but in the fine-grained top the angle is reduced to 30 or 40°.

The path leads uphill into the wood. To the south a number of blocky lichen-covered exposures of thickly bedded greywacke show 10 cm-long clasts in the top of graded beds, overlain by a finer grained laminated division.

Beyond the wood the valley widens, and is approximately parallel to the strike of the westward-dipping beds. Across the stream [SH 6500 3055] the path is paved with large cleavage slabs of greywacke, which display a variety of sedimentary features typical of turbidites.

Locality 2 [SH 6493 3071] In these coarse-grained greywackes a crude stratification can be seen in places (interval b), but a few beds also show large-scale cross-stratification, which is unusual in turbidites.

Locality 3 Rising uphill, the path crosses a 2 to 3 m-thick unit of greenish grey siltstone and mudstone within the thickly-bedded greywacke near a wall in heather-covered ground [SH 6524 3030]. Some parts show parallel- and cross-lamination on the weathered surface. There are some thin graded greywacke beds, 7 to 20 cm thick, which include intervals a, b, c and d.

Locality 4 [SH 65494 30133] Uphill the path passes into the 'National Nature Reserve' and at this point some of the bedding planes exposed in the path show good ice-carved grooves; linear, parallel-sided scratches trending just south of east, and quite distinct from lineations caused by joints or cleavage. They are well displayed in a small area about 70 m NW of the cairn.

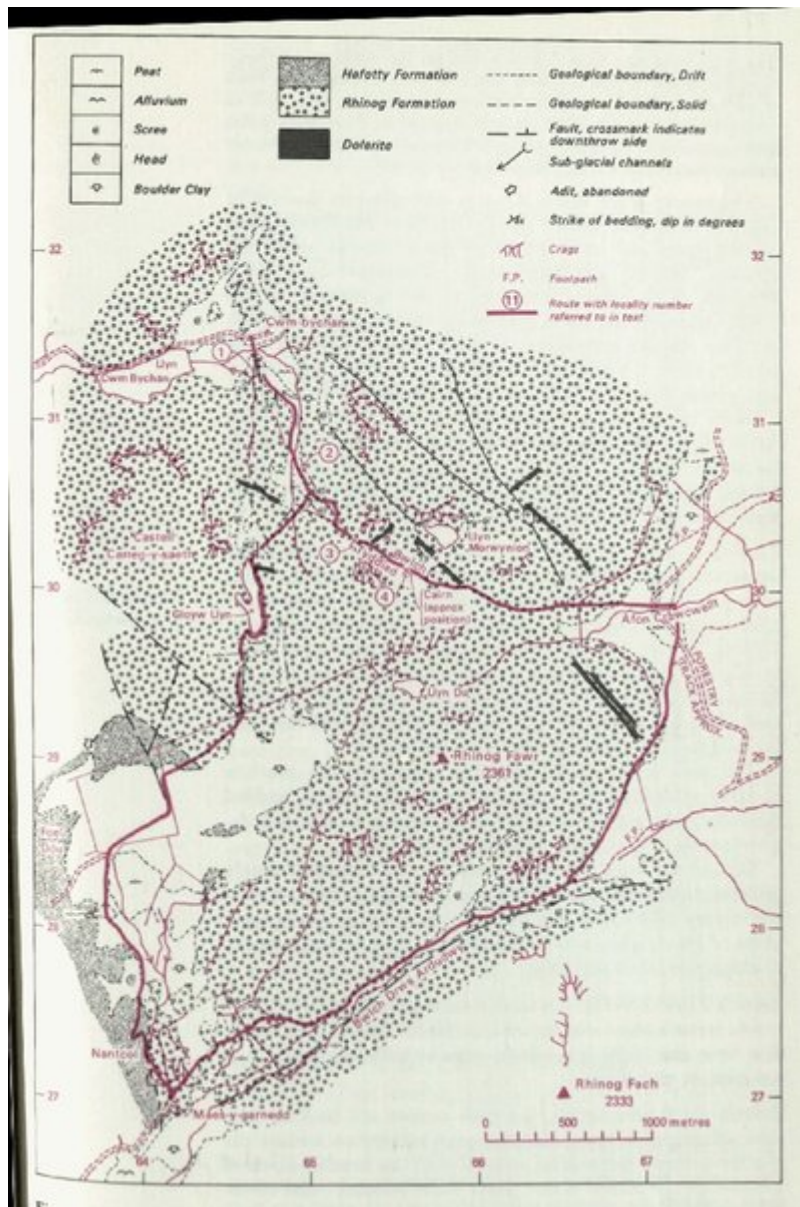
From the top of the col one may return to Cwm Bychan via Llyn Morwynion [SH 658 303], a small lake in a deep basin carved along one of the NW-trending lineaments which cross the Rhinogs. The more determined walker may follow the footpath which encircles Rhinog Fawr. The path is marked on the Dolgellau 1:50 000 topographic sheet (124). It begins from the col of Bwlch Tyddiad and runs downhill into the forest. Turn south on to the forestry road, cross the Afon Crawcwellt and follow it for 200 m. Bear west along the second fire break and leave the forest. The path leads southwest

into the col, following the edge of the boulder clay. Bwlch Drws Ardudwy is lower than Bwlch Tyddiad, but crosses a similar sequence of thickly bedded greywackes between scree-covered slopes of Rhinog Fawr to the north and Rhinog Fach to the south. Where the valley widens, a marsh area marks the site of a former lake. To the south-west the river has cut a marked V-shaped trench in the floor of the glaciated U-shaped valley. On some of the rock pavements formed by the dip slopes of the greywackes, ice-scoured grooves are clearly visible. The well marked path descends to the road in Cwm Nantcol near Maes-y-garnedd. From here take the footpath to the north, past Nantcol cottage. As the path rises it crosses the top of the Rhinog Formation on to the softer-weathering shales of the Hafotty Formation, and on the hilltop passes on to boulder clay which shows sorted stone stripes on the surface. The footpath crosses the wall and follows the gully downhill to Gloyw Lyn and then to Cwm Bychan.

A third possible route to follow from Bwlch Tyddiad is to continue eastwards through the forest and take one of the various routes to the Trawsfynydd–Dolgellau road (A470). The old route through the forest probably followed the Afon Crawcwellt, but now it is easier to follow the forestry road, turning left when joining it.

(Figure 57) Refracted cleavage in a graded bed.

References



(Figure 29) Geology of Roman Steps and Rhinog Fawr (walk No. 11) 16 'steps' occur at intervals between localities 2 and 4.



Refracted cleavage
in a graded bed

(Figure 57) Refracted cleavage in a graded bed.