17 Torrent Walk

This delightful, short walk along the Afon Clywedog starts near the bridge over the river [SH 7523 1880] on a minor road linking the A470 and A494 via Dolserau. The path (Figure 38) follows the river upstream and ends on the B4416 road to Brithdir [SH 7612 1805].

Parking is easier at the end of the walk, but geologically it is more instructive to start near the bridge. There is an excellently exposed section through two of the upper Cambrian formations, the Rhobell Volcanic Group and the overlying Aran Volcanic Group. However, it is hazardous to attempt to enter any of the gorges, and this walk should not be used as a substitute for the Capel Hermon excursion (No. 4).

Locality 1 [SH 75226 18783] Under the bridge and a little upstream there are outcrops of light grey cleaved siltstone of the Ffestiniog Flags Formation. Throughout this formation thick units of siltstone beds alternate with units of thinly interbedded fine quartzose sandstone or coarse siltstone and silty mudstone. Blocks from the latter unit have been used on the parapet of the bridge, and show the lens-like bedding, cross-lamination and inverted ripples typical of the formation. There is also a block of Rhobell Volcanic Group basalt containing large hornblende phenocrysts.

Locality 2 [SH 75327 18727] Above the siltstone unit here, there are beds of quartzose sandstone up to 45 cm thick with thin alternations of very dark grey silty mudstone. The sandstone beds are mostly massive, but some show convoluted lamination. The beds are steeply dipping to vertical and they young to the south-east.

Locality 3 [SH 75444 18676] Dolerite is exposed in the stream near the steps in the path. This is in one of the two major sills within the Ffestiniog Flags Formation in this area. The basal contact can be seen in the north bank of the river.

Locality 4 [SH 75521 18587] Here, at a waterfall where a minor tributary joins the Clywedog and for 100 m or so upstream, the transitional nature of the junction between the Ffestiniog Flags and Cwmhesgen formations is clearly demonstrated. The bedding dips less steeply than downstream. The succession consists of units of medium grey mudstone interbedded with white coarse quartzose siltstone beds up to 2 cm thick alternating with very dark grey to black mudstone, characteristic of the overlying Cwmhesgen Formation.

Locality 5 [SH 75714 18479] The junction with the Cwmhesgen Formation is not visible, but mudstone of the lower Dolgellau Member is well exposed along the river. The mudstone is dark grey to black, cleaved, richly pyritic in parts and poorly bedded. Elsewhere (see Excursion 5) the mudstone is richly fossiliferous. It is separated from basaltic lavas of the Rhobell Volcanic Group at this locality by a thin intrusion of grey, pyritic, porphyritic quartz-microdiorite.

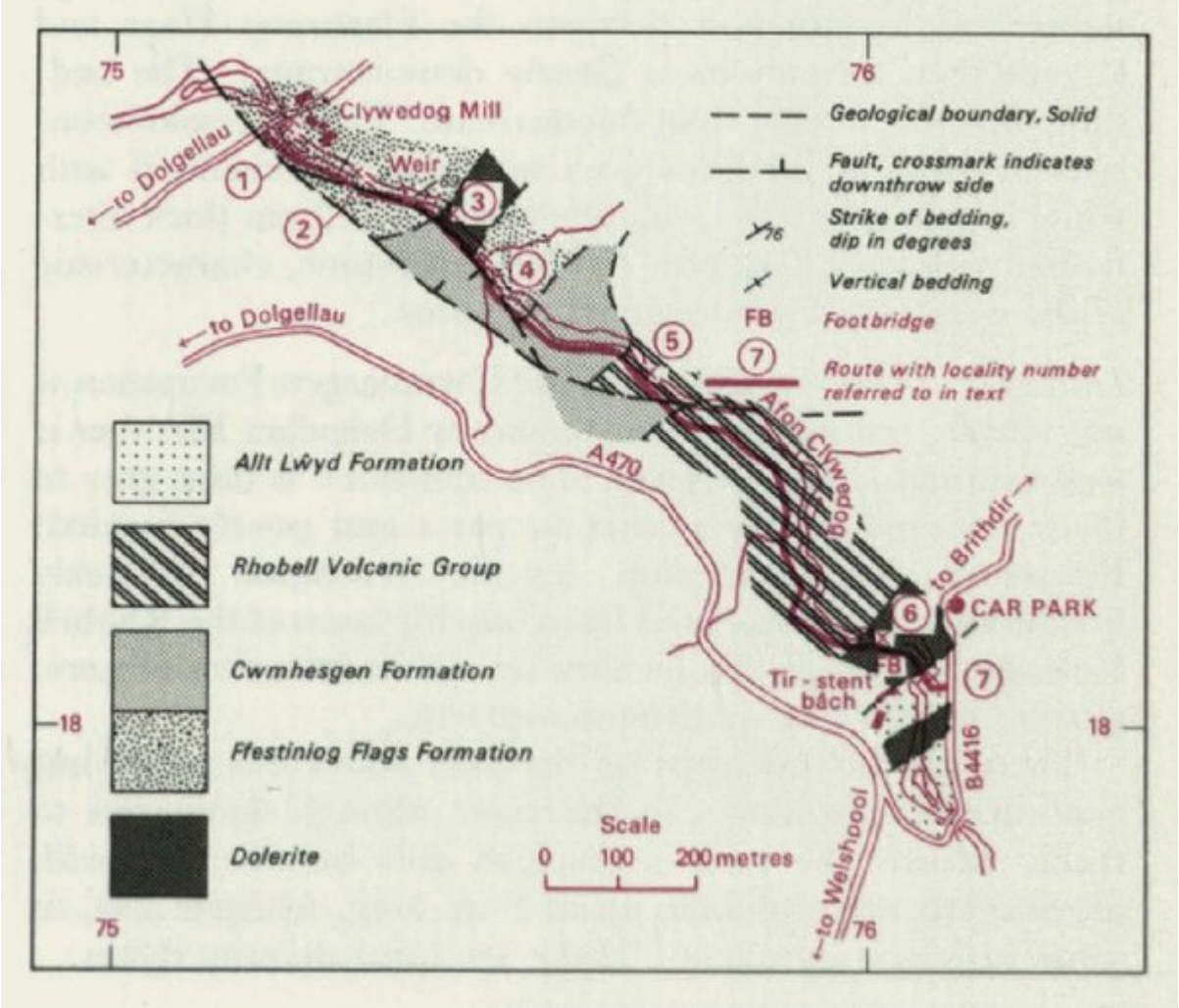
There are few outcrops on the path above this point, but exposure is continuous in the river, though dangerous to reach. Mostly the rock is greenish grey basaltic lava with phenocrysts of amphibole up to 1 cm long, feldspar and, in some varieties, pyroxene. There are some dolerite dykes.

Locality 6 [SH 76075 18083] Here, more accessible exposures in the river are of porphyritic dolerite intruded along the junction between the Rhobell Volcanic and Aran Volcanic groups.

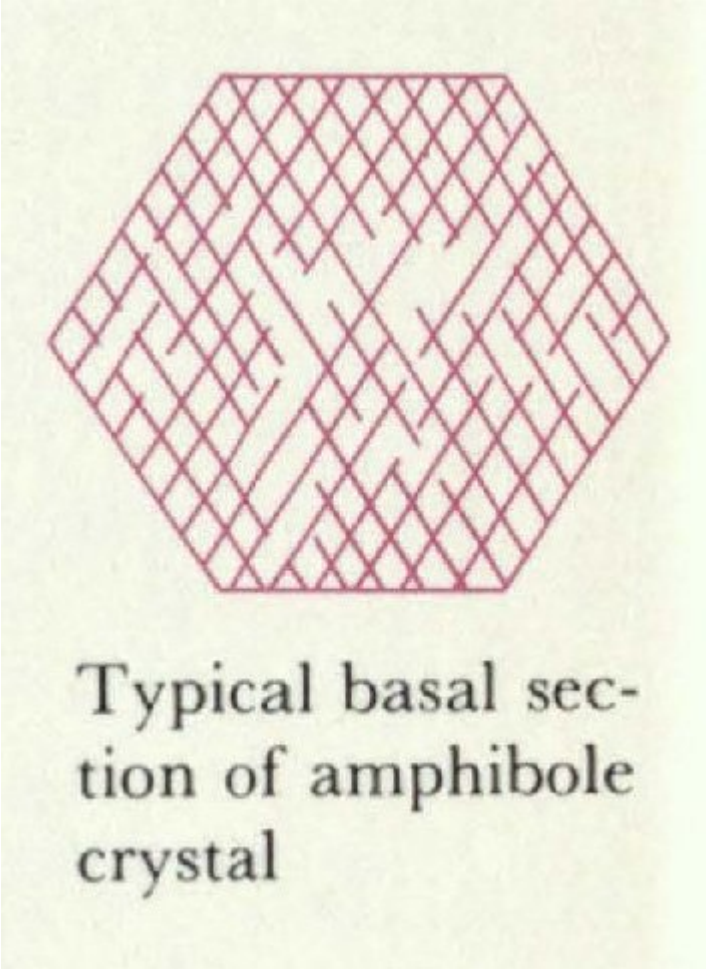
Locality 7 [SH 76098 18063] The Allt Uvyd Formation at the base of the Aran Volcanic Group is exposed below the bridge. On the south bank is grey amygdaloidal dolerite at the margin of an intrusion adjacent to a bed, 1 m thick, of coarse-grained feldspathic sandstone. On the north bank of the river coarse-grained feldspathic sandstone, with silty beds and lenses and pebbly bands up to 1 cm thick, is exposed. The pebbles are rounded, mostly igneous, and were derived from the underlying volcanic pile. Upwards the feldspathic sandstone becomes thinly interbedded with dark grey siltstone.

(Figure 60) Typical basal section of amphibole crystal.

References



(Figure 38) Geology of Torrent Walk (No, 17).



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