

Skirrid (Ysgryd Fawr), lies to the north-east of Abergavenny, and is formed of Devonian Old Red Sandstone rocks.



Follow the railway line westwards towards Brynmawr.

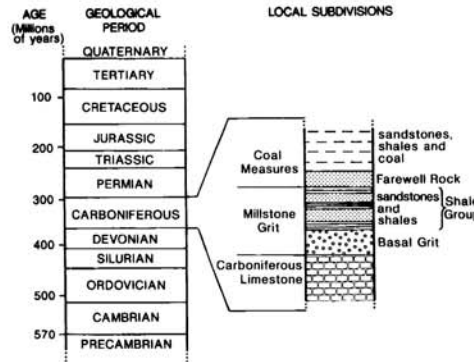
Lower Coal Measures rocks are exposed along the side of the old railway.

From the railway line the view of the north side of the gorge allows the sandstones and shales exposed at localities 1 to 3 to be put into perspective. The beds dip gently towards southwest; the youngest rocks therefore also lie in this direction, towards the basin of the South Wales Coalfield.

Locality 8. 50m before the gate across the track is reached, there is an exposure of shale which contains fossil plants; above these there is a well-exposed coal seam.

Cross the stile by the old bridge piers behind the petrol station and turn right down some steps to the roundabout. North from the roundabout, the Heads of the Valleys Road follows the line of the **Clydach Bridge Fault**, a fracture which throws down the Coal Measures rocks on its western side by over 40m.

Cross the road straight ahead, descend the steps, go through the underpass, and take the path straight ahead to return to Blackrock Road.



OUTLINE OF THE GEOLOGY

The Clydach Gorge cuts through the northeastern rim of the South Wales Coalfield, exposing rocks deposited during the **Carboniferous** Period (355 to 290 million years ago) when South Wales lay close to the equator. All were originally muds, sands and gravels that over long periods of time have been compacted to form **sedimentary rocks**. The oldest rock seen on this walk is the **Carboniferous Limestone**, which was deposited as a soft lime mud in a warm, shallow sea. Land lay only a short distance to the north.

The **Millstone Grit** which overlies the limestone is a series of conglomerates, sandstones and shales which were deposited as gravels, sands and muds in deltas and on flood plains of rivers flowing across the land area which by now extended much farther to the south.

As the deltas and coastal plains built up, dense forests grew in the swamps that developed on them. Repeated, periodic rises in sea level buried the plant remains of the forest floor under layers of marine mud before the sediments built up again and the forests regrew. The sandstones, shales, mudstones and coals that formed in these environments are collectively known as the **Coal Measures**. The compacted plant remains now form **coal**.

Originally deposited as horizontal beds, the rocks now tilt (dip) gently towards the southwest. As a result, the youngest rocks occur in the southwestern part of the Clydach Gorge, and the oldest rocks in the east and northeast.

Prepared by T. Sharpe

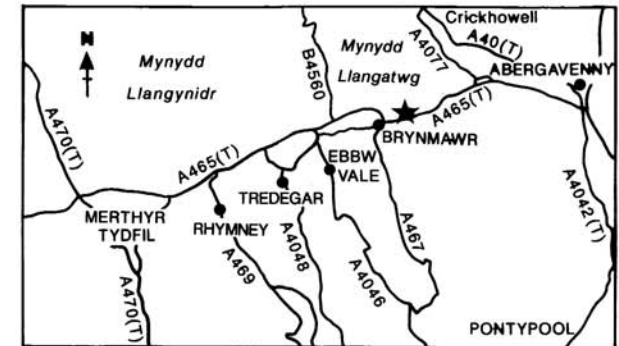
Production of this leaflet was sponsored by AGK Engineering Ltd., Chesterfield, Derbyshire

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GEOLOGICAL WALKS IN WALES



HEAD OF THE CLYDACH GORGE



LOCATION Adjacent to the A465 Heads of the Valleys Road, immediately east of the Brynmawr roundabout, 10km WSW of Abergavenny.

MAPS O.S. 1:50,000 Landranger Sheet 161 (Abergavenny and the Black Mountains)
O.S. 1:25,000 Outdoor Leisure Sheet 13 (Brecon Beacons, Eastern area)
British Geological Survey 1:50,000 Sheet 232 (Abergavenny)

START SO 198122, on Blackrock Road 200m SE of the bridge over the A465 Heads of the Valleys Road.

WALKING DISTANCE 3.5km.

PARKING On the side of Blackrock Road, near the factory.

WARNING Beware of falling rocks. Remember to follow the Geological Code of Conduct.

National Museum of Wales
Amgueddfa Genedlaethol Cymru

Department of Geology
Information Series No. 4

ITINERARY

Begin at the tarred footpath which leaves the bend in Blackrock Road at the southwest corner of the factory, and walk down towards the underpass below the roundabout. Just before the underpass, turn left through a gate. Follow the footpath to the side of the Heads of the Valleys Road.

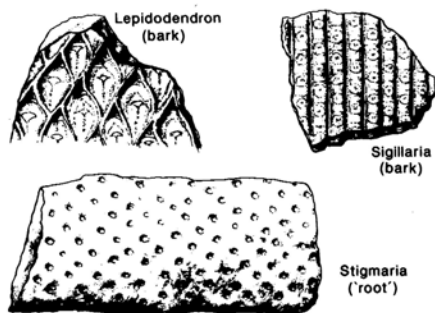
Locality 1. For the first 150m, grey shales are exposed at the side of the footpath. These rocks, and the sandstones at the top of the slope, are part of the **Lower Coal Measures**. The shales contain irregular, brown-purple lumps (**nodules**) of ironstone up to 0.5m across. Nodules such as these were once worked extensively in the area north of Brynmawr as ore for the early iron industry, which developed along the Heads of the Valleys. Weathering of the nodules has produced the rust-stains in the shale and on the footpath.

Continue to the eastern end of this exposure, where, from a corner in the fence, there is a good view of the rocks on the south side of the road.

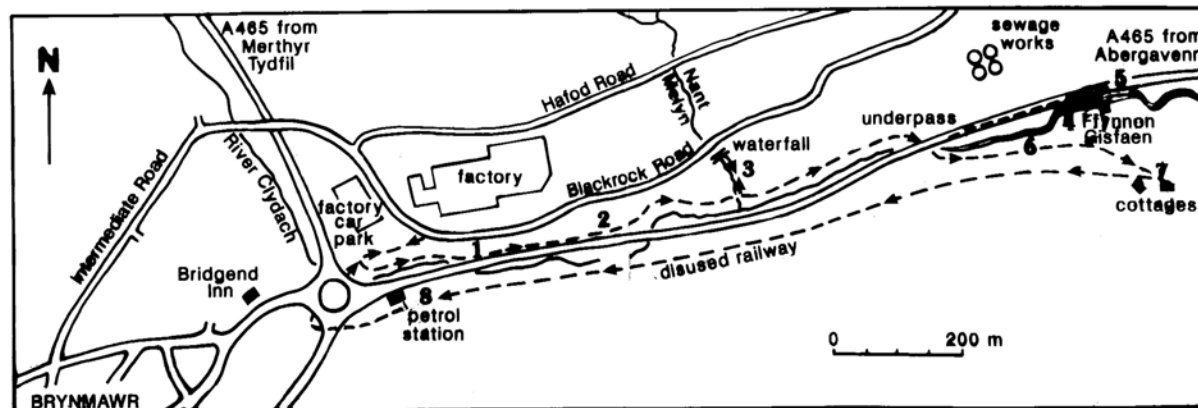
Locality 2. Immediately below the fence, by the side of the road, is an exposure of **sandstone**. The same sandstone is also exposed on the opposite side of the road forming a small ridge between the road and the river. This sandstone is one of a group of several known collectively as the **Farewell Rock** which lies at the bottom of the coal and iron-bearing Lower Coal Measures. The wavy base of the sandstone, visible from farther along the footpath, suggests that it was deposited in river channels.

There are several old mine entrances in the slope on the other side of the road. Water issuing from one of them falls over the edge of the sandstone. On the skyline, an opencast site is working coal seams from the top of the Lower Coal Measures and the bottom of the Middle Coal Measures.

Continue along the footpath, beside a pipeline, to where the pipe is carried on brick stanchions across a narrow valley, Cwm Nant Melyn, on the left.



Fossil plants from the Coal Measures



Locality 3. The Farewell Rock, overlying softer **mudstones** in the Lower Coal Measures, forms the waterfall at the back of the valley. Another, lower, sandstone forms the small waterfall nearer the footpath. Below this lower fall, where the stream goes under the footpath, a thin coal seam occupies a slot in the east bank just above the stream bed.

Take the footpath up the east bank of the Nant Melyn to the base of the large waterfall. **Beware of falling rocks.** En route, the rock forming the lower fall is crossed. It is a **conglomerate** containing rounded pebbles of white quartz (silica).

At the base of the main fall, the force of the water and the stones it carries have eroded a **plunge pool**. Some of the mudstone pebbles at the side of the pool contain fossil plants. These are the remains of the dense equatorial forests that grew in this area about 300 million years ago.

Return to the main footpath and turn left. Follow the footpath through a gate and down to an underpass below the Heads of the Valleys Road. At the northern side of the underpass, two hard sandstones separated by a shale bed are exposed. These beds belong to the **Millstone Grit**.

Go through the underpass, and turn left up the ramp to the pavement on the south side of the road. Walk downhill along the pavement to the start of a metal fence on the right.

Locality 4. Look over the fence to the River Clydach below. The river flows over a bed of conglomerate containing large, white quartz pebbles. This conglomerate, an older, lower bed than that seen at Locality 3, is called the **Basal Grit** and lies at the bottom of the Millstone Grit sequence. 35 metres to the east, a gently sloping bed of grit at eye level on the other side of the river swings steeply down, like a wall, causing the river to narrow. This may have been brought about by the grit collapsing into a cave in the limestone below.

Continue down the pavement for about 50m to some steps that descend to the river. Look across the road.

Locality 5. The netting on the cliff on the other side of the road is covering grey limestone beds which lie below the Millstone Grit. This **Carboniferous Limestone** has been worked in numerous quarries in the eastern part of the Clydach Gorge. Look over the fence to the river below where water issues from a small brick construction with a metal cover. This is Ffynnon Gisfaen, which provides over 5 million litres of water a day to Brynmawr. Some of the water flows underground through the limestone from the eastern area of Mynydd Llangynidr, about 6km to the WNW.

Return along the pavement, turn left through a gate just past the underpass, and follow a tarred path uphill.

Locality 6. From this path there is a good view of the exposure on the other side of the road. The hard sandstones and interbedded soft shales comprise the upper part of the Millstone Grit sequence (**Shale Group**) and dip gently up the valley. The two lower sandstones are those exposed at the side of the underpass. The sewage works opposite is built on rocks at the bottom of the Coal Measures. The sandstone exposed at the side of the path lies near the top of the Shale Group.

At the cottages at the top of the path, turn right onto a disused railway line.

Locality 7. From the railway line, by the cottages, there is a fine view (see photograph) down the Clydach Gorge to the limestone workings of Blackrock Quarry on the left and Gilwern Hill on the right. On both sides of the gorge, the Carboniferous Limestone (L) occupies the valley sides, with Millstone Grit (M) on the hill tops. The distant hill, the