



# A WALK AROUND DIGLEY QUARRIES TO LOOK AT THE ROCKS AND LANDSCAPES

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View of Bingley Quarry from the car park



The rocks of the Digley area are **Upper Carboniferous** (Marsdenian) in age, so they are about 310 million years old.

These rocks were laid down in **deltas** on the edge of a large continent, with mountains to the north and south. Sands and muds were deposited by rivers in shallow water. Because the continent was close to the equator, the climate was warm and wet so that tropical rain forest flourished. Dead plant material became trapped in stagnant swamps between river channels. Over geological time it was buried by muds and sands as the rivers in the delta changed position and building up more deposits. The water, oxygen and hydrogen were driven out of the plant remains, leaving only the carbon in **coal seams**. There are a couple of very small coal seams a few centimetres thick in the Digley area, one of which runs under the Digley reservoir close to Bilberry Dam.

After the sediments were formed close to sea-level, they were **buried** by hundreds of metres of sediment and **compressed**. As the sea water moved upwards it carried minerals which **cemented** the sand and mud grains together to make rocks called **sandstones** and **mudstones** (shales).

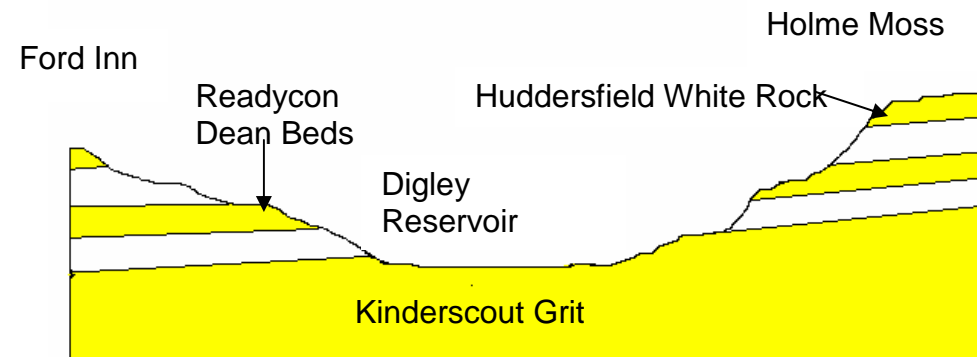
The rocks were tilted into a large fold, called the **Pennine anticline**, shortly after they were formed. The rocks of the Digley area are very close to the top of the anticline so they are nearly horizontal as you can see on the horizon at Holme Moss and Cartworth Moor. The mudstones are less resistant and can be weathered easily unless they are protected by a layer of sandstone lying above, so they form the steep slopes between each bench of sandstone.

The three main sandstones in this area have different names. The Kinderscout Grit is the oldest and has large sand grains and sometimes includes pebbles. It is

widespread in the Pennines and was laid down in large rivers which covered most of the area. The other two sandstones are less continuous and probably represented smaller flood deposits in the delta area.

Bingley Quarry was operating at least from 1881 - 1894, with no records after 1894. Proprietors Frederick and Joseph Marsden probably provided wall stone and some building stone for the local area. Bingley and Alison Quarries are recorded in 1933 as being actively worked for flagstones.

Drill holes are obvious on many beds, especially in Alison Quarry, as the rock is well bedded and easy to work. The quarries were also used in the 1940s to provide building stone for building Digley Dam and associated buildings and walls.



Cross section to show the geology of the Upper Holme Valley

Sandstones are shown in yellow

Mudstones are found between the layers of sandstone