



A WALK AROUND BROCKHOLES TO LOOK AT THE ROCKS, FOSSILS AND LANDSCAPES

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Rough Rock sandstone in quarry next to Tor
Rocks. Brockholes



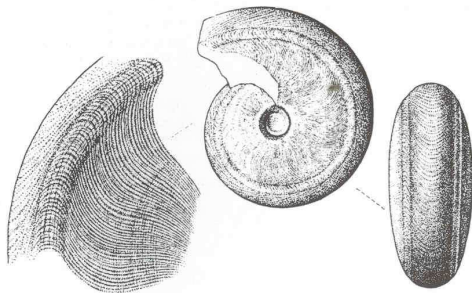
Here the
sandstone
bedding
planes are
horizontal

The rocks of the Stocksmoor area are **Upper Carboniferous** (Langsettian) in age, so they are about 310 million years old and fall within the Coal Measure sequence in West Yorkshire.

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 built up more deposits. The water, oxygen and hydrogen were driven out of the plant remains, leaving only the carbon in **coal seams**.

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 **sandstones** and **mudstones**.

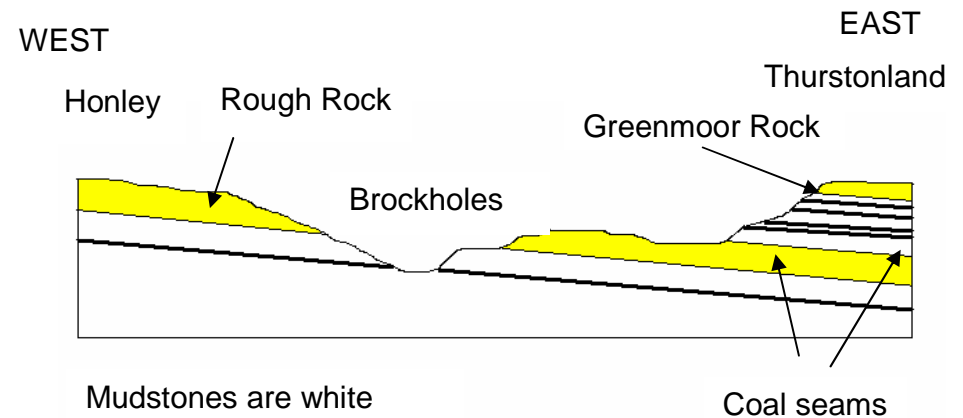
These rocks, particularly the mudstones, contain fossils of which the most important are **goniatites**. There are several layers of mudstone which contain goniatites, as well as other fossils, such as shells and microfossils. One fossiliferous layer is exposed in a stream gully in Round Wood and goniatites and bivalve shells can be found there.



Goniatites

Goniatite - Reticuloceras bilingue x 1 1/2

Most of Brockholes is built on sandstone called the **Rough Rock** which has been quarried extensively. It can be worked into an excellent building stone so has been widely quarried throughout West Yorkshire. There are several coal seams which have been exploited in the Brockholes area, probably for several hundred years until the 1940s.



Cross section to show the geology of the Brockholes area

The landscape of West Yorkshire is largely controlled by the underlying geology. The Rough Rock is a thick, resistant bed of sandstone which forms many gently sloping plateaux in the Huddersfield and Halifax areas, including the slopes on which Honley stands. The mudstones are less resistant and are weathered and eroded more easily, so are exposed in the valleys.

This pattern of erosion on the sandstones and mudstones is common and gives West Yorkshire its characteristic landscapes of flatter moorlands and shelves formed by sandstones and steeper slopes formed by mudstones.