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# TYTHERINGTON QUARRY

## *Charles Hiscock*

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*This is a report of the visit made to Tytherington Quarry by Bath Geological Society members on 9th October, 1999. The trip was led by John Sedman of Hanson plc.*

The quarry at Tytherington, near Thornbury, has been worked for well over half a century with the busiest periods being the building of the M5 motorway and other major road building programmes since. The original Grovesend Quarry lies just south of the Thornbury to Tytherington road, just east of the A38 (ST657890) but now consists of three, with North Quarry on the north side of the road and Woodleaze Quarry lying south of Grovesend Quarry. Fig. 1 shows a diagrammatic plan of the quarries. All quarries can be seen in photographs 1 to 4.

All three are in the Carboniferous Black Rock Limestone and Black Rock Dolomite while Gully Oolite and Clifton Down Mudstone appear in Grovesend and Woodleaze quarries. The western face, dipping at 30° is bounded by Lower Limestone Shales, which, like Wickwar Quarries, prevents quarrying due to the instability of the slope. In the Limestone and Dolomite, there are a few mineral bands and fossils are not common, although occasional fossiliferous horizons are found.

Sedimentation occurred around 345 million years ago at a time of warm, tropical seas which also favoured coral reef formation. The Coal Measures followed after which the Orogeny buried the limestones and overlying Coal Measures, consolidating them at depth. This process also folded the beds into the well-known synclinal pericline of the Bristol Coal Basin, fig. 2.

During the Triassic Series, the area was mountainous and subjected to hot, desert conditions which did not permit growth of vegetation. Erosion of the mountains produced alluvial fans against the mountain front, with coarse pebbly sediments close by, fining as they moved away from the highland area. This gave fine mudstones and, in the hot climate, evaporites such as the gypsum and celestite of the Cromhall to Yate district.

These alluvial fans are called the Dolomitic Conglomerate and are a feature of the Thornbury area, actually being called 'Thornbury Rock' locally. There is little evidence of Triassic fissures in the quarries, although a fault line in North Quarry shows red staining typical of infill, unlike other quarries in the locality, such as Cromhall (Slickstones) Quarry.

The dip of the beds controls the quarrying with the last in the succession, the Clifton Down Mudstone, being unsuitable for structural and roadbuilding purposes. *Figure 3* shows a diagrammatic cross-section of the quarries and is almost a mirror-image of Wickwar Quarry, visited by the Society in April 1998.

Most of the crushing, grading, bitumen and cement production is done in the oldest, Grovesend Quarry, from where it is taken both by lorry and rail, using the old Yate to Thornbury branch line. The bitumen is added for various road layers whilst, in another area, limestone aggregate is incorporated into concrete for delivery by road. Most of the stone is brought to Grovesend Quarry through tunnels under the Thornbury to Tytherington road from North Quarry and the railway line from Woodleaze Quarry. North Quarry is not noted for any special features although a fault, known to occur on the north wall, seems to fade out across the quarry, with the beds in the south face exhibiting only gentle folding.

To the south of Grovesend Quarry and connected to it by a tunnel, is the newest excavation, Woodleaze Quarry. Again, the Black Rock Limestone, Black Rock Dolomite and Gully Oolite outcrop from west to east, but, at the extreme east, Clifton Down Mudstone lies conformably on the Gully Oolite. The transition is quite abrupt, with a line of springs occurring just at the junction due to a thin clay bed. In the north east corner, there is a hollow in the top surface of the Gully Oolite. The latter dips at 30° but is overlain by horizontal beds of Dolomitic Conglomerate. Unlike the coarse, clastic Thornbury Rock, this is a fine yellow sandstone made up from weathered Carboniferous sediments, showing hollows, many filled with calcite crystals.

We thank John Sedman and his colleagues for giving up their Saturday morning to lead us on this interesting visit to one of the biggest quarry systems in the Carboniferous outside Mendip.



*Grovesend Quarry*  
- processing area with tunnel through to Woodleaze Quarry.  
The dip of the rocks can be seen clearly, about  $30^{\circ}$  east



*North Quarry, east face,  
with fault right of centre.  
The redness of the fault shows  
staining by Triassic infill*



*Woodleaze Quarry,  
Clifton Down Mudstone lying on Gully Oolite*



*Grovesend Quarry, south-east corner,  
flat-lying Dolomitic Conglomerate, unconformable on Gully Oolite*