

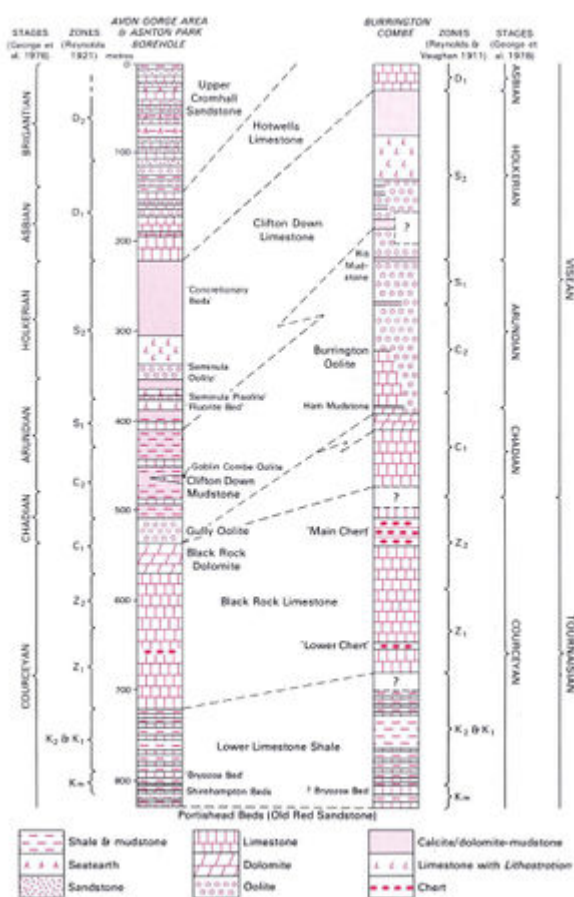
# Black Rock Limestone, Lower Carboniferous, Bristol and Gloucester region

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Green, G W. 1992. British regional geology: Bristol and Gloucester region (Third edition). (London: HMSO for the British Geological Survey.)

## Stratigraphy



Comparative vertical sections of the Carboniferous Limestone in the Avon Gorge area, Bristol and at Burrington Combe, Mendip Hills to illustrate the relationship between the lithostratigraphical and chronostratigraphical classifications of the rocks. (P948962)

In the following account the Dinantian rocks are described in ascending stratigraphical order for the whole region, except for those at Cannington Park, which are treated separately.

### Black Rock Limestone

This is the thickest and most consistent formation within the Carboniferous Limestone of the district. Most of the sequence comprises dark grey to almost black, well-bedded, poorly sorted crinoidal

packstones and wackestones. Fossils are abundant, except where they have been obliterated by secondary dolomitisation, and have enabled ready subdivision into zonal assemblages based mainly on the conodonts, corals and foraminifera. In the Mendips the Black Rock Limestone thickens from west to east from about 250 to 370 m. When traced northwards, the thickness decreases markedly and the faunal evidence demonstrates that this is partly due to the removal or non-deposition of the lower part of the Chadian sequence ([P948962](#)). At Bristol the formation is about 150 m thick, including about 30 m of dolomite at the top, decreasing to between 105 m and 120 m in the north of the Bristol Coalfield and to as little as 70 m in the northern part of the Forest of Dean. There is a concomitant northwards increase in the dolomitisation of the upper part of the succession. In parts of the northern rim of the coalfield and everywhere west of the River Severn, the whole formation has been converted to dolomite. West of the Severn the dolomite facies is known as the Lower Dolomite and east of the Severn, the Black Rock Dolomite.

The Black Rock Limestone is most complete in the Mendips and is best examined in Burrington Combe, where detailed collecting has led to the establishment of faunal ranges throughout its thickness ([P948962](#)). Here, on the evidence of the foraminifera and conodonts, the uppermost one-third of the formation is of Chadian age. The Courceyan strata below are marked by a strong development of chert in bands and nodules, the so-called 'Main Chert'. In the upper part of the Black Rock Limestone, the higher beds tend to be paler in colour and better sorted than those below, and are packstones rather than wackestones. This is most marked in the eastern Mendips where the formation is thickest and includes strata younger than elsewhere. The best documented section here is east of Leigh-on-Mendip (Butler, 1973<sup>[1]</sup>), where the Main Chert is 89 m thick. It is overlain by 44 m of dark wackestone facies rocks, above which there are 92 m of grey packstone-type crinoidal limestones with Arundian fossils in the upper part.

The early Courceyan part of the Black Rock Limestone is characterised by scattered zaphrentoid corals such as *Zaphrentites delanouei* and *Sychnoelasma* ['*Zaphrentis*'] *clevedonensis*, but is dominated by brachiopods including *Leptaena analoga*, *Rugosochonetes vaughani*, *Schellwienella* spp., *Schizophoria* spp. and *Unispirifer tornacensis*, which continue up to the late Courceyan. The late Courceyan part is marked by the incoming of a rich coral fauna including *Caninia cornucopiae*, *Caninophyllum patulum*, *Cyathaxonia cornu*, *Cyathoclisia tabernaculum* and *Synchnoelasma konincki*. The Chadian part is distinguished by the incoming of the large caninoid coral *Siphonophyllia cylindrica*. The brachiopods differ from those below, and chonetids and pustulose productoids become increasingly important.

The Black Rock Limestone, including the dolomitic facies, is widely quarried, especially west of the River Severn and in the more northerly area, east of the Severn.

## References

1. <sup>[1]</sup> Butler, M. 1973. Lower Carboniferous conodont faunas from the eastern Mendips, England. *Palaeontology*, Vol.16, 477-517.

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