

---

## North flank: Banwell

Limited parking is available at Dolebury [ST 446 587].

The northern flank of Mendip between Banwell [67] [ST 38731 58723] and Dolebury [68] [ST 44897 58838] is dominated by the narrow broken ridge of Carboniferous Limestone running the length of Banwell and Sandford Hill. This forms the steeply dipping northern limb of the Blackdown Pericline. The southern limb, formed by the Wavering Down ridge, can be seen two kilometres away on the other side of the Lox Yeo Valley.

This ridge is actually an exhumed Triassic feature. During the Triassic period, the Mendips were a steep rugged mountain range. A deep valley was excavated from Rowberrow Warren westwards through Winscombe and out to Loxton, leaving the western end of the Blackdown Pericline looking rather like a hollow tooth. This valley was subsequently infilled with scree and material washed down from the higher ground. This was then cemented to form the Dolomitic Conglomerate. Over time, the ridge was buried under the Mercia Mudstone. Only in the last couple of million years has erosion stripped away the softer Triassic rocks to reveal the hard limestone beneath, in effect exhuming the former Triassic landscape.

The climate during the Triassic was very arid. Salt lakes were present in places and these dried out to leave halite and gypsum nodules behind. Over time these nodules were dissolved away, and replaced with quartz to create geodes known locally as potato stones. These are present in the Mercia Mudstone around Sandford. Pockets of iron ore and ochre are also found in the Triassic rocks and the underlying Carboniferous Limestone. Evidence for old ochre workings can be seen on the northern flank of Sandford Hill [69] [ST 42691 59021]. The footpath here passes many small pits, spoil heaps, old trenches and adits. Specimens of ochre and quartz crystals, or 'Bristol Diamonds' can be found on the old spoil heaps.

Near the dry-ski slope is the entrance to Sandford Levvy [70] [ST 42857 59331]. This 600 m-long adit was driven in 1830 by miners seeking lead but failed to find any significant ore. Higher up the hillside is the entrance to Mangle Hole, a series of shafts which intercepts the underground river feeding the springs in Banwell.

At the western end of Banwell Hill, located in the grounds of a large private house are two caves, Banwell Bone Cave and Banwell Stalactite Cave [71] [ST 38324 58814], which have a fascinating history stretching back to the last glacial period. Miners broke into Banwell Stalactite Cave in 1757, but the entrance collapsed and the cave was largely forgotten about. In an attempt to reopen the Stalactite Cave to visitors, the local vicar, the Rev. Francis Randolph, employed two miners to find the cave. This they did but, in September 1824, they also inadvertently broke into the Bone Cave. There they found a large chamber almost filled with sediment and containing many thousands of bones. The fauna, dating from the early part of the last glaciation about 80 000 years ago, includes many cold-climate species such as bison, reindeer, wolf, brown bear, wolverine and arctic fox. The caves quickly became famous as a tourist attraction. The Bishop of Bath and Wells, George Henry Law, who owned the land, took the bones as wonderful evidence for Noah's Flood. With the help of William Beard who managed the caves, he subsequently built the Banwell Tower to remind visitors of the follies of the pagan world! Both caves are on private land but are occasionally open to the public.

At the eastern end of Sandford Hill is the disused Sandford Quarry [72] [ST 42173 59060]. In 1884, the quarry was a few small pits on the south side of the hill. By 1931, the quarry had expanded considerably into the western side of the hill and was connected to the Cheddar Valley Railway. The quarry was closed in the 1990s as part of an arrangement to extend Whatley Quarry near Frome and parts of the site are now used for climbing and abseiling. Like many other quarries on Mendip, it is developed primarily in the Burrington Oolite, a very pure limestone. The rock here dips to the north at over 70°, giving rise to very steeply sloping bedding plane slabs on the south side of the quarry.

At the east end of Sandford Hill, the Carboniferous Limestone is well exposed in an old quarry adjacent to the A38 at Churchill Rocks [73] [ST 44507 59151]. The graffiti-covered slabs of thickly bedded limestone belong to the Burrington Oolite Formation. On closer inspection, it will be apparent that the rock appears to dip to the south at about 50°, while elsewhere along the northern side of Mendip, the limestone dips steeply to the north. The reason for this anomaly is that

here the limestone has been so severely folded that it has been overturned, and the bedding plane slab visible is actually the underside of a bed of rock. A fold in which one side is overturned is known as a nappe.

The transition from overturned rock to vertically bedded and then upright, northerly dipping strata can be seen in the cliffs along the A38 between here and the Shipham turnoff. At the mouth of Bristol Water's tunnel opposite the Rowberrow turning, the bedding is vertical, while on the bend it dips about 70° to the north.

To the east of Churchill lies Dolebury Warren [68] [ST 44897 58838], which is dominated by the Iron Age hill fort and has also been used as a medieval rabbit warren, from which it takes its name. The ridge is formed from steeply north-dipping Carboniferous Limestone of the Black Rock Limestone and the Burrington Oolite formations. Fragments of the fossiliferous Black Rock Limestone Formation can be seen in the scree on the steep southern slopes, whilst good specimens of the pale grey Burrington Oolite can be seen in the northern ramparts of Dolebury Fort.

The nature reserve at Dolebury Warren is owned by the National Trust and managed by the Avon Wildlife Trust. This is an area of contrasting flower-rich limestone grassland and heathland. Early purple, bee and pyramidal orchids thrive in the grassland. The heathland is developed on loess, a sandy silty soil derived from wind-blown glacial silt that was probably deposited here during the last glaciation. This creates an acid soil, favouring bell heather and bilberry. Butterflies and insects are plentiful, especially on south-facing slopes where the conditions tend to be warmer.

There is easy access to Dolebury Warren via footpaths from all directions. From the top there are clear views over the Bristol Channel, and it was probably the good vantage point that influenced the building of the hill fort here.

## Figures

(Figure 72) Bristol diamonds' quartz crystals lining a geolode or 'potatoe stone'.

(Figure 73) Aerial photograph of North flank: Banwell.

(Figure 74) Stacked bones in Banwell Bone Cave. © John Chapman.

(Figure 75) Cross-section of Sandford Hill. For abbreviations see map key. [ST 424 584] to [ST 424 596] Vertical exaggeration x 4.

(Figure 76) Steeply dipping limestone, Sandford Quarry.

(Figure 77) Cross-section through the Churchill nappe. South [ST 444 587], North [ST 444 606].

(Figure 78) View across Dolebury Warren, towards Blackdown.

(Figure 79) Overturned strata, Churchill rocks.



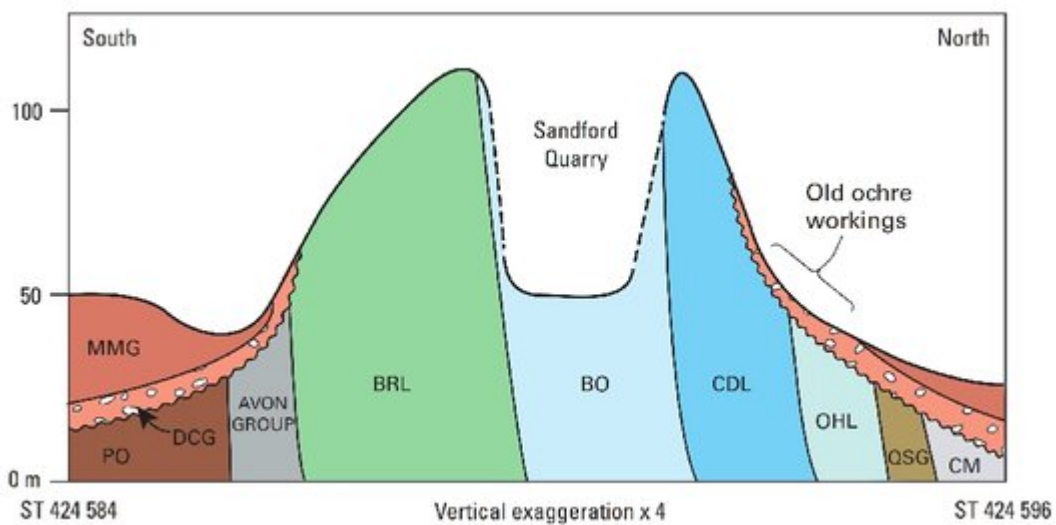
(Figure 72) Bristol diamonds' quartz crystals lining a geolode or 'potatoe stone'.



(Figure 73) Aerial photograph of North flank: Banwell.



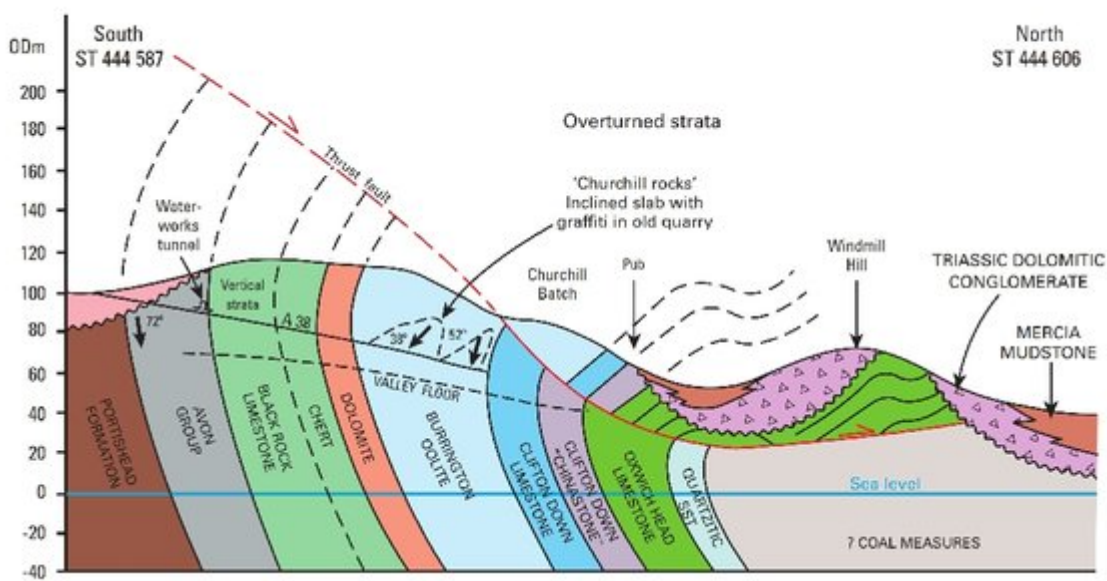
(Figure 74) Stacked bones in Banwell Bone Cave. © John Chapman.



(Figure 75) Cross-section of Sandford Hill. For abbreviations see map key. [ST 424 584] to [ST 424 596] Vertical exaggeration x 4.



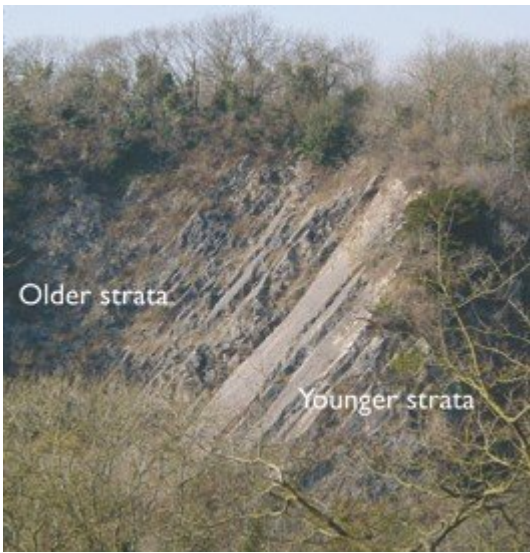
(Figure 76) Steeply dipping limestone, Sandford Quarry.



(Figure 77) Cross-section through the Churchill nappe. South [ST 444 587], North [ST 444 606].



(Figure 78) View across Dolebury Warren, towards Blackdown.



*(Figure 79) Overturned strata, Churchill rocks.*