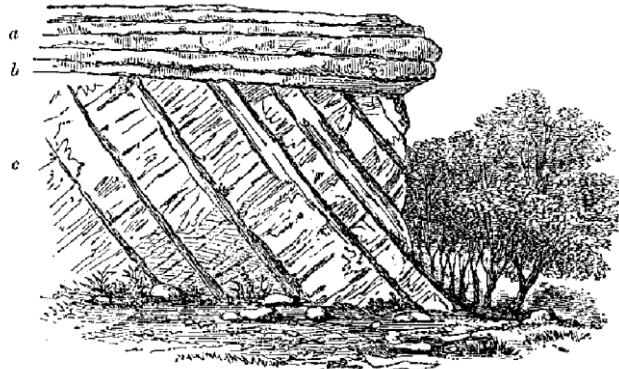


# SOMERSET GEOLOGY—A GOOD ROCK GUIDE

Hugh Prudden, June 2004

*NB Important note, June 2019: please be aware that some of the information below may now be out of date and check current access arrangements.*



- a. Inferior Oolite.
- b. Arenaceous parting.
- c. Carboniferous Limestone.

The great unconformity figured by De la Beche

## **WELCOME TO SOMERSET**

Welcome to green fields, wild flower meadows, farm cider, Cheddar cheese, picturesque villages, wild moorland, peat moors, a spectacular coastline, quiet country lanes.....

To which we can add a wealth of geological features. The gorge and caves at Cheddar are well-known. Further east near Frome there are Silurian volcanics, Carboniferous Limestone outcrops, Variscan thrust tectonics, Permo-Triassic conglomerates, sediment-filled fissures, a classic unconformity, Jurassic clays and limestones, Cretaceous Greensand and Chalk topped with Tertiary remnants including sarsen stones-a veritable geological park! Elsewhere in Mendip are reminders of coal and lead mining both in the field and museums. Today the Mendips are a major source of aggregates.

The Mesozoic formations curve in an arc through southwest and southeast Somerset creating vales and escarpments that define the landscape and clearly have influenced the patterns of soils, land use and settlement as at Porlock. The church building stones mark the outcrops. Wilder country can be found in the Quantocks, Brendon Hills and Exmoor which are underlain by rocks of Devonian age and within which lie sunken blocks (half-grabens) containing Permo-Triassic sediments.

The coastline contains exposures of Devonian sediments and tectonics west of Minehead adjoining the classic exposures of Mesozoic sediments and structural features which extend eastward to the Parrett estuary. The predominance of wave energy from the west and the large tidal range of the Bristol Channel has resulted in rapid cliff erosion and longshore drift to the east where there is a full suite of accretionary landforms: sandy beaches, storm ridges, salt marsh, and sand dunes popular with summer visitors.

The Somerset levels and Peat Moors contain the interglacial Burtle Beds and Recent sands, silts and peats plus a very full archaeological and pollen record, made famous by the pioneering studies of Harry Godwin, plus prehistoric trackways.

## THE GOOD ROCK GUIDE

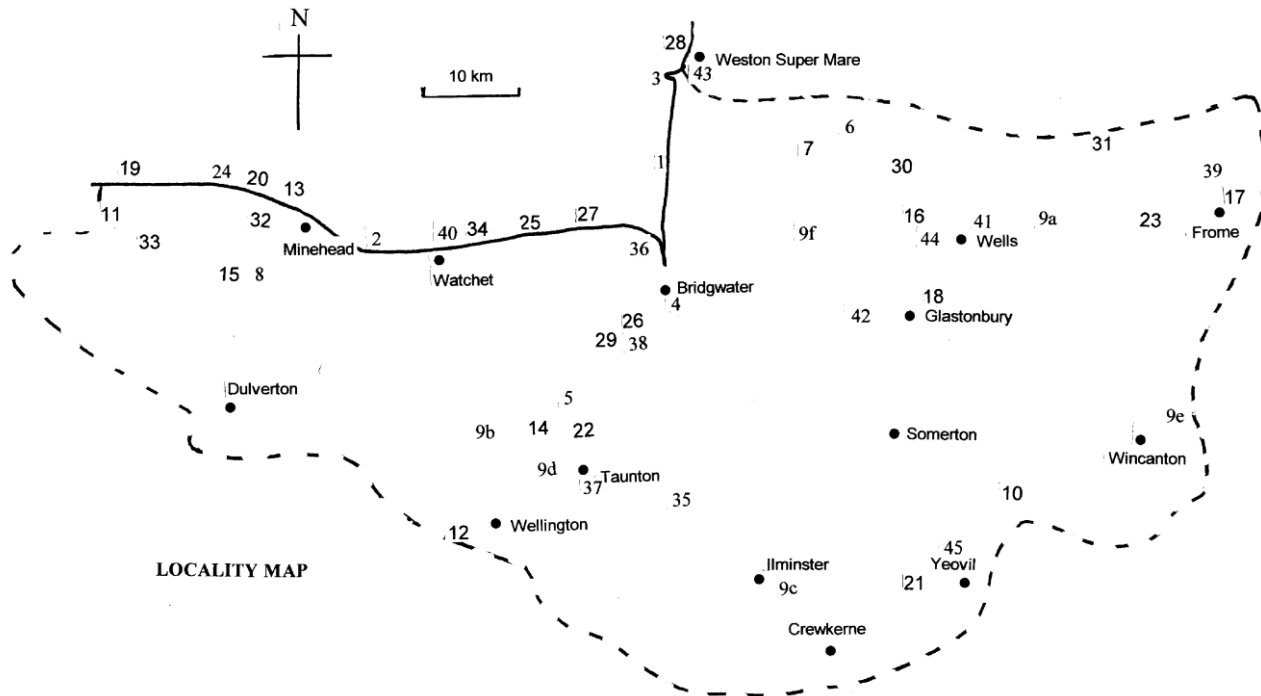
Welcome to a quick-reference guide to the best places of general geological interest in Somerset. It is a starting point for exploring the County. It does not offer detailed accounts of the geology of each locality or the region. This information is now widely available elsewhere. The localities are varied and well-worth visiting not only for their geology but as a day out exploring the countryside. Most are either SSSIs or have Regionally Important Geological Sites (RIGS) status. The British Geological Survey (BGS) have designated a lot of new formation names but here we have kept to the more familiar names as used on current survey maps.

Please keep to public footpaths. The Ordnance Survey 1:50,000, or better still, the 1:25,000 maps are most useful for planning visits and locating sites. A hammer is not required.

The Somerset Studies Library in Taunton has a useful selection of maps, memoirs and journals. We strongly recommend that a copy of *The geology of Somerset* by Peter Hardy is kept to hand for background information. The present guide and *The geology of Somerset* complement each other. The 1:50,000 scale geological maps from the British Geological Survey are a good investment. (BGS, Keyworth NG12 5GG Tel: 0115 9363100.)

Details about parking, toilets, access and references are provided at the end of each section. A four-figure grid reference accompanies each locality. Please telephone for opening times where necessary. Abbreviations: British Geological Survey (BGS), Exmoor National Park (ENP), National Trust (NT).

You are responsible for your safety. The vertical cliffs between Blue Anchor and Lilstock can break away at any time (hard hats?). The shore platforms and beaches are flooded quickly by the incoming tide. Some mudflats are treacherous. Rocky foreshores can be excessively slippery. Resist the temptation to climb cliffs. Wear strong footwear. Leave nothing of value in parked cars. Enjoy



**1. BERROW ST 2952** 3 km N of Burnham on Sea

Accreting coastline-Somerset Levels

A classic lowland coastline of deposition set at right angles to the prevailing Westerlies. The sandy beach is backed by extensive dunes; post-glacial estuarine clays are sometimes exposed at low tide below the sands. Reclaimed siltlands of the Somerset Levels lie inland. The 13 century church (ST 294 524) is mainly built of Blue Lias mudstones with a little Carboniferous Limestone and Doulling Stone dressings. The fine preaching cross is Ham Hill Stone.

Park at ST 292 542. Crowther 1992, Whittaker and Green 1983. Hour or half-day.

**2. BLUE ANCHOR ST 0243** 6 km ESE of Minehead

Triassic and Jurassic formations-gypsum-tectonics

Proceed eastward along the shore from the eastern end of the sea wall toward Blue Anchor Point where there is a good display of folding and fracturing. Red mudstones and siltstones ('Keuper Marl' of the Mercia Mudstone Group) is faulted against grey-green calcareous mudstones and marls (Blue Anchor Formation). The cliffs further along are famous for the evaporites which were once used in the local alabaster industry for church monuments. Masses of pink nodular gypsum parallel to the bedding are thought to represent the primary anhydrite. Later veins of white fibrous gypsum, some of which have been deformed by later earth movements, are seen in tension cracks and along fault planes.

Park at the eastern end of the sea wall (ST 034 435) and work eastward along the shore. Time your visit for a falling tide. It is possible to travel for one leg of the distance to or from Watchet on the West Somerset Railway (Tel. 01643 704996). Edwards, 1999. Half-day/day.

### **3. BREAN DOWN ST 2859** 2 km S W of Weston-Super-Mare

Carboniferous Limestone-coastal features-Holocene accretion

This headland, which is in the care of the National Trust, projects into the Bristol Channel and provides a 360° panorama of land, sea and sky. The Carboniferous Limestone ranges from the Black Rock Dolomite on the south side to the Birnbeck Limestone and Goblin Combe Oolite on the north. Beds dip to the north and can be studied at low tide in the cliffs on the south side and at the western end of the peninsula. There is a platform on the north side of Brean Down which may be a raised beach formed at a time when sea level was higher than that of today. A 'fossil' sea cliff at the eastern end near the car park has head, blown sand and colluvium banked up against it. An extensive beach with dunes extends southwards. Brean Down is an example of a former island now joined to the mainland as a result Holocene accretion of sand, silt and mud. Note the strong tidal race around the headland. The church (ST 297 562) is built mainly of Blue Lias with Douling Stone dressings and a little Carboniferous Limestone.

Park at the eastern end of Brean Down (ST 296 588); it is unwise to park cars on the beach as the tide rises quickly owing to the big tidal range! Café and toilets. Crowther, 1992, Whittaker and Green 1983. Half-or full-day.

### **5. BROOMFIELD ST 2232** 9 km SW of Bridgwater

Morte Slates-building stones-Wildlife Trust headquarters

Fyne Court has a nature trail that passes near to some small quarries in the Morte Slates showing terminal curvature (see Thurloxton). The parish church (ST 224 320) contains Devonian sandstones, Otter Sandstone, some Hestercombe igneous diorite, and blocks of White and Blue Lias.

Park at Fyne Court (Tel. 01823 451587). Prudden 2000, Prudden 2001. Half-day.

## **6 CHARTERHOUSE ST 4955** 6 km NW of Wells

Limestone scenery-mining-soils and vegetation

This area contains outcrops of both Carboniferous Limestone and Old Red Sandstone which have influenced the topography, stream pattern, soils and vegetation. There are a number of swallet holes and stream sinks. The hummocky 'gruffy ground' is a reminder of the lead mining dating back to Roman times. GB Cave and Charterhouse Cave are within the Somerset Wildlife Trust Reserve (ST 486 557). There are a number of paths across Blackdown which is fine walking country.

Park close to crossroads at ST 505 557. Farrant 1999 highly recommended. Note his warning on page 2 concerning private land and access to caves. Day/half day.

## **7. CHEDDAR ST 4653** 11 km N W of Wells

Carboniferous Limestone-Dolomitic Conglomerate-gorge-caves-tectonics

### **Cheddar Gorge**

The Gorge is an impressive landscape feature and a popular tourist attraction. The Gorge owes its origin and form to the steep gradient of the valley, a large catchment area and the effects of periglacial hillslope processes acting upon the well-jointed Carboniferous Limestone. There is no evidence that the Gorge is a collapsed cave. Grey, granular Carboniferous Limestone (Hotwells Limestone) can be examined at pavement level below Jacobs Ladder. Clifton Down Limestone outcrops higher up the Gorge. Parts of the Gorge have been altered by quarrying and attempts to stabilise the steep faces. Cheddar Showcaves (ST 467 539) are open to the public (tel. 01934 742343) and include a museum with a collection of

Palaeolithic tools. Panoramic views are to be had from the top of Jacobs Ladder (320 steps). There is a three mile waymarked trail around the Gorge.

### **Black Rock Nature Trail**

A footpath on the S E side of the gorge leads to the Somerset Wildlife Trust Reserve and trail. The latter is a quiet oasis at the head of the Gorge. The old quarry face 400m from the entrance is worth close study. Note the fissure with solution effects and infilled with cave earth (a quartz sand). The Carboniferous Limestone sediments contain oolites and fossil debris. Evidence for Variscan tectonics is seen in the sheared rock and cleaved shales. Note the Dolomitic Conglomerate in the bottom of an ancient Triassic valley just beyond the point where the Trail turns sharply to the right. Nearby outcrops of Carboniferous Limestone mark the sides of the Triassic valley.

Park in Cheddar; a park and ride operates in the summer; parking is very limited in the Gorge. Cheddar Caves and Gorge, Cheddar, Somerset BS27 3QF. Tel: 01934 742343. [www.cheddarcaves.co.uk](http://www.cheddarcaves.co.uk). Limited parking at ST 483 546 for Black Rock. BGS 1:25,000 Sheet ST 45 *Cheddar* geological map, Farrant 1999, Green and Welch 1965, *Cheddar Gorge: Visitor information, Cheddar Caves and Gorge: map and guide*. Half-day/day.

### **8. CLOUTSHAM ST 9043** 7 km WSW of Minehead Screes-soils-goyles

A National Trust waymarked nature trail in Exmoor National Park provides ready-made access to the steep-sided deep valleys that are found on the north side of Dunkery Hill. The Hangman Sandstone is seen in the worn footpaths and stream beds. Podzolic soils and a mantle of head are widespread. Relict scree slopes can be seen a short distance away from the trail at ST 899 435. The trail passes goyles which are being actively eroded during storm events whilst the larger streams show terraces above their flood plains. Situated on the attractive Holnicote Estate.



Park near Webber's Post at SS 993 439. Exmoor National Park leaflets *Cloutsham Nature Trail* and *Explore Exmoor*. Half-day.

## 9 A COLLECTION OF CHURCHES

Building stones-architecture

Medieval churches are a good indicator of regional variations in the use of building stones besides having much of architectural interest. We include a selection which illustrate some of the Somerset rock formations that are largely no longer quarried or accessible.

**9a. Croscombe Church** ST 591 444 *Downside Stone*: coarse grained, cream-grey, coarse pebbly and shelly conglomerate of Lower Lias age; a littoral facies on the south side of the Mendips. A new housing estate at ST 626429, 4 km to the west at Shepton Mallet, is partly built of *Doultling Stone* and has a pinnacle of Doultling Stone

**9b. Halse Church** ST 140 278 *Otter Sandstone*: red variable, calcareous sandstone, often pebbly. Deposited by braided streams in desert basins in the Triassic Period; Ham Hill Stone dressings.

**9c. Ilminster Church** ST 361 147 *Marlstone*: ferruginous, rusty-brown oolitic limestone and sandstone often crowded with bivalves, brachiopods and bivalves Jurassic Middle Lias; also Ham Hill Stone and calcareous grit from the Upper Greensand. Nearby Donyatt Church (ST 339 141) is mainly Marlstone.

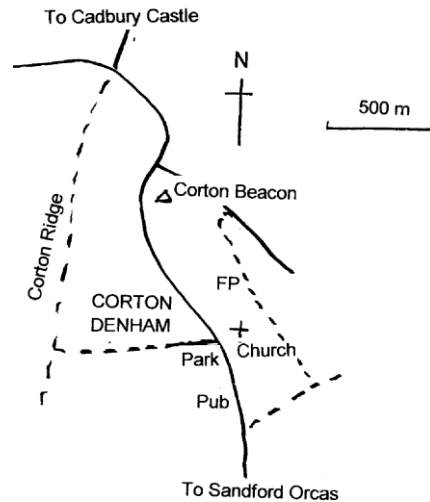
**9d Norton Fitzwarren Church** ST 197 260 *North Curry Sandstone*: greenish-grey, calcareous mudstones and siltstones with locally thick beds of white to pale brown cross-bedded, pebbly sandstones; thought to be channel deposits of Triassic age.

**9e Penselwood Church** ST 756 315 *Shaftesbury Sandstone*: green and grey, hard, shelly calcite-cemented, fine-grained, glauconitic sandstone. Upper Greensand Cretaceous Period.

**9f. Wedmore** ST 435 479 *Wedmore Stone*: lenticular mass of hard grey limestone, weathering to brown, composed of shell fragments. Rhaetic Westbury Beds. Doultling Stone dressings.

See Prudden 2003 for a review of Somerset building stones.

**10. CORTON DENHAM ST 6322** 10 km NE of Yeovil  
Jurassic formations-escarpments and dip slopes-



This part of the south Somerset scarplands is a striking example of a double escarpment and dip slope: Jurassic Junction Bed limestones and Pennard Sands form Corton Ridge on the west whilst Yeovil Sands and Inferior Oolite limestones underly Corton Beacon to the east. Proceed up the steep hillside from the church and turn left at the top. Continue using public footpaths and the lanes via the Beacon to the Macmillan Way footpath and then turn south to return via Corton Ridge. There is a small landslide at ST 626 238. The Lower Lias Clay Vale extends to the west. The church is built of Ham Hill Stone. We recommend a visit to the nearby church at Sandford Orcas (ST 623 211) which is one of the few built of Middle Lias Marlstone.

Park near the church at ST 636 225. Cadbury Castle, an important archaeological site, is a short distance to the north. Pub. Half-day.

#### **11. COUNTY GATE SS 7948** 8 km E of Lynton at the County border with Devon on the A39.

Hangman Sandstone-screens-tectonics

The NE side of the East Lyn River has an impressive array of screens. These appear to be the result of a tendency for the Hangman Sandstones to collapse especially where there is a high density of joints owing to past (and present?) tectonic stresses. It is assumed that the screens are relicts of a periglacial climate. The narrowness of the valley reflects the strength of the Hangman Sandstone. The latter, together with tectonic features (East Lyn Fault), can be examined in the stream bed by the footpath to Malmsmead. There is a panoramic view from County Gate; a tablet commemorates the life and writings of J.H.B. Peel who wrote with affection about the English landscape and Exmoor in particular.

Park at County Gate (SS 793 487) where there is an information centre and toilets or in Malmsmead and make a circular walk from either place. Exmoor National Park leaflet *Walks from County Gate*. The Exmoor Natural History Society have a display at Malmsmead (SS 792 478) (Tel: 01643 702759.) Half-day.

## **12. CULMSTOCK BEACON AND BLACKDOWN COMMON ST 1115** 6 km S of Wellington

Upper Greensand-Blackdown Plateau-podzol soil-peat-heathland

The northwest corner of the Blackdown Hills not only provides panoramic views from Culmstock Beacon (ST 110 151) but also much of botanical and geological interest. There is a capping of Upper Greensand with bleached, cherty podzolic soils and heathland which is part of the great Blackdown-East Devon Plateau, an outstanding landform-note the even skyline. The escarpment has Foxmould Sands (plus badgers) underlying Chert Beds. The sands rest on the red beds of the Mercia Mudstone Group and springs are thrown out where the two meet. Waterlogging has resulted in the formation of peaty deposits and landslips. The nearby Wellington monument (ST 137 173) is built of Cretaceous Calcareous Grit (Upper Greensand) from a quarry at Northay (ST 281 112).

Park on verge near Crossways Farm at ST 1258 1668. Follow track up past telecom tower. There is a maze of footpaths to follow. Avoid at all cost the low boggy patches as they are very difficult to negotiate. Also remember that this is a SSSI reserve please. Further reading: Prudden, 2001.

## **13. CULVER CLIFF AND MINEHEAD SS 9647** 1 km W of Minehead

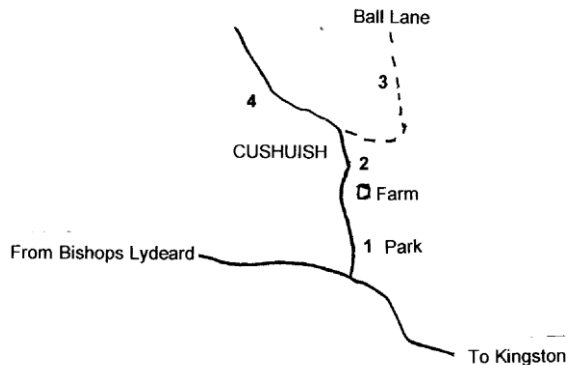
Hangman Sandstone-tectonics

A somewhat rough but rewarding scramble over a rocky beach is required to examine the Middle Devonian Hangman Sandstone at Culver Cliff. The cliffs and fallen blocks show wave-formed ripples on bedding planes and climbing-ripple cross-lamination interpreted as shallow water deltaic near-shore sediments. There are tight and minor folds plus low-angle shears with striated slickensides and quartz-filled tension gashes beneath. These give a good idea of the compressive nature of the Variscan Orogeny. Some of the folds were probably formed by contemporary slumping of the sediments shortly after they were laid down

Combine with a visit to the main shopping street in Minehead plus the parish church on the hill above the town centre to study building stones. One can compare the partly metamorphosed, purple/red Hangman Sandstone with the bright red friable Triassic sandstones and breccias. There are also Blue Lias and Ham Hill Stone (from near Yeovil) to be seen.

Park by the harbour. Walk west from the harbour keeping to the foreshore (ST 963 478). A falling tide is important for this location. Edwards 2000. Half-day.

**14. CUSHUISH ST 1930** 3 km NE of Bishops Lydeard  
Morte Slates-Otter Sandstone-Cothelstone Fault



1. This is a good exposure of the Triassic Otter Sandstone, a thickly-bedded red and cream formation deposited in desert basins. Note that the beds do not show any sign that they were affected by the Variscan Orogeny as they followed that event. This sandstone erodes easily where there is arable and where traffic has worn unmetalled roads. It has been widely used in local buildings, especially between Bishops Lydeard and Williton.

2 Proceed up the lane and notice how the character of the cutting changes: brown, silver and grey, slaty, shiny rocks appear. We have passed from rock aged some 240 Ma to Devonian Morte Slates aged some 367 Ma. These older rocks are at a higher level than the younger Otter Sandstone. The latter has been let down against the older rocks by the Cothelstone Fault which runs along the southwest side of the Quantocks. It is not visible in the cutting as the wrenching has broken-up the rock and therefore the sides have weathered back. It is a strike-slip fault with perhaps some 16 km movement in the Variscan orogeny and some later reactivation.

3 Proceed up the lane and cross to the track where there are better exposures of the Morte Slates; note that the cleaved slates have themselves been deformed by earth movements *after* the muds were turned into slates possible as a result of movement on the nearby fault..

4 Return down the track to the road, turn right and note in the cutting unusual crumpling and angular folding of the slates in the walls of the cutting. These also may reflect the effects of sideways motion on the Cothelstone Fault (strike-slip faulting).

Park at Locality 1 (ST 197 303) Prudden 2001 Ch 19, Edmunds and Williams 1985. Combine with a visit to Hestercombe Gardens (See below.)

## **15. DUNKERY GATE SS 8940** 9 km SW of Minehead

Hangman Sandstone-Mansley Beds-goyles-heathland

This is a good place to explore the south side of Dunkery Hill. The high ground is underlain by the quartzitic Hangman Sandstones (Devonian) that support acidic soils and moorland vegetation. Dunkery Gate lies at the head of Mansly

Combe where the finer-grained slates and siltstones of the Mansley Beds are exposed. A deeply-cut goyle is being actively eroded during storms. Note that accelerated erosion is continuing upstream of the bridge and parallel to the hedgebank and this suggests that erosion has been influenced by the presence of an old trackway. There are fine views on a clear day from Dunkery Beacon. Circular walks can be planned.

Park at SS 895 406. The sides of the goyle are very steep so please take care; Edwards 2000. Hour/half-day.

#### **16. EBBOR GORGE ST 5248** 4 km NNE of Wells

Carboniferous Limestone-Quartzitic Sandstone Group-Dolomitic Conglomerate-thrust tectonics-karst

Ebbor Gorge is a National Nature Reserve with both geological and wild life importance. Follow the sign-posted trail from the display boards that leads down into the Gorge. High up on the right can be seen highly fractured Carboniferous Limestone which forms the sole of the Cheddar-Wells thrust and which overlies the younger shales and sandstones of the Quartzitic Sandstone Group which crop out on the valley floor. The footpath continues through exposures of Dolomitic Conglomerate and Carboniferous Limestone (Clifton Down Limestone). The latter shows crinoidal debris, bedding, small-scale tectonic features and limestone weathering effects. There are also small caves which have yielded a Late Pleistocene fauna, and rock screens which are thought to be relicts of a periglacial climate. On a clear day one can see across the Wessex Basin into Dorset; the predominately east-west lines of hills reflect the influence of variations in rock strength and geological structure. The view is even better from the Deer Leap car park and picnic site 1.5 km north of the Gorge (ST 522 498).

Park at ST 521 485 for the Gorge. Farrant, 1999, Green and Welch, 1965. Half-day.

**17. FROME ST 7849** 1.5 km from town centre  
Collection of monoliths from Europe

The European Community of Stone (ECOS) is an impressive collection of tall monoliths at the Community College close to the entrance. They were transported by lorry and ship and donated by various member countries of the EEC funded by numerous commercial organisations. The stones include a basalt from Germany, marble from Portugal, Portland Limestone from the UK and dolomite from Belgium among many others. They stand in a half circle in the form of an amphitheatre. The concept originated from a 'European Awareness' initiative in 1987.

Park at the College which is close to the B3090 leading out of Frome to the northeast (ST 784 4940). Hour.

**18. GLASTONBURY ST 5138**  
Junction Bed-Yeovil Sands-Holocene formations-landforms

Erosion has separated this outlier of Yeovil Sands from the main escarpment which can be seen some 26 km to the east. The intervening vale is Lower Lias clays. To the north are the Mendip Hills and, to the west, the Rhaetic Beds and Blue Lias of the Polden Hills. On a clear day the Palaeozoic massifs of the Quantocks, Brendon Hills and Exmoor can be seen. Fluvial and marine deposits of sand, clay, gravel and peat underlie the Somerset Moors and Levels which extend to the Bristol Channel. This is, perhaps, the best place for a comprehensive view of Somerset. The Junction Bed limestone, which includes the marlstone Rock Bed, forms a marked bench. The main street in Glastonbury has a rich variety of Palaeozoic and Jurassic building stones. The Abbey ruins have Doulting Stone facings with a core of Blue Lias and Marlstone.

Park in the town. Avery 1955. Half-day.



## **19. GLENTHORNE SSSI SS 7949** 8 km E of Lynton

Hangman Sandstone-tectonics-goyles

The Geological Conservation Review reads as follows:

- ✓ 'This coastal site has the most accessible and revealing section in the Trentisoe Formation of the Hangman Sandstone Group. The Hangman Sandstone represents the Middle Devonian sequence of North Devon and Somerset. It formed at a time when the area to the north (parts of that which is now South Wales and the Borders) was one of non-deposition or even erosion. These sandstones thus mark a shift southwards of the fluvial sediments more typically occurring within the Brownstone Group. The Trentisoe Formation, which contains interbedded ephemeral lake sediments, is shown here to have been deposited by distal, largely unconfined, sheet floods, a type of stream deposit not seen elsewhere in the British Old Red Sandstone. There are some spectacular actively eroding goyles.

Park at County Gate (SS 793 486). There is a circular walk of 4 km which drops down 350 m to the beach at Glenthorne (SS 799 497). The SSSI extends either side of Glenthorne. Beware danger of being cut off by in-coming tides. Exmoor National Park *Walks from County Gate* and National Trust leaflet *Countisbury and Glenthorne Cliffs*. Day/halfday.

## **20. GREENALEIGH SS 9548** 2.5 km NW of Minehead

Hangman Sandstone-tectonics-head-arcuate shingle ridge

Perhaps one of Somerset's best kept secrets! The small cove has good exposures of the Hangman Sandstone Group and provides a window on the sedimentary and structural features of the Devonian rocks of west Somerset. Features include cleaved slates, massive sandstones, folds and faults including strong indications of the NNW-SSE strike-slip faulting and

jointing which is prevalent over much of SW England. A relict periglacial slope is underlain by head banked against an old cliff line. There may be ancient beach pebbles below the head. An arcuate shingle ridge projects seaward with a small brackish marsh behind (cp sand and shingle deposits at Selworthy Sand (SS 9049) and Porlock Weir (SS 8648). This is a lovely unspoilt corner of Somerset with few visitors and is **highly recommended**.

Park in Minehead just beyond the harbour. Walk westward from Minehead Harbour along the road and footpath taking the path on the left which avoids a rough shoreline trek ascending through the woods at SS 964 477; pass Greenaleigh Farm buildings and make for cove at ST 952 482. National Trust. No facilities. Best at low tide. Edwards 2000. Day/half-day.

## **21. HAM HILL ST 4716** 6 km W of Yeovil

Jurassic Ham Hill Stone-Yeovil Sands-tectonics-tufa-gulls-building stone

This hill-top Country Park is administered by South Somerset District Council. Ham Hill Stone has been quarried since Roman times and widely used for local buildings, and especially for mouldings in churches over a wide area. Although many of the old workings are grassed over, there are some good exposures showing massive, trough cross-bedded, shelly limestones (Lower Jurassic). En échelon tension fractures faced with calcite crystals are associated with shear fractures showing horizontal striations and fibrous calcite lineations. The stresses that caused these features are probably the result of Tertiary reactivation of faults in the basement rocks. Associated stylolite-like, iron-stained cracks are best seen in walls of buildings. Gulls are well-developed with tufa deposits on the walls of the gulls. Superb views in a wide arc of South Somerset. Nearby Montacute House (NT) is built of Ham Hill Stone and is worth a visit (ST 499172). The hollow lane leading down to Montacute has good exposures of the Yeovil Sands at ST 494164.

Park near Prince of Wales pub. Walk north from pub to Monument for rock faces and views. Also follow Lime Kiln Trail to see deep quarry with gulls and limekiln with adjacent shattered rock. There is a working quarry at the southern

end of the Hill (Tel. 01935 824950). The Country Park is a popular venue for family outings. Car parks, pub, information and toilets. A geological guide to Ham Hill is on sale at the ranger's hut (Prudden 1995), Wilson et al.1959.

## **22. HESTERCOMBE ST 2428** 4 km NNE of Taunton

Intrusive diorite-Morte Slates-terminal curvature-building stones-famous gardens

The primary attractions are the formal Edwardian garden and the recently restored 18th Century landscape garden in the Combe. However, there is much of interest for the geologist. The Combe contains the Hestercombe diorite (the Memoir called it a lamprophyre). There are many small exposures of cleaved Devonian siltstones and sandstones (Morte Slates Formation). The overflow car park exposed the contact of the diorite with the Devonian Morte Slates. An artificial waterfall has been restored below which are huge quartz boulders collected from the Devonian formations plus blocks of tufa. Cross-laminated siltstones and sandstones with ripple marks can be seen in the walls and flagstones of the formal garden. Thus there are opportunities to study Devonian sediments, Variscan tectonics and the mysteries of the igneous intrusion. The Orangery shows Jurassic Ham Hill Stone from near Yeovil at its best. Other buildings show Douling Stone and North Curry Sandstone. The gardens look out over the Vale of Taunton Deane (Triassic red marls) toward the Blackdown Hills (Upper Greensand).

Parking for cars and coaches, refreshments and toilets at ST 240 288. Hestercombe Gardens, Cheddon Fitzpaine, Taunton TA2 8LG. Tel: 01823 413747. [www.hestercombegardens.com](http://www.hestercombegardens.com). *Geological highlights of Hestercombe Gardens* is *In press.*, Edmonds and Williams 1985.

### **23. HOLWELL ST 7245** 5 km S W of Frome

Fissures with Triassic and Jurassic infills-tectonics

There are old quarry workings down a track to the right of the pub (ST 729 452). A large multi-stage fissure runs the length of an old quarry wall at the eastern end of quarry used as a car park. Part of the fill has collapsed enabling Triassic, Rhaetian and Jurassic sediments plus the mineralisation to be examined at close quarters. The sediments appear to have entered the fissures in both a lithified and partly lithified state. Deformation of the sediments seems to have been associated with the opening of the fissure and the intrusion of the sediments. There are footpaths to the nearby village of Nunney which has a nice pub, castle ruins (Doulting and Bath Stone) and sarsen stones (Tertiary silcretes) on a wall and near castle at the bottom of the hill leading from Nunney Catch.

Park in lay-by to the east of the Bear Inn. Please first contact Mr R Bullus of Valley Sawmills, Holwell, Nunney, Frome for permission to visit the site.

A viewing platform has been built overlooking Colemans large quarry on the north side of the workings. Park in lay-by at sharp corner on the road the Whatley at ST 7231 4529 and walk some 200 m NNW along footpath. There is a fascinating view both of the quarry activity and the undulations of the same unconformity as seen at Tedbury Camp quarry. In addition the view includes the overlying Jurassic and Cretaceous terrains to the east. There are few better places where one can appreciate geological time and space.

#### **24. HURLSTONE POINT SS 8949** 7 km W of Minehead

Hangman Sandstone-tectonics-mineralisation-screes-shingle ridge

Take the path from Bossington car park (SS 898 480) and then the 'recommended path' at the seaward end in order to examine the nature, distribution and vegetation cover of the screes in Hurlstone Combe.

Return downhill to the footpath and make for the old coastguard lookout for a close-up view of the Devonian Hangman Sandstone. The view to the west is full of interest (see Selworthy entry). Descend to the shingle beach where there are good exposures of the Hangman Sandstone, tectonic features including a tight fold and mineralisation. Proceed for 1 km along the shingle storm ridge to the far bank of the stream whence one can return to Bossington. Look out for variations in the shape and composition of the shingle both along and across the beach. The shingle ridge is now subject to a policy of 'managed retreat' owing to the difficulty of maintaining the ridge.

Park in Bossington at SS 898 480. Edwards 2000, *Walks around Selworthy (ENP)* and *Explore Holnicote (NT)*. Half-day/day.

#### **25. KILVE ST 1438** 10 km WNW of Bridgwater

Jurassic Blue Lias-ammonites and trace fossils-tectonics-valley gravels-cliffs and foreshore-oil retort

The cliffs and foreshore give good exposures of Lower Jurassic Blue Lias. There are rhythmic sequences of black shales, marls and limestones. Joint patterns and faults point to both normal extensional, and reverse compressional, faulting. Ammonites and trace fossils can be found but are difficult to extract so please do not bother. Perched valley gravels composed of Devonian sandstones can be seen on the clifftop at East Quantoxhead steps. There are solution effects in the nearby limestones as a result of acidic water from the Quantocks passing through the Blue Lias. The

manner of the progressive uncovering and removal of the limestone blocks can be demonstrated. Combine cliff-top walk to/from East Quantoxhead with a ramble along the foreshore. Note remains of brick retort built to extract oil from the dark bituminous shales in 1916; 1 m<sup>3</sup> of shale produced 156 litres of oil.

Cars only park at end of the lane (ST 145443) or at East Quantoxhead (ST 138436). Lilstock (see below) is another good venue for similar features. Beware incoming tide, and falling rock below cliffs. Pub. Half day/day. King, 1997, Whittaker and Green 1983.

**26. KINGSCLIFF QUARRY AND WOODS ST 2732** 6 km SW of Bridgwater  
Morte Slates-tectonics-Otter Sandstone-holloway

A long line of old quarry workings. Take care as the ground is uneven and not all of the quarry faces are accessible. The Morte Slates rock formation shows south-dipping sandstones, siltstones and cleaved slates. These are Devonian sediments that have been severely compressed and sheared during the Variscan Orogeny. Everywhere there is reddening from the Permo-Triassic rocks which overlay the older Devonian rocks. Otter Sandstone can be seen in the lane leading down from Shovel Farm to North Petherton (ST 2840 3272) where some 2m of bedded red-stained sub-angular sands dip gently to the east. If time allows follow the track upstream for a pleasant walk through the woods for about 1100m and return back up the track that ascends the valley side on the left and then onto the lane. Note how traffic over the years has cut a holloway in the Morte Slates.

Park just off the lane to Boomer Farm at ST 278 328. Edmonds et al 1985, Prudden 2001. Half-day. The locality is owned by the Somerset County Council.

**27. LILSTOCK ST 1745** 9 km WNW of Bridgwater

Lilstock Formation-Blue Lias-tectonics-cliffs-foreshore

Cliff sections west of Lilstock near the clifftop Range Station show examples of listric extensional faults and roll-overs. The hinge and back-fault zones are well-displayed. This is an excellent place to study N-S extensional tectonic structures. The cliffs are in Blue Lias (see Kilve entry). There are also the remnants of a small harbour now blocked by the longshore drift of shingle. There are good exposures of Rhaetian mudstones, marls, dark shales and limestones in the cliffs to the east of the stream.

Park at ST 173 451. Parties please note that the lanes are very narrow. Whittaker and Green 1983. Half-day.

**28. MIDDLE HOPE ST 3360** 5 km N of Weston-Super-Mare (North Somerset)

Carboniferous Limestone-volcanic rocks-raised beach-salt marsh

Swallow Cliff (ST 3245 6605) on the north side of the promontory has a well-exposed succession of Carboniferous Limestone containing a variety of volcanic rocks including tuffs, lapilli and basaltic pillow lavas. The sediments include crinoids, slumping, shelly material, cross-bedding and coral colonies overwhelmed by the tuff. There is a lot of calcite veining. As if this was not enough for one day, there are further exposures at ST 3375 6645 including vertical worm burrowing-tubes penetrating the bedding. Add on to this list structural features, head, a superb raised beach, salt marsh accretion to the south of the promontory plus extensive views of the Bristol Channel to Exmoor and South Wales. **It is a very special place!**

Cars can park at ST 330 660; coaches at ST 3320 6465. Check tides which have a big range. Crowther 1992, Whittaker and Green 1983.

**29. PLAINSFIELD ST 1937** 3 km S of Nether Stowey

Devonian Limestone-tectonics-building stones-Quantock parkland

Superb parkland on the northeast side of the Quantocks. An old wooded quarry (ST 1898 3721) 200 m north of Pepper Hill Farm shows Devonian limestone in an overturned syncline. The fine gatehouse (ST 1938 3738) on the Plainsfield to Nether Stowey road includes red Otter Sandstone, grey-green Cockercombe tuff (once quarried nearby but quarry now overgrown) and pale oolitic Bath Stone. The stone used in farm buildings alongside the road in Plainsfield are worth viewing as representing the local geology.

Park in small car park at ST 1929 3690. Prudden 2001. Hour/half-day.

**30. PRIDDY ST 5251**

Limestone scenery-mining

This venue has a similar range of features to those at Charterhouse (see above).

Park at Stock Hill Forest (ST 349 513). Pubs. Farrant (1999) is a most valuable guide to the area. Note his warning on page 2 concerning private land and access to caves. Day/half day.



### **31. RADSTOCK ST 6955** (North East Somerset)

Museum-coal mining-local geology

This award-winning museum has an inviting display related to the history of mining in the Somerset Coalfield and local geology with much else besides. Highly recommended.

Park near Museum in Waterloo Road. Museum is in the Market Hall in the centre of Radstock opposite the Miner's Wheel. Tel: 01761 437722. Radstock Museum, Waterloo Road, Radstock, BA3 3ER. [www.radstockmuseum.co.uk](http://www.radstockmuseum.co.uk).

### **32. SELWORTHY BEACON SS 9147** 6 km W of Minehead

Hangman Sandstone-tectonics-mineral vein-heathland views

There are extensive views from the car park SW of Selworthy Beacon at SS 910 487. Note the famous shingle beach which fronts Porlock Bay, the even (Tertiary?) skyline, the narrow, deep valleys on the north side of Dunkery Hill, and the lowlands floored with Permo-Triassic sediments. These lowlands are mostly half-grabens containing more easily eroded sediments set among the more resistant Devonian rocks. Combeshead Quarry, 100 m north of the road at SS 9283 4767, shows Devonian Hangman Sandstone. Note the marked NNW-SSE joints-a stress feature found in many Exmoor exposures (Variscan and/or Tertiary in age). There is a brecciated vein cemented by the minerals barite and hematite plus finer sediments that have developed slaty cleavage. The Jurassic Lower Lias crops out below the south side of the hill. The soils derived from the sandstones tend to be coarse loams whilst the higher parts have an acidic peaty surface horizon and underlying hardpan.

Follow the cul de sac road that leads from North Hill in Minehead to the Beacon. Edwards 2000. Hour/half-day.

### **33. SIMONSBATH SS 7739** 11 km SSE of Lynton

Kentisbury Slates-mining and minerals-tectonics-terminal curvature

A nice way to enjoy both countryside and geology is to follow publicised trails. An ENP leaflet provides a route map and a general commentary. Attention is drawn to former mining activity (iron and copper) especially where the trail passes the Wheal Eliza site that has an interpretation board. Quartz and iron mineralisation can be detected in outcrops and subsoil. The Devonian Kentisbury Slates are exposed in the small quarry by White Water stream (SS 7958 3793) and the visitor may care to ask which features represent dip, cleavage, joint and fault planes. The hummocky landforms near Cow Castle (SS 795 372) are an interesting feature found here and elsewhere along valley bottoms on Exmoor. They may be partly the result of erosion acting upon faulted blocks of resistant rocks. Rocky crags poke up through the head that is widespread. Periglacial processes are thought to be the cause of surface slates being bent over downhill as at SS 780 387 (terminal curvature).

Park in Simonsbath where there are pubs and cafes. The route is 14.5 km long and takes some 4 hours but can be shortened. Further reading: ENP leaflet *A walk from Simonsbath* and Edwards 2000.

### **34. ST AUDRIES BAY ST 1043** 3.6 km E of Watchet

Mercia Mudstone-Grey Marl-Westbury Beds-Lilstock Formation-Blue Lias

Quite an attractive bay with good accessible exposures of red Mercia Mudstone group mudstones and siltstones, Tea Green Marl, Grey Marl, Westbury Beds (dark shales with thin limestones), Lilstock Formation (limestones and marls). The latter contains a bed with slump structures possibly the result of an earthquake or asteroid!). There are ammonites on the foreshore to the west of the Bay. The succession records the transition from a desert plain environment to fully marine conditions.

Follow the narrow lane down from Rydon Farm (ST 100 425) and park at Home Farm (ST 104 430) (cars only) where there is a shop for campers. Take the path down to the beach. Beware falling rock from unstable cliffs and the incoming tide. Access is difficult along the immediate clifftops. Whittaker and Green 1982, Simms 2003. Half-day/day.

### **35. STAPLE FITZPAINE ST 2618** 7 km SSE of Taunton

Sarsen stones-Blue Lias-landslips-Blackdown Plateau

A number of large sarsen stones can be seen by the roadside and at the back of the Greyhound Inn (ST 263 184). These are Tertiary silcretes that once formed on the Blackdown Plateau. They arrived at their present positions partly through periglacial mass movements in the Ice Age but also many have been clearly moved by man. The Greyhound is built of Blue Lias and some blocks contain the small Rhynchonellid *Calcirhynchia calcaria* (do not remove please!).

Combine by driving up the hill to the south to Castle Neroche where there is a nature trail, Iron Age hillfort and 11<sup>th</sup> century castle earthworks (ST 274 157). The nature trail winds around the face of the Cretaceous Upper Greensand escarpment through pleasant woodlands. There is a massive landslide with steep backscars at the top and tumbled hummocky ground below, clearly the result of late Ice Age mudslides and flows (cp the cliffs at Charmouth today). There are extensive views from the hilltop. The Blackdown Plateau is a remarkable feature formed by long subaerial erosion in a sub-tropical climate following the retreat of the Chalk seas. There are superficial deposits of Tertiary Clay-with-Flints, sands and rounded chatter-marked cobbles.

For Castle Neroche take the road south from the Greyhound and turn left at the top of the hill. Park at the start of the nature trail (ST 274 157). Prudden 2001. Half-day.

**36. STEART AND WALL COMMON ST 2746** 9 km N of Bridgwater

Accretionary coastline-shingle ridges-salt marsh-submerged forest

This is a somewhat lonely place in the estuary of the River Parrett. Deposition of sand and marine mud is the dominant process together with longshore drift of shingle from the west. The post-glacial rise of sea level, together with the input of marine and fluvial sediments, has led to rapid sedimentation which continues. There is a quasi-relict shingle beach washed only by the very highest tides, plus salt marsh and a submerged forest at lower levels on the foreshore near Stolford (ST 225 466). The area is part of the Bridgwater Bay National Nature Reserve. Combine with a visit to see the tidal estuary and its mud at Combwich (ST 260 425).

Park at Wall Common (ST 262454 or near Dowells Farm (ST 275459). Narrow lanes. Access to Fanning Island and Stert Point is restricted. Warden Tel.: 01278 652426. Crowther 1992, Whittaker and Green 1983. Hour or half-day.

**37. TAUNTON ST 2224** Museum-building stones

The County Museum has a small display of fossils and some other items of geological interest. The Somerset Studies Library in Paul Street has a useful collection of local geological reference material.

Within a radius of some 300 m of the Museum there is a most remarkable 'exhibition' of building stones. The Museum has Blue Lias, Permo-Triassic sandstones and breccias, Doulting Stone, Devonian sandstones and slaty rocks, and green Cockercombe Tuff. Nearby can also be seen Upper Westleigh limestone, tectonised Carboniferous Limestone, Cretaceous chert and Calcareous Grit, Guiting Stone and Bath Stone with some granite and dolerite thrown in. A large sarsen brought from Staple Fitzpaine sits in the Museum garden.

There are various car parks in central Taunton including one opposite the Museum. Somerset County Museum, The Castle, Castle Green, Taunton TA14AA (Tel 01823 255 504). [www.county-museum@somerset.gov.uk](mailto:www.county-museum@somerset.gov.uk). *Geology and Landscape of Taunton Deane* (Prudden 2001) plus free leaflet from the museum contain details of trail suitable for handicapped people.

**38. THURLOXTON ST 2730** 4 km SSW of North Petherton

Morte Slates-terminal curvature-holloway-building stones-Otter Sandstone calcretes

Thurloxton lies on the edge of the Devonian outcrop where the Morte Slates formation passes eastward below the Permo-Triassic strata. The siltstones and fine sandstones of the Morte Slates have been used for the walls of the parish church of St Giles whereas North Curry Sandstone has been used for the buttresses and Ham Hill Stone used for the dressings. The road leading southward from the church is in a deep cutting (ST275 304) and exhibits striking examples of terminal curvature i.e. where the near-surface cleaved beds have been bent and turned over by downhill creep of the surface under periglacial conditions. Note the angular breaks.

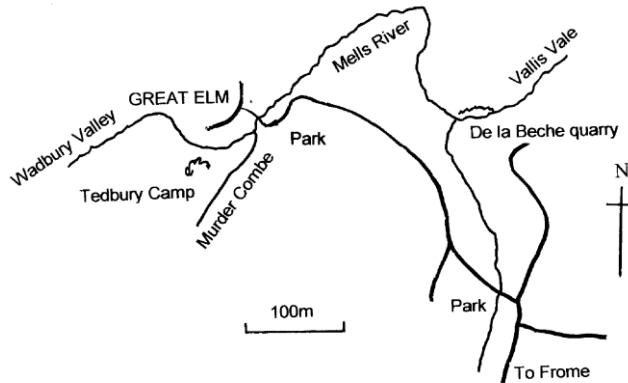
Permo-Triassic rocks can be seen in another holloway at North Newton which lies 2km to the ENE near Churchill Farm (ST 293 310). The Otter Sandstone shows whitish, blobby 'calcretes' that indicate the concentration and precipitation of calcium carbonate in the subsoil owing to the evaporation of ground water under an arid climate.

Park by Thurloxton Church and in lane at North Newton. Prudden 2001. Half-day. Combine with visit to Broomfield for a day trip.

**39. VALLIS VALE-GREAT ELM-WHATLEY ST 7449** 2 km NW of Frome

Carboniferous Limestone-Inferior Oolite-unconformity-borings-tectonics-narrow valleys

A classic area with a number of old quarries where Triassic and Jurassic strata lie unconformably upon steeply dipping Carboniferous Limestone.



Location of sites

**Tedbury Camp** Inferior Oolite limestones rest upon the eroded beds of the Clifton Down Group in an old quarry cleared by English Nature (ST 746 489). Removal of the Inferior Oolite has created an intriguingly smooth surface slightly disturbed by later earth movements. Is it simple a wave-eroded surface as is usually suggested? The surface is

encrusted with oysters and several generations of borings, filled with lighter-coloured sediment. Seen from above one can discern a Variscan tear fault complex. There is an exposure of the Carboniferous Limestone beds at the southern edge of the quarry and these are suitable for visiting groups in bed by bed description e.g. thickness, lithology, fossil content, bedding planes and aspects of diagenesis). One can also compare the Inferior Oolite limestones with the Carboniferous Limestone beds remembering that the latter have suffered deep burial and the effects of the Variscan Orogeny. Access now improved and site cleared.

**Wadbury Valley** The narrow steep-sided valleys are a characteristic feature of the area. There is an interesting walk up the valley from Great Elm to Mells alongside the Mells Stream passing the old Fussell ironworks. Do not take the valley occupied by the railway line. Bus back to Great Elm or follow the road and footpaths via Whatley Quarry, Whatley Combe and Murder Combe.

Cars only can park in the valley bottom at Great Elm where the narrow road from Great Elm to Egford crosses the Mells stream (ST 749 491). Follow the footpath which leads SW on the S side of the stream in Wadbury Bottom. Keep well clear of the active railway and tunnel. Pub in Mells. Day/ half-day.

**Vallis Vale** A series of old quarry workings include the unconformity first figured by De La Beche in 1846 (ST 756 492) and can be explored by following the footpath through the Vale for 1 km. Tedbury Camp is a safer place for group visits.

Cars can park near the southern entrance to the Vale at ST 757 484. Hour/half-day.

#### **40. WATCHET-DONIFORD ST 0743** 10 km E of Minehead

Triassic and Jurassic formations-tectonics-cliff erosion-Pleistocene gravels and brickearths-periglacial structures

The cliffs and foreshore east of Watchet Harbour have a wide spectrum of geological interests. Seaward-dipping Triassic red marls and green siltstones are being rapidly eroded just east of the harbour. A footpath on the clifftop leads eastwards to steps down to the foreshore where the E-W trending Doniford Bay Fault may be viewed (ST 078 435); Lower Lias beds of *semicostatum* Zone are let down on the south side against mudstones and marls of the Mercia Mudstone Group. A variety of extensional and compressional meso-scale fractures are well-displayed in the cliff face between the steps and the harbour. Further along Doniford Bay the Lower Lias shales and limestones show small-scale flexures. Further to the east the overlying Pleistocene valley gravels and brickearths descend to beach level and show cryoturbation structures. Low tide allows exploration of the Triassic marls, siltstones, shales, bone bed and Jurassic limestones. Cliff retreat is a problem and the remedial measures to protect the railway are of interest. Visit the Jubilee Geological Wall on the station platform plus Watchet Museum on the west side of the harbour.

Park by the harbour. Beware of tides. Half day/day. King 1996, Whittaker and Green 1983.

#### **41. WELLS ST 5545**

Local Mendip geology-caves-minerals-building stones

A homely but important local museum stands close to the Cathedral. The displays illustrate many aspects of Mendip geology e.g. rocks, minerals and fossils, especially the animal remains found in Mendip caves, and ores from the mining areas. There are work, store and lecture rooms. Dolomitic Conglomerate can be studied in nearby buildings and marginal Lower Lias conglomerate (Downside Stone) can be seen in the walls of the Old Deanery on The Green. Colchester and Wallis (1987) provides a guide to the building stones in the Cathedral (on sale at the Museum and the Cathedral).

Park in Wells. The Museum is at 8 Cathedral Green, Wells, BA5 2UE (Tel: 01749 673477) (ST 551 459). Colchester and Wallis 1987,



**42. WESTHAY ST 4241** 8 km WNW of Glastonbury

Visitor Centre-Holocene stratigraphy-peat-trackways

**CLOSED**

The Peat Moors Visitor Centre (ST 426 415) illustrates the natural history, archaeology and exploitation of the Somerset Levels with special reference to peat. The area includes a national nature reserve and some of Europe's oldest prehistoric trackways. This is a classic area for the study of post-glacial stratigraphy. Precede, or follow-up, with a visit to the Westhay Moor National Nature Reserve (parking at ST 457 437). Walk down the long drove to see the old peat workings and the wildlife. There is a relict raised bog at ST 472 448.

Park at the Peat moors Visitor Centre, Shapwick Road, Westhay near Glastonbury BA6 9TT (Tel.: 01458 860697). Toilets and tearoom. Avery 1955, Godwin 1981, Coles and Orme 1990, Cox 1993. Half-day.

**43. WESTON SUPER MARE 3160** (North Somerset)

Museum-Mendip mines and minerals

The town museum has displays illustrating minerals and mining associated with the Mendips.

Park in the town. The Museum is in Burlington Street, Weston Super Mare BS23 1PR. [www.n-somerset.gov.uk](http://www.n-somerset.gov.uk).

**44. WOOKEY HOLE ST 5347** 3 km NW of Wells

Caves-Dolomitic Conglomerate

A commercial cave open to the public with a half-mile tour including solution cavities, especially the new chambers reached by the tunnel 'Two hours of Mystery, History and Fun.' Note the Dolomitic Conglomerate at the entrance and in the gorge.

Park near the caves ST 531 480. Wookey Hole Caves Ltd, Wells, Somerset, BA5 1BB (Tel: 01749 672243). www.wookee.co.uk. Green and Welch 1965. Half-day.

#### **45. YEOVIL ST 5516**

Yeovil Sands-escarpment-Yeo Gap-gulls-building stones-Junction Bed

**Yeovil Sands Escarpment** The Yeovil Sands escarpment runs from the Iron Age Cadbury hillfort (ST 627 252) to a similar feature at Ham Hill to the west of Yeovil (ST 479 168). The Yeovil Sands are well-exposed in the lay-by at Babylon Hill on the A30 on the east side of Yeovil (ST 585 161); note the very fine grained sands, nodular concretions, sandstone beds, ripple-lamination, trace fossil activity picked out by weathering and wide vertical gulls. To the south the valley narrows where the Yeo Valley crosses the outcrop of the relatively resistant Yeovil Sands.

Park in the lay-by off the westbound carriageway of the A30 near the top of Babylon Hill (ST 585 161). Half-hour.

**Bradford Hollow** This is a fine example of the many sunken lanes in the south Somerset and north Dorset cut in the Yeovil Sands and still in an unmetalled state. These holloways are the result of animal and cart traffic breaking-up the surface over the years plus intense rainfall washing away the loosened sands. South Somerset shows some of the worst soil erosion in Britain with many fields having lost over .5 m of top soil. Unhappily, the Yeovil Sands are favoured for arable cultivation especially potato growing. See above for other features to observe.

Take the road that leads to stores from the roundabout at the bottom of Babylon Hill. A track continues up the escarpment to Bradford Hollow.

**Yeovil Town Centre** (ST 556 160). St. John's Church has mouldings of Ham Hill Stone—a bioclastic limestone. Otherwise it is built of Upper Lias Limestone which is part of the Junction Bed. This fossiliferous, earthy, rubbly condensed limestone with ferruginous algal mats was once dug locally. Marks and Spencer's store is oolitic Guiting Stone from the Cotswolds, the Public Library is Bath Oolite Westwood Stone, the HSBC bank is mainly crinoidal Douling Stone and the Burger King opposite is dark brown, ferruginous Hornton Stone from Edge Hill in the Cotswolds. The white-faced Westminster Bank is Portland Limestone. There is now a coloured illustrated guide (free but s.a.e please) to the buildings stones and the newly designated Yeovil Country Park (Prudden, 2005).

Park in the town centre. Green 1992, Prudden 1995 and 2005

## **SHORT GLOSSARY**

**Bioclastic** Limestone containing a lot of shell debris

**Colluvium** Hillwash

**Conglomerate** A rock containing rounded or sub-rounded pebbles or boulders

**Cross-bedded** A series of inclined bedding planes related to the direction of current flow

**Brecciated** Broken-up

**Cryoturbation** Structures caused by the pressure of ground ice

**Dolomite** Rock containing more than 15% magnesium carbonate

**Dressings and mouldings** Carved stone used for doorways and window tracery.

**Ferruginous** Rich in iron

**Glauconitic** A hydrated silicate of iron and potassium.

Gypsum Calcium sulphate  
Holocene The most recent geological period  
Ma Age in million of years  
Metamorphosed Changed by heat and/or pressure  
Oolite Used in two very different senses: (i) a limestone containing ooliths; (ii) an historic stratigraphic term referring to certain groups of rock formations  
Periglacial Region adjacent to an ice sheet  
Podzol An acid soil with a leached surface horizon  
Ripple-lamination Undulations in sediment caused by movement of water over substrate  
Slickenside A smoothed worn surface  
Stylolite A wiggly suture-like boundary  
Tectonic Structural features of the rocks  
Terminal curvature The bending over of near-surface slaty rocks resulting from downhill creep  
Variscan Orogeny A period of mountain building

### **SELECT REFERENCES**

*Geology of Somerset* by Hardy is the best popular account of Somerset geology. More detailed regional summaries are *Bristol and Gloucester region* by G.W.Green (1993), and *The Hampshire Basin and adjoining areas* by Melville and Freshney (1982) from the British Geological Survey (BGS) .

Avery, B.W. 1955. *The soils of the Glastonbury district of Somerset*. Memoir of the Soil Survey of England and Wales. HMSO.

Bristow, C.R. et al. 1995. Sheet 313 *Geology of the country around Shaftesbury*. BGS memoir.

- Bristow, C.R. et al. 1999. Sheet 297 *The Wincanton district: a concise account of the geology*. BGS memoir.
- Chard History Group. 1972. *Chard: a geological survey*. Available from Chard Museum, High Street, Chard.
- Coles, J.M. and Orme B.J. 1980. *Prehistory of the Somerset Levels*. Somerset Levels Project.
- Cox, M. 1993. *The Peat Moors Visitor Centre*. From Taunton Museum and the Somerset public libraries. 37pp.
- Crowther, P.R. (ed), 1992. *The coast of Avon*. Note that there are relevant chapters on the geology including Middle Hope, Berrow wetlands and salt marsh.
- Duff, K.L. et al. 1985. *New sites for old: a student's guide to the geology of the east Mendips*. Nature Conservancy Council. (Out of print).
- Donovan, D.T. and Kellaway, G.A. 1984 *Special sheet Geology of the Bristol district: the Lower Jurassic rocks*. BGS memoir.
- Edmonds, E.A. and Williams, B.J. 1985. Sheet 295 Taunton and the Quantock Hills. BGS memoir.
- Edwards, R.A. 1999. Sheets 278 and 294 (part) The Minehead district-a concise account of the geology. BGS memoir.
- Farrant, A. 1000. *Walks around the caves and karst of the Mendip Hills: a field guide*. British Cave Research Association Cave Studies Series no. 8. Available from BCRA sales, BCM BCRA, London WC1N 3XX.
- Finlay, D.C. 1965. The soils of the Mendip district. Memoir of the Soil Survey of England and Wales. HMSO.
- Godwin, Sir H. 1981. *The archives of the peat bogs*. Cambridge University Press.
- Green, G.W. and Welch, F.B. Sheet 280 *Wells and Cheddar*. BGS memoir.
- Hardy, P. 2003. *The geology of Somerset*. Ex Libris Press.
- Kellaway, G.A and Welch, F.B.A. 1993 *Special sheet geology of the Bristol district*. BGS memoir.
- King, A. 1997. *Fossil ammonites from the Somerset coast*. Somerset County Museums Service. From Somerset County Museum, Taunton Castle, Taunton TA1 4AA.
- Prudden, H.C. 1995. *Ham Hill: its rocks and quarries*. South Somerset District Council. From Tourist Information Centre, Petters Way, Yeovil BA20 1EA.
- Idem. 2000. *The building stones and geology of Fyne Court and Broomfield*. Somerset Wildlife Trust.
- Idem. 2001. *The geology and landforms of Taunton Deane*. Taunton Deane Borough Council.
- Idem In press. *The geological highlights of Hestercombe Gardens*. Hestercombe Gardens, Cheddon Fitzpaine.

- Idem. In press. *Rocks and Landscape in and around Yeovil*. South Somerset District Council.
- Idem 2003. Somerset building stones. *Proceedings of the Somerset Archaeological and Natural History Society*. **146**. 27-36.
- Idem. 2005. *Rocks and landscape in and around Yeovil*. South Somerset District Council.
- Simms, M. J. 2003. Uniquely extensive seismite from the latest Triassic of the United Kingdom: Evidence for bolide impact? *Geology*, **31**, 557-560.
- Whittaker, A. and Green, G.W. 1993. *Sheets 263 and 295 Weston super Mare*. BGS memoir.
- Wilson, V. et al. 1959. *Sheets 312 and 317 Yeovil and Bridport*. BGS memoir.

### **Building stones in the region**

*Bristol: heritage in stone*. Eileen Stonebridge. 1999. Thematic Trails.

*The building stones of Devon*. A. W. Gale et al. 1992. The Devonshire Association.

Building with stone on Wessex over 4000 years. Tim Tatton-Brown. 1998. *The Hatcher Review*, **V**, No.45.

*Exeter in stone*. Jane Dove. 1994. Thematic Trails.

*Exmoor Geology*. R. A Edwards. 1999. Exmoor Books.

*The geology and landscape of Taunton Deane*. H. C. Prudden. Taunton Deane Borough Council.

*The geology of building stones.* J. Allen Howe. 1910. Arnold (reprinted Donhead Press)

*The geology of Somerset.* P. Hardy. 2003. Ex Libris Press.

*Ham Hill: the rocks and quarries.* H. C. Prudden. 1995. South Somerset District Council.

*The landscape of South Somerset.* 1993. P. H. Smith et al. South Somerset District Council.

*The natural stone directory.* C. Reeves (Ed). The Natural stone specialist.

*The pattern of English Building.* Alec Clifton-Taylor. 1987. Faber.

*Quarrying in Somerset.* 1971. Somerset County Council.

*Stone: an introduction.* Asher Shadmon. 1996. Intermediate Technology Publications Ltd.

*The stones of Wells Cathedral.* n.d. Wells Natural History and Archaeological Society.

Stone quarrying in the *Discover Dorset* series. 1998. The Dovecote Press.