

ROSEBERRY TOPPING GEOTRAIL EXTRA

More information about features of interest noted on the Geotrail by the sign 'Ψ'.

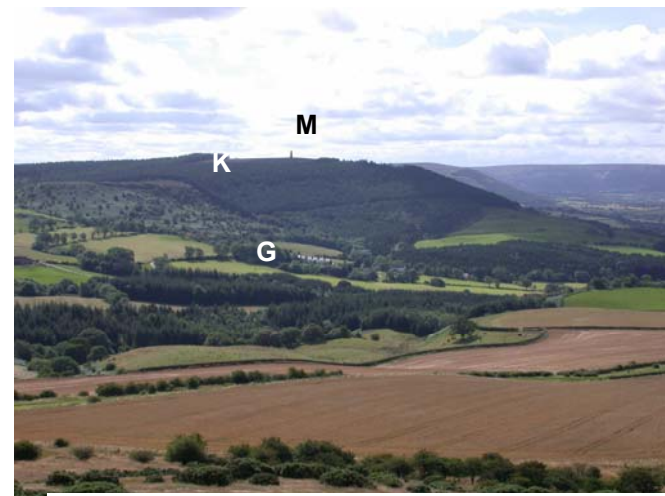
Ancient Roseberry (stop 2)

The Topping's famous name is most likely derived from the Viking (Old Norse) '*Othenesberg*' (Odin's Hill) and '*toppinn*' (hill-top). The subject has been discussed amongst many other interesting matters by the Great Ayton Community Archaeology Project group in their book 'Roseberry Topping'.

Alum (ascent from 8)

The alum industry flourished from around 1600 to 1870. Alum is aluminium alkali sulphate and was a valuable commodity with many uses including the fixing of colours in dyeing. Something like 100 tons of shale was required to produce 1 ton of alum and there were large quarries both along the coast and the Cleveland Hills escarpment. The shale has not been worked on Roseberry Topping but the Cockshaw Hill quarry can be seen from here

looking SE just to the left of Captain Cook's Monument.



View to the south from the summit showing the site of Gribdale Gate aggregate quarries and mines (G) along the Cleveland Dyke and alum workings below Cockshaw Hill (K). The pillar is Captain Cook's Monument (M)

High level depressions (seen from stop 10)

The archaeological or geological origin of the line of depressions at about 224m a.s.l. is unclear. Geologically, they are well above the Jet Rock and there is no obvious reason for quarrying or mining, although ochre production has been suggested. There are many other archaeological features on the slopes but it is

often difficult to distinguish these from the depressions that have resulted from mining subsidence.

The 1912 Landslip (stop 8)

The fall took place in 1912 and may have been induced by the ironstone mining although the owner, J. J. Burton, strenuously denied this (Jay-Jay, as he was known, was a geologist and naturalist as well as an industrialist). The rotational slide gave rise to the present asymmetrical shape of the Topping that is so much admired by local artists and photographers.



Close up of the sandstone cliff and the boulder field formed in 1912

Jet Working (stop 10)

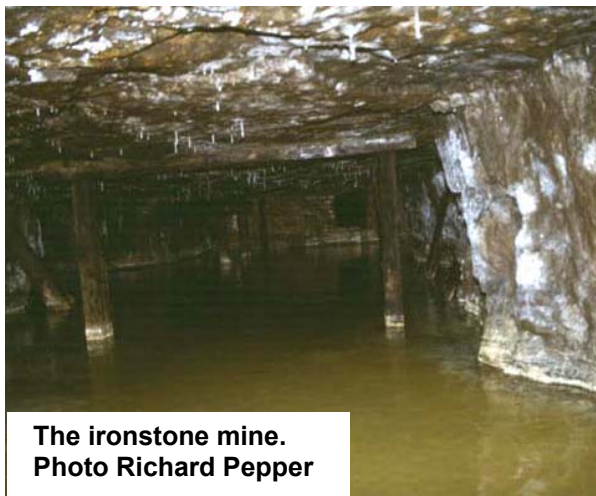
Jet is fossilised, waterlogged, compressed wood from Araucarian (monkey puzzle) trees and is usually found as thin planks.

Jet jewellery was most popular in Victorian times and although Whitby was the main centre of the industry mining took place over much of Cleveland. The Jet Rock, in which the jet is found, consists of thinly laminated mudstone, often referred to as 'paper shale'. It is typically rich in pyrite (iron sulphide) and oil. Whilst jet was usually mined by means of numerous small, shallow drifts, there are a few quarries notably here on Roseberry Common and at Cockshaw Hill.

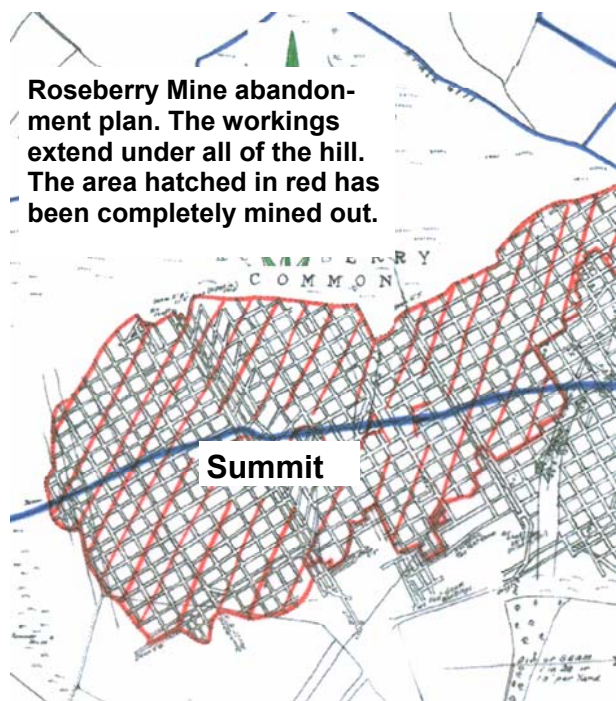
Roseberry Ironstone Mine (view from summit and diversion down Airyholme Lane)

From the summit of the Topping you can see where the drifts were located as well as the sites of former mine buildings. The line of the tramway can be followed, first down Airyholme lane, then turning sharply to the right (west) and curving to reach the northern flank of Cliff Rigg from whence it descended to the main railway. The mine is on private land and entry into the workings is difficult and dangerous. There are now few surface remains but the ruins of the powder magazine can be seen about 200m to the S.

Mining took place during two periods, 1871-87 and 1906-21. Production during the first period was by the Roseberry Iron Co. and only amounted to about 50,000 tons. It involved some initial quarrying of the Main Seam and the driveage of twin tunnels right through the Topping that daylighted on the NW face. Later, the Tees Furnace Co. reopened the mine on a bigger scale. Mining was by means of a criss-crossing pattern of 'bord and pillar' workings with the pillars being removed ('goafed') on retreat. The Main Seam was about 2m in thickness at Roseberry, much thinner than in the Eston mines to the north. The quality was also inferior.



The ironstone mine.
Photo Richard Pepper



Roseberry Mine abandonment plan. The workings extend under all of the hill. The area hatched in red has been completely mined out.

Summit

Fossils and the Jurassic environment

At places like Roseberry Topping fossils are not usually well preserved and it is best just to spot them, use them to interpret the geology and leave them for others to do likewise, rather than to try to collect them. If you must collect, the best place to do this is on the pebble beaches such as at Marske.

Staithe Sandstone shell beds (stop 5)

The sandstone often contains beds that are packed with sea bottom living bivalves such as oysters and cockles. These animals originally formed shell



The fossil leaf bed below channel sandstone



The 'oyster bed' in the cliff above stop 5

banks. They demonstrate the shallow water conditions of deposition.

Fossil plant leaf bed (descent from 9)

It's likely that it was the landslip that first exposed this remarkable bed at the cliff foot (the base of the Saltwick Sandstone). The bed includes a variety of sandy and silty, organic-rich rock types typical of a delta flood plain and including thin lenses of coal. Fine collections of the Jurassic flora, including tree ferns and cycads, were made here although it is now not easily reached and has been badly undercut by fossil hunters. Please leave it undisturbed. Elsewhere on the landslip boulder field the casts of trees such as *Equisetites* (horse tails) can be seen that were deposited with in the delta river channel.

FURTHER READING

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