

Aston Rowant & Hellfire Caves

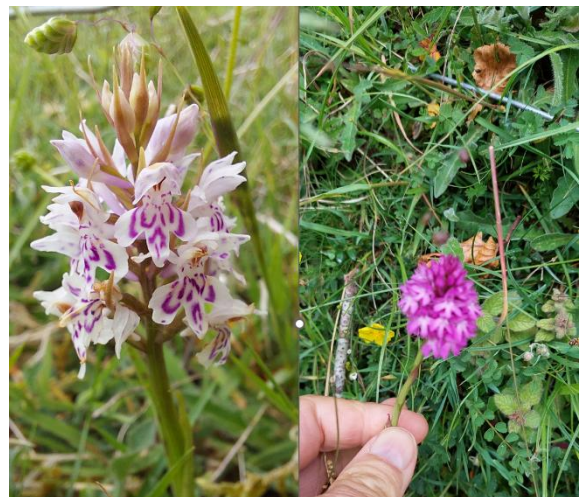
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The chalk geology of the Chiltern Hills provided the day's theme. Our first site was the Aston Rowant Nature Reserve, around ten miles west of High Wycombe. Beacon Hill, on which the reserve is located, is a Cretaceous chalk ridge with the Lewes Nodular, Seaford and Newhaven Chalks all represented. These chalks are part of the White Chalk sub-group and are relatively young, being part of what was formerly classified as the Upper Chalk. The only large exposure of these chalks is in the M40 cutting on the southwest side of the hill, which has become weathered and overgrown and doesn't provide much detail. There are plenty of flint nodules scattered about the hill, though. The hill affords a great view to the west over the geomorphology of progressively older rocks, with the Zig Zag Chalk (Grey Chalk sub-group, Lower Chalk), the marls beneath that and even the greensands below that in the far distance.



John Firth explaining the geomorphology of the area. Note the mounds of the yellow meadow ant nests.

The hill did provide botanical and biological bonuses. The crest of the ridge hosts a large population of yellow meadow ants, with the ground dotted with their low mounds, each some 45-60 cm in diameter. The meadows also provided a fine example of chalk grassland, with plenty of delightful orchids in bloom; common spotted (left) and pyramidal (right) varieties in the photo.



Second stop was the Hellfire Caves at West Wycombe. Here, chalk was mined in 18th century to provide work to combat local poverty, with the chalk excavated used to surface the road into High Wycombe (now the A40). The tunnels and chambers actually follow a plan to provide an unusual entertainment venue, rather than any geological dictates. It does, however, provide access into the New Pit Chalk, which sits below the Lewes and represents the top layer of what was the Middle Chalk. The chambers excavated show the chalk to be of massive structure (little visible internal structure) with abundant fracturing. The New

Pit contains much less flint than the formations above it (that make up Beacon Hill), but one flint band is visible in the wall of one chamber.

Our final stop was in the village of Bradenham, to admire some fine examples of puddingstones. Puddingstones are sedimentary conglomerates, composed of rounded pebbles, often flint from the local chalks, that are cemented together by a hard matrix typically made of quartz or silica. There are several large examples around the village green, along with some impressive sarcophagi. The local church shows the local geology perfectly, being constructed in a mix of flint, sarcophagi and puddingstone.



Puddingstone, with plenty of toes for scale!

This field trip was planned and led by John Firth, a published author who writes about geology and archaeology. He recently agreed to join the NGS committee and we can now look forward to more of his trips in the future.