

Ryedale Vernacular Building Materials Research Group
Mowthorpe Project
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Overview

It has been a busy year at Mowthorpe finding new sites and coming to new conclusions and it is hoped that the project will continue for another year. In particular, we have to thank the BGS field geologists – Jon Ford, Simon Parkes and Tony Cooper – with contributions from John Wright, Stephen Gibson and Tony Wright.

The Mystery of *Haploecia straminea* – is solved

Apologies for using geo-speak!

During the various surveys of Sheriff Hutton Castle and the quarries at High Stittenham and Mowthorpe there have been a number of questions answered:

- We have now established that the quarries at Mowthorpe did produce the building stones for Sheriff Hutton Castle, although the method of transport has yet to be confirmed.
- We still have to identify the working site(s) for the dressing of the stone (if this was needed) and the harbours or wharves from which it was sent across 'Lake Mowthorpe'.
- The quarries at High Stittenham yield the same type of Dogger as the main Mowthorpe Quarries.

However, one question still needed to be resolved – that of the age of 'The Dogger' from Mowthorpe – because:

- The fossil assemblage was more akin to the later Whitwell Oolite than the Dogger.
- This conclusion was drawn from the presence of the small bryozoan named *Haploecia straminea* that is the indicative fossil for the Whitwell Oolite.
- This fossil was found in large numbers at Mowthorpe and at Sheriff Hutton Castle, but was not recorded by Fox-Strangways as being found in the Dogger.
- However, it has now been found that this fossil has a wider vertical range than first described and so we can now say with certainty that the rock at Mowthorpe is the Dogger (Jon Ford BGS – personal communication).

Lake Mowthorpe

Work was undertaken by a group of brave geologists to take samples of lake sediments by auguring. Some members reported sick for the second day!

All we presently know about Lake Mowthorpe is:

- Formed towards the end of the last Ice Age when melt water from the York Ice Sheet and run off from the scarp at Terrington was dammed between the scarp and the decaying ice.
- The water from the lake eventually overspilled along the present course of the Bulmer Beck cutting a melt water channel to the south. NGR 691680.
- A smaller melt water channel can be seen at Terrington Bank cut by melt waters draining off the Terrington ridge at Deephill Hill NGR 655707.
- When the drainage of the lake basin took place the level was artificially lowered to allow water to once more flow along Bulmer Beck, and historical records reveal a stone structure at the entrance which had to be blown up to allow the water to flow.
- Even today excessive rainfall causes the lakebed to flood and so it can easily be envisaged that the lake reappeared during winters in Medieval times, so allowing the transport of stone from quarry to castle.

Following the auguring a number of observations can now be drawn:

- The lake sediments are at least 5 metres thick at some of the sites showing a number of environmental conditions during the life of the lake.

- Along the western edge, a channel with thick deposits of gravel indicated the edge of the ice sheet where water velocities would have been higher.
- In the east, the gravels give way to fine silts where the velocity was less.
- The northern edge of the lake was located but it was found that the sediments overlapped an older rotational slip in the Lias clays, i.e. formed prior to the lake filling up.

There is still more to be learnt from these sediments and the margins of the lake:

- Samples of pollen and other organic debris recovered to establish the age of the lake and the succession of plant communities at the end of the last Ice Age.
- Further work along the shoreline to search for prehistoric sites (a Mesolithic flint blade has been found) and potential sites for Medieval harbours and wharves.

Bloomery Sites

On a cold wet day, a brave group field walked the site of a number of bloomery sites at Smiddy Hill below Mowthorpe Wood. NGR 679687 The local geology has almost certainly controlled the location of the bloomery sites:

- In Mowthorpe Wood clays of the Whitby Mudstone Formation (Upper Lias) displayed rotational slips associated with a spring line at the junction of the overlying Dogger.
- At a badger set (badgers are very good geologists!) located the along the edge of the wood ironstone, nodules and sands indicated the Cleveland Ironstone and Staithe Sandstone Formations (Middle Lias).
- These in turn overlay the Redcar Mudstones (Lower Lias) again with a very powerful spring line along the edge of the field.
- Samples of coal were found and are likely to be from Middle Jurassic coal-bearing horizons to the south of High Stittenham extracted in bell-pits.

There are at least four bloomery sites seen on an aerial photograph found by Tony Wright and all show a characteristic 'horseshoe' shape with the curve edge facing south, i.e. down the slope. The following samples were taken:

- Bags (and bags) of slag were found scattered across the field.
- Lumps of fossiliferous reddish-brown ironstone were found both in the field and in the nearby exposures.
- Rabbit scrapings yielded fragments of lignite type coal of the Middle Jurassic
- Further field walking along the possible lake edge (marked break in slope) yielded a single Mesolithic microlith blade.
- However, there were no indications of the actual bloomeries, i.e. no stone work or scorched surfaces, or iron products.
- Samples of ironstone and slag have been sent to BGS and Professor A McDonnell and reports are awaited.

The conclusions we can draw from this exercise are:

- The bloomery site has easy access to ironstone, building materials, coal and water.
- The site may have been chosen because of the ease of obtaining the above materials.
- As yet, no firm date can be given to the site, with both Medieval and Anglo Saxon being suggested.

Obviously further work needs to be carried out at the site as well as surveying other potential sites along the lake edge.

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