

**17<sup>th</sup>/18<sup>th</sup> September 1988**

**Cleveland Weekend – Hosted by the Cleveland Industrial Archaeology Society**

Mike Mitchell, Barbara Mitchell, John Helme, Joan Helme, Ian Matheson + Family,  
Don Borthwick.

Saturday 17th September - GREAT AYTON IRONSTONE MINE.

We met our hosts for the weekend early afternoon in station car park at Great Ayton. John Owen has actively researched the extractive industries of Cleveland for more than thirty years, his articles contributing to the very high publishing standards of the Cleveland Industrial Archaeology Society. (His last report has been reprinted twice and is again out of print). Richard Pepper is a teaching geologist also with a major interest in the history of extractive industries, both John and Richard are members of the CIAS committee.

In recent times the Great Ayton mine site has become training track for an 'off the road' driving school. Richard therefore had negotiate permission for our access to the site and to avoid us dodge 'rough-riders?' and landrovers fitted with roll cages.

Though the levels have been sealed access is still possible by what was the fan ventilation airway. So via a short climb we entered a Cleveland ironstone mine (the Matheson family (Meg, Clair and Alistair) helping to make the numbers look a little more respectable). Great Ayton was typical of Cleveland mines except that the vein thickness was only about five feet whereas seven or eight is more typical in this ore field. Firstly we went to look at the furnace that had initially ventilated the mine. (Later an electric fan was used when a power supply became available on site). This is still virtually complete with grate, firebars and bleezer, John explaining its operation and the firemans duties. Moving along to one of the two main haulage ways compressed air supply and water drainage pipes are still institute, a third small pipe provided 'pure' water for the boiler from a source in the mine strata. We went some way along the other haulage way where the roof is high enough for easy walking, seeing a typical 'board' of the board and pillar system of work, and an automatic axle greasing station.

John always takes a flame safety lamp into ironstone mines and we were to see quite a dramatic demonstration of why. At the greasing station the flame burned brightly at the level it had when lit at our entry to the mine, less than fifty yard further down the level it was virtually out. Though ironstone is a little special in that it is constantly oxidizing and hence depleting the oxygen level it was food for thought and some worries.

Perhaps a flame safety lamp should be part of CAT's equipment for some poorly ventilated workings or where there is a possibility of the accumulation of gases.

We retraced our steps toward the entrance and looked at another roadway, where an arrangement of some very substantial timbers caused some interest & speculation. Generally thought to be a tensioning frame for the haulage rope, its precise mode of

operation could not be agreed on (any experts?).

Regaining the surface the site layout was explained then, as we walked back down an incline to our cars John detailed the transport of ore from the mine. How many Haematite mines can you visit and stay clean? Taking our leave from our hosts we then sped off for the Tom Leonard Mining Museum, unfortunately we arrived rather to close to closing time and could not gain admittance.

(Shades of Ryhope pumping engine rather than Washington 'F' pit).

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### Sunday 18th September - SILL HOWE WHINSTONE MINE and BOULBY ALUM QUARRIES.

As all the members present were staying locally, an earlier than normal start to the day had been arranged with our hosts. Our moor top meeting point lay on the whinsill dyke and evidence of back filled open workings could be seen extending into the distance to both sides of the car park. Formal permission for our visit to the mine had had to been obtained in advance by John Owen from the agent for the Duchy of Lancasters Estate, (an accident disclaimer also being required).

Access to the mine is through an elegant portal and along high roofed level (where there was a need for this level to be lined, good quality dressed stone has been used). The height of the entry level (which is roughly a right angles to the vein) was only a foretaste of things to come as this place is BIG.

At it widest the whinstone is over 20 metres thick and has been worked in these locations as two parallel drives leaving the central section to support the roof. Each drive is thirty feet high, stone being worked by three ten Foot high benches. Drives were made on two and in places three horizons connected by inclines. Our visit was only to the more modern half of the mine the workings which is about half a mile in extent. The other half or the mine had been partially sealed of after an accident in the 1920's.

Our hosts explained the geology of the mine and the system of 'underground quarrying', though the workings are so extensive little mechanization seems to have been employed. After about two hours we again returned to daylight the underground part of the meet now over, all very clean and dry by comparison with what we are used to, though Sill Howe did have some viscous ochreous mud which may have made those from the south of Cumbria feel at home.

We then set off toward the coast and the cliff tops (highest in England) nearby the Boulby Potash mine, but taking a short deviation to look at an ironstone outcrop in a deep stream valley near Grossmont?.

The Alum Shales outcrop in the cliffs here with a limestone overburden which had to be removed and was dumped in the sea. The quarried shale the collected into large heaps and burnt, additional Fuel was required only start the process the carboniferous material

in the shale maintaining combustion. The burnt shale was leached with water, the resulting liquor being run off along leats to settling tanks where the Alum precipitated out in the form of crystals.

The quarry workings & areas used for burning ore are still evident, as is the remains of the leat system. (Actually our very last visit underground in Cleveland was in a 50m tunnelled section, where it follows the cliff edge). Improvements in the production of sulphuric acid & the development of aniline dyes superseded the use of alum in dyeing & tanning, & the industry was dead by 1870.

An excellent weekend, good weather, very knowledgeable and friendly guides, interesting places to visit .....