

## CONISTON FIELD VISIT

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**Abstract:** An account of the field visit to the Coniston copper mines held on Saturday 26th March 1994, a description of the sites examined, and some interpretive and historical notes.

It is known that mining for copper at Coniston took place at intervals from 1599 until 1954. During this time there were four main periods of working. In the 17th Century German miners working for the Company of Mines Royal operated from 1599 until about 1648, when the smelt houses at Keswick ceased to operate due to the outbreak of civil war. Other parties took out leases on the mines, but there is no record of any working until 1756, when Charles Roe of Macclesfield took over. The Macclesfield Copper Company operated until 1795, when they abandoned the mine. At the beginning of the 19th Century the mines were lying discontinued, but in 1824 John Taylor obtained the lease, and he sent John Barratt to Coniston from Grassington Moor to oversee the work and to report back. New methods and technology introduced by Barratt enabled the mine to be driven to great depths, and it prospered for over fifty years. After 1880, despite the further introduction of new technology, including the use of compressed air and skip winding, output declined drastically, and in 1895 it was decided to stop pumping and to allow the mine to flood. Since that time there have been occasional attempts to rework the mines on a very small scale, the last in 1954 by J.W. Shaw, but none have been successful.

There are two main veins at Coniston, the Paddy End and Bonsor veins. Both have been extensively worked by the Elizabethans and the Victorians. The Bonsor Vein was also worked in the 19th century and Victorian mining remains dominate the scene, but there are also some from the earlier periods. The two powerful veins range south-west to north-east, and lie roughly in line with the western sides of Levers Water Beck and Red Dell Beck. Conference delegates met near the old mine office, now a Youth Hostel, which is situated amidst the old dressing floors of the Coniston Copper Works, from where a view up both valleys can be obtained. Andrew Lowe, who is the Conservation Officer for the Lake District National Park Special Planning Board, set the scene and introduced Ian Matheson of

the Cumbria Amenity Trust Mining History Society, who, with other CAT members, was to act as guide. The weather was fine and visibility good so the party was able to set off to follow a route up the miners track to Levers Water to inspect the ancient workings of the Back Strings on the Paddy End Vein, then to follow the 1830 water leat, which traverses round Tongue Brow beneath Kernal Crag to Red Dell, in order to view the workings on the Bonsor Vein,

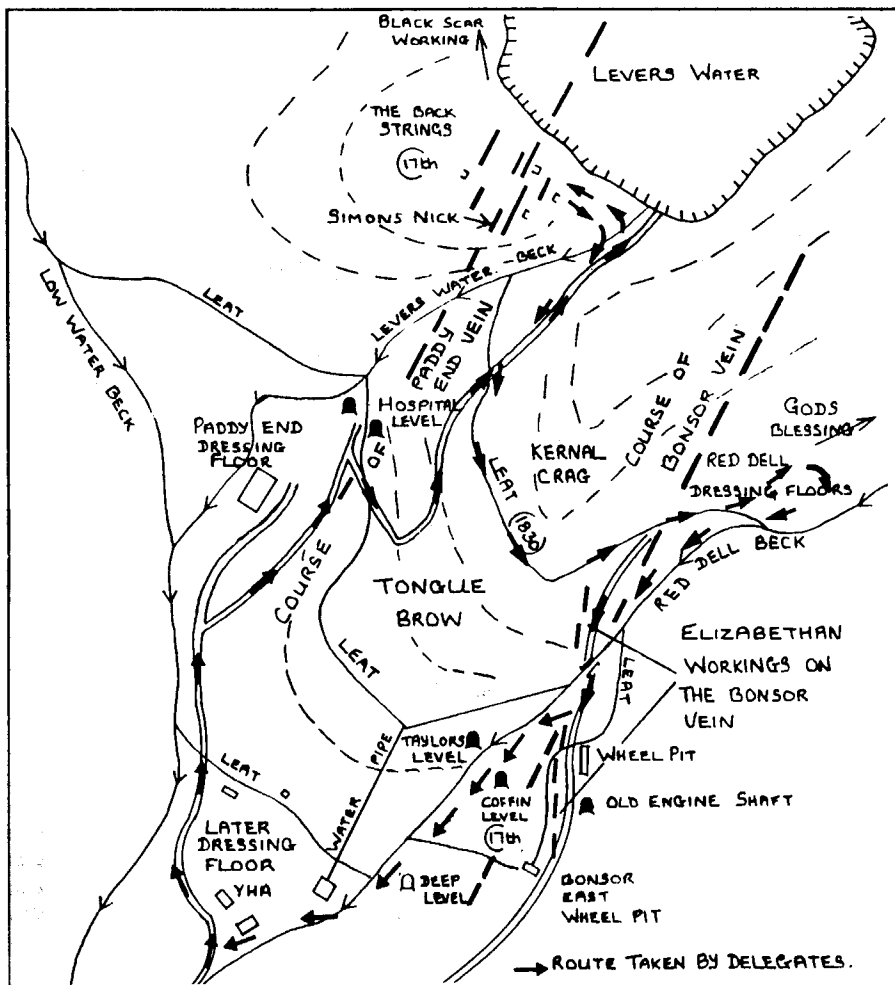
In the Philosophical Transactions, Volume 17 (1693), there was published 'An account of the names of the several Copper-works, or mines, in Coniston-fells which were wrought in when the Smelt-Houses were up in Keswick'. It seems to be a transcript of some notes made in 1684 by Roger le Fleming for his brother Sir Daniel le Fleming, who was the owner of the estate, and who at that time was contemplating re-opening the mines. They were based upon an interview with the three surviving miners who had actually worked in the mines prior to the civil war. The notes were published again by W.G. Collingwood in 1927 together with an identification of the sites, made by Oscar Gnosspeious. The workings at the Back Strings were 'called Sunny-work at Levers Water . . . being all Seven Works, and lie all together . . . and wrought about ten or twelve fathom, the Seam of ore about 16 inches thick, the Stone very soft, and the Ore very rich, and much of the said ore green, and was very much prized by the Head Masters at Keswick'.

There is no indication that the Macclesfield Copper Company did any work in this area. A level known as Levers Water Mine was driven in from the water's edge in Victorian times, and it is believed that Woodends rise, now covered, came to surface on the said horizon nearby. Some of the worked out veins extend downwards for hundreds of feet into the Victorian workings, but the 19th Century miners usually drove adits at a lower level and mined upwards, extracting both ore and waste with the aid of gravity down previously prepared ore chutes, tramways

and inclines to water powered dressing floors in the valley. It is unlikely that they would have caused much disturbance to the earlier remains on the ground at the top of Simon Nick cliff, and most of the present surface remains there are believed to be of Elizabethan origin,

There are about seven veins which have been worked from the surface and which are surrounded by mounds of broken vein stone which have the appearance of ancient dressing floors. Associated with these are the ruins of several crude cabins or huts. Round about one of these are several mortar stones, similar in appearance to those to be seen at the Bronze Age copper mine at Great Orme. Some are incorporated in the structure of the building, whilst others appear to have tumbled out as the walls collapsed, and so pre-date the structure. There are several possible explanations: the mortar stones could be of Elizabethan origin, but the building was rebuilt later during that period. The mortar stones could be Elizabethan, but the building was constructed either in the late 17th century, or, possibly, in the 18th or 19th century. The mortar stones could be pre-Elizabethan, even Bronze Age. There is as yet no way of dating them. The description given in the le Fleming notebook indicates that the rock was softened so could have been worked by bone or stone tools and that the ore was green, and therefore oxidised and so could have been readily smelted by Bronze Age technology. Whilst there are numerous authenticated Bronze Age settlements in the neighbourhood no other stone or bone tools have ever been found near the mines, and so it seems more probable that these mortar stones were used at a later period in conjunction with iron hammers. Such stones were widely used and were current over a very long period.

The largest vein, known as Simons Nick, appears from the valley below as a large cleft on the skyline. There are some drill marks in the walls, indicating that it has been widened at some time by the use of gunpowder. Roger le Fleming's account for 1693 lists a payment of £2 - 5s - 8d to a Hr Whinforth for 'powder', probably the first record of the use of gunpowder at Coniston. The parish register records that in 1694 a man called Holan was killed by an explosion at Simons Nick. Buried in the grass at the edge of Simons Nick is a wooden platform held together with iron bolts, and below this, in the floor of the Nick, part of a jack roll windlass was once found. On the top nearby is a circular depression about three feet in diameter. It is wood lined and bound with iron hoops, and appears to be the lower half of a barrel or tub which has been preserved by being buried in mine waste. Below it is a mound of small broken vein stones. At some time



*Paddy End and Bonsor Vein Copper Workings, Coniston.*

the sides of the vein may have been stripped down with gunpowder, and the ore contained wound up to the surface and concentrated by sieving in the water filled tub, the waste rock being thrown to one side and the concentrate carried away. This work could be an example of the early use of gunpowder, or be 18th or early 19th century.

From this vantage point Conference delegates were able to look across Low Water to the Black Scar workings, at first thought by Collingwood to be the ninth work identified by the Old Men as Wide Work, or Thomas Him's work. It is at an altitude of 2200 feet, situated between Little and Great How Craggs, and from a distance the white quartz looks like a waterfall. There is a level there some 200 feet long in which gunpowder has been used at some time. The screens in the gulley contain mine waste and some chalcopryite, and there are some crude roofing stones of local rock with nail holes in them. The party then departed to traverse round Tongue Brow in order to view the workings on the Bonsor Vein.

Before descending into Red Dell a pause was made to point out surface features. A mile away near the head of the valley

another Elizabethan mine, Gods Blessing or Thurdle Head, was pointed out. The Red Dell Dressing Floor just below the viewpoint at the foot was difficult to interpret and needs further study. It may have been the site of an early stamp mill which was working in the vicinity. Silt from this mill was washed down the beck, destroying the fishing and causing flooding and consequent loss of hay in the meadows near the shore of Coniston Water. In 1620 damages were awarded to tenants of Daniel Fleming against Daniel Hechstetter of the mining company, erector of the said stamp mill.

The Bonsor vein was most productive, and was worked at several periods, eventually reaching a depth of 255 fathoms below the surface, and requiring several water wheels for pumping and winding. The Elizabethans worked this vein in a series of excavations from the surface, some of which are still visible. The Fleming notebook describes it thus: 'The first work that was found and wrought in by the Dutchmen was called Low Work, it hath been a stulm or shaft to draw water from the mine . . . and had been wrought from the day to the evening end of the said work 40 fathoms or thereabouts; the seam or vein of Coper Ore then left was above three-quarters of a yard thick of good ore

. . . The second work is called White Work, or New Work, about forty fathoms from the first was wrought about ten fathoms deep . . . The third is called Tongue Brow a little distant from the last being wrought about thirty fathom and the seam about two foot thick of the like Ore.' Tongue Brow has been obliterated by later works, but Low Work and White Work can still be seen as a line of partly filled pits below the cart track and above the later water leat.

In one of Sir Daniel le Flemings notebooks there is a transcription of a report by George Bowes and Francis Needham of the state of the mines, headed 1616, which reveals that there were considerable problems with water. 'The work is greatly annoyed with water falling every great shower or snow thorrow in the topps of the mountain insomuch as they are forced sometimes to draw water a whole forenoon together . . . from the West end of this Work to the East end of Fabians work there is a middle part of the vein in length at the topp about twelve fathom which is not wrought for that it is barren: But hereafter when the work shall grow two fathom deeper it were meet to be brought thorrow for the better conveyance of the water and giving air to the workemen . . . The stone or Tayle . . . in which they make their Ritts (cuts) is extream hard . . . but they have sought help by making fire to it . . . Evry morning the workmen are forst to draw water a forth part of the day wch they might employ in work'. These 17th century workings are reached at a depth below ground of more than 180 feet, at which depth a coffin level was driven through from the side of Red Dell Beck in order to drain them. There is no indication as to how the water was raised to the surface prior to the driving of this level. The vein is not vertical, and perhaps some kind of pumping system was used. Later miners went to much trouble to divert surface water away from the workings, and the heads of both the 18th and the 19th century shafts are sited underground for that reason.

The floor of the coffin level was lowered two feet by the Macclesfield Copper Company when they deepened the mine after 1750 using gunpowder, and a new water wheel for pumping and winding down through the old 17th century workings. The Victorians in turn used the same workings for access, draining them further to a depth of over 300 feet by driving the Deep Level through in 1824. It is possible today to abseil down what is presently known as the Bonsor East Shaft to Deep Level and to see three centuries of mining. Part of it was modified by the 19th century concern, but Charles Roe's work can still be seen, and rope marks and timbering from that era still remain. About 180 feet below ground one is in the



*Remains of stone huts containing mortar stone at Simon's Nick, near Levers Water, Coniston.*

Elizabethan mine, and the entire foot wall is hand picked. There is a marvellously chiselled drainage channel which directed water towards the Coffin Level and away from the workings below.

None of these underground remains are easily accessible, and visitors from the Conference had to content themselves with examining the entrance to the coffin level before walking down the track to complete the tour, pausing to examine a short section of track which had been hand picked across a sloping glaciated rock in order to help the ponies to keep their footing en route to the smelter at Keswick.

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