

JOHN BOLTON AND THE STAINTON CAVERN

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ABSTRACT

In 1871 a quarry in Barrow-in-Furness broke into what was to be named Stainton Cavern. The cave became well known locally, and several explorations by different groups and individuals were made. Of these, Thomas Cock and others propounded a theory for formation of the cave by water, whilst the geologist John Bolton countered it with one involving earthquakes. The resulting discussions of these early British theories of speleogenesis, and the previously unreferenced explorations of the cave, are given in detail. These explorations were some of the earliest examinations of a British cave, based upon several visits made for the purpose of discovery as well as science, to be published in detail. Background information about the pioneers, in particular John Bolton, is included.

JOHN BOLTON

John Bolton (1791-1873) was a keen amateur geologist who lived for much of his life at Ulverston near Barrow-in-Furness, Cumbria. He took an intense interest in his local area, and 'spent a considerable portion of a long life in "grubbing" amongst the rocks . . . in the quarry, on the mountain, and by the sea-shore.' (Bolton, 1869). Although he often referred to himself as being of amateur status, 'not presuming to set himself up as an instructor in the science of Geology, or to call himself a geologist, even of the humblest class, . . .' he was nevertheless meticulous with his work, was in regular communication with eminent British geologists such as Adam Sedgwick, and was generally accepted as being an expert in his field. Sedgwick, in particular, became a close friend.

Bolton became interested in geology whilst still a child at school, collecting fossils from the spoil heap beside a well. His upbringing and home were rude; he lived with his widowed mother and younger brother in a small cottage at Urswick Green which was 'so humble a dwelling that the yearly rent was only 15s [75 pence]. His schooling at Urswick ended when his 'learning did not reach beyond the alphabet' (Bolton, 1869). His family moved to Ulverston when Bolton was nine. He then began work in a weaving shop 'from morning to night . . . for eighteen pence a week, but although he had but little spare time allowed, he managed in a few years to visit every limestone quarry in Furness.'

Later, John Bolton lived in Barnsley for 24 years (Anon, 1873a, Bolton, 1971), where he effected improvements to the Jacquard loom. In 1842 he became a land surveyor and moved back to Swarthmoor near Ulverston (Anon, 1873b; Bolton, 1873), where he named his home 'Sedgwick Cottage' after his friend. A simple, friendly, deeply religious man with great sense of humour (Casson, 1889), he was respected by all that knew him. Few others had interested themselves in the geology of the Furness and Cartmel area, and by the time he was 78 in 1869 he was able to publish a book on the subject, encouraged both by Sedgwick and by many of his friends. A portrait, by an unknown photographer, is reproduced as FIG. 1.

Sedgwick, on Bolton's behalf but without his knowledge, applied for and obtained a grant to help his geological work (Anon, 1873a; Sedgwick, 1873). Afterwards, in 1871, Bolton wrote a pamphlet for his friends in which he

gave some details of his personal life (Bolton, 1873). In it he gave an indication of his stubborn temperament, as shown by his unwillingness to give up his rifles to a group of 'physical force Chartist', even though a siege of his house was threatened.



FIG. 1—JOHN BOLTON, 1790–1873

Reproduced by courtesy of Barrow-in-Furness Public Library. Photographer unknown.

The spelling of 'Bolton' in early references was variable, John also using 'Boulton' in his reports and letters to Sedgwick (Hancock, 1980). It is likely that 'Boulton' is the correct spelling, for although directories show both entries (e.g., Dickinson & Dickinson, 1973; Mannex, 1882) a 'John, son of John Boulton' was christened at Ulverston Parish Church on March 5th, 1791 (Ayre & Bardsley, 1883). This, incidentally, suggests that Bolton's birth date was probably within January or February of that year. Bolton used the shorter spelling with greater frequency in later life, and this has generally been followed in modern references.

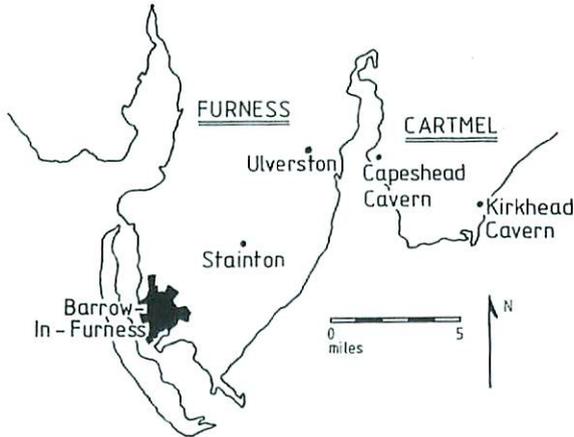


FIG. 2—LOCATION OF STAINTON, IN CUMBRIA

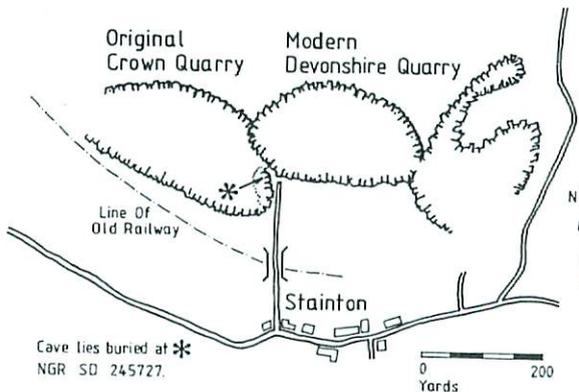


FIG. 3—LOCATION OF STAINTON CAVERN

Bolton's Interest In Caves

When, in 1871, a new cave was discovered in Mr Gardner's Crown Quarry at Stainton (Figs. 2 and 3), Bolton was immediately interested in its potential. He had previously inspected caves for archaeological remains, and his 1869 book mentions his explorations of Kirkhead Cavern and Capeshead Cavern. He noted that the latter continued further than he could explore, for 'a low opening by which a dog can make further progress into the hill of limestone

rock may extend into another chamber probably larger and more interesting than that which we have now under notice'. Kirkhead became the subject of a paper concerning the archaeological finds made there (Bolton, 1864), but evidently there were no serious attempts to gain entry to the unknown chamber. He also visited Peak Cavern, Bagshaw Cavern, and the Speedwell Mine in Derbyshire (Bolton 1871a,b). Bolton was not initially interested in caves for their own sake, only for the remains found in them, but at Stainton he soon became involved with explorations and theories concerning pelegogenesis.

DISCOVERY OF STAINTON CAVERN

The cave was discovered by quarry workers sometime early in 1871, probably early in March. Before that time a hole had been known to lead into Castle Hill, and was named as a fox or 'block' (brock or badger) hole (Bolton, 1871a,b; Holland, 1970), but it was in fact an indication of the cave beyond.

The First Published Account and a Theory of Formation

The first published account of the cave was in *The Barrow Times* (Anon., 1871b) on Saturday March 11th. The author of the article had not taken part in the first explorations. His description indicates he entered the cave for a reasonable distance, whilst not covering any new ground. However, even at this early stage a theory of formation of the cave was put forward.

In the adjoining counties, and in corresponding latitudes, as well as in the West of England, the carboniferous limestone bears unmistakable evidence of the storms that beat upon its cliffs, and the numerous caverns and water-worn rocks which exist, prove without question that 'dropping water wears away stones' . . . The direction of the current is mere theory; but it is very likely that it was confined to certain fixed channels. This is partially confirmed by the discovery at Stainton of a large cavern . . . the whole cavern, with its water-polished sides, affords ample room for study to the antiquarian and geologist. (Anon, 1871b)

The report by the anonymous author from Barrow was reprinted in another local weekly paper, *Soulby's Ulverston Advertiser*, the following Thursday March 16th (Anon, 1871c), thus helping spread news of the discovery. There were several local papers (listed in Barnes & Hobbs, 1951), most of which were eventually drawn into discussions about the cave.

Bolton's First Exploration

Before either of the first two accounts could appear in print, Bolton became involved. He first heard of the cave when he met the vicar of Dalton, the Rev. J. M. Morgan, in the street. He asked if Bolton 'had seen the wonderful cavern of Stainton' (Bolton, 1871a,b). Not having done so, Bolton walked the six miles from his home to the quarry the following day, Tuesday the 7th of March, intent on investigating this new geological feature. A longitudinal section of the cave made in 1911 (Fig. 4) makes it possible to follow the various explorers' progress.

The entrance to the cave was located about half-way up a 100 ft quarry face. Bolton, now aged 80, employed a 17 year old mine worker named Abraham Myers to accompany him. Myers had previously been into the cave, and was one of the original explorers who first reached 'the great abyss which is at the far end of that portion of the cavern at present known' (Bolton, 1871a,b). During the workmen's lunch break Myers and Bolton entered the cave.

Following a squeeze, Bolton noted several side turnings and chalk crosses previously used by Myers and his companions to mark their way out, and found piles of bones where he surmised that animals had died. At the far end of the cave Myers showed Bolton the pit that barred the way. Previously, Myers had been 'lowered down this chasm 30 or 40 feet, by means of a rope, to what was assumed to be the bottom, but it proved to only be a sort of ledge.' (Bolton, 1871a,b). This hole became known as 'the Dungeon'. Being unable to proceed further than the edge on this occasion, Myers and Bolton left the cave by the light of their halfpenny candle.

The next examination of the cave was made by the mining captain and superintendent of Brogden's mines at Stainton. He was named in Bolton's later newspaper report as his friend Mr Cox, accompanied on this occasion by two miners. Bolton's source of information was a letter written to a mutual friend, William Salmon F.G.S., in which it was stated that 'running water had something to do with the formation of this cavern' (Bolton, 1871a,b).

Cox's real name was Thomas Cock. Spelling of names in print was often variable, and indeed Cock's name was given as 'Cocks' in the local directory (Mannex, 1876). It has been suggested that Cock may have been the author of the *Barrow Times* report (Holland, 1972), but Bolton's later discussions rule this out. Cock, under the correct spelling, wrote of his first visit on the 23rd March for publication in *The Ulverston Mirror*, (Cock, 1871). His visit, the fourth known to have been made, took place at some time between Wednesday 8th and the 18th March, when Bolton published his first account.

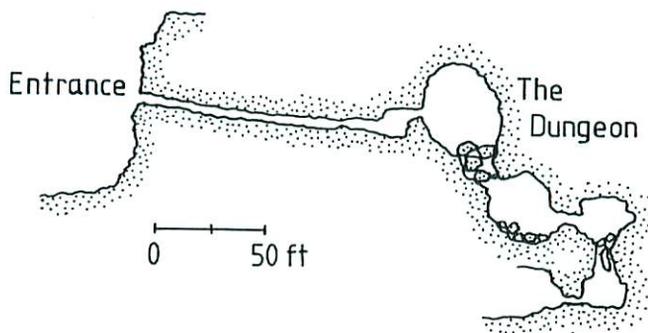


FIG. 4—STAINTON CAVERN; REDRAWN FROM A LONGITUDINAL SECTION BY CHARTER (1911)

THEORIES OF FORMATION OF STAINTON CAVERN

Bolton did not write to the paper until after the first report had been published in *The Barrow Times* on the 11th. When he did so, he was therefore in a position to comment on the water theory for formation of the cave. Of this, he wrote:

The *Barrow Times* . . . [contains] several truths but also some palpable errors. He [the anonymous author] speaks of well polished sides, which give the idea of water in motion. This, from my own observation, I may say is a perfectly mistaken conjecture. (Bolton, 1871a,b).

Bolton stated that water could not have caused the cave to form since the site of the cave was higher than the surrounding land, and thus water would not be able to run from anywhere in order to reach it. As an alternative theory, Bolton believed the cave could have been formed by

the effect of a violent convulsion of nature, similar to the earthquake at Rampside and Barrow about five years ago. This convulsion upheaved the whole hill of Castle Haw, broke and shattered the whole mass, and the streets and galleries of the cavern are the primary cracks resulting from it, and that the 'dungeon' was the centre of disturbance which affected the whole and left it in the state we now find it. This conclusion is drawn from mathematical reasoning, and may be said to be independent of any geological theory which may either support or contradict it. (Bolton, 1871a,b)

William Salmon, who had been to Kirkhead Cave with Bolton (Bolton, 1869), also came to the same conclusion 'from different data'. There being no recorded visit by Salmon, the source of his 'data' remains unknown.

The earthquake theory was an unusual one at that time, possibly being spawned in Bolton's mind by the earthquake of the 15th February, 1865, which caused a great deal of local destruction including the demolition of several houses. Besides, Bolton had previously written in apparent contradiction with himself that 'the floor, sides, and roof give evidence that at some former period this part of the cavern was filled with water', and that 'one proof towards the verification of the fact that the cavern had contained water was the appearance of the beautiful clay floor — in fact, the floor bore a close resemblance of clay land after a season of dry weather.'

TABLE I — *Dates of Known Visits to Stainton Cavern during 1871*

<i>Date of visit</i>	<i>People identified</i>	<i>Number in party</i>	<i>Date visit first reported</i>	<i>Source</i>
c.1?-6 March	Abraham Myers	*	18 March	(Bolton, 1871a,b)
c.1?-10 March	—(of Barrow).	*	11 March	(Anon, 1871b).
7 March	John Bolton Abraham Myers	2	18 March	(Bolton, 1871a,b)
c.8-17 March	Thomas Cock	3	18 March	(Bolton, 1871a,b)
c.11-24 March	—(of Barrow)	*	25 March	(Anon, 1871d)
c.22 March	Abraham Myers	3	1 April	(Bolton, 1871c,d)
25 March	John Bolton James Hamer Henry Kendall Samuel McIntyre Abraham Myers W. Swainson	6	1 April	(Bolton, 1871c,d)
28 March	—	5	1 April	(Anon, 1871f)
8 April	S.R.	*	29 April	(R, 1871)
22 April	John Bolton Thomas Cock J. Nanson	3	3 Feb	(Bolton, 1872c)
20 May	John Bolton Dr Barber Mr Booth Alan Grant Cameron Henry Kendall Samuel McIntyre Abraham Myers Abraham Slater[?]	16	27 May	(Anon, 1871h)

Other, unrecorded, visits are likely to have been made also.

* denotes that the size of the party is unknown.

Theories of cave formation due to the land being rent by earthquakes or similar catastrophes had largely given way to more modern ideas by the early part of the 18th century. As such, Bolton's ideas were no longer common, although they were of an easily understandable nature. On the other hand, theories of action by vadose and phreatic water upon limestone were becoming more widely accepted. Shaw (1979) discusses these theories in detail. Although not original in the sense of being the first to suggest the theory of water forming a cave, the specific suggestions attributed to Cock and the Barrow author were amongst the earliest in Britain to be applied by direct evidence to a specific cave.

The 'Author of the First Article' (in *The Barrow Times*) took the earliest opportunity to reply to Bolton in print the following Saturday, March 25th (Anon., 1871d,e). Following a second visit to the cave, he defended his own theory vigorously, and pointed out Bolton's contradictions. In addition, he noted that if 'the whole hill of "Castle Haw" was upheaved by some violent convulsion of nature' this was sufficient explanation as to how water could have got in and out.

During the process of solidifying, or during some of those vast internal commotions well-known to have occurred during the carboniferous epoch, a small opening or crack was made in the sedimentary deposit, and this afforded the first means of ingress to that current of water which polished its limestone channel, and deposited the soil and other alluvial matter in the spot where they are now being discovered.

The next weekend, April 1st, Thomas Cock published his report of his visit, written on the 23rd March. He elaborated on his early statement that water was involved in the cavern formation, suggesting that ice covering the land during the glacial period would have entered and enlarged 'cracks and fissures', permitting water to enter. 'The harder portions of the rock resting while the softer yielding to the abrading power of the water . . . I cannot but ascribe this place to aqueous and not to igneous origin.'

FURTHER EXPLORATIONS

TABLE I summarizes the visits already described and also all the others known to have taken place during 1871.

The second of the April 1st reports concerned a visit made the previous Tuesday the 28th, when there was a half day holiday 'on the occasion of the Royal marriage'. Shown the entrance by a workman, who considered the visitors 'far too foinely dres't for a hoell like that', the author and four friends entered the cave. One, the leader, stopped at the first squeeze, but the others continued with their exploration.

The author supported the theory of water forming the cave, since he found a passage of 'cylindrical shape' with no sharp edges. 'Well, I say that an earthquake very often does split open rocks, but one could scarcely imagine a shock making a cylindrical passage, and giving the sides a smooth wave-like surface,' he wrote. Clearly, the earthquake theory was not gaining support, although the author did concede that one might have made a large fissure which allowed entry of water in the first place (Anon., 1871f).

Bolton's Second Exploration

The third report was by Bolton himself. This was in two parts, the first being a communication which completed the details of his first exploration. The second part concerned a further visit he had made on Saturday the 25th March (Bolton, 1871c,d).

The party on this occasion was made up of Bolton, W. Swainson of Newland, Henry Kendall (mining captain), and James Hamer, a clerk employed by the mines. Two miners were also employed to help: Abraham Myers, who had been with Bolton before, and Samuel McIntyre, a top hand described as being 'active and intrepid' who had also been highly praised for his help in fighting a fire at the Ronhead mines on March 4th (Anon, 1871a).

McIntyre led the party of six men into the cave, exploring side passages, and re-examining a chamber found a few days previously by Myers whilst exploring with two others (Bolton, 1871c,d). At the chasm, Bolton and Hamer waited at the top whilst the rest climbed down using the 'superior light of engine-cleaning waste soaked in oil.' The men discovered a further large chamber '70 feet long and 35 feet in breadth', of indeterminate height. Bolton watched the descent of 'this horrible place . . . [on] ropes very far from trustworthy, being farmers' ordinary ropes, very much worn.' He was clearly relieved when they returned. The men spent a total of four hours underground.

Although Bolton corrected some prior inaccuracies in his second publication, he would not be convinced that the water was the causative agent in forming the cave. 'In reviewing the circumstances in reference to the origin of this mysterious cavern, let us refrain from dogmatizing, as our data is yet incomplete and somewhat contradictory, but wait till the whole cave has been explored.' Indeed, Bolton never did publicly retract his theories of formation of the cave, even in the face of growing evidence for the action of water. This statement represented the most he would concede towards the possibility that other ideas might hold more truth than his own. This stubbornness was perhaps in keeping with his character. His friend, William Salmon, wrote of him (1873) ' . . . he would cling to an opinion once formed until it fell from his grasp, rather than give it up.'

Kitchin's Publication Of Bolton's Reports

Both Bolton's reports were subsequently published as separate pamphlets of 16pp and 10pp respectively (Bolton, 1871b,d). The surge of interest in the cave was not just local, for *The Times* reported on Bolton's second expedition at length (Anon., 1871g), and it would seem that William Kitchin, the printer of *The Ulverston Mirror*, found it a worthwhile venture to produce further copies of Bolton's texts. Bolton himself intended their publication as pamphlets from the start. They were, as he noted in his first report (1871a), 'protected by registration at Stationer's Hall'. Both appeared with the author credited as 'Boulton'. The second, in particular, is rare; a single copy is known to exist, accessible via the author.

Other Explorations

There were several further recorded explorations of Stanton Cavern at this time. The first was made on the 8th April by a party of men 'on their second visit to the great dungeon', the writer being on his first exploration and identifying himself as 'S.R.' They progressed beyond the furthest limit reached by Bolton's party, descending a 30ft shaft into another chamber (Fig. 4). Other holes, unexplored, had rocks dropped through them into the water or mud that lay below (R., 1871).

Interest in the cave was still increasing. The following week a letter appeared in *The Ulverston Mirror* (A., 1871) from someone who wished to see the cave but thought there must be an easier method than crawling in.

Is it not possible to persuade some of our enterprising photographers to accompany them [Bolton and his companions] on their next visit, and take views of the cavern, by means of artificial light, so that that portion of the public which has a dislike to kennelling, may be enabled to form a more correct idea of the wonderful phenomenon.

To produce underground pictures at this time was still a rare occurrence, and the squeeze would have quenched enthusiasm for taking in the cumbersome cameras of the time, although magnesium as a light source was commonly available. There is no record of such an attempt having been made.

Bolton's Third Exploration

Bolton himself kept notes of his further involvement in exploring the cave, these not being published until January the following year as a series in *The Ulverston Mirror*. The first of these (Bolton, 1872a,b) added little information, but the third and fourth (Bolton, 1872c,d) gave details of his third exploration.

This, in the company of Thomas Cock and J. Nanson, was for the purpose of 'dialling', or surveying the cave. It took place on Saturday April 22nd (not the 2nd, as quoted in the report). The quarry was deserted, which worried Bolton since 'we therefore had to break the rule laid down by me as to entering the cavern with the cognisance of someone [on] the spot. However, I do not approve of the course taken on the occasion, and think it very wrong to effect an entrance unknown to anyone outside.'

The surveying was, as expected, slow and difficult, although they had with them 'dwarf dial legs, only a foot in length' to make transporting the equipment easier. Their method of surveying through the squeeze, on this occasion filled with 8 or 9 inches of water rather than the usual 4 or 5 inches, is of interest.

The mode of operation was as follows:

He [Cock] fixed his clay candlestick against the rock, and, when he had adjusted the instrument for a sight, laid himself down beside it. When in that position he could only just see his assistant's light between the surface of the water and the rocky roof above his head. However he succeeded in taking the sight in this awkward situation, and it may be truly described as 'dialling under difficulties'.

Cave surveying at this time was not unknown, but was certainly unusual for a cave not involved with tourism. Sadly, this survey was not published and is now lost, unless it be the one published by Kendall (1876).

Bolton may have entered the cave twice at this time; he records five expeditions, and implies that it was necessary for two dialling operations. The survey was certainly completed, and suggestions were even made for staking it out on the hill for surface location (Bolton, 1872e).

The Fifth, 'Great', Exploration

In his second communication (1871c,d), Bolton said:

It must not be supposed that . . . [this] . . . is an account of a complete exploration of this wonderful cavern. I have yet a great deal to say on other matters respecting it, and shall return to the subject in a short time, when I shall have the assistance of the first geologists in the kingdom.

Bolton had made suggestions to bring another geologist to the cave (1872d), offering his services as 'guide and pioneer'. Thus, Alan Charles Grant Cameron, who had been appointed Assistant Geologist of H.M. Geological Survey of England and Wales in 1868 (Flett, 1937) became involved. Cameron was conveniently nearby, as he had 'been stationed in the district for some time'. Being a close friend of Adam Sedgwick, Bolton might also have

thought to invite his 'venerated friend and instructor' as one of the geologists. However, Sedgwick was 'in his 86th year and in delicate health' (Bolton, 1871c,d) and obviously unable to visit the cave. Bolton did write to Sedgwick on the 17th April, but made no mention of the cave (Bolton, 1871e).

Cameron's detailed description, published in the *Geological Magazine* (Cameron, 1871), states that he was part of a party that 'further explored the recently discovered caverns', although no details of any additional finds are given. A fuller report of Cameron's visit appeared, as might be expected, in *The Ulverston Mirror* (Anon., 1871h), and was later elaborated upon by Bolton (1872e,f).

The exploration took place on 20th May 'under the command of Mr. John Bolton' (Anon., 1871h). Bolton, writing later, wrongly records the exploration as being on the 5th May. Also present, once again, were Kendall, Hamer, Myers, and McIntyre, plus a Dr Barber and Mr Booth. The rest of the party was made up of other miners and mining captains. An Abraham Slater is also mentioned, although this appears to be a mistake and should read 'Abraham Myers'.

Fourteen men entered the cave with 'torches, candles, ropes, and other such needful accessories', and were promised 'a monument . . . to those of the party who should perish in the interests of science, and never more be heard of' (Anon., 1871h). Caving was not considered a 'safe' pastime. Later, two more explorers joined them inside, making the total size of the party 16. Cameron and Kendall both surveyed more passages; new discoveries were minor, and some passages were not explored.

During the space of less than 3 months there had been at least 11 separate visits to the cave, with probably many more going unrecorded. These involved a minimum of 46 individual entries, many of the men involved entering the cavern on several occasions. Clearly, due both to the publicity surrounding it and the beautiful crystals and formations commented on by several of the writers, it was a popular site.

PRESERVATION AND LOSS

Suggestions were made for the preservation of the cavern and the production of a tourist attraction. Bolton (1871a,b) thought it might be feasible to blast out the entrance series.

If this monster blast was successful, it would probably open out the best portion of the cavern, so as to make it accessible even to ladies. At present no female will ever attempt to enter it if it continues in the condition I found it. I sincerely hope the proprietors will not destroy this natural curiosity.

He also suggested names for many of the passages then known,

as it would serve as a guide to visitors, who may be as numerous as are those at Peaks Cavern, Bagshaw's Cavern, or Speedwell Mine, in Derbyshire, for it is indeed as wonderful as any of these. . . . A guide would form a valuable acquisition in facilitating the viewing of this natural wonder.

The whole of the cavern, from the aperture to the entrance of this natural temple, may and eventually will be taken away by the quarrying operations at present going on; but beyond this . . . neither miner's pick nor gunpowder must ever touch it — indeed it would be a sin to destroy, to mutilate, or in any way to interfere with this wonderful temple of nature.

The Barrow author of the earliest newspaper account also pressed for the cave to be protected

until the day when we shall be able to boast of a museum . . . wherein to deposit all the various geological and antiquarian remains which are being daily found, but are now either lying neglected on the ground, or ruthlessly destroyed, owing to the want of a suitable resting place. (Anon, 1871b).

Sadly, by the 23rd of March he had already noted that

one party who entered last week destroyed one of the finest stalactites hanging from the roof, and having fastened a string to its extremity, dragged it with them to the entrance to carry it home as a memento. (Anon, 1871d)

The required protection was never granted to the cave, nor was the entrance series fully removed by quarrying. Holland (1960) states that the entrance was partly removed before 1911, the last recorded examination of the cave (in a search for ore) being in 1915. Following the First World War overburden was tipped from the cliff top (Holland, 1972), and the cave entrance now lies buried (FIG. 5).



FIG. 5—PART OF THE OLD CROWN QUARRY AT STAINTON, LOOKING NORTH. THE GRASS-COVERED OVERBURDEN TIP WHICH CONCEALS STAINTON CAVERN IS SHOWN IN THE LEFT-HAND HALF OF THE PICTURE, BEHIND THE SCRAP METAL

Photograph: Chris Howes, August 1985

POTENTIAL FOR NEW DISCOVERIES

Stainton Cavern should still be considered an important site of interest to the speleologist. Some 600 feet or so has been estimated still to remain intact beyond the overburden (Holland, 1960). Although further explorations were made before access was lost, it is probable that many passages remained unexplored. For example, the cave was noted to draught strongly (R. 1871; Bolton, 1871c,d), and the lower chambers had an active streamway which was not followed. It was never properly examined for archaeological remains.

In 1911 a member of the Fell and Rock Climbing Club, G. H. Charter, became interested in the site (Charter, 1911). Charter was friendly with one of Bolton's original party, possibly Abraham Myers. Myers had been with Bolton on three of his explorations, and would have been 57 years old at

this time. This led Charter to investigate the cave after the elapse of some 40 years, during which time 'the place has been rarely visited'. Consulting the local library he 'came across a pamphlet . . . detailing the first visit of my friend's party'. From it, he noted that Bolton had written of 'still another dungeon, which it is possible will never be explored'. The quotations do not appear in either of Bolton's known pamphlet-publications (they are found in the newspaper report, Bolton, 1872f), and presumably there was originally a third one, probably also published by Kitchen, which combined all of Bolton's 1872 writings. Charter himself did not find any new passage of note.

Other entrances or routes into the cave may once have existed. Bolton noted erratic boulders which would not have been able to enter through the known entrance. Holland noted a possible connection to Cuckoo Pit in 1960, but the latter site was later filled in (Holland, 1960, 1967).

THE HISTORICAL IMPORTANCE OF STAINTON CAVERN

Historically, the site is of great interest; Charter found the names of Bolton's party of March 25th, 1871, written on a clay-covered boulder, and there is every reason to believe the inscription is still there, sealed within the cave.

It is unusual to find so many visits of an exploratory nature within such a short space of time in Britain at this date, as well as the production of a detailed survey. Early British theories of cave formation, detailing how water had worn the passages and Bolton's own ideas which pursued earthquakes as the formative agency, were based upon the cave. Those propounded by Cock and the anonymous Barrow man, in particular, were remarkably in accordance with modern theory.

Interest in Stainton Cavern had largely been developed and maintained by Bolton's writings. This was at a time well before caving clubs and societies came into existence. It would not be for another three years that Boyd Dawkins would publish his classic *Cave Hunting* in 1874. Rooke Pennington did not explore Eldon Hole until 1873 (Pennington, 1877), and Martel was not to create an atmosphere of general cave exploration in Britain until 1895 (Martel, 1897) when he descended Gaping Gill. The explorations by Bolton and his contemporaries, preceding these others, are important in this context alone.

Bolton had remained 'hale and hearty to within a few months of his decease, . . . in himself a wonderful testimony of the advantage accruing from a temperate life' (Anon., 1873a). Already an old man when he entered the cavern, he was remarkable for his enthusiasm and determination throughout his pioneering explorations, even though at the end he was thwarted from proving his theories of speleogenesis. His last writing on the subject (1872f) was:

Although five special and careful explorations have been accomplished, our knowledge of the mysteries and wonders of the cavern is still very imperfect, and it is very probable that a complete development of all the intricacies of this strange place will never be arrived at by man. We must therefore again reiterate the sentiment expressed by Anderson —

Where learning ends let faith begin.

At the close of 1872 Bolton caught a severe cold in a thunderstorm, and died on the 10th January 1873 (Morris, 1873). His friend, Adam Sedgwick, died within a few days, on the 27th.

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REFERENCES

- A., F. 1871. The Stainton Cavern. *The Ulverston Mirror & Furness Reflector*, **11**, (572), April 15, 5, col. 6.
- ANON. 1871a. Fire at Ronhead Mines. *The Barrow Times*, (309), March 4, 4, col. 5.
- ANON. 1871b. Discovery of a cave at Stainton — a new field for the antiquarian. *The Barrow Times*, (311), March 11, 4, col. 5.
- ANON. 1871c. Discovery of a cave at Stainton. *Soulby's Ulverston Advertiser*, (1180), March 16, 6, col. 5.
- ANON. 1871d. The Stainton Cavern. *The Barrow Times*, (315), March 25, 7, col. 4.
- ANON. 1871e. The Stainton Cavern. *The Ulverston Mirror & Furness Reflector*, **11**, (569), March 25, 5, cols. 3-4.
- ANON. 1871f. A visit to Stainton Cave. *The Ulverston Mirror & Furness Reflector*, **11**, (570), April 1, 6, col. 2.
- ANON. 1871g. Discovery of a cavern at Stainton. *The Times* (27035), April 12, 4, col. 5.
- ANON. 1871h. The Stainton Cavern. Further explorations. *The Ulverston Mirror & Furness Reflector*, **12**, (578), May 27, 2, cols 1-2.
- ANON. 1873a. The late John Bolton. *The Ulverston Mirror & Furness Reflector*, **13**, (664), Jan. 18, 6, cols 3-5.
- ANON. 1873b. Obituary. [John Bolton and Professor Sedgwick.] *Geol. Mag.* **10**, 95-96.
- AYRE, L.R. and BARDSLEY, C.W. 1883. *The registers of Ulverston parish church* (194), 518.
- BARNES, F. and HOBBS, J.L. 1951. *Handlist of newspapers published in Cumberland, Westmorland, and North Lancashire*. [Cumberland & Westmorland Antiq. & Archaeol. Soc. Tract. Series **14**]
- BOLTON, J. 1864. On the Kirkhead Cave near Ulverston. *J. Anthropol. Soc. London*, **2**, 251-254.
- BOLTON, J. 1869. *Geological fragments collected principally from rambles among the rocks of Furness and Cartmel*. Ulverston, Atkinson. (Reprinted 1978, Whitehaven, Moon)
- BOLTON, J. 1871a. The newly-discovered cavern at Stainton. *The Ulverston Mirror & Furness Reflector*, **11**, (568), March 18, 2, cols. 1-4.
- BOLTON ('BOULTON'), J. 1871b. *Particulars of a first exploration of the extensive and newly-discovered cavern, at Stainton, Low Furness*. Ulverston, William Kitchin. (separate publication of Bolton. 1871a).
- BOLTON, J. 1871c. Stainton Cavern. Second (partial) exploration. *The Ulverston Mirror & Furness Reflector*, **11**, (570), April 1, 7, cols. 2-3.
- BOLTON ('BOULTON') 1871d. *Particulars of a second exploration of the extensive and newly-discovered cavern, at Stainton, Low Furness*. Ulverston, William Kitchin. (separate publication of Bolton. 1871c).
- BOLTON, J. 1871e. Letter dated 17 April to Adam Sedgwick held at Cambridge University Library, accession no. ADD 7652 2/HH81.
- BOLTON, J. 1872a. More about the cavern at Stainton. *The Ulverston Mirror & Furness Reflector*, **12**, (612), Jan. 20, 6, col. 3.
- BOLTON, J. 1872b. More about the cavern at Stainton. *The Ulverston Mirror & Furness Reflector*, **12**, (613), Jan. 27, 6, cols. 2-3.
- BOLTON, J. 1872c. More about the cavern at Stainton. Dialling No. 1 *The Ulverston Mirror & Furness Reflector*, **12**, (614), Feb. 3, 6, cols. 2-3.
- BOLTON, J. 1872d. More about the cavern at Stainton. *The Ulverston Mirror & Furness Reflector*, **12**, (616), Feb. 17, 6, col. 2.
- BOLTON, J. 1872e. More about the cavern at Stainton. *The Ulverston Mirror & Furness Reflector*, **12**, (617), Feb. 24, 6, cols. 5-6.

- BOLTON, J. 1872f. More about the cavern at Stainton. *The Ulverston Mirror & Furness Reflector*, 12, (618), Mar. 2, 2, col. 6.
- BOLTON, J. 1873. Personal communication to friends, later published in *The Ulverston Mirror & Furness Reflector*, 13, (664), Jan. 18, 6, cols. 3-5.
- BOLTON, S. 1971. John Bolton — Urswick fossil hunter. *The Barrow News*, April 2.
- CAMERON, A.[C.]G. 1871. Description of the recently discovered caverns at Stainton. *Geol. Mag.* 8, 312-314.
- CASSON, R. 1889. *A few Furness worthies*. Ulverston, James Atkinson, 35-39.
- CHARTER, G.H. 1911. The Stainton Cavern. *J. Fell and Rock Climbing Club of the English Lake District J.*, 2, (2), 228-231.
- COCK, T. 1871. The Stainton Cavern. *The Ulverston Mirror & Furness Reflector*, 11, (570), April 1, 5, cols. 4-5.
- DAWKINS, W.B. 1874. *Cave hunting* . . . London, Macmillan.
- DICKINSON, F. and DICKINSON, R. 1973. *Monumental inscriptions at Ulverston, Lancashire*. [Cumberland & Westmorland Antiq. & Archaeol. Soc. Tract Series 19, p. 89]
- FLETT, J.S. 1937. *The first 100 years of the Geological Survey of G.B.* London, H.M.S.O.
- HANCOCK, G. 1980. Bolton (or Boulton), John. *Geol. Curator*, 2, (9/10), 615-616.
- HOLLAND, E. G. 1960. *Underground in Furness*. Clapham, Dalesman. 1st edn.
- HOLLAND, E. G. 1967. *Underground in Furness*. Clapham, Dalesman. 2nd edn.
- HOLLAND, E. G. 1970. The long lost Stainton Cavern. *Red Rose Cave and Pothole Club J.*, (5), 35-37.
- HOLLAND, E. G. 1972. Stainton Cavern. *Br. Caver*, 59, 24-39
- KENDALL, J.D. 1876. The haematite deposits of Whitehaven and Furness. *Trans. Manchester Geol. Soc.*, 13 (8) for 1874-75, 231-286 (figs. 20, 21).
- MANNEX, P. 1876. *History and directory of Barrow and the whole of North Lonsdale*, Preston, Snape.
- MANNEX, P. 1882. *History and directory of Furness and Cartmel*. Preston, Snape.
- MARTEL, E.A. 1897. *Irlande et cavernes anglaises*. Paris, Delagrave.
- MORRIS, J.P. 1873. In memoriam. John Bolton 1791-1873. Handwritten copy of text read at funeral; held at Barrow-in-Furness Library.
- PENNINGTON, R. 1877. *Notes on the barrows and bone-caves of Derbyshire with an account of a descent into Elden Hole*. London, Macmillan.
- R., S. 1871. The Stainton Cavern explored. *The Barrow Herald*. (433), April 29, 4, col. 3.
- SALMON, W. 1873. Reminiscences of the late Mr. John Bolton. *The Ulverston Mirror & Furness Reflector*, 13, (665), 2, cols. 1-2.
- SEDGWICK, A. 1873. Letter to W. Salmon, Jan. 18. *The Ulverston Mirror & Furness Reflector*, 13, (665), 2, col. 2.
- SHAW, T.R. 1979. *History of cave science*, Crymych, Oldham.

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