

hence, loathed Melancholy  
Of Cerberus and blackest Midnight born  
In Stygian Cave forlorn,  
'mongst horrid shapes, and shrieks,  
and sights unholy  
Find out some uncouth cell  
where brooding Darkness spreads his  
jealous wings  
and the night raven sings

J. Milton, from 'L. Allegro'

PFR 74

### Editorial Comments.

The usual last minute delays, struggles to incite article writers, fights with the aged typewriter, and, somewhere along the line, a little caving, have at length resulted in the appearance of this, the seventh MSG Journal.

Whilst no spectacular new discoveries are included (MSG caving work in the last couple of years has been largely a matter of tying up loose ends and finishing surveys), a fair amount of material needing publishing had nevertheless accumulated. The indefatigable Hon. Sec. has led parties of recruits into the aquatic and filthy recesses of Keldheads, to triumphantly emerge with tales (and, eventually, survey notes) of several hundred feet of new passage. The editor (who has a penchant for sorting out complex surveys) has had a field day with Devis Hole Mine Cavern, and also with a variety of little known caves in the Magnesian Limestone of South Yorkshire, Nottinghamshire and Derbyshire. A tale of frustrations in Cross Pot is told to the general public at last, and the Teesside wing of the Group have fallen with delight on the old whinstone workings of Cleveland. As well as these major topics, there are a variety of shorter articles by a variety of authors, to all of whom we are most grateful.

Warp On!

Peter F. Ryder.

### Credits.

Cover Artwork	John C. Longstaff.
Words, surveys, miscellaneous drawings, aged typewriter	Peter F. Ryder.
Words, surveys, the wielding of the crowbar of office	Graham Stevens.
Printing, reducing of surveys	Sid Armstrong.
Words on Windypits	Roger Cooper, Ric Halliwell.
Words on Whinstone	Andy Skelton, Kevin Solman.
Words on Water Tracing	John F.B. Hawkes.
Hobthrushes	Martin of the Yurt (Davies).

### .....and next time

Just as this journal was going to press, and after the Devis surveys had been printed, Stuart Hodgson appeared to cheerfully inform us of another 1,000' of passage in Devis Hole Mine Cave - news which gave rise to a mixture of emotions. Nevertheless, the Devis saga will continue. Journal Eight is being (mentally) planned.....

## New Explorations.

### Devis Hole Mine Cave, Cogden Gill, Grinton, Swaledale.

It has been known for some years that natural passages had been encountered in Devis Hole Mine, Cogden Gill, but no account or survey of these was known to exist, and apparently no proper inspection of the natural cave had been made before 1964, when the level ran in some 70' from its entrance. Within a few years, the remaining section of level had been choked by heavy silting.

In 1971 attempts to dig into the level were made by MSG members, a sizeable shaft being sunk, but abandoned without the level being entered or located. However, Earby Mine Research Group took over the dig, and located the level in one side of the dug shaft (this had been thought, from surface observations, to be dropping directly into the level, but a miscalculation had been made and the shaft had been sunk about 4' to the west of the level). The level, although the arching remained intact in this section, was silted to within a few inches of the roof, and the EMRG had a considerable task on their hands to effect entry into the mine - a trench had to be dug through the silt for 40', until the roof fall (which holds up the silt - in flood the surface stream flows into the level) was reached. They dug through this, and placed a 15" diameter metal tube, constructed from two oil drums, through the fall. The main interest of the EMRG was in the extensive mine workings. MSG members, finding, to their delight, the mine accessible, promptly started work on surveying and exploring the natural caverns, which proved to be far more extensive than had previously been thought. Several areas of natural passages were entered by a little digging, and had evidently never been explored previously.

### Description of the Cave.

There are three main areas of natural passages in Devis Hole Mine:-

#### (i) The Central Maze

A very complex series of passages (totalling c.5,150' in all) intersected by the level 500'-600' from its entrance.

#### (ii) The East - West Level.

Much of this is modified natural passage, with several short natural branch passages opening off it.

#### (iii) Occidental Series.

At the far west end of the East - West Level, a smaller joint network series of natural passages.

### The Central Maze.

Descending the 10' timbered entrance shaft, the visitor reaches this area after a 40' muddy crawl, a struggle through the iron drum (larger cavers may be frustrated here) and 400' of walking through mine level, with some scrambling over minor roof falls.

Three accessible natural passages enter the level on the r., and four on the l. Beyond these, on the l., is a branch level running for c.60' to a sump, with three natural passages leading off it on each side.

The area is far too complex to allow a detailed description, other than in the form of notes to be used alongside the survey. The area can be divided into four parts - on the r. of the level the Near West, beyond which, and only accessible through the constricted Coral Crawl is the Far West. The most complex series of passages is on the l. of the level - the Near East and beyond, and again only accessible via a single connecting passage (at cross-section 'c' on the survey), the Far East.

In the Branch Level, on the l. the first two natural passages connect with the Near East, the third is short and choked. On the r., the first two branches lead into a fairly short natural series, a continuation of the Near East. The third passage on the r., just before the sump, connects with the Far East.

#### (a) The Near West.

A series of generally small passages, with one larger, quite well decorated, passage or elongate chamber running parallel to the level, and having a 15' deep miners' sump in its floor. Apart from this sump, and a few walls of "deads", there has apparently been little modification of the natural passages. The passages,

as elsewhere in the Central Maze area, often show a square section at roof level due to collapse in a persistent well jointed and blocky mudstone band. Below this band is a bed, present in most of the Central Maze area but absent locally, of fossil corals (a compound coral, perhaps Lithostrotion). This is usually in the order of 9" to 1' in thickness, but in the region of Coral Crawl it reaches perhaps double this figure. Coral Crawl is a constricted passage formed entirely in the coral band, erosion having left the siliceous corallites standing proud of the walls and forming razor sharp "claws" which in a friendly manner attempt to detain the passing visitor.

(b) The Far West.

The major passage of this series, gratefully reached at the far end of Coral Crawl, is a large rift passage, up to 15' high, somewhat modified by collapse but nevertheless larger than anything seen in the Near West. The passages beyond are a joint network, less closely spaced than elsewhere in the Central Maze area, generally being narrow, with little collapse modification, and ending too tight or choked.

(c) The Near East.

An incredible complex of passages, developed on three sets of joints, and with four-, five- and six-way junctions every few feet. The passages are frequently narrow rifts c.10' high, being narrowest at floor level, and often showing the square roof section associated with the mudstone band, and the coral band below this. To the south (i.e. in the series on the r. of the Branch Level) the passages become higher and narrower, pinching out (this is also seen in the Far East). There is some collapse modification, notably in the chamber running parallel to, and a few feet from, the mine level, and also at some of the complex intersections of passages. One interesting feature is the abrupt termination of many passages running east (towards the Far East) in collapses or highly calcified beddings. It appears that the Near East and the Far East are separated by a narrow fairly linear band of ancient collapses (to judge by the degree of calcifying).

(d) The Far East.

An extensive joint network, less closely spaced than the Near East - only two joints appear dominant in at any rate the southern part of this area, which is an almost rectilinear network in places. To the north the passages are often only 2'-4' in height, but to the south they become high and narrow rifts, often 20' high, and only wide enough to be passable 10' above their floors. To the south-east there is fairly extensive collapse modification, which may be relatively recent.

Near the centre of this area the Miners' Sump (25' deep and climbable with care on a rope) into sects several passages. It appears that the major rifts contain a considerable depth of clay on their floors - the miners have excavated the clay fill for several yards along one major rift running south from the sump.

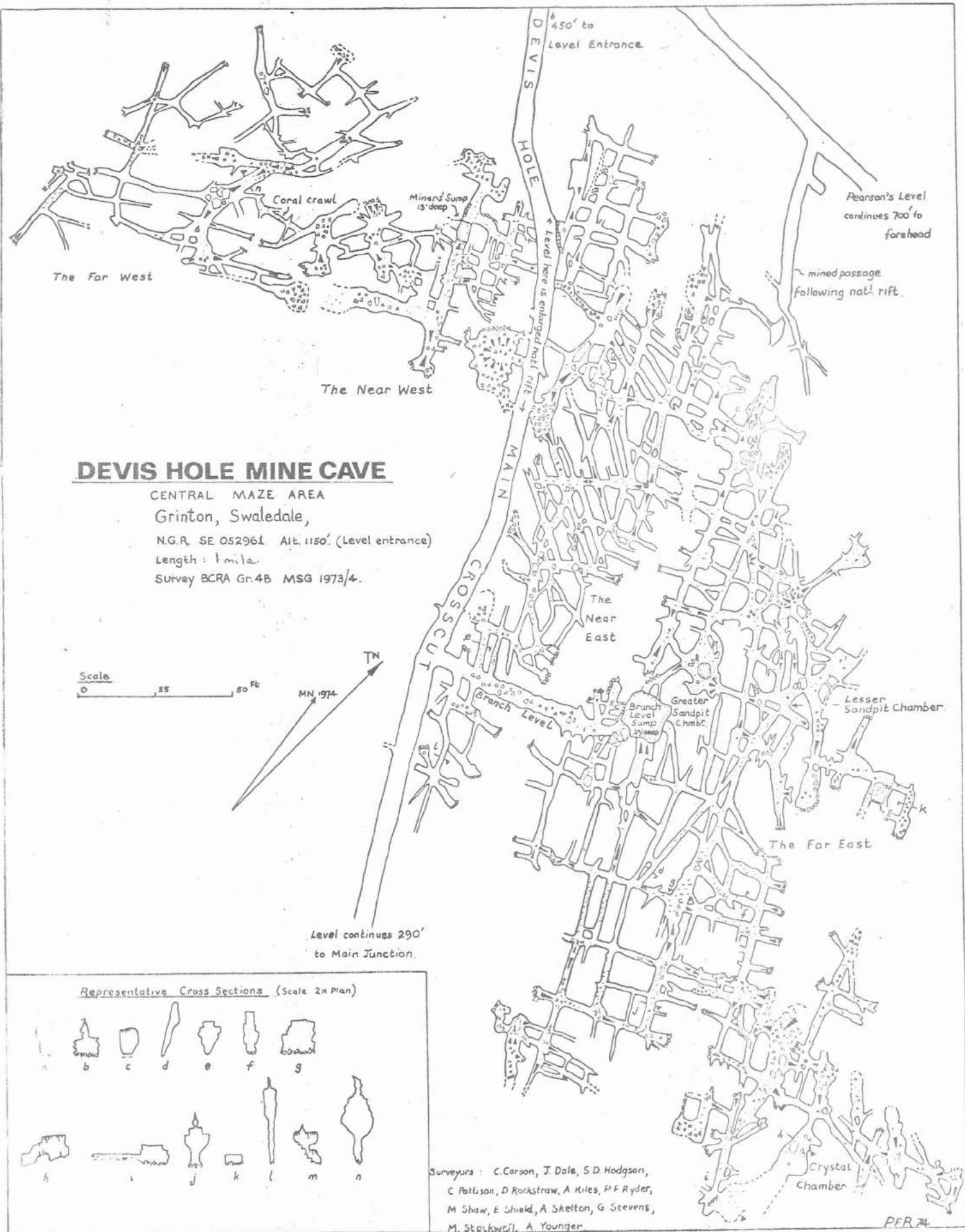
Along the eastern fringe of the area, the passages generally end too tight to pass, or, further south, in collapses. There is some indication of another linear belt of collapse running north-south, but by continuing southwards this can eventually be passed into the series of passages around Crystal Chamber. This small but well decorated chamber lowers southwards to an impassably low but wide bedding - somewhat uncharacteristic of the system.

There are several chambers and roomy square-sectioned passages in the Far East area, produced by collapse. Evidence of the depth of fill is seen in the floors of Greater and Lesser Sandpit Chambers, evidently dug by the miners - who have otherwise left the natural passages unaltered.

The East - West Level.

Beyond the Branch Level leading to the Miners' Sump and connections with the Near East and Far East areas, the main Devis Hole Crosscut continues, passing one shaky section and a 70' long branch on the r. (which appears to be a modified natural passage) for 384' to a junction with the main vein workings, running both east and west. The entrance crosscut continues for a further 307' to a forehead, passing a small rise and a 15' deep hole in the floor leading down into some short and tight natural rifts.

Both east and west levels have sections which are little modified natural cave passage, and for much of the first hundred yards of east level, and the west level throughout its length, at least one waterworn natural wall can be seen.



In part of the west level a thin vein of galena can be seen exposed in the narrow unmodified natural roof rift.

570' from the junction with the entrance crosscut on the west level is a branch to the south, also showing natural features. At the end of this passage is a 10' deep sump into a short sublevel.

The west level, beyond this junction, runs through an area of massive collapse, much of it recent. At the time of writing, this section may well be blocked again. After much climbing and crawling through a series of falls, collapse chambers and precarious boulder ruckles, more solid ground is eventually met, and the level continues to a forehead, where a clay filled natural rift, which the miners had been following, can be seen to continue. On the l. shortly before the end is a short side branch, with a similar termination. Before this branch level, and also on the l., is an open natural rift, the entrance to -

#### Occidental Series.

A series of natural rifts, 510' in total length, which are generally small and fairly constricted. These passages had been thoroughly examined by the miners in the hope of finding ore - at one point stalagmite flows have been cut away to allow a tight squeeze into further passages. There are no chambers of any size or especial features of interest

#### Some thoughts on the development of the system.

Two distinct types of phreatic cave system seem to be represented in Devis Hole Mine, both limited in their development by the relatively thin limestone bed in which they are developed.

The Central Maze area is an example of a 2-dimensional maze, as is also seen in Windegg Mine Caverns (see *MSG Journal* 5, June 1972). This system of passages probably owes its origin to slow solution without directional flow. Whether similar networks of passage (apart from the minor Occidental Series), totally clay filled, exist elsewhere in the mine, is uncertain. There are certainly many clay-filled fissures and small passages visible opening off the workings, notably off the East - West Level.

The East - West level poses some interesting problems, its original form before mining interference being uncertain - there may or may not have been a total clay fill. The majority of the clay filled natural passages opening off this level are of very small dimensions, and this would seem to indicate that the passage was a discreet phreatic tunnel (except in the neighbourhood of Occidental Series) rather than part of a network. The general form and extent of the passage merit a tentative suggestion of its originating by directional flow under phreatic conditions, an approximation towards Bretz's "phreatic water main type cave" (see Bretz, J.H. 'Vadose and Phreatic features of limestone caverns', *The Journal of Geology*, Vol.50 No.6. Part II (1942), pp.675-811). The direction of the passage is apparently controlled by a minor fault which has subsequently been mineralised.

Another example of these two types of phreatic system occurring in close proximity to one another, in Yoredale limestone, is perhaps seen in Silverband Mine Caverns (see Myers, J.O., 'The Caverns of Silverband', *Northern Pennine Club Journal*, Vo.3. no.1. (1967), p.34 et seq.).

#### Devis Hole Mine and notes on its history.

A miners' map dated 1774 shows the mine workings very much as they exist at present - thus the mine is quite early by Swaledale standards. The workings shown on the map are all still accessible - if they were not extended further in the 19th century, very little length of passage can be concealed behind the roof falls which terminate East level and its branches, with the exception of Horns Level (the first south branch met on following East level from its junction with the entrance crosscut), which, if the roughly scaled map is to be relied upon, originally extended a further c.400' beyond the 120' accessible at present.

The total length of mined passage surveyed during MSG work totals a little over 6,100'. Apart from some short sub levels in East level, two reached down 10' holes in

the floor and one up an 8' rise, and the short sub level at the end of the southern branch way along West Level, all this was in the form of haulage levels approximately at the same altitude as the entrance crosscut. Numerous rises and three sumps (which would require tackle) were noted but have not yet been investigated. G.M.Davies (of the YURT), who visited the mine in the early 1960's, reports that one of the two deeper sumps near the end of South East Level gives access to several hundred feet of "old man's workings".

Although the mine is reported to have been reasonably productive, remarkably little mineralisation is seen in the workings so far explored, apart from a thin string of Galena in the roof of West Level. The major vein workings may well have been up rises.

The name 'Devis Hole' is interesting (also given to the surface stream which flows past the entrance - however this may have been named from the mine) - a tentative suggestion is that it is a corruption of 'Devil's Hole' (a name which occurs in the Coniston Copper Mines, used in reference to a natural cavity), probably given by the miners who were very superstitious as regards natural "self-open" caves and cavities which they encountered in their workings.

### Flood Danger.

After heavy storms, or periods of prolonged rainfall, the stream which flows past the mine entrance can back up from the marshy area in which it normally sinks (to pass under the mine tips and reappear a little lower down the valley) and flow into the level entrance, through the initial low crawl and the iron drum, to sink in natural fissures in the level floor a few yards beyond the iron drum. If a party were in the mine at the time of a flood they could well be trapped for some time - although the floodwaters apparently do not affect the workings themselves beyond the initial hundred feet or so.

The iron drum, and the roof fall through which it passes, are apparently fairly stable at the moment, but with repeated floodings through the winter this situation may well change, and unless a more permanent means of shoring the fall is found, the mine may well become inaccessible again within a few years.

It must be borne in mind that sections of the old workings are extremely unstable, and the greatest possible care should be taken.

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### Cross Pot, Swindale, Brough.

#### Introduction.

Cross Pot is a stream sink adjacent to the Brough to Middleton-in-Teesdale road, which has attracted MSG attention, and excited speculation, since the early days of the Group. New ground was first broken on 19th September 1968 when Alan Brook of ULSA, lured north by the promise of a free dinner, passed a tight rift (Afterdinner Squeeze) and entered the chamber below, returning to report the possibility of horizontal development. Since that date a number of further assaults by the thinner MSG members, and attempted assaults by thicker ones (who cannot pass the squeeze) have resulted in further exploration of a complex system of small passages developed at the base of the limestone. A situation has now been reached where further progress is unlikely without blasting - thus the system is now being "published".

The significance of Cross Pot is twofold. Firstly, it is the only Northern Dales pothole sink which can be followed down into horizontal passages, and secondly, it lies at the head of the theoretical "Swindale Master System", and has considerable potential as regards length - the rising is 2 miles away.

An account of the hole, and of the initial MSG explorations, appeared in MSG Journal 2 (1968), but a more complete description seems in order here.

There are three open holes at Cross Pot - on the E of the road is a large rocky cross-shaped shake (giving the name) with at its N end the two small entrances of Cross Pot II, which only takes a small wet-weather stream. Beyond this is the active stream sink, Cross Pot I. On the opposite (W) side of the road, cunningly concealed in a rubbish tip, is the short dry Cross Pot III.

# DEVIS HOLE MINE

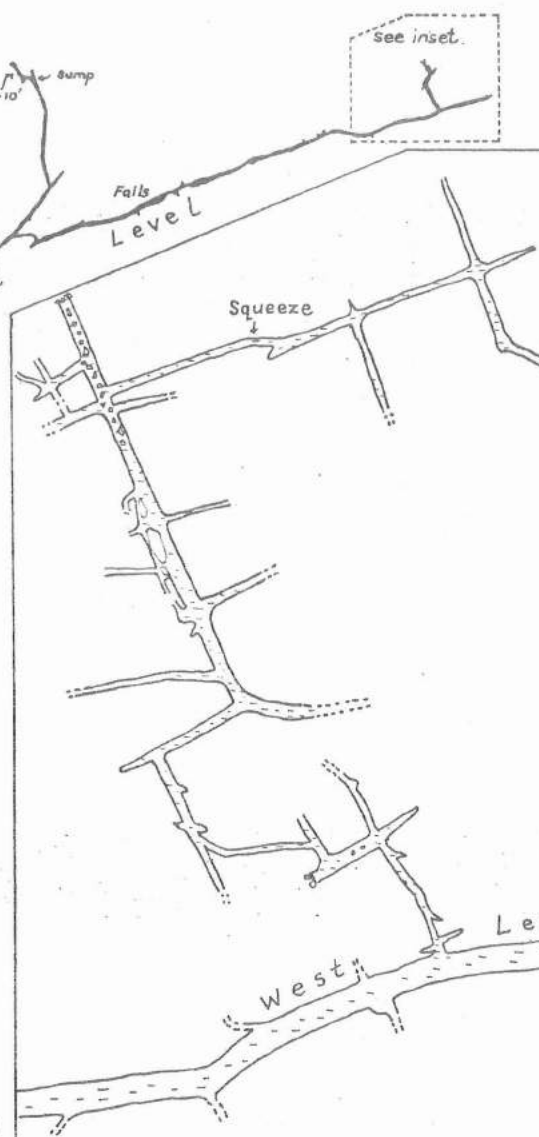
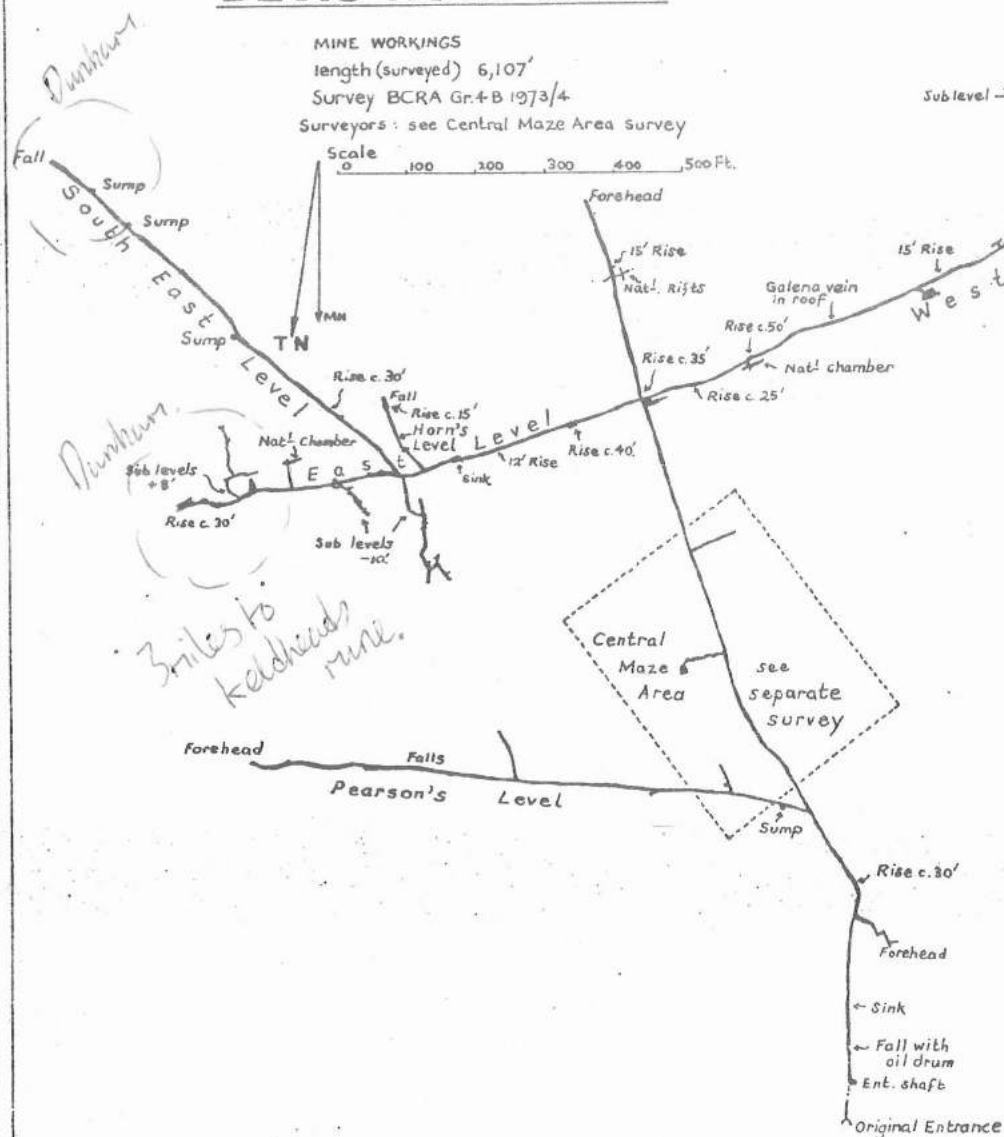
## MINE WORKINGS

length (surveyed) 6,107'

Survey BCRA Gr.4-B 1973/4

Surveyors: see Central Maze Area Survey

Scale 0 100 200 300 400 500 Ft.



## OCCIDENTAL SERIES

WEST LEVEL, DEVIS HOLE MINE

length (natl passage): 510'

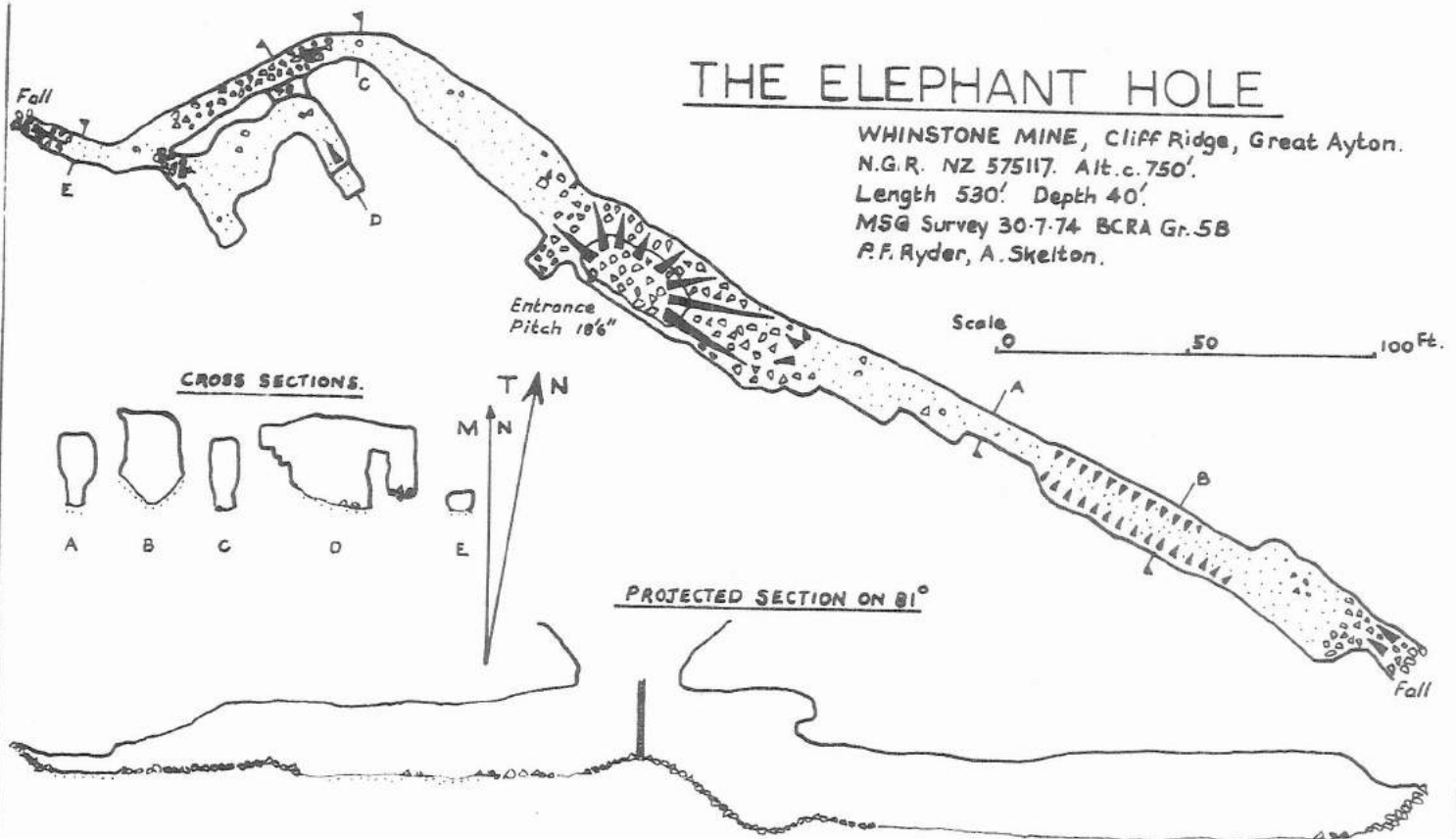
Survey BCRA Gr.4-B 1973

S.D. Hodgson, G. Stevens.

*3 miles to Keldhead mine.*

# THE ELEPHANT HOLE

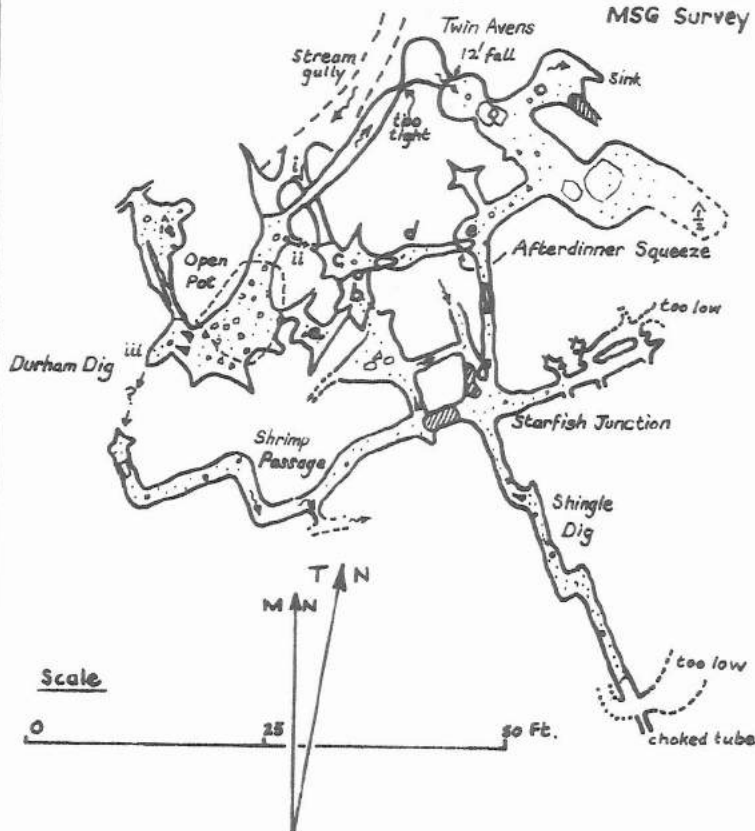
WHINSTONE MINE, Cliff Ridge, Great Ayton.  
N.G.R. NZ 575117. Alt. c. 750'.  
Length 530' Depth 40'.  
MSG Survey 30.7.74 BCRA Gr. 5B  
P.F. Ryder, A. Skelton.



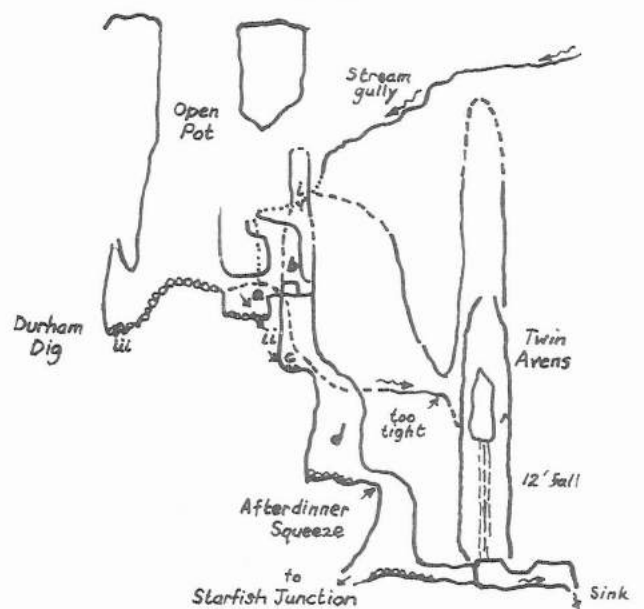
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# CROSS POT

SWINDALE,  
N.G.R. NY 818177 Alt. 1400'.  
Length c. 300' Depth c. 75'.  
MSG Survey 1970-1974 BCRA Gr 2/3B.



## PROJECTED SECTION ON 51° (simplified)



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### Cross Pot I - Description.

The open pot is 27' deep from the surface, and most easily descended by following the stream course, which cuts down in a mini-gorge and under a rock arch before dropping a final 10' into the pot. There are three different possible points of engulfment of the stream :

- (i) Above the final 10' drop on the stream course, the stream can drop down on the l. (looking downstream) into the system via the Twin Avens route.
- (ii) At the foot of the 10' drop the water can sink and enter the cave through a small fissure, and then flow down through Afterdinner Squeeze, the cavers' route into the lower passages - this poses enough problems without a raging waterfall going down it, so sink (i) should be cleared before attempting a descent, if it is not already operative.
- (iii) Under some conditions the stream can flow on for a further 15' across the floor of the open pot and sink in Durham Dig - a choked rift initially dug by the Durham Cave Club (who were probably the first to descend the pot, in the 1950's). This probably enters the lower system via Shrimp Passage.

Three accessible passages open from the base of the open pot. At the foot of the 10' climb is a tight rift, more easily entered by chikneying down from a hole in the stream gorge above the climb, above sink (i). The water from this sink falls down into this rift, and flows away from the open pot, for c.20' before the passage closes to an impassably small hole, through which a larger chamber can be glimpsed. This is in fact the upper of the Twin Avens, accessible from the lower passages.

At the opposite end of the open pot, above the now choked Durham Dig, a tight rift, probably an old inlet, leads off, and opens after a few feet into a chamber. This promptly closes to a 'T'-junction, with both branches being impassably narrow, c.15' from the open pot.

The route into the lower passages is via the third opening from the open pot, a narrow fissure in the S wall, dropping 4' into a small chamber. From this one steps up 4' again into a small circular chamber, and then drops 8' into a larger chamber with faint daylight entering in the roof, 20' above, from a short passage connecting with the stream gorge above sink (i). This could be used as an alternative entry, but would require a ladder.

On the opposite side of the chamber is a narrow rift dropping 12'. The climb down is quite easy, but a few feet from its base the rift closes down viciously to Afterdinner Squeeze - involving first a horizontal thrutch and then a 10' drop - well supplied with ledges and handholds, but the initial vertical section is very narrow.

Those who manage to pass the squeeze drop into a small chamber with two routes leading off, an open passage to the l. and to the r. a narrow rift almost blocked by a large boulder.

The open passage leads to a 'T'-junction. To the l. is a 5' climb into the first of the Twin Avens, a 25' high circular specimen with the stream crashing down from an opening 12' up the wall. This opening leads into the second aven, the top of which must be very close to the surface 40' above. The stream enters through the impassable rift mentioned above, through which faint daylight can be seen, from the first passage leading off from the open pot. From the base of the first aven the stream flows across the passage floor for a few feet to sink in a narrow choked rift, too tight to enter - this is the last time that the main stream is seen. Turning r. at the 'T'-junction leads into a wide low bedding, apparently formed by the large slabs which form its floor dropping into a cavity beneath. The bedding is penetrable for 15' or so before becoming too low, but there seems no prospect of a route into whatever might lie beneath it.

Returning to the small chamber below Afterdinner Squeeze, the other passage leads, after a very tight squeeze over a boulder (part of which had to be hammered away to allow the squeeze), to a small chamber (Starfish Junction) formed by the convergence of five passages (hence the name).

If the stream is flowing in this section of the cave, it turns into a low descending tube (its floor formed by the shale underlying the limestone) on the l. here. Straight ahead is another tube, which scalloping shows to be a former downstream

passage, running along the strike. This passage (Shingle Dig) was half choked within a few feet, and was the scene of much digging and grovelling, until the constriction was finally passed on 1.8.74. To the r. is an inlet passage, running up dip, containing a pool rich in fauna (hence the name 'Shrimp Passage'), and the fifth passage, also on the r. and forming an acute angle with the entrance passage, is another inlet, from a very tight tube.

The downstream passage from Starfish Junction is accessible for c.20'. The tube ahead then closes down, but two holes on the l. open into a parallel tube. These were too tight to pass, but much hammering allowed arch-mole Graham Stevens to get his head and shoulders through the first one, to allow a view of the parallel tube closing to another constriction - thus, even if it could be entered, more work would be required. Beyond the second constriction, however, apparently open passage could be glimpsed, and a distant rumble of water heard. Whether what can be seen is the main stream passage, or whether the sound is filtering, through the many tiny tubes and fissures in the rock around here, from the waterfalls of the Twin Avens, is a matter for debate. Further progress would need blasting - there is not enough room for hammer-and-chisel work, and the rock is in any case not very amenable to such manual methods.

Shingle Dig is a tight crawl, with two dogleg bends to the l. (the first of these necessitating the digging, before it could be passed). After 40' the passage enlarges somewhat, and the floor drops, to a bedding at the base of the limestone turning l. (down dip). Straight ahead the tube continues, but is totally choked with fill. The bedding can just be entered, but promptly closes down to an average height of c.4" - there is a rather higher section in the middle, but too narrow to allow progress. Thus another possible route to the downstream passage proved abortive.

Shrimp Passage is a comfortable crawl, with on the r., after a few feet, a tight branch. Beyond this, on the l., is an impassably tight outlet rift, taking the small stream which flows from the further reaches of the passage. This outlet rift can be seen to enlarge beyond the impassably tight section, but may merely run parallel with the passage to connect with a small choked tube back at Starfish Junction. The main passage continues round several bends, and past some attractive formations, to finally end at a large wedged boulder, beyond which the passage appears to split up into small choked rifts. Only a sketch survey was made of this passage, but it appears that its termination may in fact be fairly close to Durham Dig, the third possible sinking place of the stream. The tight branch on the r. a few feet from the commencement of the passage opens into a small chamber, with a rift on the l. becoming too tight. On the r. a small tube connects with the fifth passage from Starfish Junction, the tight inlet tube.

The total length of Cross Pot is c.300', and the depth c.75'. The fact that horizontal passages can be entered was cause for optimism as regards the prospects of entering a lengthy streamway (when considering the general rule that the passages in Northern Dales caves generally enlarge downstream, away from the sink). The problem in Cross Pot seems to be that three separate routes taking the stream down to the base of the limestone have developed, rather than a single one, and none have attained accessible proportions. The furthest downstream sections seen are wide and low beddings, developed on a dip of a few degrees (similar development is also seen, again where the strata have a noticeable dip, at the base of the Main Limestone in the downstream passage in Whirley Gill Hole, Wensleydale) at the base of the limestone.

It should be noted that Cross Pot I apparently floods drastically, and the stream can rise rapidly - there has been recent gripping of the moorland areas in its catchment. If sink (ii) becomes operative, which is likely if the constricted sink (i) overflows, the tight rift descents and Afterdinner Squeeze will rapidly become impassable.

#### Cross Pot II - Description.

The two small entrances of Cross Pot II are about 10' apart, in the N end of the large rocky shakehole adjacent to the road. The northern entrance, which takes a small stream in wet conditions, is a 30' pitch. The southern entrance is rather awkward initially, but can be climbed with a handline. A 17' climb down leads to a broad ledge, and a further 10' climb gains the bouldery floor of a sizeable chamber, with the northern entrance entering high in the roof. On the l. is a descending rift

passage, to a further 6' descent, into a large rift passage running south-west. The floor drops steeply to a wet weather sink, the deepest point in the hole, and then rises to a circular chamber 6' across. Beyond this the rift continues up a 6' climb to a junction. Straight ahead is a very tight descending passage, which might be passable to a thin determined caver, and to the r. a narrow rift running for 20' to a choke. Total length of the cave is c.120', and depth c.55'.

The relationship of Cross Pot I and Cross Pot II poses an interesting problem. Cross Pot II appears to be an older system, the main rift contrasting with the tight and immature (?) passages of Cross Pot I. Although the deeper Cross Pot I is only a few yards away, the small stream sinking in Cross Pot II probably does not enter the explored reaches of its neighbour. There seems little prospect of extending Cross Pot II in depth.

#### Cross Pot III - Description.

A little judicious rubbish moving in the tip on the west side of the road will reveal wooden boards, and the removal of these will reveal the entrance to Cross Pot III - a descending rift passage (no tackle required) heading back under the road and towards Cross Pot II. Descending a slope of boulders and broken crockery, a boulder ruckle is reached, with some formations, including a rather suprising 4' high stalagmite, the only noteworthy feature of the hole. Estimated length is c.30' and depth c.25'.

Cross Pot III seems very likely to be a part of the Cross Pot II system, and quite possibly terminates within a few yards of the tight passage at the end of the main rift of that cave. A connection might be possible with some work.

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#### Keldheads Cave and its recent extensions - a detailed account.

An account of the discovery of Keldheads Cave, near Preston-under-Soar, Wensleydale, appeared in MSG Journal No.4 (May 1971) together with a provisional survey. Discovery, or rediscovery, for the cave entrance was already known (see NRC Journal Summer 1963) took place on 15-8-70, and the breakthrough into the main streamway on 27-8-70, our third visit. Survey and exploration were continued on two occasions in the following weeks, until on the third visit a party claimed water level in the Duck was too high to pass in safety. This deterred visits, and some four months elapsed before the next trip, when the main remaining passages were surveyed, and the provisional survey published. The seven visits to the cave had involved seven persons and 20 "man-trips".

Enthusiasm for Keldheads waned. On a later occasion, after heavy rain, the entrance was observed to be issuing a tremendous torrent of water, and much of the cave must have been submerged. Thus the reputation of Keldheads Cave, as second in notoriety only to Eller Beck Head, was established (see MSG Journal 5, 1972).

There were several features of Keldheads Cave still requiring attention. Many places had been explored only once, and some of the more obnoxious places had not been explored at all. Thus after a break of almost two years a second phase of exploration and survey began. It is significant that with the exception of GS none of the nine persons involved in phase two had visited the cave during the earlier work (GS has a special liking for Keldheads Cave, having been the first to explore most of the system beyond the Duck). Phase two has been carried out spasmodically with a higher turnover of manpower, but has been no less epic, indeed, the penultimate trip (a trip generally lasting 3-4 hours, during which one is usually crawling in water in small passages with very sharp rocks. It is difficult to move fast or to exercise to warm up once one is cold, and one soon gets cold surveying wet crawls) was probably the most epic - the water level was some 3-6" higher than usual, the Duck required a short dive, and the wettest and muddiest parts of Quickmud Series had to be surveyed.

A diary of these phase two visits follows :-

- 4 - 1 - 73: N.Andrews (BACC), GS. N.W.Bedding dug out and extended 10' to a choke, final bedding area probed and Monkey Puzzle passage explored by NA into presumed known ground.
- 9 - 3 - 73: N.A., G.S. Monkey Puzzle solved, and Quickmud Series found.
- 6 - 9 - 73: C.F.Pattison, D.Rackstraw, E.Shield, G.S., D.A.Younger. Final bedding area pronounced final and GS and DR surveyed part of Monkey Puzzle Passage.
- 25 - 7 - 74: M.Shaw, A.Skelton, G.S., D.A.Y. Latter 2 completed Monkey Puzzle survey, and found and surveyed a short extension near Doubting Castle.
- 3 - 10 - 74: A.S., G.S., G.Womack. The epic. In flood conditions the Duck had to be dived. G.W. soon departed (this was his first cave!) whilst AS and GS surveyed Quickmud Series - very aqueous, very cold.
- 27 - 10 - 74: GS paid a flying visit to tidy up a few loose ends. Water levels were normal.

#### Description.

The cave is situated at SE 076916, where a stream emerges from beneath boulders below a small outcrop of the Main Limestone. Within the entrance is a roomy chamber (by Keldheads standards) with a choked passage on the r. and ahead a sharp bend where the stream enters from the r. A stooping passage leads on, with the water normally c.6" deep, for 33' to a junction where the stream enters from a small passage on the l., and the larger main passage with a boulder floor leads on.

The stream inlet passage splits into three; to the r. oxbows back to the main passage, to the l. most of the water emerges from a tube which chokes, and straight ahead a small hole opens up into the 8' high Inlet Chamber, leading to a dangerously loose boulder choke.

A few yards along the main passage, to the l. is the other end of the oxbow, whilst on the r. is a boulder slope. The way on lies along a crawl at the top of this slope, along the l. wall beside a mass of poised boulders. Particular care is needed here. One enters a collapse chamber and drops down a boulder slope into a bedding plane crawl. This normally carries a small stream emerging from a choke on the r. The bedding plane continues past five branches on the l, to a rock pillar giving a choice of routes to a junction. To the r. is a choked oxbow; to the l. a squeeze (dug out on 4 - 1 - 73, the North-west Bedding) leading for 10' to some small choked fissures where a small stream enters.

Returning, the five branches are now on the r. The first is a squeeze into a very low watery chamber with a choked inlet. Small fissures connect with the second and third branches from the bedding plane, whilst above the second branch is a blockfall cavity. The fourth passage from the bedding plane, Harmonica Passage, takes the stream and ends at a squeeze up through boulders into Little Man Chamber. Here the fifth branch (i.e. the first on the r. as one enters the bedding plane from the collapse chambers), the Mud Tube, enters, and a hole in the boulders opposite the Mud Tube drops into a low passage with 18" of water in it.

Straight on, the water flows into a dangerous ruckle, but before this a small tube on the r., half full of water, leads to the Duck. Through two low arches on the r. a higher passage can be seen. The further arch is the easier and in normal weather a few inches of airspace allow one to keep ones face above water.

# KELDHEADS CAVE

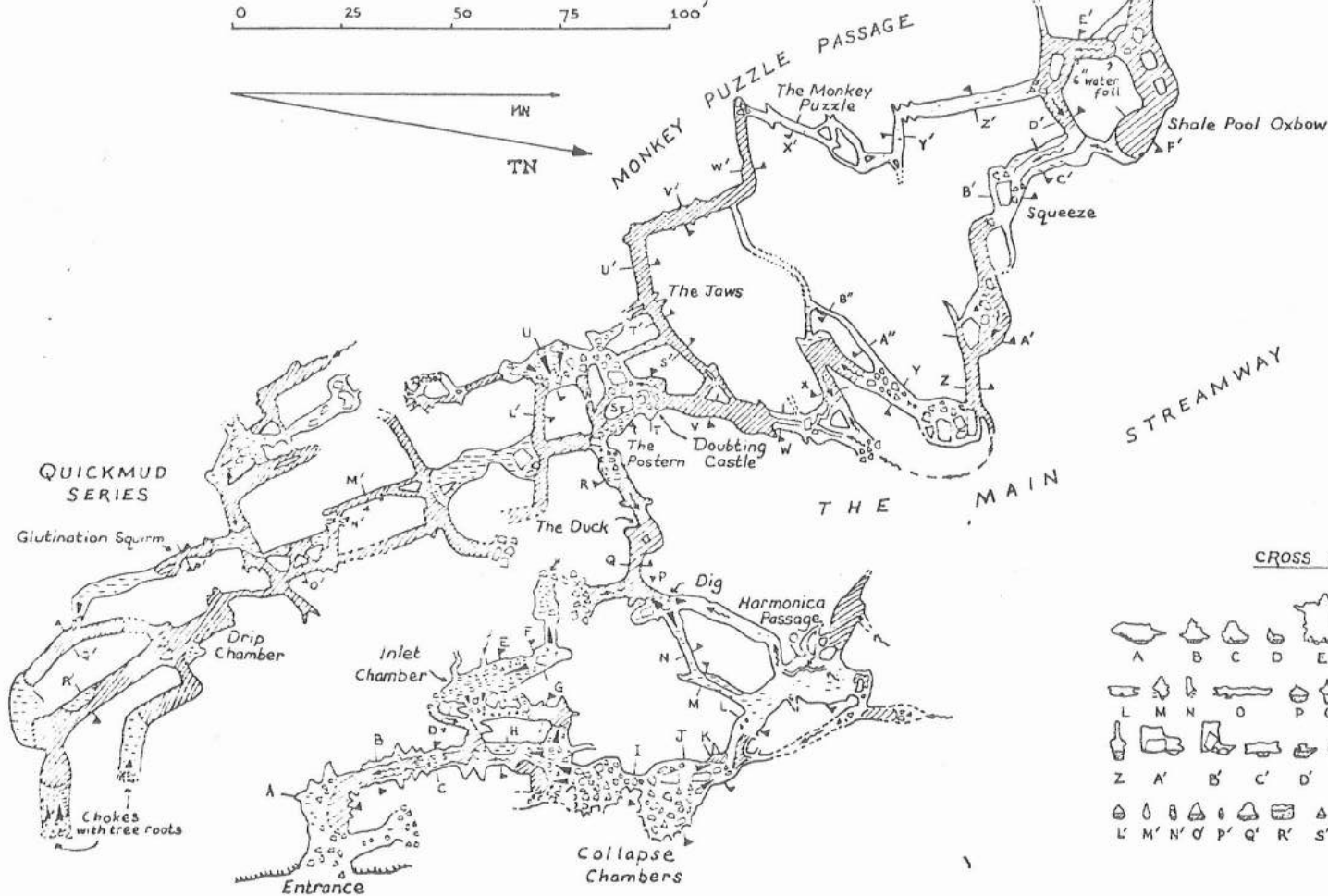
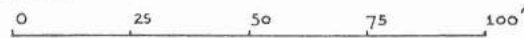
Preston under Scar, Wensleydale.

NGR. SE 076916 Alt. 900'

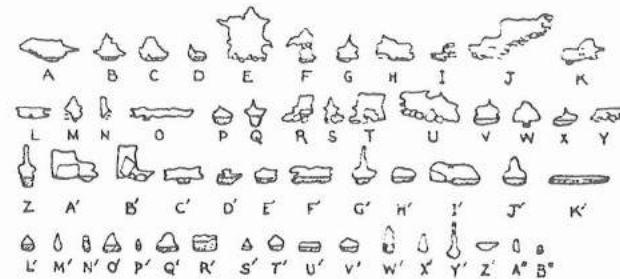
Length: 2,000'

MSG Survey BCRA Gr. 4/5 B-C 1970-1974

Scale



## CROSS SECTIONS



Once through the Duck, a crawl leads up boulders, past a branch on the l., to a choice of a low wet crawl on or a narrow fissure to the r. (The Postern). The walls hereabouts are loose and demand care. The crawl and The Postern both lead into Doubting Castle, a collapse chamber in the main streamway. The Postern has traditionally proved elusive to returning parties.

Upstream from Doubting Castle, stooping and crawling lead past two small tubes on the l. to a 'Y'-junction. The r. fork, an inlet, chokes after 15', and has been shown to be an oxbow by the fact that muddied water flows from here when the main stream is muddied by parties further upstream. The l. passage is a flat crawl round an acute r. bend past a tight tube on the l., and then through some boulders to a sharp l. bend. Above the boulders is a collapse chamber. Ahead, the streamway is a hands-and-knees crawl leading to another collapse chamber bypassed by a squeeze over a slab back into the stream. A few yards on there is a fork, with the stream emerging from the l. and Shale Pool Oxbow branching r., to rejoin the streamway further upstream. Following the stream, a duck between two flakes of shale leads to a r. bend with the entrance to Monkey Puzzle Passage on the l., then after another bend with a tight inlet on the l. there is a 6" waterfall, above which Shale Pool Oxbow rejoins on the r. Crawling to the l. and on one reaches another collapse chamber with a few small stalactites in the roof. 40' further on the streamway suddenly ends in a blank wall, with the stream entering through a narrow chink on the l. 5' back from the end is a narrow cross rift in the roof up which one can squeeze into a low but wide bedding plane some 6' above the streamway. Crawling forward a few feet two floor channels are met. The stream flows into, and sinks in, the second, and reappears in the first, where it sinks again to flow to the chink feeding the streamway. To the l. along these channels are two passages which join up after 15' and after a further 20' the roof lowers to c.4". The bedding plane confining the stream is very wide - over 15' in places. Crawling forward some 20' the bedding is seen to veer r. A lip of rock restricts the height to c.7". Non-one has proceeded beyond this, and it is difficult to see what happens (to turn ones head over one has to put it under water). Over the lip the water deepens but the choice of route is restricted by roof pendants. No draught or sound of water flow has been detected.

Monkey Puzzle Passage, which is the second branch on the r. downstream of the 6" waterfall, provides a remarkable mirror-image "oxbow" back to Doubting Castle. This reflection is in direction only for the passage is smaller, more awkward, sharper and wetter than its counterpart. A crawl leads to a taller cross fissure and a series of bends leads to the Monkey Puzzle - a short length of passage difficult to enter and difficult to leave! The passage leads on to a collapse cavity on a corner with a hole through boulders on the l. dropping into a watery passage which becomes roomier. Around a corner a narrow passage on the l. emits the sound of running water, and seems connected with the tube near the acute r. bend in the main streamway. Ahead, one reaches "The Jaws" where two blocks obstruct the passage above water. The passage then splits, with a watery tube on the r. emerging in Doubting Castle and a drier tube straight on emerging in the main streamway a few feet further upstream. In Doubting Castle a climb over a boulder "saddle" leads into an ante-chamber with two routes out. Opposite the saddle is a climb over boulders back down to water level, and 30' of ruckles and ducks. Turning l. in the ante-chamber a tube leads to a cross-roads. To the l. is a wet passage leading to the passage between the Postern and the Duck. Straight on is a watery tube, and to the r. is the main route around some boulders and across a pool and mud bank to a roomy junction. From the r. a stream emerges from a passage leading to a ruckle. To the l. the passage narrows down to a wet fissure leading to a ruckle.

Across the junction, three passages lead off to enter Quickmud Series. The l. hand one near where the passage narrows is a wet tube becoming a duck which is silted and has not been passed. It is bypassed by the other two passages, two fissures which unite and lead down a narrow tube. On the l. a few feet before the end of the tube, a small archway is a duck and leads to a roomier passage. On the r. is an oxbow whilst ahead is a 'T'-junction. To the l. is the other end of the silted duck whilst on the r. the passage gets roomier with two fissures on the r. connecting with the oxbow. The water deepens to a crossroads. To the l. is a blind fissure, straight on is a duck - the clean way in! To the r. the passage leads to yet another junction. On are a variety of collapse chambers and semi-submerged passages and fissures all eventually choking or submerging. To the l., the passage

reduces to a squeeze mostly submerged in liquid mud - Glutination Squirm. Beyond a roomier passage leads to a descent through boulders to a junction with a muddy passage. To the l. is silted but to the r. leads down to a low canal. Across the canal a boulder floor leads to a collapse cavity obviously close to the surface. Turning l. along the canal for some distance, roof pendants give a choice of a duck or a detour to the l. These emerge in "Chamber of the Drips" where the roof drips in response to rainfall. To the r. in this chamber a branch leads to a mud slope and boulder choke - again near the surface (roots are growing through the mud and on a windy day the wind could be heard outside). Across the "Chamber of the Drips" the canal continues to where the roof lowers and the other side of the duck - the clean way out!

#### Hydrological and Morphological Features.

The source of the Keldheads water is not known. To the north, at SE 073921 a small stream sinks in a road drain, and there is a spring of similar volume nearby. This flows across a boggy area and down a well defined vallet to meet the Keldheads water well downstream of the cave.

The stream encountered in the bedding plane and eastern passages (i.e. the Entrance Series) is possibly derived from field drainage. The main stream is more substantial and could possibly be associated with sinks in Apedale.

All the passages show essentially phreatic development with shalebands exerting a pronounced influence, indeed many passages seem to have developed by shale removal. Blockfall accounts for further development. Solution of the impure limestones and excavation of the shale bands have produced a fair amount of debris. The passages upstream of Doubting Castle are largely clean washed, but downstream this debris has been deposited in the form of mud banks and soft mud beneath the water. The flow pattern in the downstream area is complicated; there are no main stream passages, most of the flow being in inaccessible paraphreatic tubes and beddings or beneath boulder ruckles. There are large volumes of slow flowing water with soft mud floors (hence "Quickmud").

Fossil coral (*Ionsdaelia*) are obvious in the cave, both in the walls and roof and in detached blocks. Formations are generally absent although some cementing of the collapses near the entrance has taken place.

A biological feature of the cave, especially Quickmud Series near the chokes, is the presence of mouldy flies. Worms low in pigment have been seen in the Mud Tube. A house martin has been observed nesting near the entrance, and swooping in and out of the entrance chamber.

#### Access

The cave is close to a road in a gated field, and local enquiry suggested that there would be no objection to our visiting it. On two recent meets however, parties have been accosted and interviewed by the police who are concerned about thefts from the nearby quarry, now disused. It seems that merely parking nearby is sufficient to mobilise a fair proportion of the local constabulary. It is suggested therefore than permission is sought from the Bolton Estate Office, Wensley, Leyburn, Yorkshire, and Leyburn Police Station informed of an intended visit.

## CLIFF BECK HEAD CAVE AND THE BUTTERTUBS.

The Buttertubs, a series of open potholes running along the Main Limestone outcrop on the west side of the ravine of Cliff Beck, are well known both to cavers and passing motorists (the Thwaite to Hawes road, commonly known as the "Buttertubs Pass", threads its way between the open shafts). The potholes, which cut through virtually the whole thickness of the limestone, are quite typical Yoredale Limestone pots, showing vertical development on joints only - other examples, although not all on such an impressive scale as the Buttertubs, can be seen, in Swaledale, in Great Sleddale Pots and Tailbrigg Pots, and further north in Cold Brow Pots and Swindale Pots.

Less well known, although only a few minutes of steep scrambling away from the road, is the resurgence cave which drains the main group of Buttertubs, Cliff Beck Head. Although wide open, and in an obvious situation in the valley bottom directly below the pothole sinks, it has virtually escaped mention in caving publications. MSG interest in the cave has been in two phases, in the "early days" (1966/7) when an unwetsuited party grovelled their way up the r.hand (Conduit) passage, and wondered whether anyone had been (fool enough to go) there before. In 1973, Pete Ryder, wanting to survey the system in the course of his academic studies, dragged various helpers (notably the long suffering Chris Pattison) into the cave.

A sketch survey of Conduit Passage appeared in MSG Journal 1 (1967), but this is unlikely to have been paid much attention since the duplication quality of this notable publication was so poor as to render the survey virtually invisible.

In the course of the 1973 efforts, Chris Pattison was induced to push each of the cave's two streamways to its final and bitter end - someone else may have done this before, but there is no evidence, as far as we know, of this. Thus a full description of the cave and area appear here in the 'New Explorations' section of this journal - at any rate on the grounds of the system being previously undescribed.

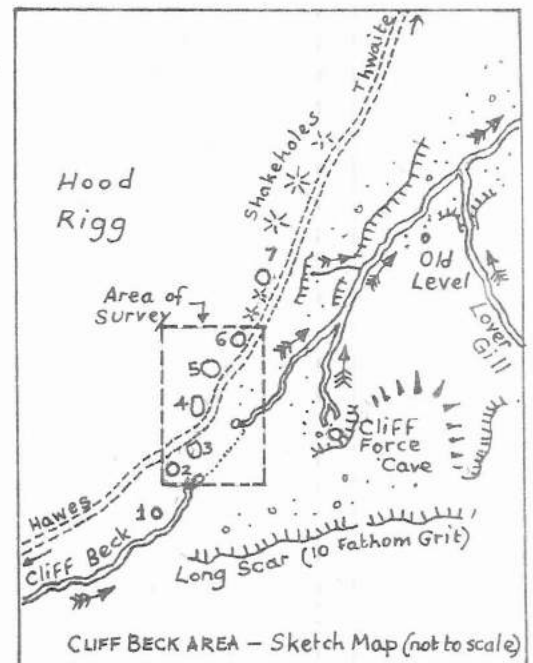
### (i) The Area.

Following the narrow deeply incised valley of Cliff Beck up from Thwaite, above a ravine cut in the Undersett Limestone, the Beck is found to rise from two resurgences, each at the base of the Main Limestone.

That on the l. (the south east side of the valley) is Cliff Force, one of the "major hydrological systems" of the Northern Dales, fed by sinks beyond the Swaledale/Wensleydale watershed. Much effort has been expended by NFC in attempts to enter the extensive cave system which must exist here, but so far only 450' of passage have rewarded their labours (see NFC Journal Summer 1967).

On the r. of the valley head is Cliff Beck Head - the resurgence end of, by contrast, a "local system". The entrance is a low arch at the foot of a small limestone crag, with a sizeable stream emerging. Immediately beneath the entrance recess, the cave divides into two.

The stony bed of Cliff Beck, dry in all but the wettest weather, continues beyond the cave entrance, running alongside limestone scars, until the valley widens out again at the top of the limestone. Here the active stream is met again, sinking in a gravelly pool in its bed. This sink is presumed to feed the l. hand of the two passages in the cave - Cliff Beck Passage.



Directly above Cliff Beck Head entrance, the valley side rises steeply for c.100', to a pronounced break in slope, a shelf which marks the top of the Main Limestone - this is utilised by the road, which runs along the east (valley) side of the northern group of Buttertubs, cuts between the two major shafts (nos. 3 & 4) and then rises steeply to cross the Swaledale/Wensleydale watershed and descend along the eastern flank of Fossdale towards Hawes.

The two major shafts 3 & 4 are both small stream sinks, and it is the water from these that feeds the r. hand (Conduit) passage at the rear of the entrance recess of Cliff Beck Head.

In the various smaller potholes north of nos. 3 & 4, some water sinks, and this appears to feed small risings along the foot of the limestone outcrop below the road. One of these risings has what appears, from a distance, to be a small cave entrance - however, on toiling up the steep screes to it from the valley bottom, it is found that appearances serve only to deceive, and the "entrance" is no more than a shallow recess in the rock face.

(ii) Cliff Beck Head.

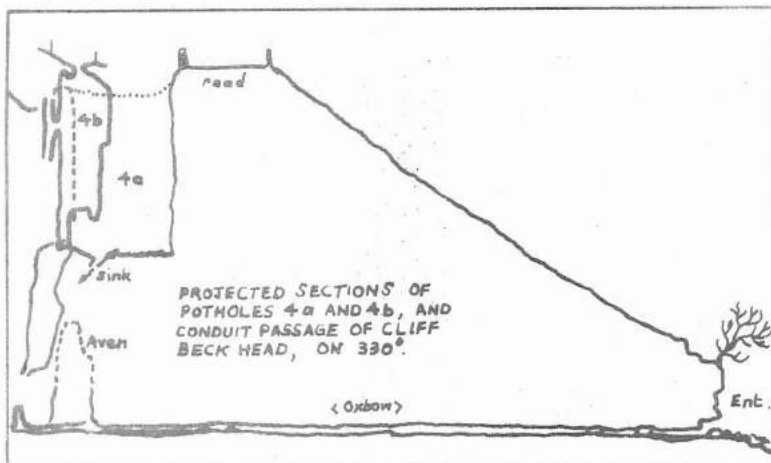
Immediately within the entrance arch, the cave divides into two streamways. Each has a surveyed length of 220' - and the similarities between them more or less end there, since the two passages are very different in character, or as different in character as what the uninspired caver would class together as "wet crawls" can be.

Conduit Passage.

Inside the entrance recess, this is the smaller, tubular, passage running "straight ahead". The passage is initially a wet crawl more or less square in cross section, and about 2' high and wide. After a couple of bends to the l., a dry branch passage half choked with sand is seen ahead - this connects with Cliff Beck Passage a few feet from its entrance, so digging would be pointless. The Conduit streamway continues r., passing a short oxbow, before turning r. and then l. into a rather roomier section of passage, with the stream running over a gravel floor. This section ends abruptly where the stream enters from an impassably small passage on the l. A few feet before this, however, is a dry branch on the l. which is a short oxbow, conveniently bypassing the impassable section of streamway, which is only a few feet long. The oxbow, although narrow, is a straightforward crawl, rejoining the stream passage. On the occasion of our initial (1967) visit, a crayfish was encountered here. Despite the efforts of John Longstaff to entice it up the Hon. Sec's boilersuit leg (the HS being wedged in the oxbow at the time) it could not be detained for inspection or fraternisation.

The streamway continues, narrow, with protruding chert ledges on either side. At one point impassably small inlet tubes enter on both r. and l., that on the r. draughting - these perhaps connect with Buttertub 4 via a former route of the stream. A squeeze over a boulder leads into a rather aqueous section, which ends in a junction. Straight ahead is an aven - the only place in the whole cave where one can stand up. The narrow fluted rift is in fact c.30' high, gradually closing in upwards, and is very close to Buttertub 4b, the "new" Buttertub. The aven is on approximately the same joint direction as shaft 4b, and is, according to the survey, offset about 12' to the east of it - and the top of the aven is probably c.15' below the level of the base of the shaft, so a passable connection seems unlikely.

If one can resist the temptation of remaining standing up in the dry aven, the streamway can be followed for another 25' as a flat out bedding crawl, to a narrow 6' high joint aven and a fork, each branch being an impassably low inlet. According to the survey this point is 20' east of, and about 12' below, the deepest point in Buttertub 4a - the actual point in that hole at which the stream is seen, however, is 45' above.



# THE BUTTERTUBS and CLIFF BECK HEAD

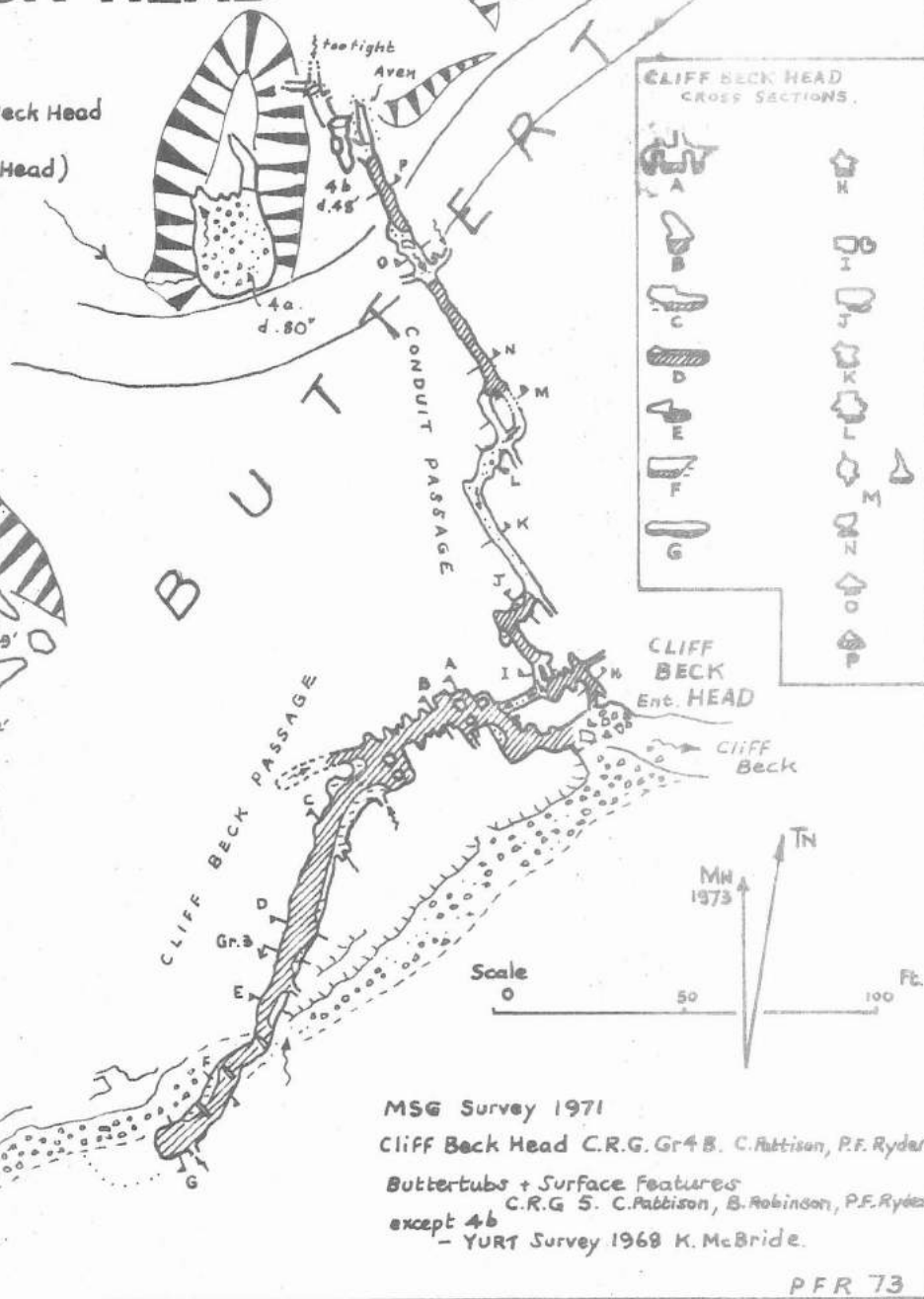
Thwaite, Swaledale

N.G.R. SD 874963

Alt. c. 1500'

Length 440' (Cliff Beck Head)

Cliff Beck Head



### Cliff Beck Passage.

Whereas Conduit Passage is generally narrow and relatively (in terms of the relative amounts of passage cross-sectional area occupied by water and by air) "dry", Cliff Beck Passage is generally low, wide and wet. The passage is quite sizeable in parts - one can actually stand up for a few yards near the entrance. After passing a series of unusual rock "pedestals" (see cross section 'A'), the passage attains a total width of c.15'. On the r. here is a small inlet passage, a crawl of c.25' to a sump. The main streamway continues wide but with decreasing airspace, above 18" of mud and water. After an unpleasant duck, the roof rises again, and the final 50' or so of passage is easier going, ending in a blank wall. The stream enters through three narrow joint fissures in the passage roof.

The final section of Cliff Beck Passage is more or less directly beneath the surface stream bed, although the roof inlets at its end are still c.150' from the normal weather sink of the stream.

The southern Buttertubs (1 & 2, and perhaps 3 as well) may drain to this passage rather than Conduit Passage, although very little water normally sinks in them.

If one follows the streambed up from Cliff Beck Head towards the Cliff Beck sink, a small bedding cave entrance (too small to enter - 2' wide and 6" high) in the r. bank is seen. The position of this suggests that it may be an old resurgence for Buttertub 2, now abandoned as the drainage from this shaft finds its way down to join the subterranean course of Cliff Beck.

However, the existence of bedding cave development at this level, 45' above the level of Cliff Beck Head, suggests that a system of passages may exist at this horizon, perhaps taking the Beck water from its choked sink (65' vertically above the rising) for c.150' to a point at which it drops down constricted fissures to enter the explored reaches of Cliff Beck Head. The fact that the sink cannot take the full flow of the stream in flood conditions, suggests that the passage development at this level is at a relatively immature stage, and that the passages, if they exist, are probably not of accessible dimensions.

Cliff Beck Passage, the accessible portion of the underground course of the Beck, appears to be basically a phreatic passage - the area of the "rock pedestals" may have originated as a small joint network.

Conduit Passage is also probably basically phreatic in origin, although showing a greater degree of vadose modification.

### (iii) The Buttertubs.

There are seven separate shafts or multiple shafts in all, running in a line parallel to the contours, and commencing at the point at which Cliff Beck first reaches the limestone.

1 - This is actually c.50 yards upstream of the stream sink, and a few feet above stream level in the west bank of the Beck. The entrance has been dug out, apparently after considerable effort, by the Electron Caving Club - this is recorded on an aluminium plaque affixed to the wooden frame round the entrance. This gives the name of the hole as "Cliff Force Pot" - a rather unfortunate choice of name, since there appears to be reason to connect the pot with Cliff Force Rising, which is on the other side of the valley further downstream. Perhaps "Cliff Beck Pot" would have been a better name.

This hole is perhaps 35' deep, the initial descent being through a boulder ruckle (not over stable), opening into a rift in solid rock which drops to a gravel floor, and closes down completely at each end.

(continued page 34)

Caves in the Magnesian Limestone of South Yorkshire, Derbyshire and Nottinghamshire.

In 1973 and 1974 a number of small caves in the Magnesian Limestone south of Doncaster were investigated by the writer and friends, whilst based at Sheffield. Little has appeared in print as regards these caves, except where they happen to be of archaeological importance. The following descriptions are solely from a geomorphological point of view, articles describing the archaeological finds (notably at Cresswell, and also at Langwith) having appeared in a variety of publications.

The caves visited are here described from north to south.

CONISBOROUGH CAVES

Two short caves in a disused railway cutting, crossed by the A630 (Sheffield to Doncaster) road between Conisborough and Warmsworth.

Cave I. N.G.R. SK 528993. Alt.200'.

Obvious entrance in N wall of cutting a few yards W of the road bridge, reached by a 25' climb up steep grass and rock from the cutting floor. Immediately inside the entrance one climbs down 8' into a passage 4' wide and 15' high. This descends and lowers, the roof being formed by a massive boulder ruckle, to a mud slope leading up to a squeeze under a precariously wedged boulder into a final small chamber, ending in a choke. Total length of the cave is c.50'. The size of the passage, now much reduced by boulder ruckle, suggests that it may once have been part of something much larger.

Cave II. N.G.R. SK 532992. Alt.100'.

On the S side of the cutting, about a quarter of a mile E of the road bridge, are two small entrances, reached by a steep 40' climb up the cutting side (at an angle of 58° - if the grass is wet the climb is very difficult, and it is easier to scramble down, on a lifeline, from above).

The E cave is a straightforward rift becoming too tight 12' in. The W cave, c.50' away and at the same level, opens, after a crawl over a boulder, into a roomy 10' high chamber. On the r. is a blind alcove, on the l. a second chamber ending in a choke. Two holes in the floor of this second chamber drop into a bedding chamber at a lower level, with a squeeze into a further 15' of low bedding, heading beneath the choke in the chamber above, but becoming too low. A vocal connection from this section was established with the short E cave, which can only be a few feet away from this point. Total length of the cave is c.70'.

HERNE HILL CAVE, MALTBY. N.G.R. SK 533922. Alt.350'.

The entrance to this cave was found whilst a private car park adjacent to the main street of Maltby was being enlarged in 1973. Apparently the cave was only entered by local children until the first week of January 1974, when it received mention in the local press (being variously described as "natural rifts" and "old mine workings"), as two children whose lamps had failed had to be rescued by the police. This drew the attention of the writer and Sid Armstrong to the site, who visited it and obtained the landowner's permission to unblock the entrance (which had been walled up after the rescue) and explore the cave.

The entrance, c.4' wide and 2' high, is situated in the centre of a small anticline in the limestone. A low arched tube drops steeply for 15' before suddenly opening into the roomy First Chamber, 20' long, 12' wide and varying in height from 4' to 10'. To the l., at the upper end of the chamber, is a small alcove containing a circular shaft dropping 15' into the Second Chamber. An easier route into this is down the obvious boulder slope at the r. end of the First Chamber. Halfway down this slope a narrow rift on the l. drops into a smaller blind chamber.

The Second Chamber is more or less directly beneath the first, and from here the remainder of the cave runs more or less in a straight line to the north west. To the r. of the Second Chamber are two short branch passages which rise steeply and connect in a low chamber. The main route on from the Second Chamber is through a short crawl into the Third Chamber, which swings r. and then l., with smaller passages leading off on both sides. Those to the r. are a small oxbow, those to the l. alternative routes into the Fourth Chamber, which the main route also enters, after a few feet of hands-and-knees crawl. This is the largest chamber in the cave, being about 30' long and up to 15' wide, with a narrow joint aven crossing the roof (there are several similar avens, on a smaller scale, elsewhere in the cave, all too narrow to climb).

Beyond the Fourth Chamber the passage lowers and narrows to a short crawl, with on the l. two small holes into a short parallel passage. At the end of the crawl the passage steps up into the Fifth Chamber. The only way on from this is up a slope to the r. beneath a small aven, with a tube leading r. again into a second small aven. A little digging allowed access into a tube leading off from this second aven, but this choked after a few feet.

The total length of the cave proved to be 400', and the depth c.30'. The whole syste, is completely dry, and seems to be totally phreatic in origin, the main cave from the Second Chamber to the Fifth Chamber gently descending north-westward and terminating where the roof drops below the general level of infill. There may be a continuation from the Fifth Chamber below floor level, and now completely choked by fill. There appears little prospect of extending the cave without extensive digging.

#### CRESWELL CAVES.

The caves of Creswell, of considerable fame archaeologically, provide a very interesting site from the point of view of the geomorphologist as well, and include the most extensive Magnesian Limestone cave so far known in this country. A small stream (Millwood Brook) cuts through a limestone ridge, forming a gorge (Creswell Crags) a quarter of a mile in length, bounded by cliffs up to 60' high. The various caves all open in the cliffs, with the exception of Quarry Cave, in a disused quarry a few hundred yards to the south of the gorge.

In the following description, the caves on the north side of the gorge are first dealt with, from west to east, and then those on the south side of the gorge, in a similar fashion.

#### WEST PINHOLE. N.G.R. SK 533741. Alt.250'.

This is situated at the extreme W end of the crags. The main entrance takes the form of a high but narrow rift, running dead straight for c.50', to where it pinches out. On the r., within a few feet of the entrance, are two openings into a 5' high chamber, which communicates via several other openings with the cliff face E of the main entrance to the cave. On the r. of the main rift c.30' from the entrance is a low chamber 12' long, with on the opposite side of the main rift an opening into a chamber developed on a north-south rift parallel with the main rift. Beyond this small chamber a lower passage continues to a 'T'-junction. To the l. is a low crawl ending too tight after a 12' high circular aven. To the r. a low arched passage passes through a squeeze, then bends r. to rejoin the main rift a few feet from its termination.

The total length of this quite complex little cave, here termed, for the sake of convenience, West Pinhole, is c.200'. The contrast between the relatively high and narrow rifts running north-south and the lower arched passages, generally entering the rifts 2' or 3' above their floor level, which constitute the remainder of the cave, is interesting.

Moving eastwards and passing a small entrance 6' up the cliff (which opens into a small chamber with a rift passing continuing, ending too tight 30' from the entrance), one comes to the large and impressive entrance of:

#### THE PINHOLE. N.G.R. SK533741. Alt.250'.

This cave consists of one large rift passage, running northward. The passage is high but relatively narrow for 60' from the entrance, and then opens into a 30' high chamber, with a short and low side passage on the r. Straight ahead is a climb up under some large wedged boulders, and a branch passage on the l. which closes down within a few feet. The main rift continues as a narrow passage of walking height with stalagmite flows on the walls, to finally close down after a squeeze and a 6' drop.

East of Pinhole is an obvious short through cave (hardly more than a natural arch) high in the gorge side, with just W of its lower entrance a small cave 30' long consisting of a single narrow passage ending too tight.

Some distance further E are three large and obvious entrances to:

#### ROBIN HOOD'S CAVE. N.G.R. SK 534742. Alt.250'.

This is a quite extensive and complex system, the accessibility of much of which is doubtless due to the work of archaeologists.

The central entrance opens immediately into a very large chamber. To the l. this rises gently to a 'T'-junction with a rift passage running in from the W entrance. To the r. here a short tight crawl leads to a 15' climb up a circular aven, opening at the top into a roomy passage, with a bedding plane too low to pass admitting daylight from the cliff face above the W entrance. The roomy passage continues for some distance to another 'T'-junction. To the l. here ends after a further 30', but to the r. a passage continues, running back to rejoin the Main Chamber, and providing an interesting "round trip".

Various passages on the r. of the Main Chamber all connect with a large rift passage running in from the E entrance. This passes under a 30' high aven, and then opens into a large flat floored chamber, with on the l., beyond the last of the passages communicating with the Main Chamber, a low crawl which ends in a sand choke very close to the "round trip" passage. In the roof of the chamber are several small avens, that nearest the wall having a passage opening off it some 20' up. This contains some attractive formations, but closes down within a few feet.

To the r. of the large flat floored chamber a roomy passage continues to a 'T'-junction with another major passage running parallel with that from the E entrance. To the r. this divides into two levels, the upper containing some formations, which reunite just before the passage closes down. To the l. is a large and roomy gallery, ending abruptly in a blank wall after 40'.

A level of passage development below the major passages and chambers of the cave appears to exist. In the S wall of the Main Chamber midway between the central and western entrance passages is a small shaft, climbable, dropping 17' to a small passage which runs for 20' beneath the floor of the Main Chamber. This has almost the appearance of being mined, and may have been interfered with. However, a series of unaltered natural chambers at the same low level can be reached by an 8' shaft just inside the cliff face recess of the W entrance. This drops into c.60' of low sandy passages and chambers, with a number of small circular avens which have a variety of very small phreatic tubes leading off. These circular 'bored' avens are characteristic of Creswell Caves, being also seen in West Pinhole and Boat House Cave.

The total length of passage in Robin Hood's Cave, from the BCRA Gr.5 survey made, is 950' - making this, as far as the writer knows, the longest known cave in the Magnesian Limestone.

Continuing eastward along the cliff face from Robin Hood's Cave, a small cave entrance at the cliff foot is found. This is:

LOOPHOLE. N.G.R. SK 535742. Alt.250'.

The entrance opens into a phreatic tube passage c.3' in diameter, which ascends steeply and doubles back on itself to the Upper Entrance, on a ledge on the cliff face. A more or less horizontal tube runs back from the Upper Entrance across the top of the inclined tube, closing in after c.25'. The total length of this little cave is c.50'. The name "Loophole" is provisional.

Following the north side of the gorge eastwards from Loophole, the height of the cliffs decreases, until the last of the caves on this side of the Crags is reached:

MOTHER GRUNDY'S PARLOUR. N.G.R. SK 536743. Alt.250'.

The large and obvious entrance chamber is little more than a rockshelter, with at its rear a 4' high passage continuing for a few yards into a final small chamber, with no evident continuation. Total length is 50'.

On the S side of the gorge are two caves, both with large and obvious entrances. That opposite and a little E of Linhole is:

CHURCH CREEK. N.G.R. SK 534741. Alt.250'.

The entrance is 10' wide and 12' high. After a few feet of large passage, a junction is reached. To the l. are a series of low choked passages, to the r. a chamber with a circular aven and to its r. the smaller second entrance, opening 6' above the foot of the cliff. The main passage, gradually decreasing in size, runs more or less straight for c.100', to a short crawl. Beyond this the passage regains height, but narrows, to the foot of a steep but easy climb up an inclined tube to a final small chamber, terminated by a calcited choke emitting a slight draught. Total length of the cave is 250', making it the second longest of the Creswell Caves.

# HERNE HILL CAVE

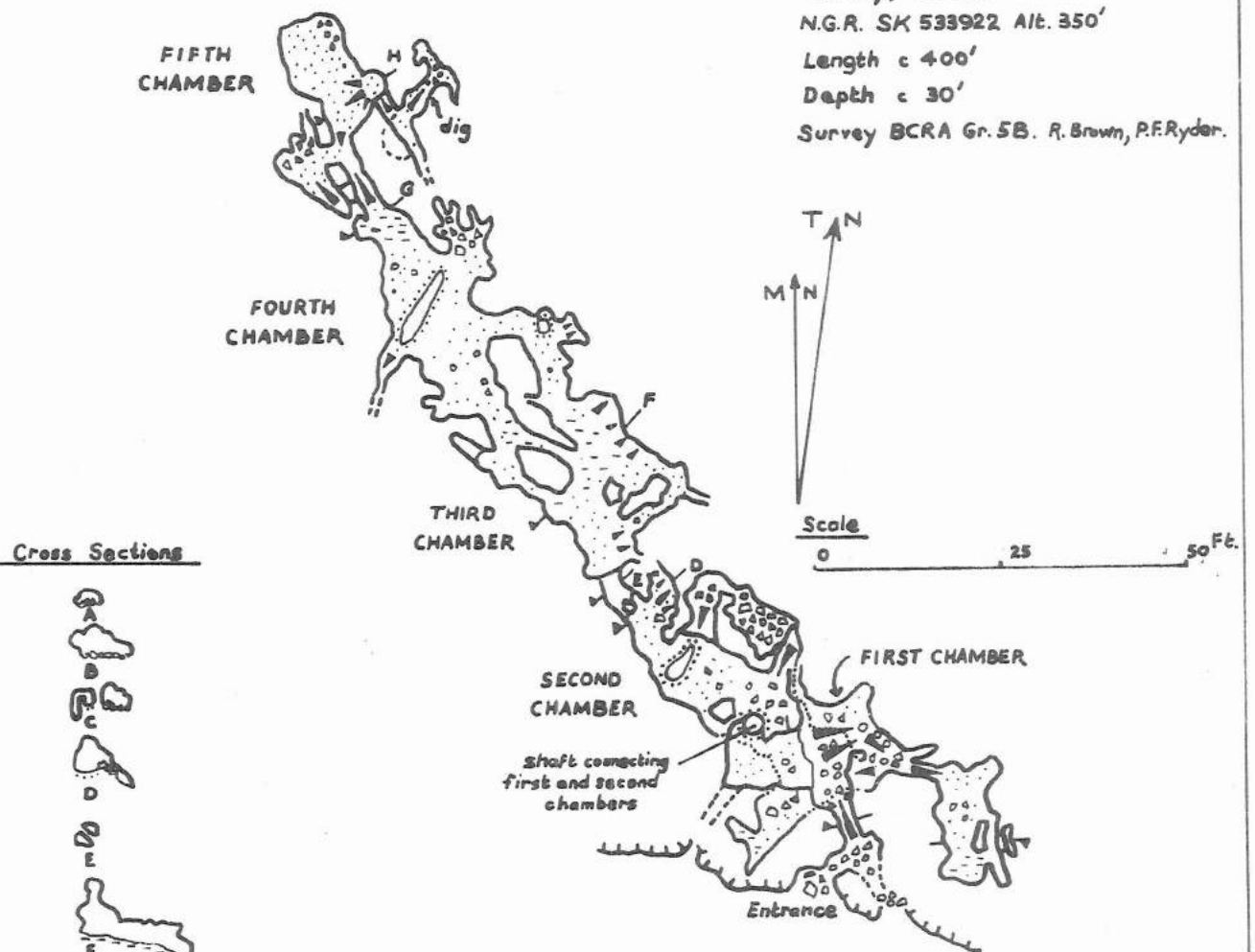
Maltby, Yorks.

N.G.R. SK 533922 Alt. 350'

Length c 400'

Depth c 30'

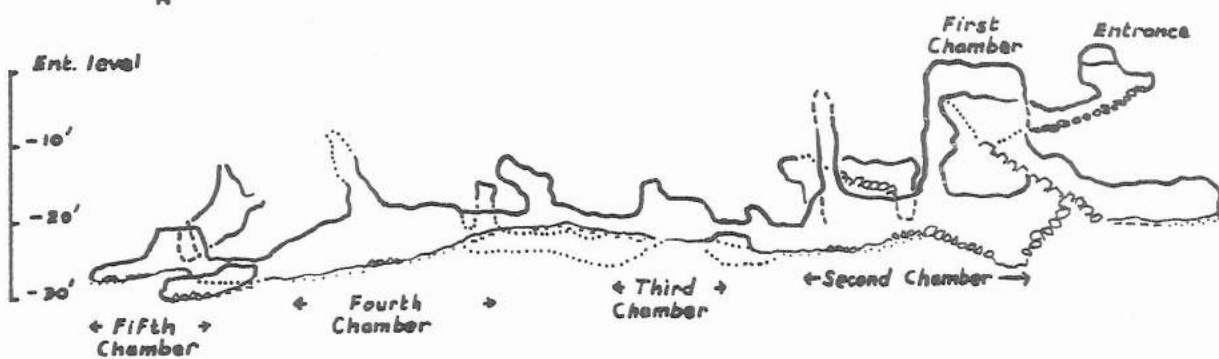
Survey BCRA Gr. 5B. R. Brown, P.F. Ryder.



## Cross Sections



## Projected Section on 127°



A few yards from the E end of the cliffs on this side of the gorge is the 20' wide arched entrance of:

BOAT HOUSE CAVE. N.G.R. SK 537742. Alt.250'.

This has evidently gained its name from the entrance chamber being used as a boat house, opening directly onto the artificial lake (Craggs Pond) which now occupies the gorge. At the rear of the entrance chamber a passage, generally c.4' high and of similar width, continues, passing under a variety of phreatic avens up to 15' high. The gently winding passage ends in a short crawl and a total sand choke, the cave being 100' in length. A few small side passages all close down or choke within a few feet.

The remaining cave at Creswell is Quarry Cave (provisional name), situated in a large disused quarry a few hundred yards south of the gorge.

QUARRY CAVE. N.G.R. SK 535740. Alt.300'.

An obvious entrance in the north wall of the quarry drops into a large passage containing much sandy fill. To the north the passage rises for 20' or so, into the quarry wall, before abruptly ending, the roof apparently dropping below the fill. To the south the cave drops into a low chamber beneath the quarry floor, before ending in a similar sandy choke. Total passage length is c.50'. This short cave is interesting in its suggesting that the large phreatic passages seen in the caves in the gorge extend for considerable distances beyond their now terminal chokes of fill and calcited boulders. The major phreatic tunnel briefly seen in Quarry Cave probably connects with one of the two caves on the south side of the gorge. Church Hole is the nearer, probably being little more than 100 yards away (a surface survey would be difficult because of the dense vegetation between the quarry and the Craggs). Boat House Cave is probably 300 yards away, but shows very similar sandy fill to Quarry Cave, which is not seen in Church Hole.

All the caves seen at Creswell are of a very similar type, apparently ancient passages of phreatic origin which have probably been totally infilled, and their fill removed by vadose action, perhaps during the Pleistocene. The typical cylindrical avens with their small scale ramifications of phreatic tubes and the network plans of West Pinhole and parts of Robin Hood's Caves being good criteria of a phreatic period of development.

LANGWITH CAVE. N.G.R. SK 518695. Alt.300'.

The large entrance to Langwith Cave lies on the N bank of the Boulter, almost due N of Upper Langwith church, and a few yards W of a public footpath.

The entrance drops into a roomy chamber, about 20' across and 12' high, from which several feet of fill were cleared by archaeologists early this century. To the r. is a slope up to a second, smaller, entrance. Straight ahead and to the l. are the low entrances, at floor level, of further passages. The main passage is that on the l. - this continues, as a dry but low crawl, for c.40', ending in a tight squeeze up into a small chamber where tree roots belie the proximity of the surface. On the r. of this passage is a side branch which loops round through a low section to re-enter the entrance chamber. Beside the entry of this into the chamber is a hole up into a small chamber, the roof of which is composed of wooden boards, presumably laid down from the surface, and now grassed over.

The passage straight ahead from the entrance chamber leads immediately to a 'T'-junction. To the r. is choked, to the l. is a short tight crawl into a chamber 8' long and 4' high, ending in a choke.

Total length of the cave must be c.100' (it was not surveyed), and there seems little prospect of further extension.

PLEASLEY VALE RAILWAY CUTTING POT. N.G.R. SK 520649. Alt.450'.

Mention of natural fissures found in the making of the railway cutting to the S of Pleasley Vale had been found in the Geological Survey Memoir for the N part of the Derbyshire Coalfield. An inspection of the cutting, now grassy and disused, revealed several holes, some obviously recently dug out. All appeared to be choked within a few feet, with the exception of a hole on the S side of the cutting at the above grid reference.

This 'pothole' is evidently being dug and worked on by some party unknown, so no digging was carried out and the cave was not surveyed. The cave is of considerable interest, however, and a brief description seems in order.

The 'pothole' (if it may be termed such) consists basically of two rifts at right angles, the major one running approximately east-west (parallel to the railway cutting and to the south side of the gorge-like valley of Plesley Vale, the edge of which is a few hundred yards away to the north)), and a second rift running south from the first.

The entrance is an overhanging 10' drop into this second rift (the rift now choked with fill, apparently continues up to the natural ground surface c.25' above, and is now seen in section in the rock face above the entrance. To the south of the entrance (i.e. away from the railway cutting) the rift continues for 20' before narrowing to a choke. A shored shaft has recently been excavated in the floor here to connect with a chamber at a lower level in the same rift, also enterable from the major east-west rift.

Northwards from the entrance, the major rift is met at a 'T'-junction after a few feet, descending steeply both to r. (east) and l. (west). To the r. a scramble down (passing on the r. the entrance to the low level chamber in the entrance rift) leads to a narrow crawl ending in a squeeze down into a 20' high chamber. This continues for c.15' before narrowing to a high but impenetrable rift. To the l. at the 'T'-junction a scramble down leads into a bouldery chamber. The way on is down through the boulder ruckle in the floor, through a squeeze opening directly into the roof of a rift chamber - a 15' ladder is necessary to reach the floor. At the far end of this chamber one has a choice of passages. A hole in the floor drops through a squeeze into a rift chamber with some formations, ending choked after 25'. A climb up straight ahead leads to a few feet of crawl opening into the top of a deep rift. This was descended for c.35', but lack of tackle meant that the final 12' drop could not be descended - there appeared to be no way on at the bottom, but this could not be ascertained with any certainty.

The total depth of the hole to the floor of the final 12' drop was estimated at c.85', and the passage length perhaps 220'. The mode of formation of the system poses an interesting problem. The main rift bore some striking similarities to the East Yorkshire "windypits", fissures formed by slipping rather than solutional action. Slip features in the Magnesian Limestone are well seen at Houghton-le-Spring in County Durham. However, this hole is at some distance from the valley side (most of the windypits are situated at the crest of a steep slope). The presence of the entrance rift, at right angles to the major rift, and of other shorter side rifts, complicate the position further. It is to be hoped that more information on this interesting cave appears in print in the near future.

The above is by no means an exhaustive account of the caves of the southern section of the Magnesian Limestone outcrop - merely notes on those visited. Further work on caves of the area, notably those around Conisborough and Doncaster, has been carried out by the Yorkshire Subterranean Society, and records of their work is shortly to appear in their first journal, which will be available from M.J.Burrow, 29 Oak Royd, Rothwell, Leeds.

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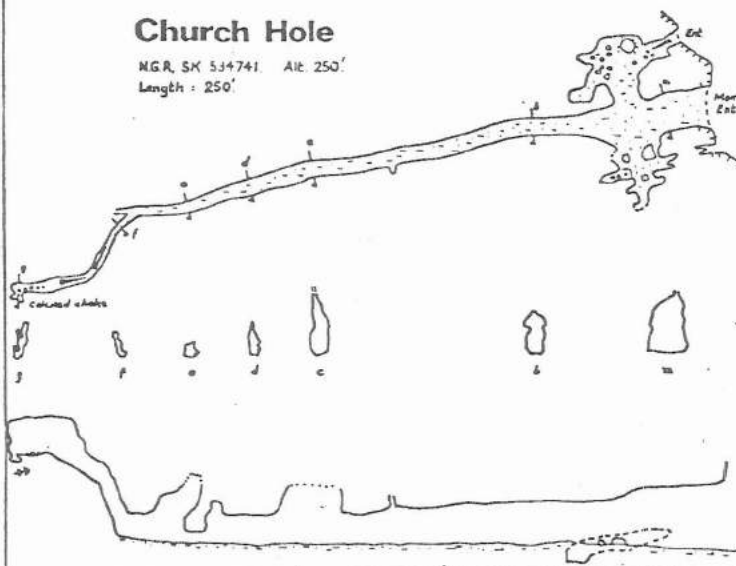
#### The Magnesian Limestone of North Yorkshire.

In the recent Sheffield University Speleo. Soc. Journal (Vol 2: 3), Summer 1974, more new Magnesian Limestone caves are recorded, in the area north of Knaresborough. Provisionally named "Permian Caves" (the landowner at the moment does not wish the location published), two holes have been surveyed, the larger being a rift of tectonic origin (but not apparently a slip feature - hence it may be akin to Plesley Vale Railway Cutting Pot) some 300' long and 100' deep.

A variety of small caves, and perhaps potentially some larger ones, doubtless await discovery (or at any rate, recording), in the "forgotten karstlands" of the Magnesian Limestone.

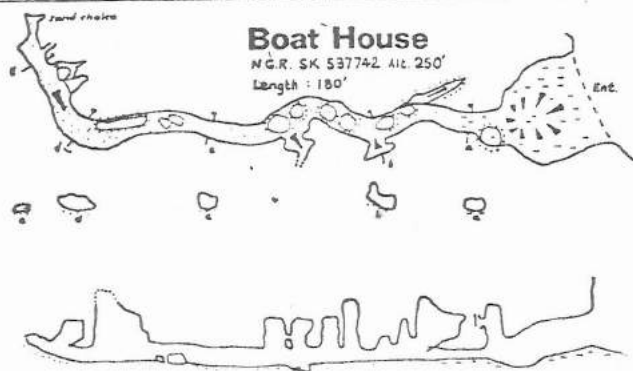
## Church Hole

N.G.R. SK 534741 Alt. 250'  
Length : 250'



## Boat House

N.G.R. SK 537742 Alt. 250'  
Length : 180'



## CRESWELL CAVES

Nottinghamshire / Derbyshire  
Scale, Orientation and Orientation of  
Longitudinal Projected Sections [on 351"]  
Same on each plan.  
Cross Sections to same scale as plans.



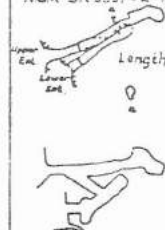
## West Pinhole

N.G.R. SK 533741 Alt. 250'  
Length : 200'

## Loophole

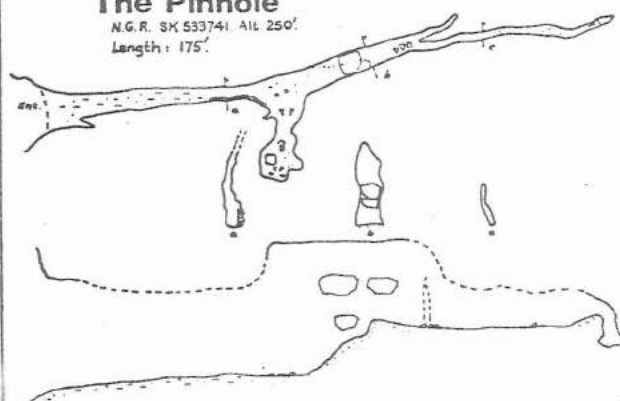
N.G.R. SK 533742 Alt. 250'

Length : 50'



## The Pinhole

N.G.R. SK 533741 Alt. 250'  
Length : 175'



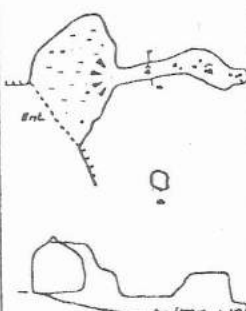
## Quarry Cave

N.G.R. SK 535740 Alt. 300'  
Length : 50'



## Mother Grundy's Parlour

N.G.R. SK 536743 Alt. 250'  
Length : 50'



## Robin Hood's Cave

N.G.R. SK 534742 Alt. 250'  
Length : 950'



MSG Surveys Oct. 1973  
CRG Gr 4-58.

P. Armstrong  
C. Hoode  
C. Purha  
P. P. Ayler  
M. Stokmull

PFR 1973

## Ends and Oddments. (around the Northern Dales)

### Botcher Gill Sink

A major sink, in a large tributary of Gurnerside Gill, the destination of the stream from which had puzzled MSG members for some time. This was eventually fluorescein tested by IWT and the dye reappeared approx. 90 hours later from a rising in the lower of the two Main Limestone gorges in Swinnergill, the water resurging along the foot of a scree slope. A little digging has only shown that a lot more digging will be required if entry from the rising end is to be gained. Attempts at digging out the sink have been made at various times in the Group's history (see MSG Journal 4) but little progress made there either. The distance between sink and rising is nearly 2 miles, and the fall in the region of 300' - potential for a large cave system.

### Stone Root Cave

A small cave in the lower Swinnergill gorge had been known for some time, but was thought to be only 25' long. With the discovery of the Botcher Gill rising only a few hundred feet away downstream it was re-investigated, and its terminal choke, a bedding obstructed by silt and boulders, dug to allow a tight squeeze into a continuing passage. After a small blockfall chamber and an aven a full 8' in height another dig was necessary, to gain a higher rift, which disappointingly turned back towards the stream bank, and narrowed in to become impassable where faint daylight could be seen. An impassably narrow choked tube leading off on the r. of the little blockfall chamber emits the sound of a stream, and determined efforts were made to dig through to this, without success. The total length of this rather frustrating and awkward little cave is c.110'.

### Hug Gill, Gretadale.

Hug Gill, Gretadale, sinks at about NY 977126, downstream of Uggill Force, and resurges from boulders a short distance downstream at the end of a gorge in the Great (=Main) Limestone. On the east side of this gorge a small rift cave with two entrances, 25' long, was found.

### Yad Moss Cave

Discovered recently by YURT, and developed in a thin band of limestone near the Middleton-in-Teesdale to Alston road at its highest point, crossing Yad Moss. The entrance (previously known to MSG but not entered) is a very low bedding - a few yards in, however, this enlarges to a walking size streamway with some formations, eventually closing to a narrow crawl which becomes too tight, probably fairly near the sink. Estimated length of the cave is 380', and it is currently awaiting survey.

### Hudeshope

In the article 'Some thoughts on the major hydrological systems and associated caves in the Yoredale Limestones of the Northern Dales' which appeared in MSG Journal 4 (May 1971), four "problems" were described. One of these was Botcher Gill Sink, now (see above) confirmed as a feeder of a "major system". Another was the Hudeshope Rising, in Teesdale (NY 939305), which it was postulated might be fed from sinks in Flushiemere Beck two miles or so away to the west. However, John Hawkes of UNCC has inspected the area, and located a not-at-all-obvious sink in the bed of Hudeshope Beck, in its Great Limestone gorge a few hundred yards upstream of the rising. He diverted most of the stream into this and noted a corresponding increase in the volume of water at the rising, some time later - thus proving the connection, and the fact that the Hudeshope Rising is most likely a "local system".

Swinhope Burn, Weardale.

The Errington brothers of Consett have found two pots here, one taking a stream, on the north side of Swinhope Burn

Fairy Holes Cave, Weardale.

Associated Portland Cement Manufacturers (APCM) Ltd., have made a start on re-opening Fairy Holes Cave, near Eastgate-in-Weardale. This former SSSI was  $2\frac{1}{2}$  miles long, but was rendered inaccessible by quarrying. To date some 2000' of passage have been destroyed. Prompted by the Nature Conservancy and CNCC, APCM have exposed the top of the truncated cave passage in the quarry face, but the majority of the passage is presently underwater. A proposal to lower the water level is being considered. Once temporary access has been regained, re-survey will take place and radio location techniques will be used to fix the cave in relation to the surface - this work will be undertaken by volunteers from several clubs. It is then hoped to locate a site for an alternative entrance away from the proposed quarry extensions. Almost all of the known cave lies on APCM land, but it will be several years before the quarry extends further along the line of the cave. The cave system is still the longest in the Northern Dales, and little has been published on it. It represents an important site for further scientific study.

Grange Gill Cave, Wensleydale.

On 1-11-74 a large MSG party descended on this small cave with the intent of extending the r. inlet (see MSG Journal 6) but were thwarted by a wedged boulder on a constricted corner. The exact potential of the cave is uncertain - the stream in the inlet may be derived from nearby sinks in the stream bed, or may come from further afield. Another visit is being planned.

Swinnergill Caves, Swaledale.

In late 1973 the two main caves in Swinnergill, Swinnergill Kirk and Swinnergill Kirk, were surveyed by Alan Riles, PFR and GS. Nothing new was found, but the survey is here published - almost all known caves in the Swaledale area have now been surveyed to BCRA Grades 4 or 5 by Group members. There are two Main Limestone gorges in Swinnergill, the double exposure being a consequence of faulting. Stone Root Cave (see above) is situated in the lower gorge. Swinnergill Caves are situated in the shorter upper gorge, in which part (or on occasions, all) of the stream sinks to feed risings in East Gill, Keld (see MSG Journal 4).

Swinnergill Kirk is a simple straightforward cave, a single roomy passage running in a straight line down dip, to suddenly close to a tight crawl turning r. to a small and constricted static sump - the cave is 200' long and 38' deep. Swinnergill Cave, the entrance of which is only a few yards downstream from the Kirk entrance, is a totally different type of cave, making an interesting contrast with the Kirk. A small passage leads to an easy climb down into a larger streamway, which upstream splits into a complex of inlets and tubes beneath the bed of the surface stream, and downstream continues for some distance to a 20' high chamber, beyond which the passage suddenly and inexplicably shuts down to a low silted bedding, which terminates within a few feet in a narrow fissure sump. Total length of this attractive little system is 485' and depth 35'.

There are three other small caves, not surveyed, lower down the Swinnergill gorge (we had heard rumours of a third longer system, but have been unable to find it). Swinnergill Cave III is a sinuous descending tube to a choke, with a branch passage leading to an alternative entrance higher in the gorge side. Swinnergill Cave IV is a descending bedding to a chamber where water from sinks in the stream bed enters, and promptly disappears through an inaccessibly small opening. These two caves are each in the region of 40' in length. Swinnergill Cave V, further downstream, is smaller and dry. All three smaller caves are on the east side of the stream.

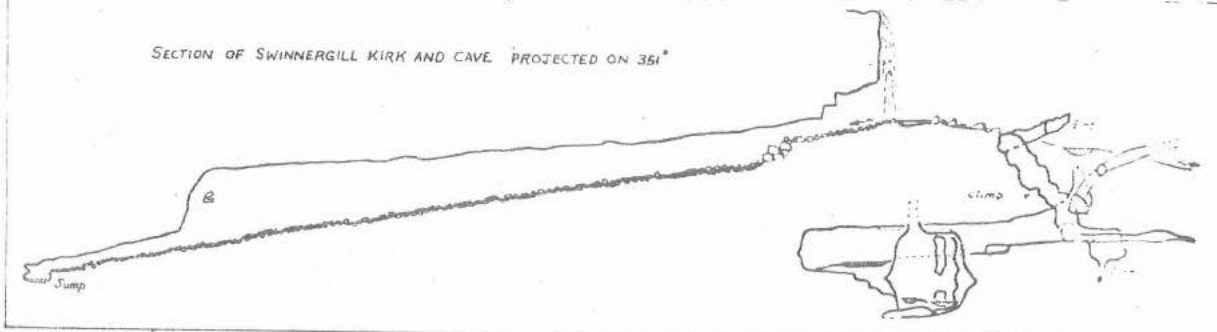
# SWINNERGILL CAVES

NGR NY 911014 Alt 1400'

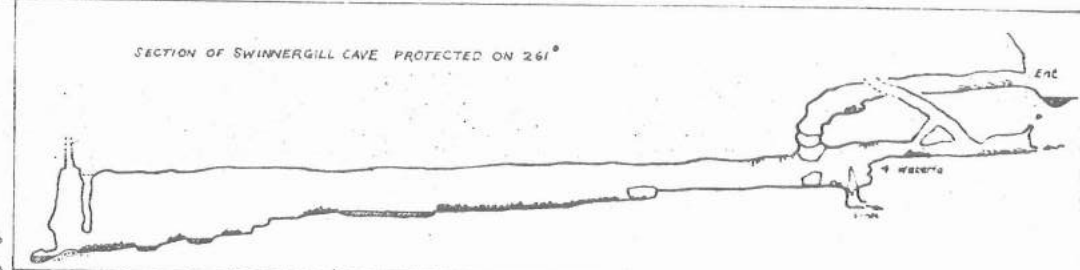
Swinnergill Kirk length 200' depth 35'

Swinnergill Cave length 485' depth 38'

SECTION OF SWINNERGILL KIRK AND CAVE PROJECTED ON 351°



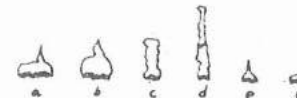
SECTION OF SWINNERGILL CAVE PROJECTED ON 261°



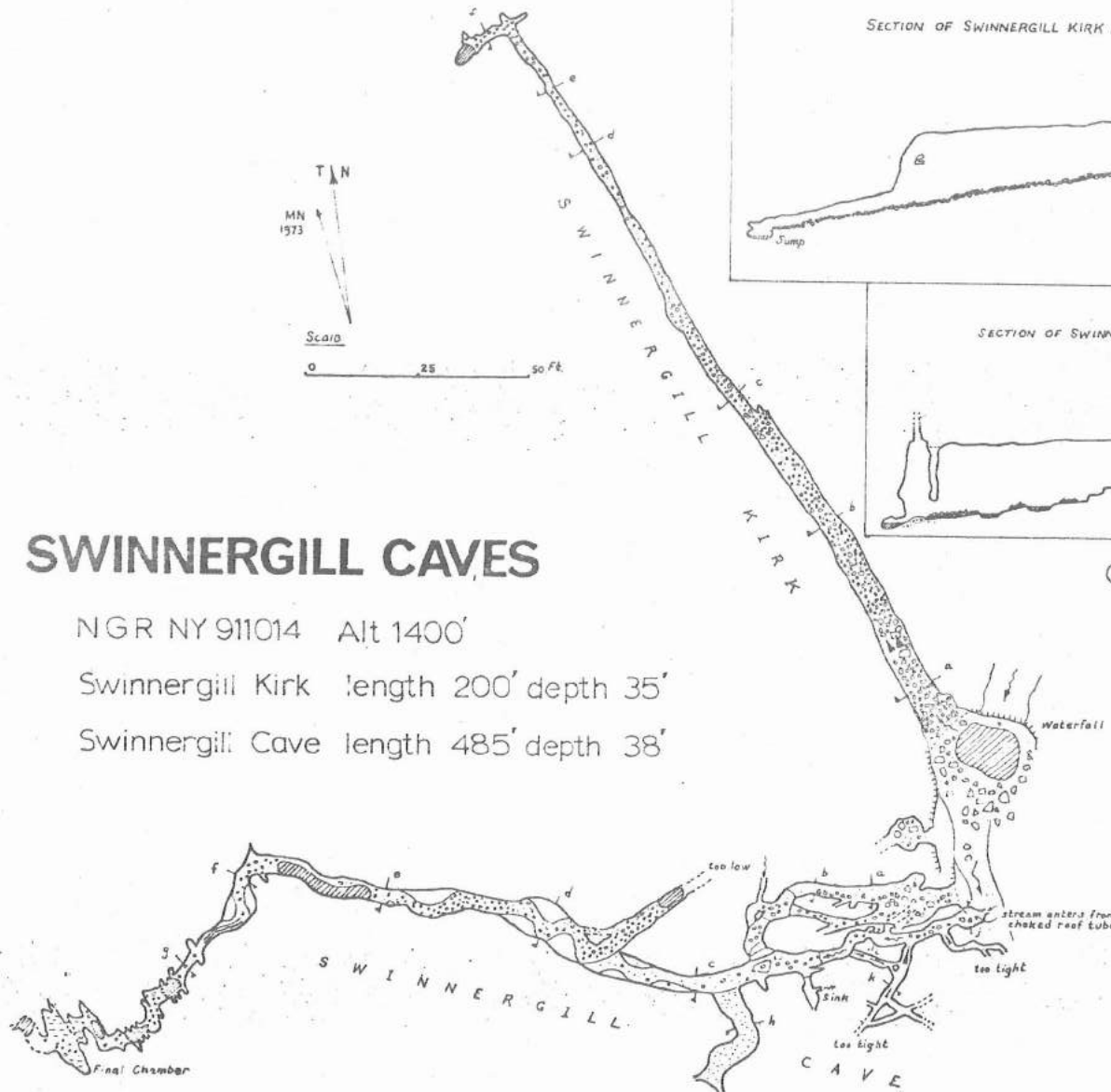
CRG Gr 5b survey MSG 1973 A.Ries, P.F.R., der G.Stevens

## CROSS SECTIONS

### SWINNERGILL KIRK



### SWINNERGILL CAVE

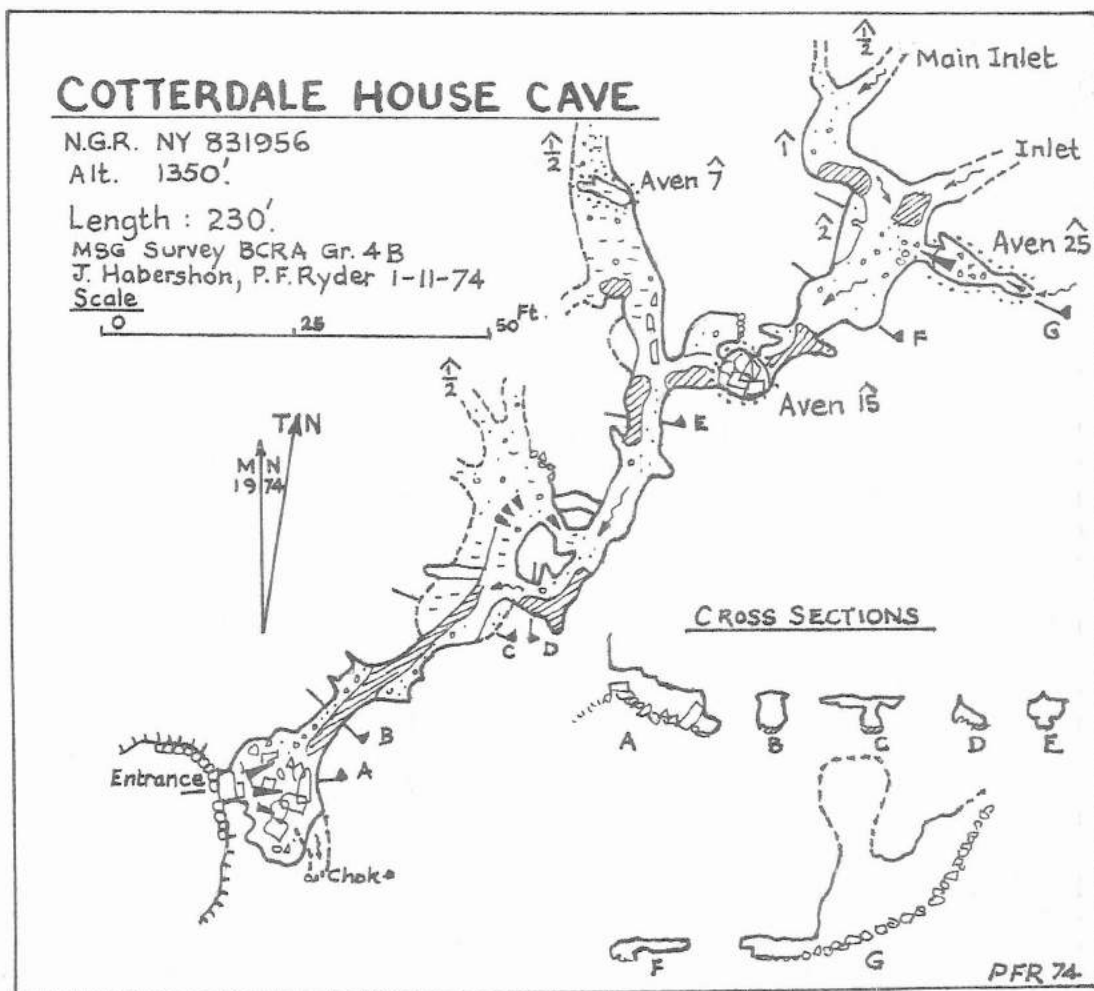


### Cotterdale House Cave, Wensleydale

This had previously been visited by Group members on 30-3-70. Much time was spent searching for the entrance, as all holes and fissures in the Main Limestone gorge on East Gill, Cotterdale, have recently been neatly walled up. Eventually the correct hole was found - in an obvious recess in the cliff perhaps 25' above the stream, now with about 15' of drystone walling. The entrance is behind the wall about 5' from the southern end of the walling. Please replace the wall after visiting the system.

The cave is 230' long in all, consisting of a small stream passage which steadily gets smaller - nevertheless, it is quite attractive in parts. At two points low silted beddings lead off on the l., running back towards the side of the gorge - the stream on the surface can be faintly heard. The streamway, after passing a couple of avens, eventually forks into two inlets, the r. is too low, the l. can be followed round a bend through a pool before becoming impassably small.

A second small cave was found on the east side of the gorge perhaps 150' upstream of the main one - time did not permit this to be surveyed. At the rear of an undercut at the foot of the cliff, this consisted of a crawl over boulders and down into a rift passage, which after 25' closed to a wide silted bedding only a few inches high - this is probably quite near the termination of one of the two dry branches on the r. of the streamway in the main cave. Digging might make a connection passable.



There seems little prospect of extending the cave further, except by digging in the dry bedding plane branches. The stream is probably derived from sinks in the surface Gill, with a little drainage from the hillside above entering through the two avens on the main streamway. Downstream of the entrance chamber, where the stream sinks into a choked bedding, the stream probably flows beneath scree and boulders to feed small seepage risings just above stream level, below the entrance.

Windypit News.

R.G.Cooper.

Thomas Gill's 'Vallis Eboracensis' (1852) contains the following passage:

'Not far from the mouth of the Fairies' Parlour is another mysterious cavern, which penetrates the solid rock for a considerable distance. The writer, along with two friends, had the curiosity to examine this rocky pathway as far as was practicable, extending as near as could be ascertained about thirty yards. It is an arduous task, and requires courage and perseverance to descend the rugged precipices, - to creep along dark narrow passes where the light of day never shone, and where the candle would but dimly burn, - sometimes on hands and knees, sometimes erect, sometimes in a slanting position on back or breast, or assuming the vermicular motion, squeezed beneath massive rocks, one move of which would make you move no more. The next step brings you into a spacious, lofty hall, festooned with chandeliers of stone, suspended overhead, as if ready to crush you to dust. After a couple of hours spent in this subterranean retreat, you hail with joy the return of day as you approach the mouth of the dark and gloomy cavern'.

Gill is here writing about a windypit-type fissure at the foot of Whitestone Cliff, about half a mile north of Sutton Bank. The area was recently visited by Ric and Pat Halliwell and Roger Cooper, who made a through trip in the fissure described above. We failed to find the Fairies' Parlour, but nearby was a narrow fissure over 50' long, and also a 30' rope descent into a chamber as large as Hill Fort Windypit.

In Bolthby quarry a fissure 40' long and 20' high has been found, running parallel to the main quarry face, about 16' behind it. It is entered by an inverted keyhole-shaped crawl about 5' from the bottom of the main quarry face.

A fissure called 'The Devil's Parlour' by Gill has been identified in the face of Roulston Scar. Mrs Craik's account of North Riding folklore talks of a cavern (windypit?) NW of Over Siltan, but I have not had the chance to visit this yet.

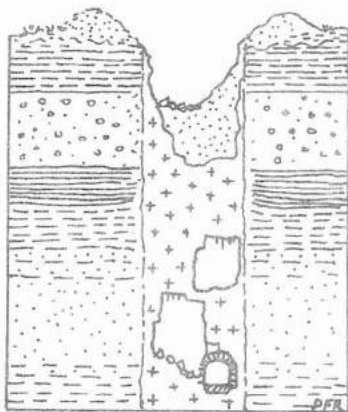
To return to the 'classic' windypit area, the farmer at Daleside, i.e. N. side of Gowerdale, complained recently that in the vicinity of High Buildings, he no sooner fills in one windypit than another one opens up! Those at present detectable overlook Coomb Hill, are full of rubbish, and too narrow anyway. Caydale, although in the heart of windypit country, has as yet only produced one hole, marked on K.D.B. Williams' map of the area in 'Ampleforth Country' (1966). However, I have found at least three holes in the upper part of the valley, which have been completely sealed by farmers, as well as a series of 'Peak Scar-like' features. In Peak Scar, three holes over 20' in length have been found in the detached limestone mass downslope of the main cliff face. Lastly, the rock face in Oxendale, S of Tile House Barn, has some interesting enterable holes running into it at right angles, but these have not been explored.

#### Peak Scar Fissures.

A.Lawton dug out some grass at the top of 'Periba Chimney' on Peak Scar, near Hawaby, to reveal a 30' deep fissure. Cave Science No.12 describes three other enterable fissures at Peak Scar: the largest is known as Murton Cave.

#### Blood Windypit.

Further visits to Blood Windypit (see MSG Journal 6) have shown it to be much more complex than the published survey suggests. There are mazes of passages E of the W entrance and S of Blood Pit III, and further passages underneath Main Passage.



The Cleveland Dyke is an intrusive feature dating from the Tertiary period. The Dyke, which originates on the west coast of Scotland, is 200 miles long, and varies in width between 6' and 80'. The Dyke is formed of dolerite, locally called "whinstone". In Cleveland the Dyke extends from Blea Hill, its most easterly outcrop, for about 32 miles in a west-north-west direction to Eaglescliffe on the Tees.

In the past the Dyke was a valuable source of durable stone and its course may now be traced as a series of trench like quarries. It was also in some localities mined to a considerable depth, one such mine being the Sil Howe Whinstone Mine at Goathland.

Prior to the mine opening in 1899, Whinstone had been quarried in this region for many years, however the quarries became so deep and waterlogged and so prone to collapse that it became uneconomical to quarry the Whin to any greater depth. Conditions became so dangerous and extensive that in 1898 an adit was driven into the moorside in order to extract the Whinstone from below. The mines operated for half a century, the Whin removed being used as road stone. The closure of the mines in 1950 was due mainly to competition from cheaper aggregates such as slag and quarried limestone.

Sil Howe was first visited by MSG members in March 1974, the party comprising Kevin Skelton of A.C.C.C., A.S., G.S. and M.S. The mine had previously only been visited by Kevin Skelton so despite of, or because of, his lurid tales of unending passages of huge dimensions, we were all a little sceptical as to what we might find.

The party entered the mine by the adit entrance on the moor at NZ 24040277 below the Whitby - Beckhole road. Squeezing between the iron grill sealing the entrance and the stone wall, we were rather unimpressed by the two feet of muddy rather stagnant water lying in the entrance. The adit is arched and lined with stone for the first 200'. The water becomes shallower as one travels up the tunnel and one becomes aware of the bright orange mud on the passage floor. This mud occurs throughout the mine and seems to be the result of the breakdown of the dolerite. In the sides of the adit are 15 small "cubby-holes" in which men in the adit could shelter as tubs moved along the tramway, the hollows left by the sleepers of the tramway still being visible. A larger cavity in the roof with a short passage leading off, 800' from the level entrance, was possibly some kind of test bore, probably for ironstone.

1020' from the entrance are a set of ventilation doors, of wood - these still open and close easily. Beyond the ventilation doors are small soft stalactites, which vary in colour from brilliant white to attractive shades of brown and red. 1820' from the entrance the adit reaches the dyke and emerges into a large chamber where the workings began. Upon entering this G.S. was completely taken aback and began making wild comparisons with Gaping Ghyll Main Chamber.

To the left is a wall which used to seal off the western side of the workings. Known as Tinker End, this part of the workings was abandoned in 1917 due to frequent collapses and roof falls. The wall has now been breached and those entering Tinker End will be struck by the method of mining peculiar to dyke mines. At this point the dyke is approximately 30' wide, and the stone was removed from two parallel passages each 12' wide and 15' high, the dividing wall between the two being about 6' thick. As the workings progressed the wall

would be breached in places to connect the two passages and alleviate the need for two tramways. As one travels down Tinker End the left hand passage is frequently blocked by roof falls, so it is far easier to stay in the right hand gallery. This gallery is in places half walled, the purpose of the walling being obscure. It was suggested that this might be a precaution against roof falls, although it seems that any roof fall would surely collapse the walling as well. The passage continues for 1350' from the junction with the adit, to eventually end in a massive rather unstable collapse.

The passages to the east of the adit are similar to those in Tinker End, however here the workings are on three separate levels. The different levels are connected by ascending ramps, some of these now being difficult or even dangerous to climb due to the amount of loose material that has accumulated on them. These ramps proved especially frustrating to the surveyors who found great difficulty in standing upright on the slopes whilst bearings were taken.

The galleries are here about 20' high, and the floors dividing them from those below about 12' thick, so in places the workings assume a total height of over 85'. This is most impressive at those points at which the miners have blasted out the floors, producing very sizeable chambers, which allow one to appreciate the full vertical extent of the workings.

In places water dripping from the roof and trickling down the walls has given rise to some rather pleasing formations, some of which are quite large and must have grown at a considerable rate. These formations are however rather soft and brittle. Whilst demonstrating this brittleness K.S. came face to face with the notorious "swinging stalactites" - these are stalactites of a watery substance akin to very runny jelly - when touched they would swing and shiver. However, unless actually touched they look much the same as any other formations, consequently subsequent expeditions have failed to relocate them. This does little for the credibility of those who claim to have seen them.

The western galleries all end at solid rock foreheads, except for one which leads up to an airshaft. This is the only one of an original eight airshafts, which now remains open. The upper entrances of all the others are buried beneath 30' or so of rubble and debris in the surface dyke workings into which the shafts emerged. The lower ends of two or three other former air shafts have been located, appearing as steeply ascending passages choked with debris which has obviously fallen from above, and usually with small streams falling through the debris. In view of the fact that only the one airshaft remains open, it is suprising that the air in Sil Howe is so good, only on one occasion in the far reaches of the lower levels was bad air found by MSG members.

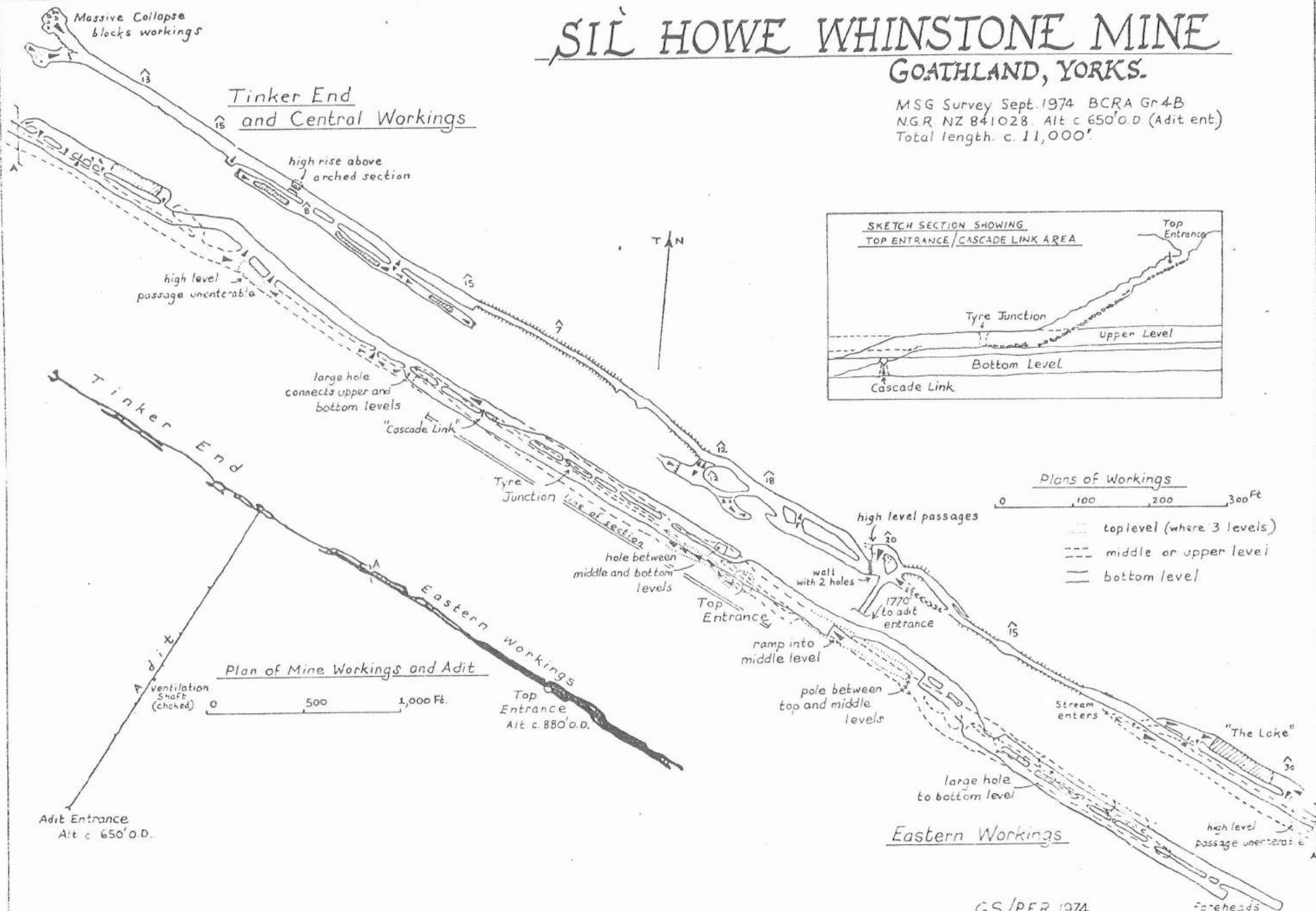
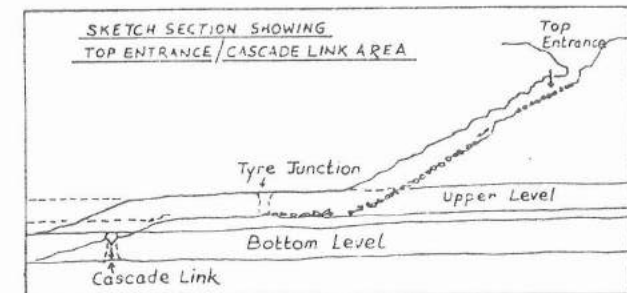
Rather than return via the adit level the original party used the air shaft as a point of exit. It can easily be found from within the mine by following the old tyres which have been pushed down in, some of these having travelled a considerable distance downslope into the workings. On most subsequent trips this upper entrances has been preferred, as it allows reasonably dry access. The air shaft entrance is a small hole in the bottom of the trench of the surface dyke workings at NZ 84760303, dropping into a steeply descending passage (into which a small stream falls from a chink in the roof a few feet below the entrance). The floor of this passage is in places cut in solid rock, but is generally a scree slope and care should be taken - a handline is useful but not essential.

Several further trips were made into Sil Howe mine, the last two occupied with a survey of the workings, to BCRA Gr.4 for the main passages, with some side branches and parallel passages being sketched in to lower grades. Total surveyed length of the accessible workings totalled 11,000', 2188' being in the western (Tinker End) section and almost 7,000' in the eastern workings. Vertical distance between the adit and the airshaft entrances is in the region of 230', although this is an estimate taken from

# SIL HOWE WHINSTONE MINE

## GOATHLAND, YORKS.

MSG Survey Sept. 1974 BCRA Gr 4B  
N.G.R. NZ 841028. Alt c 650' O.D. (Adit ent.)  
Total length. c. 11,000'



Surveying trips have been made to several other Cleveland Dyke workings, but these have all so far been found to be rather disappointing in comparison to Sil Howe.

Mines in the west end of Lounsedale Quarry (NZ 612103) near Kildale were entered, but found to reach foreheads within a few yards. The main working here appears to have been at quarry floor level, and is now flooded - a hole in the floor of the short passages entered leads down into a large partly flooded passage which was not explored through lack of tackle.

In Cliff Ridge Wood, Great Ayton, the Elephant Hole (NZ 573117) proved more interesting, but still with no great length of passage. A hole in the quarry floor drops into several hundred feet of large passage, ending in each direction in a massive collapse. The entrance pitch was negotiated using 25' ladder, although a rope might suffice for a good climber. Belay points (a stake should be taken) should be set well back from the edge of the funnel shaped depression in which the hole lies, since the funnel slopes are unstable and liable to slip.

Other subterranean dyke workings do exist, principally in the Egton area, but these have not yet been visited by Group members.

For information incorporated in this article we should like to thank N.C.M.R.S., John Owen, and W.F.F. Stewart, who has made an extensive study of the working of the mine.

A. Skelton.

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### Fissure Caves in Saddleworth, Yorkshire.

Fairy Holes, Saddleworth, appeared in 'Pennine Underground' with an incorrect description and a grid reference which was not even on the correct sheet. There is no reference at all to Fairy Holes in Northern Caves Volume 5.

Fairy Holes is located just below the crest of Alderman Head overlooking Dove Stone Reservoir on a narrow neck connecting the "head" with the main moor (SE 015046). The entrance is in a small depression and the name is carved on a large stone block over the entrance. The passage direction is mirrored on the surface by a series of shallow collapse features. The cave itself consists of approximately 5m of hands and knees passage, followed by a slide down over an inclined block and then over a hundred metres of walking passageway. The passage ends where the sides close in. There are several excellent examples of "fit features" where one side has moved away from the other causing one wall to be a mirror image of the other. The floor consists of loose boulders and an intermittent draught was noticeable in the entrance crawl.

The one point on which 'Pennine Underground' was correct is that on the opposite side of Alderman are two shafts of about 8 - 10 metres depth. Both are too tight for any horizontal passages to be gained and the walls are extremely smooth. It is however possible to bridge down to floor level. Again the small features on the sides of the shafts are mirror images providing evidence of the moving apart of the walls.

There is a further collapse feature not mentioned in 'Pennine Underground' but described in the climbing guide to the area as "the largest cave in the area, with 300 feet of passage". The fissures are cut by an abandoned quarry in the Running Hill Pits (SE 018075). The track leading to the quarries enters the middle series of quarries, but there is a lower series slightly downhill and

it is in the lower series that the cave is found, in the second most northerly quarry. The entrance is a small drop leading to a short passage about 2 metres wide and 10 metres long ending at a tight crawl about 1.5 metres above ground level. There is a parallel rift about 2 metres to the right, and a hole in the floor leads to a draughting narrowing shaft. Due to lack of support no further exploration was made of this fissure, which is as yet nameless (Diggle Windypit?).

Ric Halliwell.

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#### Water Tracing at Ireshopeburn Caves.

The two small caves known as Ireshopeburn (or Clints) Caves have been described on two previous occasions (1) & (2). Both are resurgences, but as far as the author can ascertain no water tracing has been carried out in the area. Five streams flow over the limestone in the area, as shown on the accompanying plan. One of these sinks completely in a shakehole, but in wet weather the remaining four only partially sink on reaching the limestone. The sinks are marked S1 to S5 going from west to east. The main stream (Grooves Cleugh) has a fairly definite sink at S2b, but in dry weather it is apparent that the stream starts sinking as soon as it meets the limestone (S2a). The main resurgences are labelled as follows; R1 is the larger of the caves, R2 the smaller cave, R3 a mine level (driven in the shale beneath the limestone), R4 a small resurgence and R5 a small rising in the bed of the easternmost stream, near the mine.

The work in this article was carried out primarily as a test of a tracing method using sodium chloride (common salt) and a simple electrical conductivity meter. The method is described in reference 3.

The following positive connections were obtained (under fairly dry conditions) ;

<u>Connection.</u>	<u>Time of first appearance.</u>
S1 --- R1	50 minutes.
S2b --- R1	40 minutes.
S4 --- R2	90 minutes.

Six pounds of salt were used on each occasion, and found to be more than adequate.

The resurgence for S3 is problematical; no indication of a connection to either R1 or R2 having been found after some six hours. It is possible that the resurgence is the mine level, for the flow rates are not incompatible. If this is so, the long canal in the mine level will render testing difficult, unless direct exploration reveals a definite entry point for the water.

The connection S5 --- R5 seems reasonable (though not tested), as the flow rates are very similar. The origin of R4 is not known, and is perhaps seepage. Its temperature in warm weather was always the lowest of the resurgences.

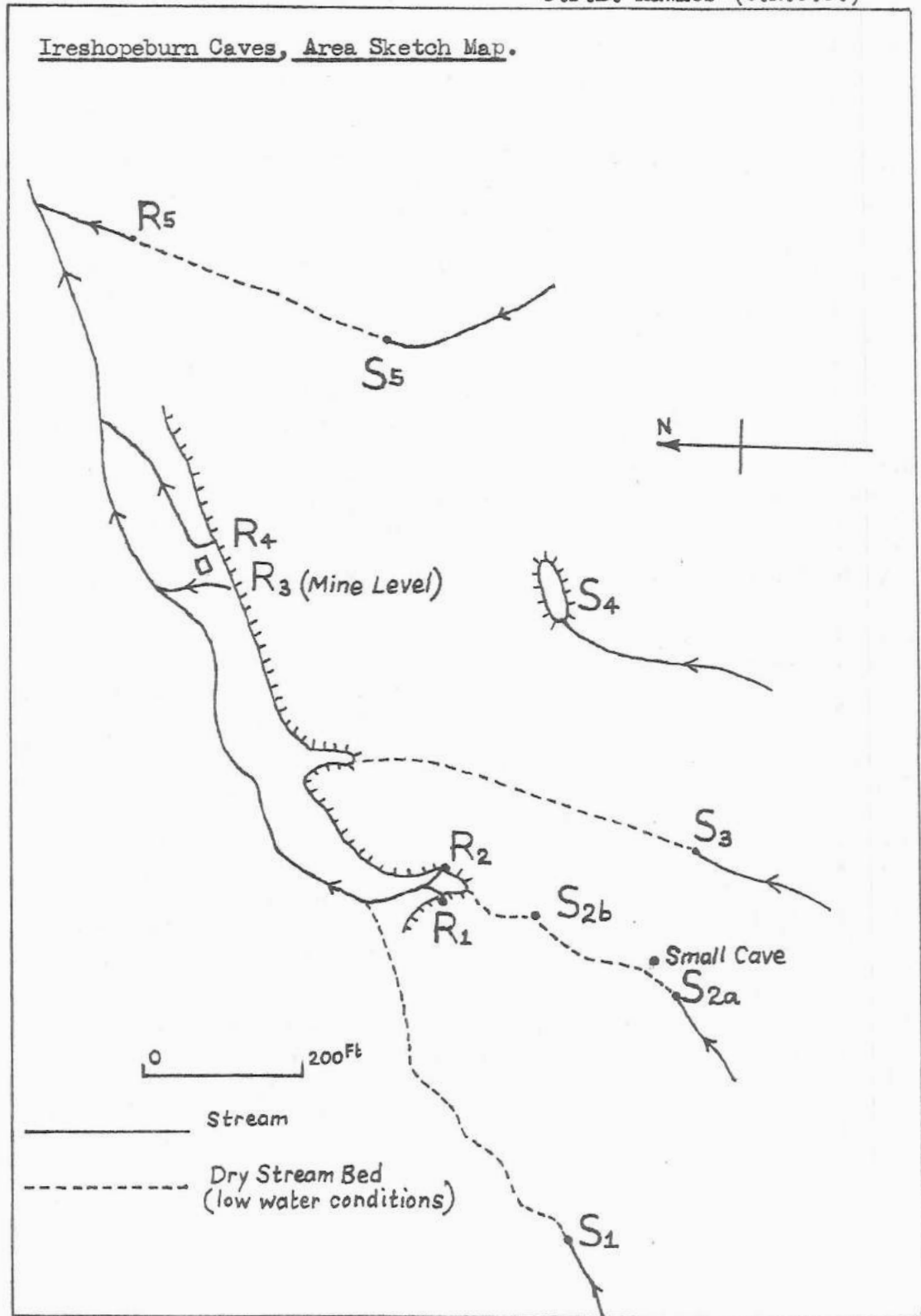
Just below S2a on the right hand bank going downstream is a small cave containing a stream whose temperature is close to that of the surface stream, and it undoubtedly originates there. Whether the water proceeds to R1, as seems fairly obvious, has not been tested.

In conclusion, there are a number of loose ends, but the author is happy to leave these to others! The conductivity method proved reasonably successful but it is not recommended where the connections are not 'obvious'. You have to be prepared to hump several pounds of salt about and spend most of your time squinting at a millimeter.

References.

- (1) M.S.G. Journal, 1, 1967.
- (2) Milner, U.L.S.A. Review, 3, p.22, 1968.
- (3) Heys, Trans. Cave Research Group, 10, P.121, 1968.

J.F.B. Hawkes (U.N.C.C.)



### Smeltmill Beck Cave Revisited.

Smeltmill Beck Cave was the first major MSG 'new exploration' in 1967. The majority of the cave was explored and surveyed in 1967/68, but since this date some small extensions have been made. Published accounts of the cave appeared in MSG Journal 1 and MSG Report III, but both of these publications were of very limited circulation indeed. An account of the geology and geomorphology of the cave appeared in YURT Report 2 (1970), and since then various notes have appeared in MSG Journals and Newsletters. A comprehensive account of the system, however, is not generally available, and the following article is intended to remedy this deficiency.

#### Situation.

The Smeltmill Beck system drains a section of the Main Limestone outcrop on the north flank of the valley of Argill Beck, the limestone plateau being followed by the main A66 Scotch Corner to Carlisle road at this point.

Smeltmill Beck, the only stream to occasionally maintain a surface course across this section of plateau, is generally represented by a dry stony stream bed, passing under the main road. Downstream from the road the stream bed drops steeply into a small rocky amphitheatre, where, the base of the limestone being reached, the stream resurges from two low cave entrances west of the dry gully - Smeltmill Beck Cave.

Upstream from the main road, the stream bed can be followed for about 400 yards, to the rear of the plateau, where the active stream is again encountered, sinking in gravel in its bed. A small collapse hole nearby is not enterable.

Other sinks feeding the system lie at the rear of the plateau both east and west of Smeltmill Beck. The main feeder is a large stream sink - a boulder choked pothole used as a rubbish tip - at NY 845153, half a mile north west of Smeltmill Beck sink. Between the main sink and Smeltmill Beck there are a variety of small sinks which doubtless feed the system. East of Smeltmill Beck the plateau rises with the inclination of the limestone strata, and the exact limit of the subterranean catchment is not clear. One inlet (Hollow Way) in the cave appears to drain this area, however, and its most likely feeder is a stream sink behind the Transport Cafe adjacent to the A66. Further sinks beyond this are apparently part of the Palliard Sike system, incompletely understood as yet (see 'Hydrological Problems of the West Stainmore Are' in MSG Journal 2, 1968).

#### Description of the Cave.

##### (a) The Entrance Series.

The entrance series of Smeltmill Beck Cave is quite different in character to the remainder of the system. The twin entrances join in a wide wet bedding area (with a higher rift running parallel to the cliff face a few feet inside). The most obvious passage is to the l., a hands-and-knees crawl which forks. The r. branch is an aqueous wallow for 70', ending too tight, and the l. branch is an easier wet crawl to a small chamber with some attractive eroded rock "sculpture" - this is Crab Grotto. Beyond the small chamber the passage lowers to a crawl again and soon ends too low.

This is apparently a former inlet, from regions unknown, possibly connected with a small stream now rising a few hundred feet west of the cave entrance.

Returning to the entrance area, the main route on is through either of two low wet passages to the r. The l. route involves (dependant on water level) an easy duck, the r. route is drier but necessitates flat crawling over a fallen slab. The two routes reunite in a wide passage with low airspace - The Ducks. On the occasion of the initial exploration this was quite desperate in parts, but digging at the entrance has since lowered the water level, and in dry weather one now hardly needs to get an ear wet (note, however, that there is a considerable flood risk, since flood pulses have been observed to come down the cave, and sump this section very rapidly).

After a hundred feet or so of wallowing, the passage opens up to walking height (with waist deep water) - this is Expectation Passage. The roof soon lowers again, and there is another short low airspace section (with a short ox-bow, and an impassably small inlet rift on the r., which probably brings in more water in flood conditions, when Smeltmill Beck flows on the surface). This section ends abruptly where the passage changes character to a high and narrower rift. On the first exploration this sudden enlargement was gratefully gained after a particularly desperate duck, or a squeeze (allowing one to keep ones nose just above water) alongside a mudbank) - conditions are now considerably easier.

(b) The Main Streamway.

The remarkable joint control of this section of the cave is at once obvious from the survey. Virtually straight sections of streamway angling along the predominant joints (the two main joint directions being roughly  $290^{\circ}$  and  $320^{\circ}$ ) alternate with acute bends, as the passage continues, virtually all easy walking, to Cairn Chamber, quarter of a mile from the entrance. Formations become more profuse and colourful as Cairn Chamber is neared. There are, or were, several chert bridges in this section (often covered by stal.), but these have suffered from the passage of cavers.

Cairn Chamber - a slightly wider section of passage with a sandbank, where a cairn was built marking the limit of the first exploratory visit - is situated on the last of the acute bends for a considerable distance. Beyond the chamber the streamway runs north-west for c.800', on a much straighter course.

50' upstream from Cairn Chamber, in the r. wall (and very easily missed) is Hollow Way, the first major inlet passage. Beyond the inlet is a section of the main streamway known as the Hanging Gardens, where a profusion of calcite flows, cascades, columns and stalagmites adorn ledges on either side of the passage - making this the most photographed part of the cave.

Continuing upstream, the passage eventually reaches an acute bend to the r. (Ichthys Corner), and turns through almost  $180^{\circ}$  to run back for several hundred feet nearly parallel with its previous course. There is one sharp double bend in this section, where on the l. (proceeding upstream - in actual fact it appears as "straight ahead") is the narrow entrance of Shrimp Inlet.

Upstream of Shrimp Inlet the passage changes character somewhat, to an easy traverse (Cascade Traverse) above the stream, which flows in a narrow trench. This ends at a 3' cascade (notable in being the highest waterfall in the cave - the whole system is remarkably horizontal, only rising 18' in nearly a mile). Above the cascade the passage continues narrow but high, necessitating sideways walking, and at one point a short crawl through a pool (The Grovel). Beyond this is more 20' high narrow rift, with a small joint fissure on the r. where several calcited bones were found, identified as being from a Red Deer (giving the name "Red Deer Rift" to this section).

The rift-like streamway, which here has comparatively little in the way of formations, ends at a 1' cascade, beyond which the cave resumes its character of before Cascade Traverse - a more winding streamway, with profuse formations again. Oxbow development, absent further downstream, is commencing here in a number of places, and there is one roomy oxbow on the l., just before the passage forks at the Main Junction. The main streamway doubles back acutely l. here, and straight ahead is the Keyhole Passage inlet.

Continuing up the main streamway, through some lower sections, a canal and then a chamber, with 3' deep water, are reached. At first sight the passage appears to terminate abruptly here. On the r., however, is a small hole just above water level (Hope). An amusing scramble down flounder over an underwater mantelshelf gains a larger passage beyond, the way on upstream.

Beyond Hope is Handwrecker Series, basically a triangular-sectioned (the apex of the triangle upwards) passage, containing deepish water in parts

and then lowering to a crawl over crusty mud and chert. A few yards beyond Hope is a branch passage on the r., which closes to silted fissures after a little over 100' - whether this is an inlet or former outlet is not yet clear.

The Handvreckers streamway ends in a 'T'-junction with Halloween Passage, where the cave turns to run along a joint direction previously unutilised except perhaps in The Ducks. The passage again changes character to a narrow rift with deep water and in places a distinct lack of airspace. The point at which the main stream enters is not clear, there being several possible sumps in short cross rifts. The accessible rift to the r. at the final junction ends in a mud choke, to the l. several ducks and a short free-diveable sump can be passed, only to end in a small chamber with any possible outlets highly silted. This is thus the upstream termination of the main streamway - the sink which feeds it is still over a quarter of a mile away.

#### The Inlets.

##### (c) Hollow Way.

This is at first a narrow crawl, with the stream in a very narrow fissure 4'-5' below the accessible section. The floor then steps up, and one crawls along in the stream and over a nicely gouged boulder. Shortly after this the floor suddenly drops into mist deep water, and within a few feet the roof follows suit, the only exit from the sump being a continuation of barely boot height at floor level. This point is 150' from the main streamway, and considerably further from any of the small sinks which may feed the inlet.

Previous to the rather belated discovery of this passage, the various small sinks east of Smeltmill Beck had not been thought to enter the system - there is no other likely inlet in the cave. However, Hollow Way crosses under the surface bed of Smeltmill Beck and heads beyond, towards (hydrologically speaking) the mysterious region behind the Transport Cafe. Considering the amount of water, and the distance to the sinks, the passage does not seem very well developed, and its premature termination was something of a disappointment.

##### (d) Shrimp Inlet.

A small stream - only a trickle - enters here, but its source is a mystery. The passage is a narrow rift, of some cross-sectional area (due to its height) but much constricted by chert ledges and stal flows. It can be followed as a tight crawl for 120', to where the removal of stalagmite flows would necessitate a little chemical assistance. The cave here is still some distance from the edge of the limestone plateau, and if Shrimp Inlet follows basically the same joint sets as the Main Streamway, a considerable length of passage may remain to be explored (assuming that the inlet eventually connects with one of the small sinks at the plateau margin).

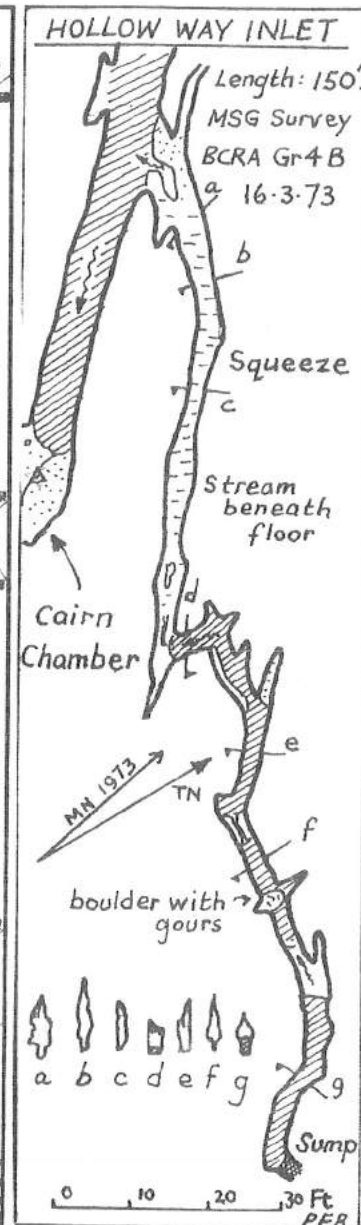
##### (e) Keyhole Passage.

This is the only inlet whose source is more or less definitely known, and brings in the Smeltmill Beck stream, from its normal weather sink at the plateau margin. The inlet commences as an attractive circular tube with a small floor trench (a classic example of a phreatic tube with vadose modification), easily crawlable, but diminishes in size to a very tight squeeze into the final chamber, the 20' high Choke Aven. This shows collapse modification in the form of a pile of boulders, with the bedding plane continuation at floor level beyond, bringing in the stream, too low to enter. This point, according to the survey, is little over 100' horizontally, and 70' vertically, from the sink which feeds the inlet.

It is interesting to note that Keyhole Passage, 450' long in all, runs almost directly beneath the line of shakeholes at the rear of the limestone plateau. Two of these at least contain shafts, but there is no evidence of any connection with the cave below. One shaft - Plucka Hill Pot - is 30' deep, and needs a ladder. The second, New Collapse Pot, is too constricted to enter, although stones can be thrown down and appear to fall a considerable distance. An attempt at a vocal connection between New Collapse Pot and the Keyhole Passage streamway beneath was unsuccessful. Apart from the final small Choke Aven, there is no evidence of vertical development of any scale above Keyhole Passage.

## BROUGH

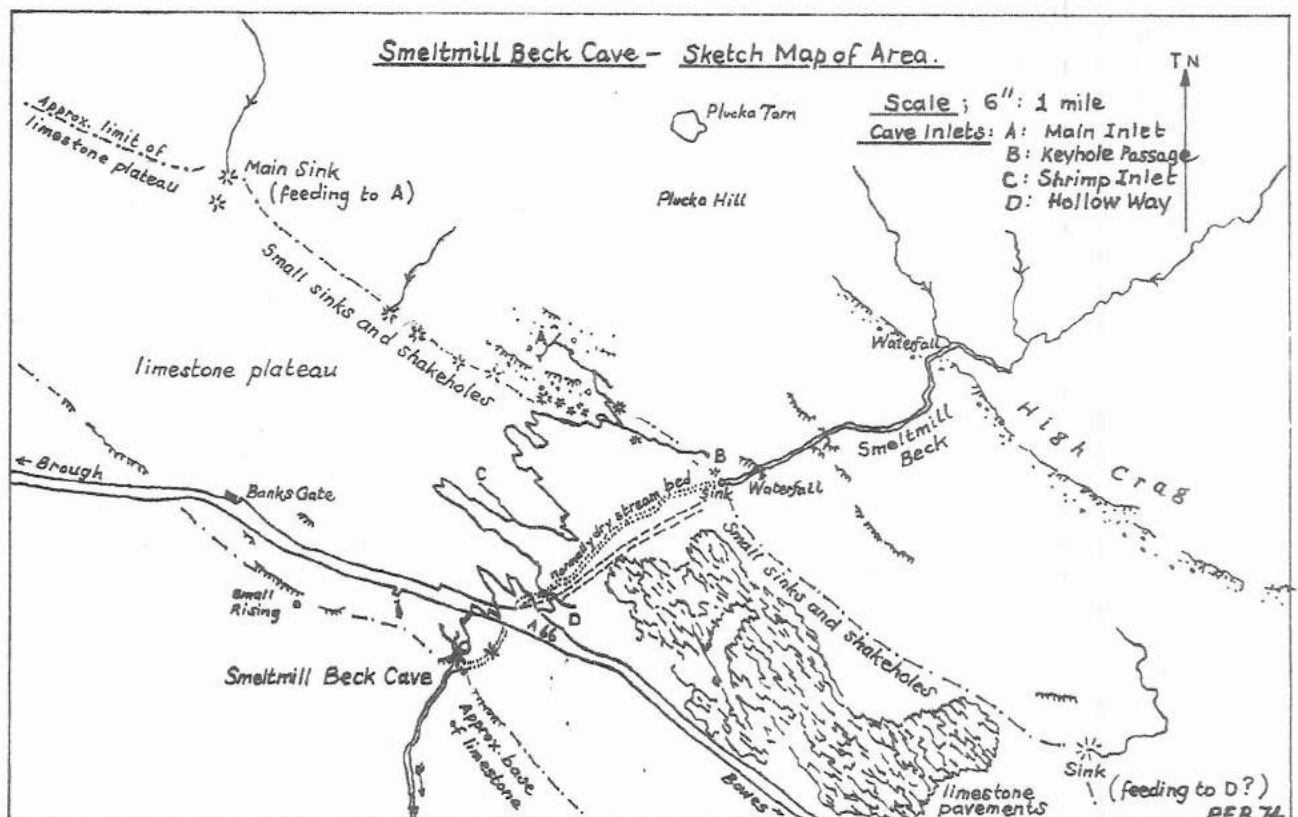
Scale 0 400 Feet  
100 m National Grid



To those who enjoy speculating about the prospects of entering the major Northern Dales cave systems from their sinks, Keyhole Passage has a two-fold significance. Here we have an accessible stream passage, developed more or less at the base of the limestone, which approaches very near to its sink. Quite a number of Northern Dales sinks are accessible to the base of the limestone (the Smeltmill Beck sink is not - indeed, it is very thoroughly gravel choked, no rock being exposed), but as yet none (Whirley Gill Pot is a possible exception, but here the entrance is not a stream sink, but a pothole dropping into a streamway near the sink) of the Northern Dales pothole sinks have given access to any length of stream passage. Attempted drawing of parallels between the Swindale and the Smeltmill Beck systems spurred on MSG efforts in Cross Pot, and it was hoped that if Cross Pot could be pushed for a few hundred feet horizontally the downstream passage might enlarge into a larger-scale version of Smeltmill. However, as can be read earlier in this journal, efforts at this sink have so far yielded only a relatively short system of constricted passages and a great deal of frustration.

The second point of significance seen in Keyhole Passage and its relationship with surface features gives less rather than more hope to Northern Dales sink pushers. The small potholes directly above the active streamway apparently show no connection whatsoever with it, and, like many of the similar small shafts found at the rear of Yoredale Limestone plateau, show no horizontal development whatsoever. The development of the stream cave and the potholes here appears to be entirely unrelated, and this may well be the case throughout the Northern Dales. Another example of pothole sinks (with open shafts of considerable areal dimensions) in close proximity to, but with no accessible connection with, a stream cave, can be seen in the case of the Buttertubs and Cliff Beck Head Cave.

P.F.R.



(Cliff Beck Head Cave and the Buttertubs, cont. from page 15)

2 - This is an obvious wide shaft, with trees growing in it. A ladder of 25' will suffice for the descent. Total depth of the hole is c.35', and there seems no obvious prospect of extending it to any greater depth.

3 - Two wide and obvious shafts, with one or two smaller holes beside them. The shaft in which the stream sinks is a little over 30' deep, about 15' wide and over 50' long, with a more or less level gravel floor, the stream sinking into a tiny fissure.

4 - The deepest Buttertub, an impressive shaft immediately adjacent to the west side of the road. The open shaft is c.50' deep, and most easily descended on a ladder, although a good climber can descend via the complex interconnecting channels and deep flutings at the north end.

At the bottom of the open shaft, there is the customary level gravel floor, and a small fissure where the stream sinks. There is also a second pitch - the only "underground" pitch in the Buttertubs - a narrow fissure opening off the north end of the open shaft drops a further 30' (climbable with a rope) to end in a choked fissure which has evidently been the scene of much digging). Running water is audible here, and the end of Cliff Beck Head Cave (Conduit Passage) is probably only c.20' away.

In the east side of the depression in which the main shaft of Buttertub 4 is situated is a small fenced enclosure containing the entrance of Buttertub 4a - the "new" Buttertub which appeared (and was deemed worthy of mention in the local press) in 1967. The narrow fluted shaft is just under 50' deep, and requires a ladder, the initial drop being 36', and then a further 12' descent in a smaller shaft.

5 - In the next depression north of Buttertub 4 are two shafts, 5a a wide shallow shaft, more a rocky shakehole than a shaft, easily scrambled down, and much overgrown. Further west is a narrow rift pot, with at its north end, its entrance half corked by a huge boulder, a circular shaft 50' deep. This hole, 5b, requires a ladder.

6 - A smaller shaft, 27' deep to a boulder floor, with no prospect of any continuation, its only noteworthiness being that this was the first experiments of MSG members with Single Rope Techniques. PFR, ostensible engaged in surveying the pot, managed to whaletail his way to the bottom in an inverted position, and had considerable difficulty jumaring back up again.

7 - Continuing north from Buttertub 6, and passing a few small grassy shakes, the last of the open potholes, no.7, is found. This is a small shaft, again devoid of any particular interest, 20' deep.

It is interesting to note that only one shaft, 4a, shows any secondary development below the usual open pothole shaft. Presumably the drainage which finds its way into the other shafts makes its way more or less directly down the joints to the base of the limestone, before feeding Cliff Beck Head or the other smaller risings further north. Whether cavities have developed upwards from the base of the limestone (i.e. the 30' aven at the end of Conduit Passage of Cliff Beck Head) beneath these other pots, is an interesting problem.

The Buttertubs, and similar groups of open shafts throughout the Northern Dales, still pose a variety of interesting geomorphological questions. The basic opening of the joints probably took place under phreatic conditions, and much of the enlargement into roomy shafts has been due to solution by thin films of water trickling down the shaft walls - as evidenced by the vertical flutings so well displayed by the shafts. The relationship between such shafts and vadose streamways is always of interest - often there seems to be very little relationship, stream passages intersecting the vertical cavities (sometimes termed "domepits") more or less by chance. Conduit Passage of Cliff Beck Head does seem to be unusual in that it is obviously related to, and has developed with, the Buttertubs 4a and 4b, and perhaps the multiple shafts of 3 as well.

# NEARCLIFF WOOD RIFT

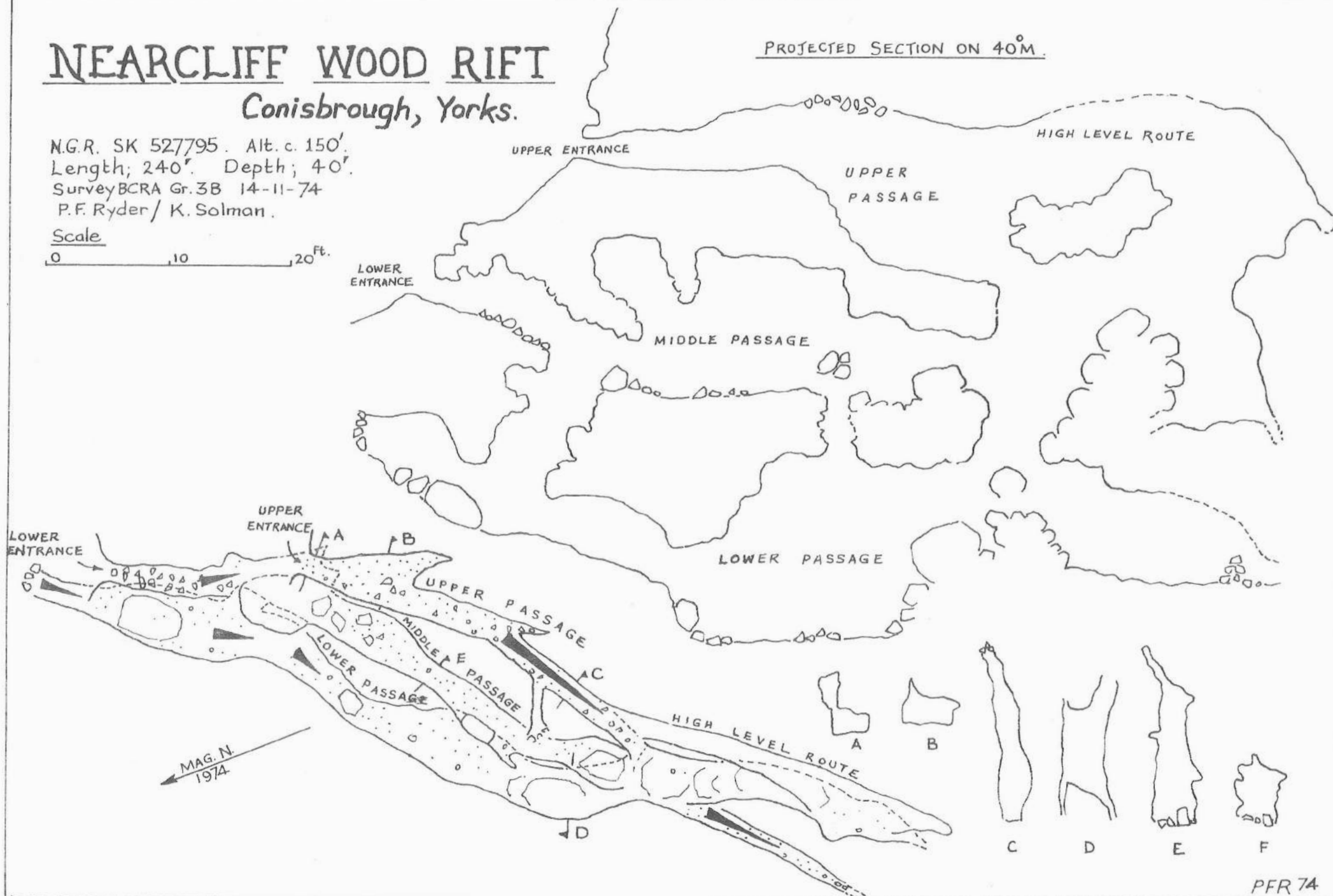
Conisbrough, Yorks.

N.G.R. SK 527795. Alt. c. 150'.  
Length; 240'. Depth; 40'.  
Survey BCRA Gr. 3B 14-11-74  
P.F. Ryder / K. Solman.

Scale

0 10 20 Ft.

PROJECTED SECTION ON 40°M.



Nearcliff Wood Rift, Conisbrough.

This cave was visited after the main article in this Journal dealing with the Magnesian Limestone caves of the South Yorkshire area had been completed and that section of the Journal printed.

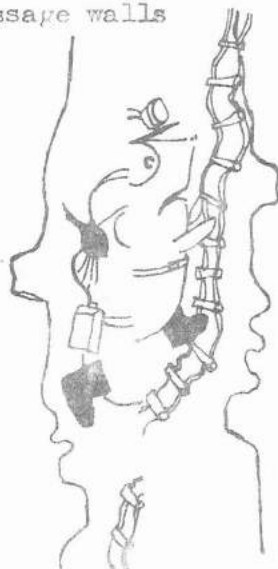
Following initial instructions given by members of the South Yorkshire Caving Club, the cave was located and briefly inspected by Sid Armstrong and PFR on 5-10-74. On 14-11-74 Roger Cooper, Ric Halliwell, Kevin Solman and PFR, on an "evening trip" from Hull, returned to the cave, thoroughly inspected and surveyed it.

The best way to locate the cave entrance is to follow the track branching 1. from the Conisbrough to Doncaster road about quarter of a mile before the road bridge over the disused railway cutting. This track runs along the foot of the Magnesian Limestone scarp, and passes under the viaduct of the disused railway. About 400 yards beyond the viaduct a small track/path joins from the r., slanting upslope onto extensive old quarry tips. Following this secondary track upwards (back towards the old viaduct), a footpath of sorts crosses - to the r. this drops steeply down onto the main track, to the l. it enters the woodland covering the scarp slope (Nearcliff Wood). The cave entrances are very near this footpath, but the whole scarp slope is a chaos of tangled vegetation, slipped masses of limestone, old quarries, crags and miscellaneous declivities, so finding them is not easy.

There are two entrances, one 12' above the other. The cave is a typical slip rift, a stepping of the rift, coupled with wedged boulder floors, dividing it into three levels, imaginatively termed on the survey "Upper Passage", "Middle Passage" and "Lower Passage". The two entrances lead into Upper and Middle Passages, the Upper Passage ending in a climbable 15' drop into a chamber of sorts where all three levels join. Beyond this the main rift continues a little further at the level of Middle Passage, with a high level route above it, enterable by a climb up at the far end of the main rift, and running back to drop into the roof of Upper Passage above the 15' drop.

The survey - carried out using an ancient undamped prismatic compass (it came as a pleasant surprise to the plotter of the survey to find that the various loops closed tolerably well - nevertheless only Gr.3 is claimed) - acts as a description of the hole. Generally, it is dry, bouldery and devoid of any especial hazards (beyond the occasional loose boulder), and, one might add, devoid of any especial interest. The cave is obviously well known to local children, and to a few cavers. Total length is 240' and depth around 40'. The straight line distance from the Lower Entrance to the furthest accessible point in the main rift is, however, barely 80'.

The cave was probably formed by one single joint-opening movement along a joint consisting of three steps. Some of the deposits on the passage floors are loessic, but most result from the drying out of decomposed leaf litter. There are no flowstone or other secondary deposits. No slip planes can be identified, although the degree of both vertical and horizontal movement (2' to 3' in each case) is obvious from a consideration of the morphology of the passage walls



SLIP RIFT  
KS/PFR.

P.F.Ryder and R.Cooper.

## Sil Howe Whinstone Mine - Methods of Working.

From the time of the opening of the level in 1899, to the closure of the mine in 1950, the methods of working altered very little.

The pre-existing tramway (from the Sil Howe Quarries to the Goathland Crushing Plant) was extended from a point 550 yards below the adit entrance, into the level, and into the workings as the faces were pushed forward. A loop was incorporated into the connection, to allow the passage of empty or laden wagons travelling up or down the single tramway. Within the loop, two or three men were engaged in breaking up the stone, by hand, into manageable pieces.

Laden wagons, coupled in pairs, travelled downhill under their own momentum, with either a man or a horse to serve as a brake. To hold the horses back, corn was placed at intervals along the incline, and encouraged frequent stops.

Horses were also used to pull the empty wagons up the long incline (over two miles), and to pull laden wagons from the mine faces to a position where gravity alone could be employed.

In the mine, all the horses were driven from the rear, so if one stopped in a low narrow gallery, the "driver" would have to detour through any available interconnecting passage, or, in some instances, climb up an air vent, over the moor top, through the level entrance and lead the horse out from in front. Horses were used in the mine up to its closure in 1950.

When Mr Sherratt took over the lease of the mine in 1936, he introduced motor cars (old and unfit for use on public roads) to haul the empty wagons up the incline, and to act as brakes on the way down.

The Sil Howe mine was wet, with several chalybeate streams flowing through the workings. As the adit was mined rising gently towards the dyke, water was channelled out under gravity. This drainage water from the workings was employed as a power source within one year of the mine opening.

In 1900 the Lancashire Boiler at the Crushing Plant was damaged by fire, and this steam boiler was then replaced by a water driven turbine, fed by the water from the mine workings, which was channelled across the moor into a reservoir above the Crushing Plant.

### Men employed, and methods of working underground.

The number of men employed in the mine never exceeded a dozen, and of these only three or four were "face workers". They directed their own operation, and hired their own assistants to load the wagon and perform any other job that needed doing.

Within the mine workings ran two parallel galleries (each 12' wide), separated by a 6' wide central divide. About 5' of dyke rock was left intact on either side of the workings, to give support. As the galleries lengthened, so the central divide was removed at intervals to ease communication and to alleviate the need for two separate tub ways. With every 30 or 40 yards that the galleries extended, an ascending ramp was cut in the rock face, and another similar gallery system developed above the lower one. In some places a third system was mined above the second. The floors between the galleries were about 12' thick.

The stone was removed by cutting benches in the face, using a combination of hammer, pick and explosives, until 1936 when Mr Sherratt installed pneumatic drills which ran from a diesel compressor on the surface. A headroom of about 20' was mined - most of it by hammer and chisel, exploiting the cooling cracks in the igneous rock. Thus an overall vertical extent in the areas of the three-deck system of about 84' was produced. In several places the floors and central divide of this three-deck system were deliberately blown in, and the whinstone removed.

Extensive use of explosives was never employed, their use being a very risky business as no shotfiring certificate was required, and theoretically anyone could measure and place charges, and light the fuse. However, official control was put on storage and safe keeping of the explosives, a Powder Certificate being required, and frequent checks being made by the local constabulary.

A regular duty of the miners and foreman was to "sound out the tops" of the entire workings. This was done by tapping the roof with a long iron bar. The ensuing noise indicated whether the roof was sound, or in danger of collapse. Although primitive, this method was very effective.

Throughout its entire working life the mine was lit by octagonal candles, oil lamps and pressure lanterns. Electric light was never employed.

#### Systems of Payment of Workers.

Any equipment employed in mining operations was drawn from the Company Stores (stocking candles, hammers, explosives etc.), and at the end of the week all the equipment costs were deducted from the miner's wage. The miners had to divide their wage between themselves and their assistants, taking the larger percentage for themselves.

Prior to 1936 the miner attached his own personal metal token to each wagonload he filled at the face. This was then sent out through the workings and along the incline to the Crushing Plant, where the token was removed and the weight of the load recorded. At the end of each week the wage was paid, according to the weight of stone removed and shown on the token.

After 1936 the system of payment was amended, and became based on the number of wagons loaded. The tokens were discarded, and white chalk marks instead were used to identify the trucks. Under normal working conditions, each man could produce two wagon loads per working day shift. One wagon load totalled about 2 tons 15 cwt. of whinstone.

#### Wage Structure.

<u>Miners.</u>	<u>Surface Workers.</u>
1914.      £2 per week average.	£1-16-0 per 54 hours.
1936.      £4 per week average.	£3-0-0 per 48 hours.
1949.      £8 per week average.	£4-8-0 per 44 hours.

Special thanks are given to members of N.C.M.R.S., without whose co-operation this article could not have been written.

Kevin Solman.

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#### The Quest for the Hobthrush.

Once, long ago, in a land so far north that it was beyond the top of the Wensleydale ordnance map, lived a brave though foolhardy young man. His name is of no consequence, and in any case, is unknown - although legend suggests that he may have been one of the Diwarp family, perhaps even a son of the notorious Mole.

The fateful day started, much like any other, with a dawn of the usual sort. Our hero, X for short, awoke with a start which he quickly stopped. He was just finishing his breakfast - cornies grilled in slug pate - when a letter arrived for X, ample after his meal. It told him that if he wished to make a name for himself, and stop being cross all his life, he would go to distant Teesdale where lived the fearsome hobthrush - half bird, half limestone; half-heartedly he mounted his noble steed, kicked it into life and sped away swift as the wind after a night on brown ale.

He arrived at a small village and strode forward with a grim expression. The peasants tried to prevent him, but he brushed aside their fearful tales, and his own because it kept dragging in puddles, and strode swiftly on. He was determined to boldly go, and boldly went, where no man had been before. Some second later he emerged from the 'Ladies' at Middleton, red faced, but was excused his mistake, and the locals introduced him to their squire-

"Meet X, Sir Tyficate" they cried - at which pungent comment X departed.

The hobthrush reputedly lived in a cave. A long tramp took him there, and left him. Unable to see in the darkness of the cave he struck a lucifer - a devil of a job - and as there was no sign of the fearsome beast he crawled in. In a large cavern, mysteriously lit from some unknown source which he didn't relish, was a big nest like a stone topiary in the middle of which lay a glistening calcite-skinned egg. Next to it was a letter to a ITR from a GMD (whoever they were) which included an appalling tale of a young adventurer being torn to pieces by the hobthrush because he had entered its lair. "What a rip-off" X postulated, as the tap of a great beak on his head silenced him forever. X pired, and the hobthrush settled onto its egg with a gravelly cry, and made a mental note that Volume 5 of 'Northern Graves' now needed revision.

Martin Davies.

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#### M.S.G. Publications.

The following back numbers are available from:

Dr. G.Stevens, 4 Kingston Avenue, Acklam, Middlesbrough,  
Cleveland, TS5 7RS.

Major items of contents are shown - (S) indicates that a survey is included.

#### Journals 1,2,3 & 5.

- are now out of print, but are available for photocopying, by arrangement.

#### Journal 4. (May 1971). (Quarto, 38 pp. + 7 pp. surveys, 30 p. post included).

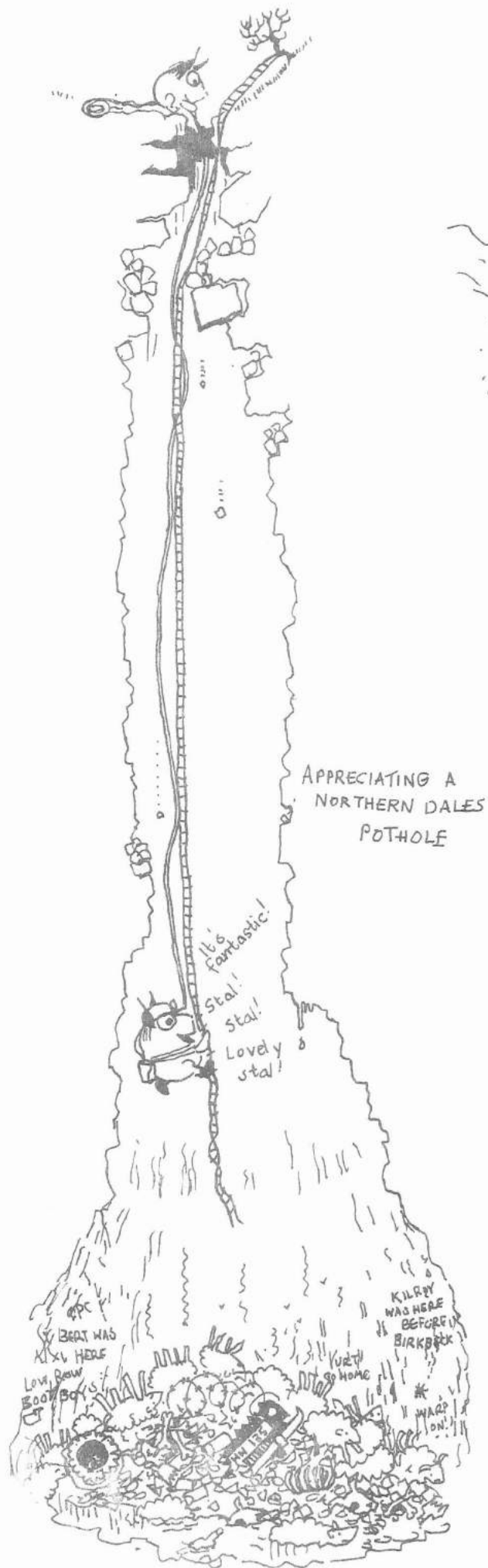
Moking Hurth and Moking Pot, Teesdale (S), Eller Beck Head Cave, Bowes, Fagnergill 1970, Fagnergill New Level Mine Cave (S), Smarber Beck Head Cave, Swaledale (S), Keldheads Cave, Wensleydale (S), Windegg Mine Caverns, Arkengarthdale, Meets Reports 1970 (S), Deepest Tothole in Australia, Bluebell Wood Cave, Newton Aycliffe (S), Kisdon Cave, Swaledale (S), Hydrological Systems in the Northern Dales.

#### Journal 6. (Easter 1973). (A4, 24 pp. + 7pp, surveys : 25 p. inc. postage).

Fossdale Beck Cave, near Buttertubs Pass (S), Elph Cleugh Cave, Weardale (S), Trough Scars Caves, Near Bowes, Maize Beck Caves, Dufton Fell, Grange Gill Cave, Wensleydale (S), Moking Hurth, Teesdale (S), Maze Holes, near Hawes (S), Ryhope Caves, Sunderland (S), Ashberry Windypit, E.Yorks (S), Kirkdale Cave, E.Yorks (S), Blood Windypit, E.Yorks (S).

In addition, loose copies of some of the surveys previously published in the various journals are available @ 2p. each. Include 4p. postage, regardless of number ordered:

Hard Level Gill Cave, Swaledale (ex. J.3).  
Lynkirk Cave, Weardale, and East Gill Cave, Swaledale (ex.J.4).  
Moking Hurth System, Teesdale (ex. J.4)  
Fagnergill New Level Mine Cave, Swaledale (ex.J.4)  
Blind Gill Level, Swaledale (ex. J.5.)  
Skye Cave surveys, ex. J.5.  
The Allt nan Leac Valley (area map).  
Beinn an Dubhaich Cave,  
Camus Malag Cave,  
Uamh cinn Ghlinn and Claon Uamh.  
Uamh Sgeinne.



PR 74.

Larger scale dyeline copies of the surveys in this journal are available to order. Prices on application:

- Devis Hole Mine Workings, Swaledale (200' : 1").
- Devis Hole Cavern Central Maze Area. (25' : 1").
- Swinnergill Caves, Swaledale. (25' : 1").
- Cresswell Caves, Derbyshire/Nottinghamshire. (25' : 1").
- Keld Heads Cave, Wensleydale. (25' : 1").
- Sil Howe Whinstone Mine, Goathland. (100' : 1")

Other Surveys still available.

- Smeltmill Beck Cave (length 6,000') 35" x 25"  
lithoprint at 50' : 1". Gr. 4/5c. (25 p. post included)
- Ayleburn Mine Cave, Alston, Cumberland. (length 1 mile)  
40" x 20". dyeline, at 100' : 1". Gr. 4/5c. (25 p. post included).
- Windegg Mine Caverns, Arkengarthdale, Yorks. (length 4000')  
18" x 14" lithoprint at 32' : 1". Gr. 4c. (as issued  
with Journal 5). Survey only - (12½ p. post included).

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Any cavers living in the County Durham /Teesside area, who have an interest in other than purely sporting speleological activities (i.e. in digging, prospecting for new caves, surveying, research projects etc.) are welcome to contact M.S.G., which is run as a more-or-less informal "group" rather than a fully organised caving club. Meets are generally in the Northern Dales (i.e. Wensleydale and further north) area, and in other areas away from the main centres of conventional speleological activity. At the time of writing, meets are generally held on Thursday or Friday nights during most of the year, and at weekends in the summer, and around Christmas and Easter.

Interested persons should contact the Hon. Sec., Graham Stevens (address above), or Peter F. Ryder (Research Sec.), c/o. 73 Abbey Road, Darlington, Co. Durham, or the Dept. of Geography, University of Hull, Cottingham Road, Hull HU6 7RX.

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