

Heare be ye Bros D. & R. Errington.

MS G 8



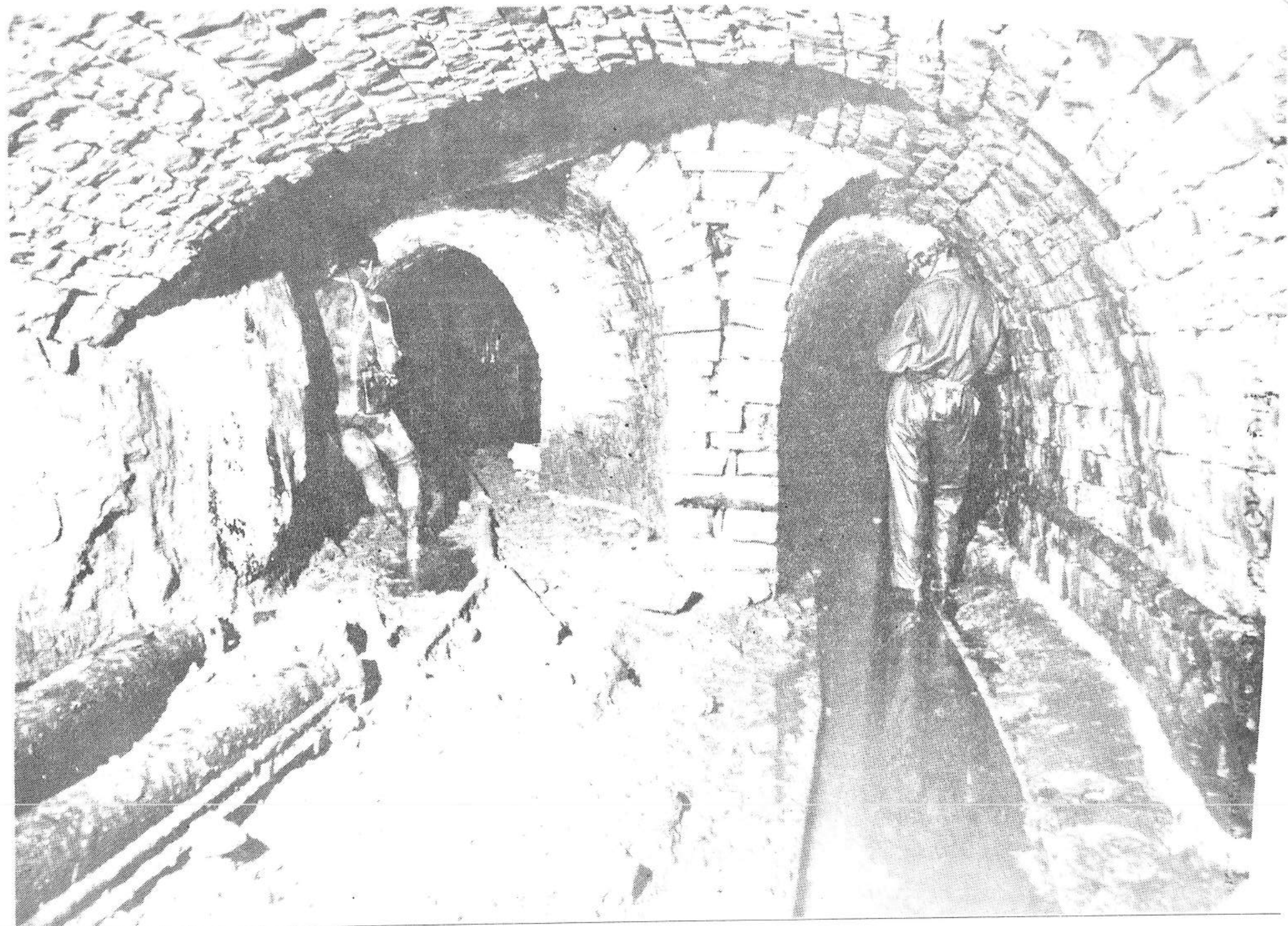
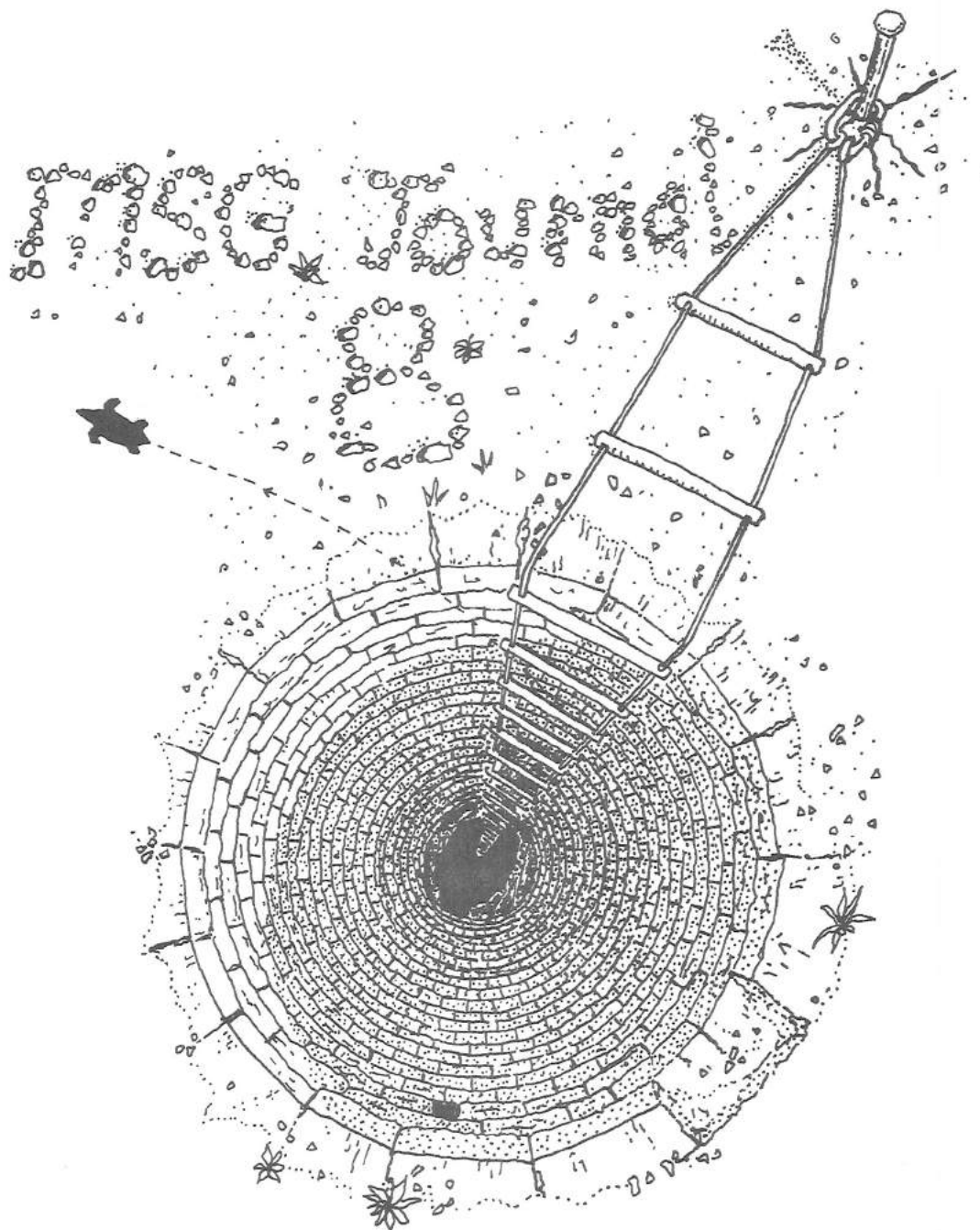


Fig. 4. 10. 10



August 1976

New Explorations -
Isle of Skye
Teesdale
Weardale
Alston Area
Vale of Eden
Swaledale
Wensleydale
Caves in Saddleworth
North-East Yorkshire,
Caves and Mines
Flying Moles
Richmond Copper Mine

Editorial Comments

This is the eighth Journal produced by MSG in ten years of Northern Dales caving, ten years which have seen something like a hundred new explorations - previously unrecorded caves and potholes and extensions to known systems - made and documented.

A variety of new explorations are recorded in this Journal. The greatest daydream of those who have taken part in the Skyewarp Expeditions, the link between Valley Head Cave and Upper Valley Head Cave, has at last become a reality. Although only 1,200' long, this is a fine through trip and the most extensive cave on the island. Northern Dales new explorations, the usual MSG Journal fodder, continue apace. We are grateful to members of the Durham University Speleological Association for allowing us to publish details of their work in the Northern Dales, and also to Dave and Keith Errington who have been very active in the Alston and Weardale areas. Friends from Hull University Speleological Society have also given assistance with projects such as the surveying of Lunehead Mine Caverns.

Thus the usual pattern of MSG activity - a small "core" of devotees in the Darlington and Teeside areas aided and abetted by an assortment of friends from further afield - continues. The Group has never claimed to be a "caving club" of the usual sort, but more of a loose organisation of speleologists with an especial interest in caving of an other than purely sporting type, based on the Northern Dales area.

Before the 1960's cavers had more or less ignored the Yoredale limestones of the Northern Dales, and whilst ten year digs in search of new cave were in progress in Craven (and hundred year digs on Mendip!), wide open entrances just waiting to be explored were scattered across the fells north of the Ure.

The first flush of the speleological golden age of the Northern Dales may now be past, but the work continues. As this Journal goes to press several hundred feet of new passage have just been explored and surveyed in Hearne Beck Cave and Hearne Beck Pot, and the first sump dives in Northern Dales caves (first that is with the exception of the Hon.Sec's occasional submergations without artificial aids) are being made. So the stockpile of material for Journal Nine is already heaping up.

If any caving reader, situated in the Teeside/County Durham area, is interested in MSG's activities, the rough gist of which will be gained by perusing the following pages, he is invited to contact the Hon.Sec. (Graham Stevens, address see p.68). We would be pleased to hear of any new explorations by any caver or club in the Northern Dales area.

Credits

Editorial, typing, drawings
Organisation of printing
Collation and general management

Peter F. Ryder
Peter R. Armstrong
Graham Stevens

Frontispiece Sir Francis Level, Gunnerside Gill, Swaledale

Kev. Solman.

Valley Head Cave, Isle of Skye.

The Beinn an Dubhaich area of the Isle of Skye, where there is a sizeable area of outcrop of the Durness Limestone, has been the venue of half a dozen MSG "expeditions" since 1971. A fair number of new caves, most of them relatively small, have been unearthed and surveyed in traditional Moldywarp manner (see Ryder 1974), and other clubs have recently been active as well, notably the Grampian Speleo Group and a party from the University College of London Speleo. Society who in the course of one brief but productive visit in 1972 found several new caves including the first 1000'+ Skye system, High Pasture Cave, and a shorter cave (termed by them "Unnamed Cave") associated with the sink feeding Valley Head Cave, a 1971 MSG find.

MSG work at Easters 1975 and 1976 has concentrated on the Valley Head system, each visit yielding new sections of streamway, and "Unnamed Cave" (later named "Upper Valley Head Cave" has now been linked to valley Head Cave, making a fine through trip with a total of 1,200' passage in all.

History of Exploration.

Valley Head Cave (Uamh Cinn Ghlinn), the resurgence at the head of the Allt nan Leac Valley, two miles inland from Loch Slapin, was first entered at Easter 1971 by the writer, who, after a brief dig, made a shivering and unwetsuited exploration of the entrance crawl and ducks as far as The Vestry and Chantry Chamber, two sizeable chambers. Colin Carson and Chris Langthorne surveyed the cave on the following day, and explored the upstream canal beyond The Vestry to a sump.

Unnamed / Upper Valley Head Cave was found by the UCLSS party in 1972, a hole in the dry valley above Valley Head Cave leading down to a section of streamway, upstream connecting with the Allt nan Leac Sink (noted and dug briefly by the MSG party the year before), and downstream terminating in a sump. UCLSS did not survey the cave, so the following Easter the writer, along with Nev Andrews (ULSA & BACC) returned, and surveyed 220' of passage, in the process pushing a tight high level crawl which seemed to pass over the downstream sump, but ended, frustratingly, too tight just where the streamway could be heard again ahead.

There the situation rested for two years, with the thought that several hundred feet of stream passage must remain to be explored between the two caves, in our minds. Valley Head was the best prospect on Skye, since the sink to resurgence distance, although only just 300 yards, considerably exceeded most of those in the area, where the limestone outcrops rarely exceed 100 yards in width. The lure of the prospect became too strong, and at Easter 1975 another visit was made, by Graham Stevens, Kevin Solman and the writer. The "sump" in Upper Valley Head Cave was inspected, and Graham, as is his wont, found a chink of airspace and ducked through - a little digging beyond lowered the water level and the "sump" became an easy duck. Beyond was a superb streamway dropping down a series of waterfalls and cascades to eventually end in a sump. 545' of new cave were surveyed, and the length of Upper Valley Head Cave rose to 755' - the second longest system on Skye.

Survey showed that the new sump in Upper Valley Head Cave, and that in Valley Head Cave, were a little over 70' apart, with at each end high level passages up above the streamway, boulder choked in the lower cave and very tight in the upper. The possibility of a connection now seemed quite strong, given our usual luck in working on Skye. Easter 1976 saw the same trio as the previous year back at Valley Head, and the resurgence cave was entered for the first time since 1971. An assault on the high level boulder ruckle failed, but digging in the stream bed just upstream of The Vestry allowed us to lower the water level on the terminal sump by 2" - and a chink of draughting airspace appeared. Graham, as before, needed little encouragement, and after 3' of subaqueous travel arrived in a low airspace canal. He followed this for 120' to another duck, even shorter (although again with little airspace, and probably sumped before our water lowering activities), and wallowing through found himself in known ground - the final chamber of Upper Valley Head Cave. The connection had been made, and Valley Head and Upper Valley Head Caves became one system, with a total passage length of c.1,200'.

Description of the System.

The cave is described in a downstream direction, from the Upper Entrances (formerly Upper Valley Head Cave) down to the resurgence - this is the recommended direction for visitors making the through trip, since passing the 3' sump is easiest diving downstream.

The Upper Entrances.

The main Upper Entrance is found by continuing straight up through the grassy amphitheatre above Valley Head Cave into a shallow dry valley, passing a single bouldery shakehole. The entrance most commonly used is a hole on the north side of the valley against an outcropping igneous dyke, about 25 yards before the stream sink is reached. The Sink Entrance is a hole in the side of the sinkhole, in the base of which the Upper Allt nan Leac sinks in choked fissures.

The Main Entrance is a 6' drop onto an earthy chute that drops into the stream passage, here running about 12' below ground level. Upstream is an easy crawl, slightly winding, to a final bend with a deeper pool where faint daylight can be seen ahead from the Sink Entrance - to gain this, however, a tightish duck must be passed.

Downstream from the Main Entrance the stream begins to cut down, and the passage is of stooping size, narrow, with fine exposures of banded marbles and cherts in the jagged walls. After 70' of easy going a bend to the l. is met, with the stream flowing into a deep pool, and the roof suddenly shelving down - the first duck.

Just before the duck, two holes on the r. at roof level give access to the Roof Gallery, a narrow crawl running directly above the streamway, explored in 1972. In the upstream direction this crawl becomes very constricted before connecting with a small aven in the stream passage, and in the downstream direction is a tight crawl through a low chamber floored by razor sharp flakes, which becomes too narrow just as it starts to drop back towards the streamway beneath.

The 1975 Extension.

The duck, best entered feet first, is easily passed into a low canal with roof pendants, ending after 30' where the stream cascades away over a solid rock floor again (in which a fine red garnet is exposed). After a little more crawling, the streamway begins to gain height, and then drops down a whole series of 1'-2' cascades, curving l. as it does so - The Spiral Staircase. At the foot of the cascades is quite a roomy boulder strewn chamber, with on the l. a loose slope of boulders slanting steeply upwards. This is Chute Route, probably an abandoned inlet (it still carries a trickle of water) from the single shakehole in the dry valley above, towards which it trends. A cautious ascent of the ruckle (dodging loose flakes hanging from the roof and walls) can be made, but at the top of the slope the passage rapidly lowers and divides, both branches being very low.

The streamway continues on beyond the Chute Route junction, passing a tube completely choked by fill on the l., and then lowering to a brief crawl ending in an eyehole at the head of a 2' cascade into a waist deep pool. From the pool a few yards of easy walking lead to the head of the Waterslide, where the stream sluices down the inclined surface of an igneous dyke into another pool. Below, the passage follows the line of the dyke as a narrow rift in rather shattered rock, beneath "hanging death" boulders between which a roomy high level chamber up above the streamway can be glimpsed. After a few yards an awkwardly narrow section of rift is immediately succeeded by a 2' drop into another waist deep pool - The Thrunge, and then the rift passage abruptly changes character to a bedding, which maintains the interest of the cave by being floored by hundreds of tiny parallel razor sharp ridges of chert - The Spiky Hassocks. Gingerly crossing these, a less painful crawl over boulders opens into a chamber (with at roof level a short section of bedding ending in two small rift avens, running back above the streamway in an upstream direction), and the streamway then narrows to a rift once more, and drops 10' into the largest chamber in the system, Campanule Chamber. A climb down sharp flakes beside the waterfall gains the floor of the Chamber, which is a roomy boulder floored rift dominated by the presence overhead of a huge boulder apparently suspended on nothing - this does not exactly encourage a long stay.

VALLEY HEAD CAVE

UAMH CINN GHLINN

Ailt nan Leac Valley Isle of Skye

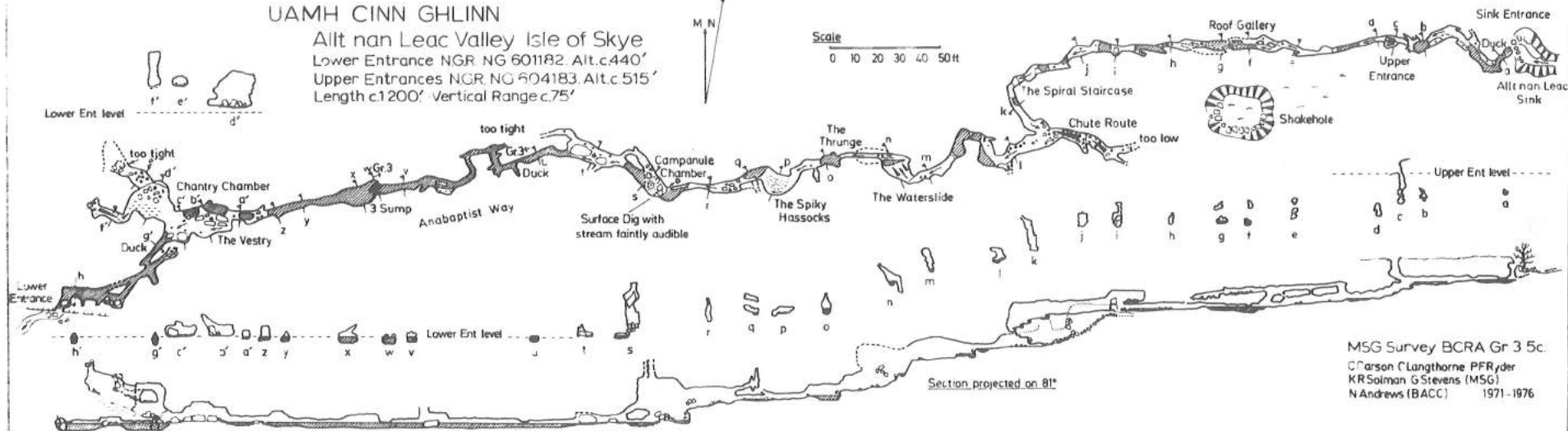
Lower Entrance NGR NG 601182 Alt.c.440'

Upper Entrances NGR NG 604183 Alt.c.515'

Length c.1200' Vertical Range c.75'



Scale
0 10 20 30 40 50 ft



MSG Survey BCRA Gr 3 5c.
C. Carson C. Langthorne PFRyder
KR Solman G Stevens (MSG)
N Andrews (BACC) 1971-1976

PFR 1976

Two narrow cylindrical avens pierce the roof of Campanule Chamber above the dangling block, and the survey shows that these must come to within a few feet of a boulder choked hole on the surface, where some digging has evidently been carried out, and the cave stream is faintly audible far beneath. Continuation of this dig might well result in the abrupt disclosure of a drop of in the region of 35' into the chamber beneath.

Three routes lead on downstream from Campanule Chamber, a hole down through the boulder floor into a wet crawl, or two narrower holes at the far end of the chamber which reunite with the streamway beyond the low wet section, in a small chamber. Beyond this chamber the stream flows off into a low passage, probably too tight to pass, beneath a massive fallen block. A route to the r. skirts this, and leads to a junction - to the r. is a high level rift narrowing to an impassable slot with larger passage visible beyond, and to the l. a crawl past the block regains the stream, here entering a low and aqueous bedding passage, leading after a few feet to a duck, the limit of the 1975 exploration.

Anabaptist Series.

A short duck leads into a low canal passage, with various short cross joints and alcoves to either side. An easy but very wet passage continues round several bends, passing a duck-cum-squeeze on the r. into an apparent side passage which has not yet been properly inspected. The main route leads to a small chamber with a large fallen block and a boulder choked aven, and then, after a few yards more of low canal, the Sump into Lower Valley Head Cave.

The Lower Cave.

The Sump, which may have an inch or so of airspace on it in dry weather conditions, is an easy dive of two or three feet, into a roomy chamber with waist deep water - the upstream limit of Valley Head Cave, as explored in 1971.

Continuing downstream, the passage lowers to a wet crawl for c.50', before opening into a roomy boulder strewn chamber, The Vestry. At the far end of this the stream flows off under a low arch, but on the r. a more roomy opening gives access to a 15' high circular chamber, Chantry Chamber. 6' up the chamber wall an inviting 4' diameter tube runs for 15' to a boulder ruckle, two routes through which might just be passable to a very slim caver, into a roomy but low chamber visible beyond. Equally frustrating is the other exit from Chantry Chamber, a fine 15' high rift passage which swings r. and ascends a mud slope, to suddenly end in a blank wall with a choked aven above, and a silt filled tube on the r. which probably connects with a silted passage visible through the boulder ruckle at the end of the high level route from Chantry Chamber.

The stream exit from The Vestry is a wet crawl, with some near ducks, passing a small boulder choked chamber on the l. and an almost sumped oxbow on the r. before, after c.80' of wet going, a watery grovel round a boulder leads to the Lower Entrance, where the stream resurges from the foot of a line of cliffs to become the Allt nan Leac.

Valley Head Cave is now the longest system on Skye. Although the streamway has now been followed through from sink to rising, prospects for further extension do remain in the puzzling choked high level passages running updip from Chantry Chamber, beneath extensive areas of limestone pavement on the flank of Beinn an Dubhaich. They, and the tiny remnant of a large choked passage seen in Ancient Cave (Uamh Aosda) further along the scars west of the Lower Entrance to Valley Head Cave, suggest that an old (Pre Glacial?) cave system, pre-dating the present active passages, may exist.

The Valley Head system should be avoided in wet weather, as the low airspace sections of the streamway will all readily sump, and possibly remain sumped for some time. Care should also be taken in sections of the streamway, usually those adjacent to igneous dykes, where the rock is very shattered.

Other Work on Skye - Easter 1975.

The Cave of Broken Glass (Uamh Gloine Bhriste).

Uamh an Ard Achadh (High Pasture Cave), the impressive 1,050' long system found by UCLSS in 1972, was first visited by MSG members at Easter 1973. The cave stream was fluoresceined, and the dye reappeared a few hours later at a rising at the foot of the obvious dry valley which runs down from the cave entrance. In this valley, about 100 yards above the rising (which is from impenetrable beddings), an apparent flood rising, choked by boulders, was noted.

On March 31st 1975 the writer and Kev Solman returned to the flood rising, armed with digging gear, and in a very short time a squeeze between the boulders was opened, to give access to a roomy passage, with the stream distantly audible. Our hopes rose high - we had estimated that there "was room for" another thousand feet of passage between the explored limit of High Pasture Cave and its rising.

A few feet of hands-and-knees crawl led into a 6' high chamber, beyond which the passage divided into two lower beddings, which after a few yards reconnected. Ahead the passage lowered further, to a crawl through a static pool with another low and choked oxbow on the l. - where was the 20' high stream passage we had envisaged? Grovelling through the pool we emerged into a final chamber, all of 3' high, where the stream was at last met - flowing from a 3" high bedding and sinking into a ridiculously tiny slot.

Total length of passage was c.100', and the main feature of the cave was its floor deposits - the usual gravel and granite cobbles, liberally intermingled with rusting tins and broken spirits bottles, evidence, sure as the fluorescein, of a connection with the High Pasture Cave streamway, which is bestrewn with similar debris (evoking the original UCLSS name for the cave, "Tin Can Alley").

A surface survey, to BCRA Gr.5, was carried out between High Pasture Cave and its rising, taking in the dry valley and The Cave of Broken Glass. Shortly beyond the explored limit of High Pasture Cave is an extensive amphitheatre like area, with several collapse depressions which, like the High Pasture Cave entrance, have been utilised as rubbish tips. One surface boulder ruckle, at the foot of the 'dry waterfall' feature at the head of the amphitheatre, correlates almost exactly with the surveyed position of the final boulder ruckle in High Pasture Cave - a lower entrance could perhaps be dug open. It seems very unlikely that an accessible streamway exists beneath this amphitheatre area, and the underground route of the stream beyond it, as seen in The Cave of Broken Glass, does not seem to be attended by anything like the degree of development as is seen in High Pasture Cave. The surface dry valley is only very shallow where it is underlain by High Pasture Cave, but much more deeply cut in its lower sections - this seems to suggest that the stream at one time flowed through High Pasture Cave and resurged at the head of the amphitheatre area. The present underground course between that area and the current rising may be a more recent development.

High Pasture Pots.

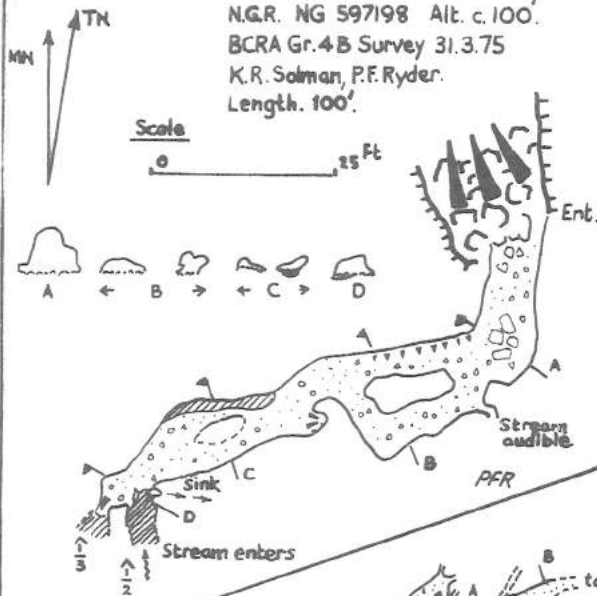
Two small holes on the steeply rising hillside south of High Pasture Cave were noted by MSG members in 1973. The upper hole (NGR NG 595196, Alt. c.325') was dug open, a shaft right on the granite/limestone contact, proving to be 15' deep to a floor of large boulders.

The lower hole (No.2) is a few yards further downhill, and a few feet north of the edge of the granite. The entrance was cleared of boulders by Roger Sutcliffe (of the Gritstone Club) in September 1974, and drops into a boulder strewn chamber 10' across, the floor sloping down to a further 12' drop into a rift 12' long and 2' wide. At the far end of this rift a tiny stream drops from a passage entrance 3' high and 1'6" wide, 15' above

UAMH GLOINE BHRISTE

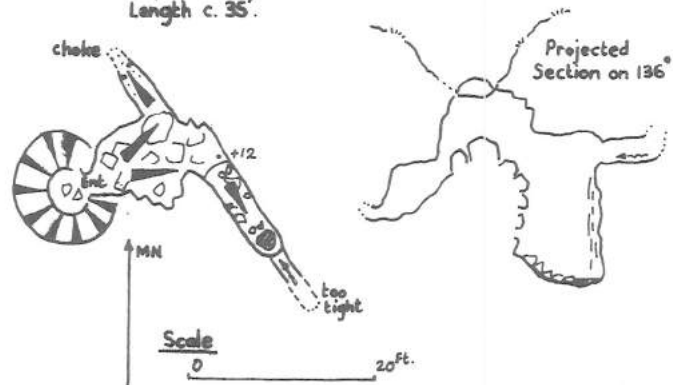
THE CAVE OF BROKEN GLASS

N.G.R. NG 597198 Alt. c. 100'
BCRA Gr. 4 B Survey 31.3.75
K.R. Solman, P.F. Ryder.
Length. 100'.



HIGH PASTURE POT II

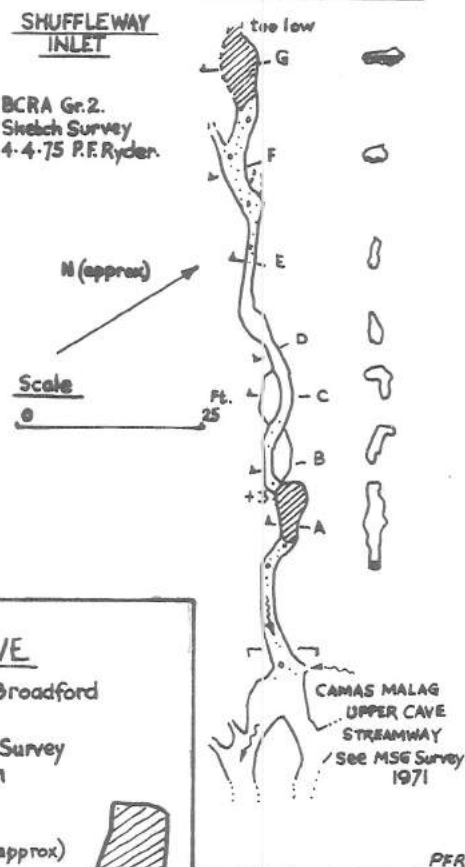
N.G.R. NG 595196 Alt. c. 325'
BCRA Gr 2 Sketch Survey 2.4.75 P.F. Ryder.
Depth c. 20'.
Length c. 35'.



CAMAS MALAG UPPER CAVE

SHUFFLEWAY INLET

BCRA Gr. 2.
Sketch Survey
4.4.75 P.F. Ryder.



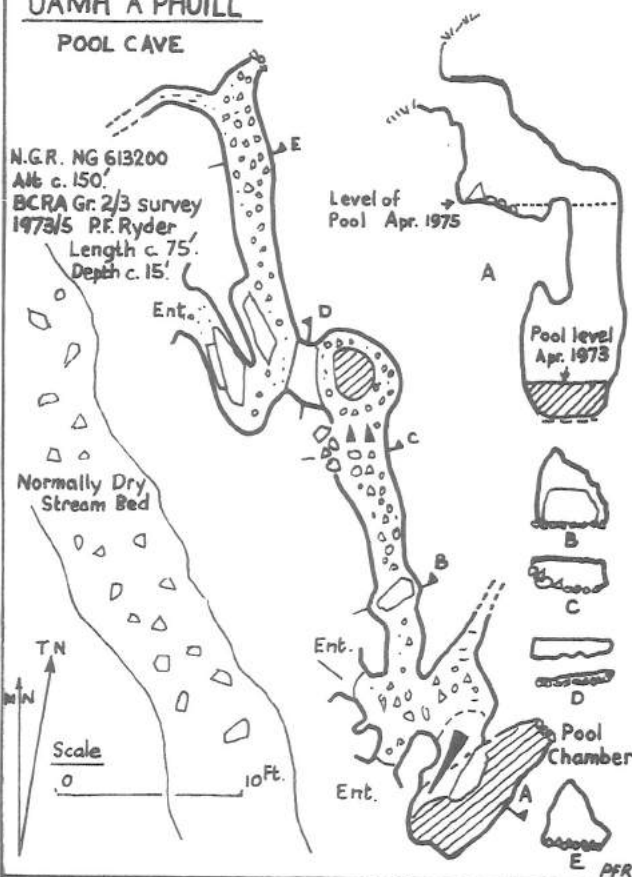
UAMH AN CÒS MOINTEACHAIL

MOSSY HOLLOW CAVE

UAMH A'PHUILL

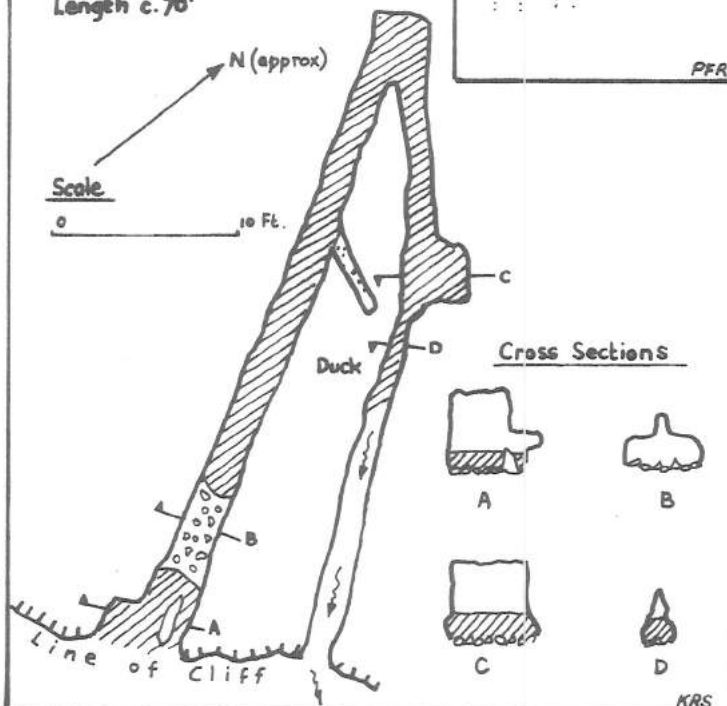
POOL CAVE

N.G.R. NG 613200
Alt. c. 150'.
BCRA Gr. 2/3 survey
1973/5 P.F. Ryder.
Length c. 75'.
Depth c. 15'.



SKULAMUS CAVE

Skulamus Bridge, Broadford
N.G.R. NG 671229
BCRA Gr. 2. Sketch Survey
4.4.75. K.R. Solman
Length c. 70'



floor level, and sinks in a pool in the floor. This inlet passage can be reached by traversing, but ends in an impenetrably small aven after a few feet.

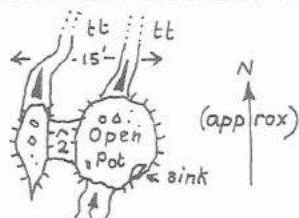
Returning to the entrance chamber, and squeezing down between the boulder floor and the wall to the l. of the drop into the rift, gives access to a few feet of descending passage which shuts down to a very low slot, and appears to choke. Total length of High Pasture Pot 2 is c.35', and depth a little over 20'.

Coille Gaireallach Area

A few small holes which have been included in the published list of the caves of this area (Ryder 1974), but had not been previously examined with any degree of thoroughness by MSG, were checked :-

CG 12 - a "tight dry shaft" was widened and descended, but proved to be thoroughly choked 7' down.

CG 16, Uamh Slaodach (Awkward Cave) - quite an impressive sinkhole, in an obvious gully. The open pot is easily scrambled down, the stream sinking in its floor, and a descending rift passage becomes too tight almost immediately. On the l. a low arch leads through into a second open pot, very much overgrown, and concealed on the surface, by ferns. A descending rift passage also leads off northwards from this, but this too rapidly narrows, and closes down to become too tight.



CG 23 - to the west of the head of the eastern of the two prominent gullies, a tiny hole drops down into a rift chamber, with a continuing passage becoming too narrow after c.12'.

CG 24 - the sink at the head of the eastern gully (that containing Uamh Pharnassus). Several large rocks were removed but the passage appears thoroughly choked.

Mossy Hollow Cave (Uamh an Cos Mointeachail)

This cave was first noted and explored by the Grampian Speleo Group in July 1974 (GSG 1974). The entrance is best found by following the upper limit of the woodland (and limestone) eastwards from the heads of the twin gullies towards the Allt an Inbhire. As the edge of the wood begins to drop steeply towards the stream, several shakeholes are passed (including one with an obvious 6' wide and 2' high cave entrance on its north side, which lowers to a muddy crawl choked after 20'). A small hole at the east end of a prominent rocky shake is the entrance to Mossy Hollow Cave, perhaps 100 yards short of the Allt an Inbhire.

Sliding down from the entrance, one enters a passage perhaps 3' square, which after 12' divides into two levels, a constricted lower fissure, with a small stream entering from its l. wall, and a wider higher level passage. After 15' these routes reunite, and the stream drops further to a third even lower level, only a few inches wide. The "middle level" was pushed for c.10' to a constriction, which may be passable by a thin person (the passage does seem to widen a little beyond), and the upper level followed for 12' to a junction - apparently the limit of the GSG exploration.

To the l. here a tight ascending chute leads up into a small chamber with tight tubes continuing, whilst straight ahead is an opening into a descending passage. Hammering allowed a few feet of progress here, in a narrow rift with some formations, which then swung r., and could be seen continuing another 10' or so to where it became obviously too tight. Total length of the cave is c.70'.

The Mossy Hollow stream comes out to daylight again in a shakehole a few yards from the edge of the Allt an Inbhire ravine, flows on the surface for a few feet, and then drops into a steeply descending low passage which chokes c.15' down.

Shuffleway Inlet, Camas Malag Cave.

This is the narrow rift passage which runs straight on at the acute bend in the streamway of Camas Malag Upper Cave, c.100' upstream from the lower entrance to the Upper Cave. This passage had been explored for 30' or so by the writer on a visit in 1969, but was not pushed at all on the 1971 surveying trip (for survey of the cave see Ryder 1974).

A return visit by the writer, or his own, at Easter 1975, saw the inlet explored for an estimated 90', giving a total length of 490' to the Upper Cave. The first few feet of the inlet are high but quite tight widthwise, but the passage then widens to a chamber 10' high and 3' wide containing a pool. At the end of the pool the floor steps up 3', and the inlet continues as a tight sideways walk-cum-shuffle for 15' to a point at which the roof bedding which gave some width at shoulder height shuts in - this is the last point at which one can turn round. A sideways crawl continues, for c.25' to a low arch on the l. where the passage changes character from a rift 4' high and little over 1' wide, to a cobble floored crawl 3' wide and 2' high. Passing a small tube on the l. the height reduces again, and after a low section the passage enters a wide but low bedding containing a pool, which narrows again after 10'. This could perhaps be pushed further, but the solo explorer decided discretion the better part of valour. Retreat, a backwards shuffle for c.45', proved interesting, to a point where a turn around could be accomplished.

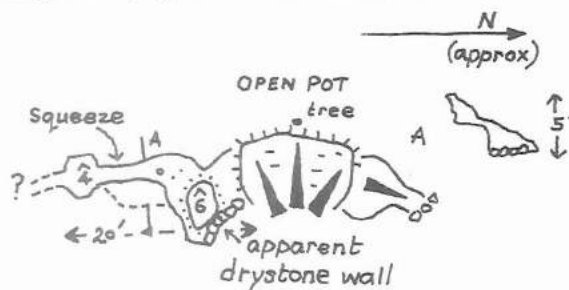
The inlet passage in the Lower Cave was also checked, and proved to close down to a very low bedding after 10' - another 10' or so of passage, continuing small, could be seen ahead. It is unlikely that any further extension could be made here. The first "through trip" from the Lower Cave to the Middle Cave was then accomplished, the climb up from the Lower Cave into the open pot separating the two sections of the system being easy, but the short grovel down through broken glass and rusting ironmongery from the open pot into the Middle Cave being less pleasant.

Shelter Cave, Beinn na Caillich area.

An investigation of the limestone outcrops along the east side of Beinn na Caillich was made by members of the South West Essex Technical College Caving Club in 1974 (SWETCC 1974). Very little was found cavewise, but a "rock shelter" 3m. long is briefly mentioned. This is probably the hole found by MSG members on their way up Beinn na Caillich, and later returned to with caving gear - it is about 50 yards south of the corner of the forestry plantation, at NG 622239, Alt. 250'. The cave is rather more than a

"rockshelter" - the entrance is a rocky shakehole with a tree, from which passages open north and south. To the north chokes immediately, whilst to the south closes to a tight crawl, and despite efforts a tight squeeze 20' in could not be passed - a small chamber is visible beyond, with what appears to be a narrow but passable rift going on.

A few hundred yards to the north, a small stream, the Allt an t-Sabhail, was inspected, and two short distance sink-rising systems found in its bed, but the passages were all too tight to enter. The stream was followed down through the forest, but nothing further of interest found.



Shelter Cave - sketchplan.

Skulamus Cave

This cave was located by the simple expedient of looking at the O.S. 1" map, on which the label "cave", well inland from the sea, and conveniently adjacent to the main road, excited attention.

The entrance is located about 100 yards to the north of the main Broadford to Kyleakin road, about $1\frac{1}{2}$ miles east of Broadford (NGR NG 671229), on the east side of a small stream. The cave was first visited by MSG members in 1971, and the first 30' explored in surface gear, until a combination of dampness and household rubbish forced a retreat. GSG members visited the cave in 1974 (GSG 1974), commenting that the cave passages "appeared by their shape to be the result of faulting and breakdown".

At Easter 1975 Kevin Solman and Graham Stevens returned to the cave, and Kevin braved the water and assorted debris to explore, and produce a Gr.2 survey, of c.70' of small passage.

The entrance is a hands-and-knees crawl in 9" of water, but after a few feet a gravel bank floors the passage, before watery conditions resume. 25' from the entrance a dry tube runs off on the r. for 6', before ending in a blank wall. The main passage continues for another 10' or so of wet crawl before turning sharply r. and heading back towards the stream outside. The water gradually deepens until a 4' high chamber is reached, beyond which daylight can be seen through a narrow wet passage running back to the stream bank 8' downstream of the main entrance. The "through trip" would involve a constricted duck in this tight rift, which was not attempted. A small stream flows out of the smaller northern entrance to the cave, but no inlet above the water surface was noted within.

Perhaps the most interesting feature of the cave is that it is developed in Jurassic limestone, unlike the remainder of cave systems at present known on Skye, which are in the Lower Palaeozoic Durness Limestone.

Other Work on Skye - Easter 1976.

The Area East of Coille Gaireallach.

An investigation of this area, where there are extensive exposures of Durness Limestone on the west flank of the Beinn an Dubhaich / Ben Suardal ridge to the east of the Coille Gaireallach woodlands, was begun at Easter 1975 and continued in 1976.

The road from Broadford to Torrinn and Elgol (A 881), about half a mile beyond the church ruins of Cill Chrìosd, passes over two streams within a few yards of each other. The first stream, unnamed on the O.S. map, is in dry weather mere a stony gully with occasional pools, and the second is the sizeable Allt an Inbhire.

The dry stream bed can be followed up from the road, through the east end of the Coille Gaireallach woods, until two small cave entrances are found on the east bank, a few feet downstream of a prominent flood sink (a rift choked 10' down). These are the entrances of Uamh a'Phuill (Pool Cave), a small cave found by the writer in 1973, and revisited and extended at Easter 1975.

When originally entered, the small entrances proved to drop into a small chamber with a choice of routes forward, a tight passage running "downstream", parallel with the side of the gully, or a twisting muddy chute descending 15' into a chamber floored by a 2' deep pool, with much mud around. The "downstream" passage was not investigated on this occasion.

When the cave was revisited in 1975, there was no such choice of route from the entrance chamber - the r. side of the chamber was floored by a dark and sinister pool, the water level having risen between 10' and 12' above its 1973 level. Attention was then turned to the tight passage on the l., and a little engineering opened up c.50' of low crawly passage, ending in a total choke, and with a small chamber half way along which opened out into the side of the gully via a hole not quite big enough to squeeze through. Total length of the cave is now c.70', and depth c.15'.

Where this strange little cave fits into the general picture of the hydrology of the area is not at all obvious. Following the gully on uphill, a junction is met, with a well defined but grassy gully or dry valley coming in from the south-east, and the main gully branching south-west. A few yards further on the stream itself is met, sinking in its bed.

This stream may sink at various points, its dry weather sink being a deep pool right at the edge of the limestone outcrop, on the boundary of the grassy woodland with heathery ill-drained moor. This main sink was termed the Pool Sink.

At Easter 1976 the stream, or the part of it which overflowed Pool Sink, was sinking in choked fissures about 100 yards further down the gully. There was an obvious hole about 10' south of the gully here, and some excavation was carried out, a fine Quern stone (of mica schist) being unearthed in the process. Enough debris was removed to allow one to drop into a narrow rift about 5' down, heading west. It was too tight to pass along, although a determined thin man with a digging implement might be able to force it - about 12' ahead a 'T'-junction with what could have been a more sizeable passage could be seen, and the water sinking in the stream bed nearby could be heard thundering somewhere below.

The Pool Sink was fluoresced at Easter 1975, and the dye reappeared 75 minutes later at a rising feeding the tributary of the Allt an Inbhire, which joins that stream about 50 yards upstream of the road bridge. Pool Sink is at NG 613200, Alt. c.170', the rising at NG 612202, Alt. c.120', a fall of c.50' in a little over 200 yards.

The rising is from several narrow joints and fissures, the largest of which was blocked by a large fallen slab. A couple of hours of heaving and crowbarring at Easter 76 saw the offending rock removed, but behind it the water was welling up from tiny fissures. The prospect of a sizeable (by Skye standards!) cave is there, but the way in is not obvious.

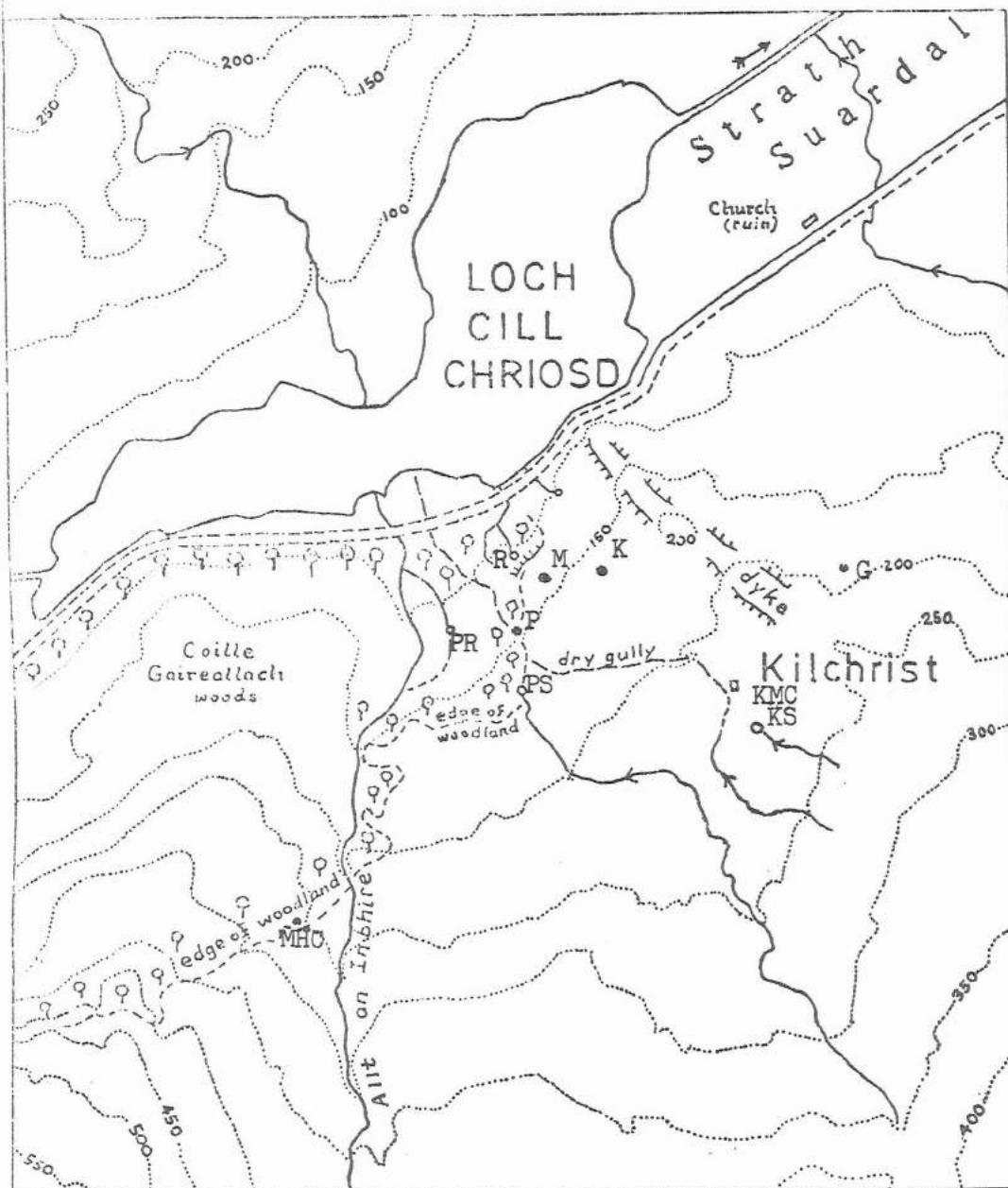
An inspection of the area to the east of the Pool Cave gully revealed more features of interest. The grassy branch gully winds up the hillside, past a couple of bouldery declivities which might be possible 'digs', towards the prominent ruin of Kilchrist Manse. Just beyond the ruin, flowing water is met, sinking in a bed of granite cobbles. Following the edge of the limestone north eastwards from here, behind the ruin, and the jumble of fallen walls and cottage foundations which mark the site of the hamlet of Kilchrist, several small sinks are passed, where small streams flowing off the granite pass underground.

It seemed possible that Kilchrist Sinks might feed a subterranean system roughly following the course of the grassy surface gully, down to join the Pool Sink system. However, one feature, observed on our first walk over the area in 1973, did not tie in with this hypothesis. Out in the middle of the extensive grassy area running down from Kilchrist to the main road - an area bounded on the west by the Pool Cave gully and on the east by the outcrop of a massive granite dyke (which forms a very prominent craggy ridge) - was Kilchrist Cave. Here a reasonable sized stream rose from a grassy bank and within a few feet sank again, into shallow choked holes. A few yards away, however, the water was seen again, in the 30' long cave, a roomy passage opening at the east end of a prominent collapse depression or elongate shakehole. The stream emerged from a boulder ruckle very near the surface sink and flowed across the cave, sinking into a tiny tube. At the downstream end of the shakehole the water was audible again in two bouldery holes. An hour of digging in 1973 in one of these exposed only a ruckle of huge boulders. Half an hour of digging in the other, at Easter 76, opened the entrance to -

Lower Kilchrist Cave

The dug out entrance, a low grovel, opens up immediately into a 4' high chamber, with daylight also entering through the boulder ruckle dug at in 1973. The stream enters from beneath the boulders, flows across the

AREA EAST OF COILLE GAIREALLACH



Key to Map

- PS: Pool Sink
- P: Pool Cave
- PR: Pool Rising
- KS: Kilchrist Sink
- KMC: Kilchrist Manse Cave
- K: Kilchrist Caves
- M: Murchisonia Hole
- R: Rising for the Kilchrist Sink/Caves system.
- G: Glebe Pot
- MHC: Mossy Hollow Cave

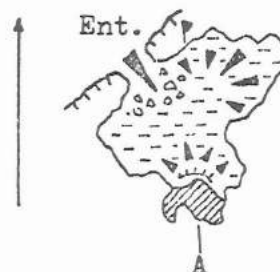
Scale

1/2 mile.

KILCHRIST MANSE CAVE

Sketch Survey Gr.2. Length c.25'

N(approx)



0 25 ft.

Positive Dye Tests

(average/low flow conditions)

Easter 1975

Pool Sink to Pool Rising,
in c.75 minutes.

Easter 1976

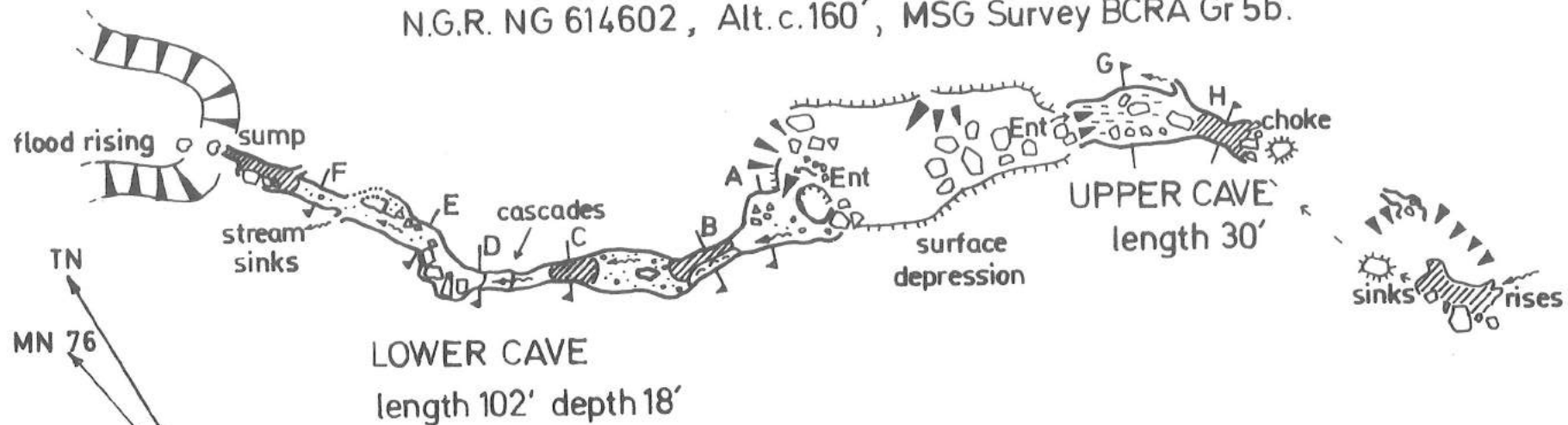
Kilchrist Sink to Rising 'R',
via. Kilchrist Caves and
Murchisonia Hole, in c.20 hours.

PFR 1976

KILCHRIST CAVES

STRATH SUARDAL, ISLE OF SKYE

N.G.R. NG 614602, Alt. c. 160', MSG Survey BCRA Gr 5b.



Projected Section on 120°

Scale
0 10 20 30 40 50ft

Cross Sections



P.F.Ryder E.L.Wells 22.4.76

chamber floor, and drops into a knee deep pool, lined on the l. by stalagmite banks. Beyond, the stream passage lowers to a flat crawl over cobbles, before gaining height again as the stream falls down a series of small cascades, to a small collapse chamber littered with boulders. This is followed after a few feet by a second small chamber, with a high level passage (becoming too low) on the r. The stream flows off into another crawl, and much of the water sinks under the l. wall in a tiny bedding. The passage continues to a pool ending in a small earthy aven on the l. and a tight waterlogged fissure ahead.

The total length of Lower Kilchrist Cave is 102'. The survey shows the end of the cave to be almost directly beneath two shallow choked holes in a grassy depression 30 yards down the hillside from the Kilchrist Cave shakehole. A scatter of gravel and small stones on the grass around these suggests that they act as flood risings when the terminal constriction in the streamway causes the water to back up in high flow conditions.

Obviously a considerable length of streamway remained to be explored between the downstream end of Lower Kilchrist Cave and the eventual resurgence of the stream, which we judged must be one of several small risings at the foot of the hillside, just above the road. Walking down the hillside directly below the cave, and following a course parallel to the massive dyke a couple of hundred yards away on the r., a rising was found, in a clump of trees a short distance above the road. A dig here was attempted, but little progress made.

The hillside further west was then scanned, and another interesting hole found, filled to the brim with boulders but emitting an intriguing sound of running water. Chris Langthorne attacked this, and soon exposed a hole down into a passage, turning up, as he did so, a rock containing a 2" diameter fossil gastropod, the first fossil we had ever seen in the Skye Durness Limestone. This was later identified, by Hull University Geology Department, as being of the genus *Murchisonia* - which gave us a name for the hole. The fossil proved to be the most interesting thing about the cave - the passage opened up proved to be 10' of downstream crawl, to a point where the roof stepped down drastically. An enlargement could be glimpsed perhaps 10' ahead, but the intervening section was very low and narrow - a thin and determined caver might be able to pass this. Upstream, the water appeared to rise from small sumped fissures.

The *Murchisonia* Hole stream was coloured with a little Rhodamine WT, the colour appearing 20 minutes later at a rising in the wood little more than 100 yards away, the stream flowing from impenetrably small fissures.

A problem remained. Was the *Murchisonia* Hole stream the same one as seen in Kilchrist Caves, and if so, what was the original source of the water. The area around the ruined manse at Kilchrist was returned to. A hundred yards or so south of the ruin a small stream sank in a shakehole - this was duly rhodamined. Half way between the sink and the ruin a low bedding entrance was located in a limestone knoll. Some digging was necessary to enlarge this (uncovering a deposit of oyster shells in the process), before Kilchrist Manse Cave could be entered. Unfortunately there was no connection with the sinking stream - the cave consisted of a single mud floored chamber, perhaps 4' high in the centre, with a static pool in one corner surrounded by mudbanks. The whole place had the air of being "old" and not associated with any currently active systems.

A search of the area between the old manse and Kilchrist Caves failed to reveal any other holes, except a couple of choked pits where an underground stream was faintly audible. Digging here, we thought, would take quite some time - no solid rock was exposed at all.

The hydrological problem of the area was eventually solved when the dye reappeared, 20 hours later, at the *Murchisonia* Hole rising, just above the road. Kilchrist Caves and *Murchisonia* Hole all showed evidence

of the passage of the dye.

One other small hole was found in the Kilchrist area, in the area labelled "Glebe" on the O.S. 6" map, reached by walking north-east from the ruined manse, and crossing the outcrop of the massive igneous dyke which runs down to the road. In a grassy area a hundred yards or so beyond the dyke a very small stream sinks, and a few yards away is an obvious open hole. Glebe Pot proved to be an easy scramble down into a small bouldery chamber, in the floor of which the little stream was briefly seen, entering and leaving through impassably small passages. Depth of the hole was c.20'.

The Cave of Knives area.

A team from Sheffield University Speleo. Society had visited the Allt nan Leac area at Christmas 1974, and found a few small caves, two being in the vicinity of the Cave of Knives, found by MSG in 1971 and extended in 1973. One of the SUSS finds, Water Chute Cave, was thought to be part of the same hydrological system as the Cave of Knives.

At Easter 1976 MSG members spent an afternoon pottering in this area. A small sink was found in the north bank of the Allt nan Leac about 80' to the north-east of the Upper Entrance to the Cave of Knives. Fluorescein introduced here reappeared 35 minutes later at the Lower Entrance to the Cave of Knives. This sink is only 25' from the entrance of Water Chute Cave, and the water sinking is presumably that which flows through this 40' long cave.

A surface survey was carried out of the area, and tied in well with the original MSG survey of the Cave of Knives - the igneous dykes outcropping all round do not, as we had feared, appear to affect compass bearings. Plotting the SUSS Gr.1 sketch of Water Chute Cave (see SUSS 1975) onto this surface survey, showed that the sump in this cave is about 50' in straight line distance from the upstream choke in the Cave of Knives.

The other SUSS find, Mud Slide Cave, about 70' long, is apparently in the clints above the Cave of Knives, but was not located.

References for the above article, and the Revised Gazeteer of Skye Caves.

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- GSG 1974: 'Club work in Skye 1974', A.L.Jeffreys, GSG Bulletin 2nd Series, Vol.1 No.1 November 1974.
- CDG 1975: 'Skye Sump Index', T.Faulkner, CDG Newsletter New Series No.35, April 1975.
- SUSS 1975: 'Skye - Christmas 1974', P.Crowcroft & R.Kay, SUSS Journal, Vol.2 No.4 Easter 1975.
- MSG 1976: reference in the article on the preceeding pages.

The writer would like to acknowledge several individuals who have assisted this gathering together of information, including Alan Jeffreys of GSG, Trevor Faulkner of SWETCC and James M.Cole of SUSS, as well as the assorted Moldywarps, of both 'hard core' and 'fringe' varieties, who have assisted in the work on Skye.

Peter F. Ryder
Univ. of Hull 1976.

A Gazetteer of Limestone Caves of the Isle of Skye. Spring 1976.

<u>Cave Name.</u>	<u>Gaelic Name</u>	<u>Length</u>	<u>Vert.Range</u>	<u>Grid.Ref.</u>	<u>Alt.</u>	<u>Lit. Ref.</u>
<u>Allt nan Leac Valley</u>						
(i) Camas Malag Cave.		720'	c.40'	NG 584187	c.100'	Ryder 1974.
(ii) The Cave of Knives.	Uamh Sgeinne.	350'	c.35'	NG 587184	c.200'	Ryder 1974 & MSG 1976
(iii) Water Chute Cave.		40'		NG 590184	c.250'	SUSS 1975
(iv) Mud Slide Cave.		70'		NG 587185	c.250'	SUSS 1975
(v) Beinn an Dubhaich Cave (Allt nan Leac Cave)		400'	35'	NG 589184	c.300'	Ryder 1974
(vi) Beinn an Dubhaich Rising. (sump)		40'		NG 588184	c.275'	CDG 1975
(vii) (small cave to E of (v))		30'		NG 590184	c.300'	Ryder 1974
(viii) (choked sink)			15'	NG 590184	c.325'	Ryder 1974
(ix) Willowtree Cave	Uamh Craobh Sheileach					
(re-opened by SUSS, as 'Eagle Cave')		65'	20'	NG 594184	c.425'	SUSS 1975
(x) Allt nan Leac Pot.	Uamh Sluic.		40'	NG 595184	c.425'	Ryder 1974
(xi) Slant Cave.	Claon Uamh.	130'	15'	NG 598183	c.370'	Ryder 1974
(xii) Lower Slant Cave.		25'		NG 598183	c.360'	Ryder 1974
(xiii) Ancient Cave.	Uamh Aosda.	25'		NG 600183	c.450'	MSG 1976
(xiv) Valley Head Cave.	Uamh Cinn Ghlinn.	1,200'	75'	NG 601182	c.440'	MSG 1976
(xv) Pit of the Forgotten One.	Poll Neach Di-Chuimhnichte.		20'	NG 616184	c.625'	Ryder 1974
<u>Coille Gaireallach Area</u>						
CG1 Twisted Cave.		25'		NG 599196	c.325'	Ryder 1974
CG2/3 Hell Hole.	Poll Iffrin.	400'	45'	NG 600197	c.225'	GSG 1973
CG4 Ivybush Hole.	Poll Eidheann.	85'		NG 600198	c.175'	GSG 1973/1974
CG5		15'		NG 601198	c.125'	Ryder 1974
CG6 Slit Cave.	Uamh Sgoilte.	85'	25'	NG 601198	c.125'	Ryder 1974
CG7		15'		NG 602197	c.225'	Ryder 1974
CG8 Cave of the Woods.	Uamh Coile.					
(re-opened by GSG as 'Chert Rift Cave')		250'	c.40'	NG 602197	c.175'	GSG 1973/Ryder 1974
CG9 Cave of the Seed.	Uamh an T-Sill.					
(or Cave of the Fairies, or Skeleton Cave)		200'	32'	NG 602197	c.200'	GSG 1973/Ryder 1974
CG10 (probable rising for CG9)		10'		NG 602198	c.150'	Ryder 1974
CG11		28'		NG 603198	c.150'	Ryder 1974
CG12			7'	NG 603198	c.150'	MSG 1976
CG13		25'	25'	NG 603196	c.215'	Ryder 1974
CG14			10'	NG 603196	c.215'	Ryder 1974
CG15 (hole on granite/lmst. boundary)			25'	NG 603196	c.215'	Ryder 1974

Coille Gaireallach Area (continued)

Cave Name.	Gaelic Name.	Length	Vert. Range	Grid. Ref.	Alt.	Lit. Ref.
CG16 Awkward Cave.	Uamh Slaodach.	25'	15'	NG 604196	c.300'	MSG 1976
CG17/18 (upper through cave in western gully)		60'		NG 605195	c.375'	Ryder 1974
CG19/20 (lower through cave in western gully)		c.80'		NG 605195	c.350'	Ryder 1974
CG21		15'		NG 605195	c.325'	Ryder 1974
CG22 Shelf Cave.	Uamh an T-Shelf.	80'	25'	NG 605196	c.300'	Ryder 1974
CG23		12'	10'	NG 606194	c.475'	MSG 1976
CG24 (choked sink at head of eastern gully)				NG 606194	c.475'	MSG 1976
CG25		35'	15'	NG 606195	c.450'	Ryder 1974
CG26/27 (through cave in eastern gully)		50'	10'	NG 606195	c.425'	Ryder 1974
CG28 Parnassus Cave	Uamh Pharnassus	195'	40'	NG 606195	c.400'	Ryder 1974
CG29		30'	20'	NG 605195	c.375'	Ryder 1974
CG30			6'	NG 605195	c.350'	Ryder 1974
CG31		25'		NG 604198	c.150'	Ryder 1974
CG32 Wood Top Pot.	Poll Ceann A'Choile.		40'	NG 600194	c.500'	Ryder 1974
CG33 (cave above Mossy Hollow Cave)		20'		NG 609197	c.300'	MSG 1976
CG34 Mossy Hollow Cave.	Uamh an Cos Mointeachail.	70'	12'	NG 610197	c.250'	GSG 1974/MSG 1976
(note CG33 & CG34 are additions to the original list of CG caves published in (Ryder 1974)).						

High Pasture Area

High Pasture Cave,	Uamh an Ard Achadh.	1,050'	42'	NG 594197	c.200'	Ryder 1974
Upper High Pasture Cave.		20'		NG 594197	c.200'	SUSS (priv.comm.)
(a short rubbish choked cave beside High Pasture Sink, opened by SUSS in 1975)						
The Cave of Broken Glass.	Uamh Glione Bhriste.	100'		NG 597198	c.100'	MSG 1976
High Pasture Pot 1.			15'	NG 595196	c.350'	MSG 1976
High Pasture Pot 2.		35'	20'	NG 595196	c.325'	MSG 1976

Area East of the Allt an Inbhire.

Allt an Inbhire Cave.		35'		NG 611202	c.100'	Ryder 1974
Streamside Cave.	Uamh Taobh na H-Aibhne.	30'		NG 610198	c.175'	Ryder 1974
Pool Cave.	Uamh A'Phuill.	75'	15'	NG 613201	c.145'	MSG 1976
Upper Kilchrist Cave.		30'		NG 614202	c.160'	MSG 1976
Lower Kilchrist Cave.		102'	18'	NG 614202	c.160'	MSG 1976
Kilchrist Manse Cave.		25'		NG 616200	c.225'	MSG 1976
Glebe Pot.			20'	NG 618202	c.190'	MSG 1976

Other Areas.

Shelter Cave.(Beinn na Caillich)		25'		NG 622239	c.250'	MSG 1976
Skulamus Cave.		70'		NG 671229		MSG 1976

NEW EXPLORATIONS IN THE NORTHERN DALES.

Recent Northern Dales exploratory and survey work, by MSG and others, is here dealt with dale by dale, commencing with Teesdale, where the major site of MSG interest in 1975/6 has been:-

LUNEHEAD MINE AND CAVERNS.

It has been known for some time that natural caverns were broken into during the working of Lunehead Mine, a series of lead and barytes workings entered through a level on the south bank of Cleve Beck, a few hundred yards below the Middleton-in-Teesdale to Brough road.

Natural cave systems have been encountered by lead miners at quite a number of localities in the Northern Dales, although not all have received documentary mention. The two major "mine caves" which have occupied much of the attention of MSG members over the past six years, Windegg and Devis Hole Mine Caves, in Swaledale, do not seem to figure at all in what little literature exists relevant to the mines, although the miners obviously knew of, and had partially explored, the natural systems.

The standard reference to the natural caverns in Lunehead Mine is found in 'The Geology of the Northern Pennine Orefield' by K.C. Dunham, Vol.1 (1949), pp.316-318. The natural passages are here described as a "belt of post-mineralization caverns having a general WNW trend". Brief references to the existence of the caverns occur in a number of works, but no fuller description ever seems to have appeared.

Early in the history of MSG, members visited the Lunehead area, and one or two small holes were found on the limestone plateau running along the south side of the road (e.g. Cruckle Pot, see MSG Journal 2), and the entrance to Lunehead Level was visited, and found to be thoroughly run in. The level had apparently been open until c.1965, and a few parties of cavers had been in, but, to the best of our knowledge, no thorough inspection or survey of the natural passages had ever been made.

Thus Lunehead was written off as another of the "lost mine caverns" of the Northern Dales - until summer 1975, when two Group members happened to walk down to the entrance, and found it wide open. Apparently there had been a brief resurgence of interest in the mineralogical potential of the area, and the mining company who own the site had dug out the level to reinspect the workings, and then abandoned it again.

In the last few months of 1975 and the first three of 1976 a spate of MSG visits to the system followed, and most weekends saw parties, armed with surveying gear and cameras, splashing their way up the Entrance Level. By March 1976 we had surveyed over 10,000' of mined passage and 2,475' of natural cave. The natural passages proved to be of a totally different character to those in the other "mine caves" of the Northern Dales, and in some of them 'new ground' was broken, although not to any spectacular extent.

In some ways the surveying has been a race against time, since the standing water in the Entrance Level is gradually deepening, dammed up behind the accumulating shale falls at the entrance - the cutting in shale here, cleared out by the mining company, has begun to run in once more. On our first visit the water was little more than knee deep, but on subsequent visits the degree of immersion required has steadily increased. On our last (to date) surveying trip, the party had to flounder through water approaching neck deep, and one gonsuited member (on her first trip underground) succeeded in floating out of her wellington boots, pulling out her suit's drainage plugs as she did so, and promptly sinking with all hands. Wetsuits or similar totally waterproof garments are advisable.

Some work remains to be done in Lunehead, one or two "hairy" places to be looked at by the more steel-nerved members, and various scientific work, e.g. water tracing, to be attempted. We are grateful to members of Hull University Speleo. Society for their assistance, both in terms of actual manpower, and for the loan of extra surveying gear.

Description of the Mine and Cave System.

Lunehead Mine basically consists of the Entrance Level, running almost due south from the south bank of Cleve Beck, and allowing access to a roughly parallel series of vein workings (and associated natural passages), which trend west-south-west to east-north-east. The most southerly vein actually intersected by the Entrance Level is Cavern Vein, but another vein c.500' further south, No.1 Vein, is reached by crosscuts running south from the workings on Cavern Vein.

The mineworkings and natural passages accessible in March 1976 are described in the order that they are reached from the Entrance Level.

The Entrance Level.

The gloomy gaping portal of the level, at the foot of a cirque of crumbling shale, is not the most inviting of entrances, and the immediate plunge into 4' of icy water which entry necessitates makes it seem even less so. Once one is thoroughly immersed, and picking one's way over submerged pitprops and boulders, one may occasionally be struck around the face by small birds flying out of the level at high speed - these are dippers, who favour damp gloomy places as nesting sites. Please take care, especially at night, when the birds seem to fly straight at one's light - collisions have proved fatal (to the dippers), and it may be safer for all concerned to turn one's lamp off when passing the nesting area, a few yards into the level.

After 375', from the original position of the level portal, the level, according to Dunham, cuts Wensley Vein. This was not worked from the level, but only from shallow surface opencuts, and it is not obvious underground, unless the distance quoted is incorrect, and the air shaft 385' from the present entrance (which is about 30' south of the original position of the portal) represents the position of the vein.

This air shaft, 50' or 60' deep, is situated in a small depression a few feet east of the track running down from the road to the level entrance, and is capped by a large but portable stone slab. The top few feet of the shaft are lined, but the remainder is rock cut, and appears to be in quite reasonable condition - the shaft could be used as an entrance (requiring ladders) if the level entrance were blocked, although if the water backed up behind an entrance blockage, the level at the base of the shaft might well be sumped.

Wading on up the level from the patch of faint daylight at the foot of the airshaft, the passage is fairly featureless except for occasional passing places, for 786' of semi-aquatic progress, when a high rise is met on the r. of the level. In wet conditions a torrent of water descends here, but in dry weather none at all (although, interestingly, the sound of a small stream can be heard somewhere above). There is a small wet weather stream sink on the surface, c.100' above the level here, which must be fairly close to this point (although a surface survey has yet to be carried out), and a connection between this rise and the sink (where there is a short cave) seems fairly certain.

20' beyond the rise, the level cuts the first of the major mineral veins it gave access to :-

Read Vein.

The level broadens into a chamber, with the line of the vein, here apparently an unmineralised fault, obvious in the roof and l. wall. The vein was worked only to the west, by a branch of the Entrance Level known as Black Level - Dunham comments that this was said to extend for some 1,700', but the ground was no longer "in good condition". This observation is quite justified, since after 20' of arched level a massive shale fall, completely blocking the passage, is met.

The Entrance Level continues, with the water shallowing to knee deep, for a further 250', where it intersects:-

LUNEHEAD MINE & CAVERNS

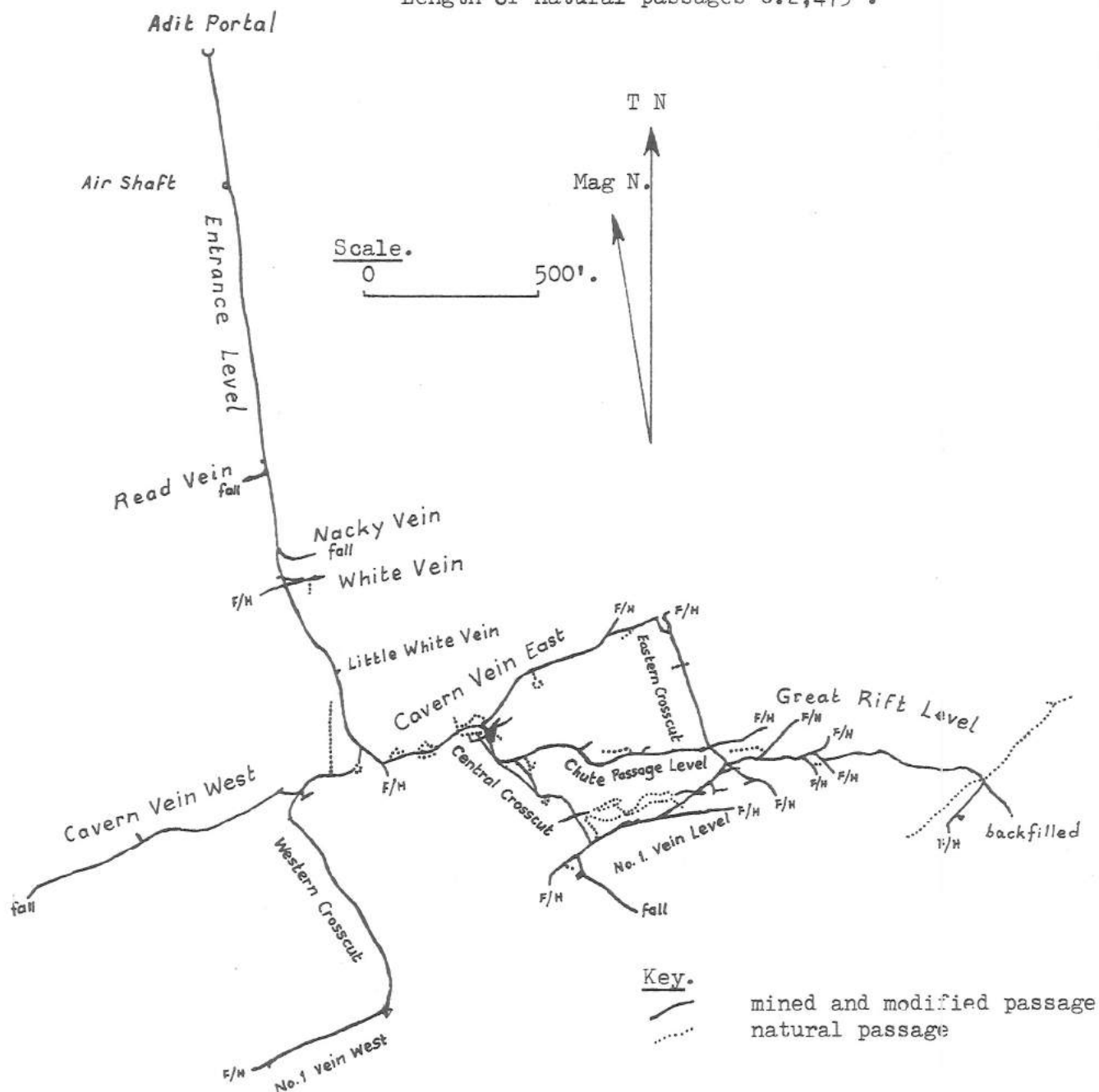
(a) Mineworkings.

Teesdale, Co. Durham.

N.G.R. (Level.Ent.) NY 846205 Alt. c. 1,375'.

Length of mined passages c.10,400'

Length of natural passages c.2,475'.

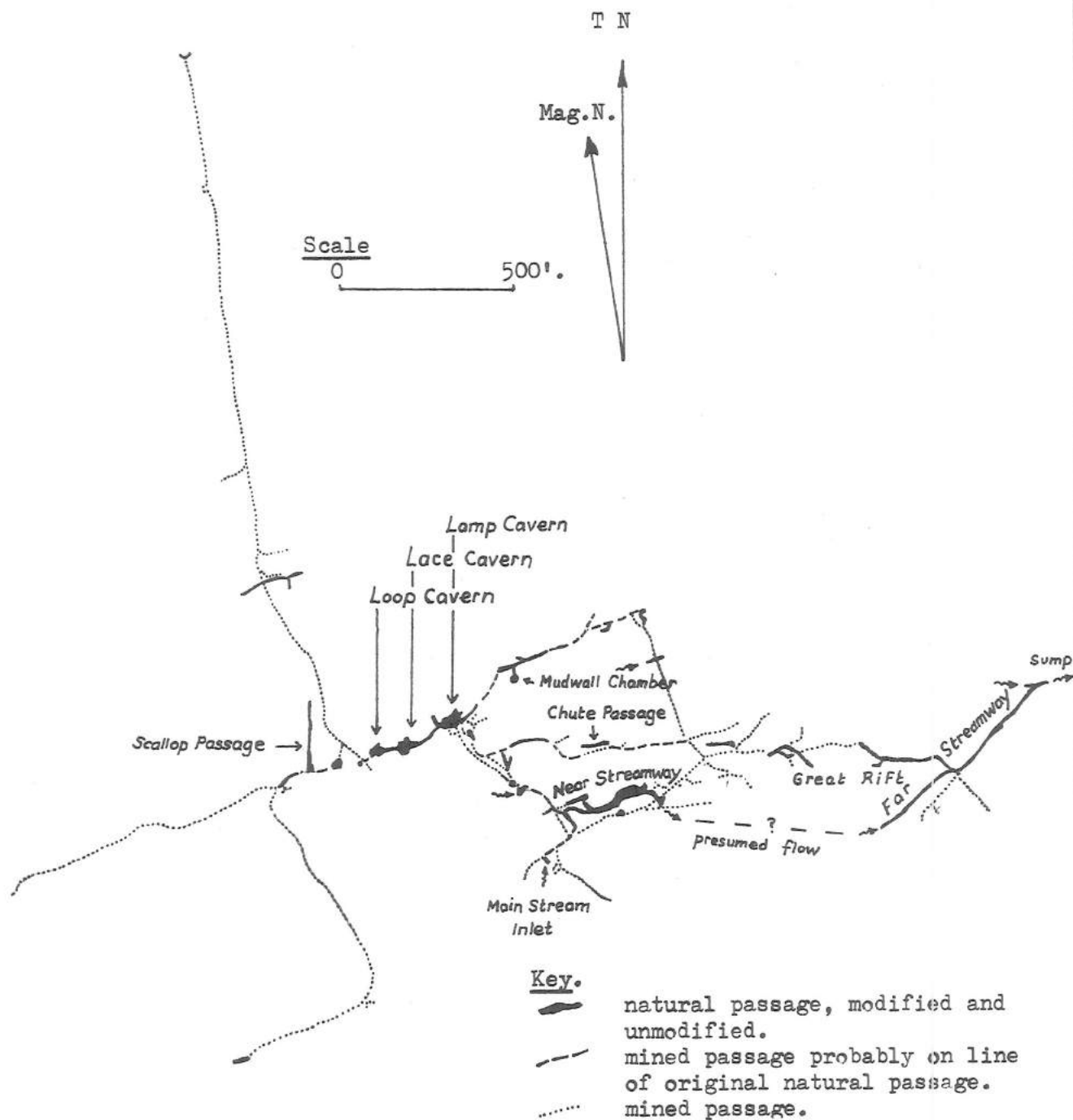


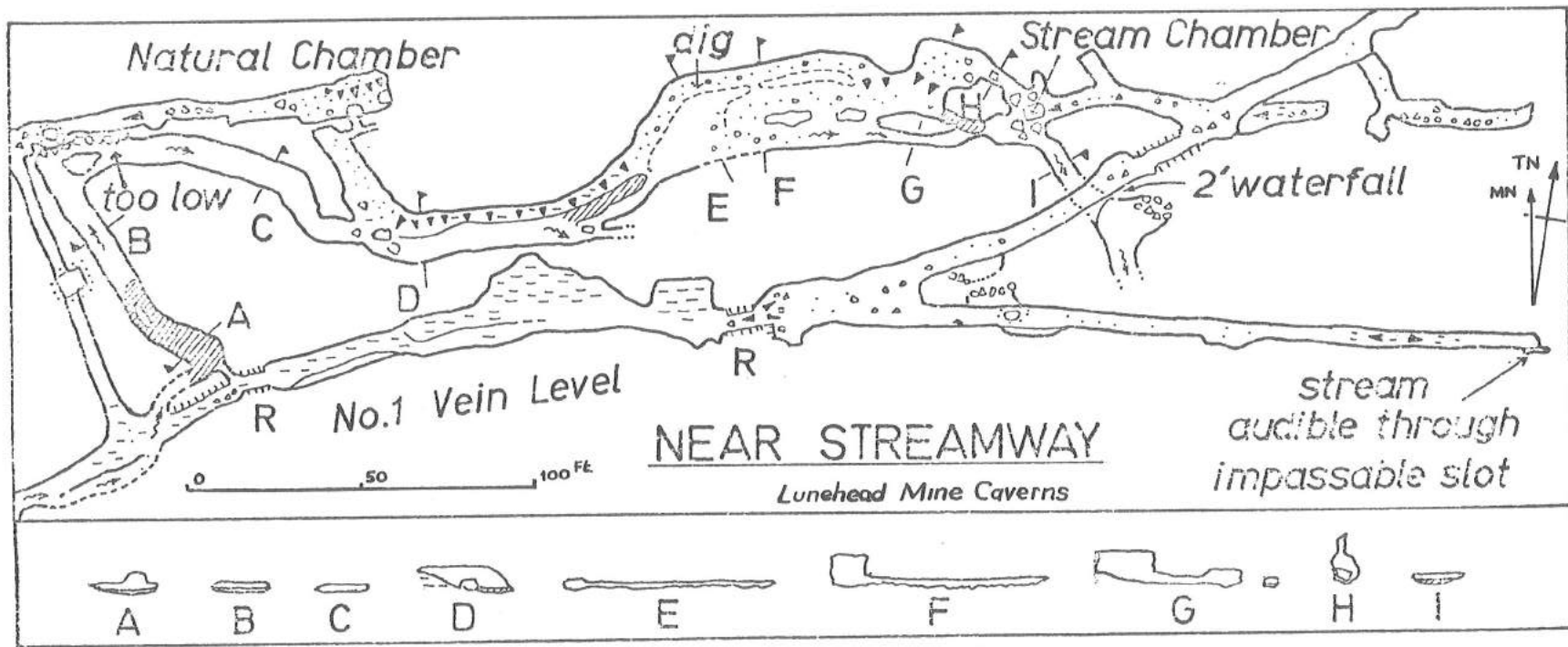
Survey BCRA Gr. 4/5c

S.Clark, I.Davison, K.Errington, Sue Hamstead, C.Langthorne, P.F.Ryder,
M.Saunders, R.Sermon, A.Skelton, K.R.Solman, G.Stevens, M.Stockwell,
Elaine Wells, Gary & Graham Womack. Oct.1975 - March 1976.

LUNEHEAD MINE & CAVERNS

(b) Natural Passages.





Nacky Vein.

In contrast to Read Vein, this major vein was worked only to the east of the Entrance Level, and the workings extended for almost 1,000'. Dunham notes that the "belt of post-mineralization caverns" cuts through Nacky Vein, but unfortunately only 140' of the level on Nacky Vein is now accessible, an arched and lined passage terminating abruptly in a massive collapse, with water entering from above.

Beyond the Nacky Vein junction, the Entrance Level continues for 50' to another junction, this time with:-

White Vein.

As with Nacky Vein, an arched level branches away to the l. (east) here, but in this case the branch is almost blocked at its entrance by stacked deads. The level junction is a few yards north of the actual line of the vein, the branch level curving round to pick up the vein workings.

Crawling over the stacked deads, and noting from the mud deposits on them that a considerable flow of water must pass over them in certain conditions, the branch level is entered, but progress along it is of necessity slow, due to the 3' of glutinous mud on the floor. A struggle along for c.60' allows one to thankfully drag oneself up out of the slime onto a pile of boulders, below a wide opening up into the vein workings above. Beyond, the arched level continues for another 30' or so, with even deeper mud, to a total blockage of boulders.

Vein Workings and Natural Passages on White Vein.

Just before the actual junction between the White Vein Branch Level and the Entrance Level is reached, there is a high rise on the r. - it is not certain how this connects, if at all, with the White (or Nacky?) Vein workings.

The actual vein workings of White Vein cross the Entrance Level about 15' beyond the branching of the level. A high rift crosses the level, an easy scramble up on either side gaining the floor of the vein workings. It is here that natural passages are first encountered in the mine - the lower parts of the high rift here seem to be natural, and some areas of scalloping remain on the walls.

Following the workings west of the Entrance Level, about 70' of east going leads to a "forehead" of sorts, the last few feet of passage being entirely natural, and the "forehead" merely being where the miners have ceased to remove the sandy fill from the passage.

To the east of the Entrance Level, more interesting deposits of natural cave fill can be seen in a low chamber c.20' from the intersection. Beyond the chamber a short crawl leads to a more roomy cavity, dropping down to a hole into the arched branch level beneath, where the pile of rocks giving brief respite from the deep mud is situated. Dropping carefully down to the level, and then climbing 15' up a loose slope beyond, the continuing vein workings can be entered, and after a few feet a slope down leads into a roomy cavern, perhaps 10' high and wide and 40' long, which appears to be almost entirely natural. On the r. is a natural passage running south, a scalloped rift 4' high and 2'6" wide, choked after 25', and on the l. two routes into the base of a mined rise. Straight ahead, to the east, the cavern terminates in a boulder ruckle.

Returning to the Entrance Level, the level remains in good condition, with the base of the Great Limestone appearing in it, in the roof, for the first time. 330' of easy going lead to the base of a high rise on the l., which marks the position of Little White Vein, which, according to Dunham, was worked over a distance of only 20' horizontally, but 50' vertically.

Beyond this rise, the Entrance Level continues for a further 185', with occasional small infilled natural tubes and fissures appearing in its roof, to end in a 'Y'-junction, a few yards short of the line of Cavern Vein, and the beginning of the part of the mine of most interest to the speleologist. To the r. is the section of the mine here referred to as

Cavern Vein West, with a cross cut to No.1 Vein West. To the l. is Cavern Vein East and the main section of No.1 Vein, along with the majority of the natural passages found in the mine.

Cavern Vein East - The Caverns Area.

From the 'Y'-junction, taking the l. fork, another 70' of level leads to the intersection with Cavern Vein itself. To the r. here, between the two sections of the mine here referred to as Cavern Vein East and Cavern Vein West, about 80' of the vein remains unworked, in its original condition - the mineralisation being almost entirely removed by the formation of phreatic passages and cavities, which themselves are now virtually choked by sandy fill. A slope up here leads into a circular 15' high aven, but beyond the passage is choked.

Cavern Vein, as Dunham notes, does appear to consist of two sub-parallel branches here, the first being that followed by the main workings, and natural cavitites, and the second, running c.20' further south, being occasionally accessible through small cross cuts. One of these little crosscuts is concealed behind a wall of deads at the junction where Cavern Vein East is joined - a squirm down leads into a 20' hands-and-knees crawl ending in a wall of barytes, on the line of the southern branch of the vein.

Turning l. (east) at the junction, the passages opens into:-

Loop Cavern.

This is the first of the three major natural caverns on Cavern Vein East. The chamber is c.35' long and 20' wide, although the northern half of it is low, and reached by climbing up a wall of deads - beyond the deads the floor appears to be undisturbed sandy fill, and this area perhaps represents the condition of the chambers when the miners first broke into them, infilled to within two or three feet of the roof. The southern side of the chamber is c.10' high, with narrow joint avens developed along the line of a barytes vein which crosses the roof, rising another 10' higher. The miners evidently used the chamber for a passing place for their wagons, the rails remaining in situ - hence the name.

Beyond Loop Cavern, a lower passage, stacked with deads on the l. but apparently at least partly natural, leads on for 40' before emerging into the gloom of :-

Lace Cavern.

The second of the large chambers, its name derived from a lacework like decoration of stalagmite flows on the wall above the point of entry. The chamber is c.18' high, 25' wide and 45' long, its dimensions somewhat obscured by the banks of deads piled on either side of the level crossing its floor. The bedding plane roof, virtually flat, and crossed by small solutionally enlarged cross rifts, is impressive, and on the l. is a joint aven and what may have been the entrance to a passage running north from the chamber, now choked by boulders.

At the far end of the cavern, a lower passage leads on for 70' to:-

Lamp Cavern.

This, the largest chamber in the mine, must be one of the most sizeable natural caverns in the Northern Dales, being c.75' long, 30' wide, and a little over 20' high, the expanse of flat, slightly scalloped bedding roof and the general darkness of the rock adding to the air of spaciousness. Once again, walls of deads line the tramway crossing the floor of the chamber, and beyond them slopes of miners debris slant up to join the walls a few feet from the roof.

On the l. at the point of entry, a climb up the deads leads into a natural passage, highly scalloped, running north for 30' to end in an apparent roof fall. On the opposite, south, side of the Cavern, a slope leads up to a squarecut mined passage running south for 18' to open into vein workings on the parallel branch vein, which to the r. soon end but to the l. can be followed under a 30' rise into Attic Cavern.

Following the walled trench of the tramway across Lamp Cavern, a bouldery hole in the floor beneath the rails marks the collapse terminating one of the sub levels, the lowest of the up to four levels of mine working in this area.

At the far end of Lamp Cavern, the mine level branches. The obvious route, bearing r., is in fact the beginning of a crosscut to No.1 Vein. The eastward continuation of Cavern Vein East is reached by a scramble over boulders and scree on the l. here.

The Attic Cavern Area.

The area around the east end of Lamp Cavern and the junction of Cavern Vein East level and the crosscut is the most complex in the mine, and making reference to the survey is much easier than an extended verbal description. Openings from both the level and the crosscut, a few yards beyond their bifurcation, lead up into the low but wide Attic Cavern, a chamber evidently natural in its origins but much modified by the miners. There are two 'layers' of sub levels beneath the floor of the chamber, and apparently one above, glimpsed up rises but inaccessible without scaling tackle.

Cavern Vein East.

The passage which follows the line of Cavern Vein East eastward from Lamp and Attic Caverns begins as a natural rift, but soon becomes a mined level, although occasionally intersecting clay filled natural cavities. After 180', however, the level suddenly breaks out into an impressive scalloped natural rift, floored by mounds of clayey fill which have slumped down from natural cavities at higher levels - dripping water has dissected one of these mounds into a maze of tiny gullies, with pebbles that had been resting on the clay left balanced on the summits of miniature earth pillars - hence the name of this section, Mudpillar Rift.

On the r. of Mudpillar Rift is the inviting entrance of a sizeable natural passage at roof level, only accessible by a frantic scramble up a steep bank of slumping fill - at the top 35' of stooping height passage, untouched by the miners, leads south to Mudwall Chamber, a low but wide bedding chamber with short crawls leading off. The clay fill is evidently of some depth, and if removed the chamber might be of quite considerable dimensions. Mudwall Chamber may mark the line of the parallel southern branch of Cavern Vein East, last seen in the short mine workings opening off Attic Cavern.

Returning (with the generous assistance of gravity) to the floor of Mudpillar Rift, the passage continues east along the line of the vein, passing the base of a mined rise. At one point, where the passage is again an unmodified (except perhaps for the removal of clay fill) cave, the actual vein is exposed as a sort of inverted "wall" standing out from the roof, having evidently proved more resistant to erosion than the limestone. In some places the vein, comprising c.6" of barytes, shows cavities in its centre lined by an impressive array of crystals.



Exposed Barytes
Vein in Mudpillar
Rift.

Continuing east, evidences of natural passages are lost again for a time, until, passing a short branch to a forehead on the l., an area of mudfalls - major slumps of clayey fill from natural passages up above the level - is reached. One fall can be climbed up into a natural bedding cave c.18' above the mined level, but this chokes after a few yards.

The second mudfall required a little digging before it could be passed, and the level followed on to eventually end in a forehead almost 700'

from Lamp Cavern. About 15' before the forehead there is a branch passage on the r., running for a few yards to end at the head of an easy 20' climb down to the north end of the third, and easternmost, of the crosscuts connecting Cavern Vein with No.1 Vein.

Passages between Cavern Vein East and No.1 Vein.

The Cavern Vein East Level, and the parallel No.1 vein level further south, with the two crosscuts connecting them form in plan a rough square of c.600' side. Crossing this square, from the south-east corner to a point a little south of the north-west corner, is another mined passage, here termed Chute Passage Level.

The most obvious passage running on from Lamp Cavern forms the west side of this "square", and is the central of the three crosscuts in the mine between Cavern and No.1 veins - the western is in the section of the workings west of the Entrance Level.

From Lamp Cavern, passing on the l. a hole up into Attic Cavern, and then a small side passage (leading into 60' of low and muddy natural passage terminating in a tight descending tube very difficult to reverse out of - the surveying party spent a traumatic half hour here, the tube attempting to become what its name suggests, "Kevin's Coffin"), 90' of easy walking leads to a mined chamber with a small natural aven on the r., and a hole in the floor dropping 6' into an arched sub-level.

A few yards beyond the "hole in the floor" the level reaches a 'Y'-fork, to the l. the Chute Passage Level, to the r. the Central Crosscut.

The Central Crosscut.

This passage is, like much of the mine in this region, a mixture of mined level and natural cavities. From the 'Y' junction the level slopes noticeably downhill - the drainage of the workings beyond here is entirely through natural passages - for a little over 100' to a roomy bouldery chamber and junction. Just before the junction is reached, a climb of 10' up a wall of deads on the l. leads into a short series of sandy natural passages, 90' in all, including a 12' aven and a small passage ending in a boulder ruckle which the survey shows is within a few feet of Chute Passage Level.

The junction chamber is a modified natural aven chamber, 15' high. On the r., running back towards, and under, the Lamp/Attic Cavern complex, is an arched sub-level. 130' along this is the opening up into "hole in the floor chamber" in the main level, and beyond, passing various shale falls, the sub-level branches into three, all ending in collapses, the "basement" of the complex area.

Bouldery hollows in the floor of the junction chamber indicate collapse into a lower level of passage here as well - a hole under the l. wall was dug out, and proved to drop down into a natural bedding passage carrying a trickle of water away from the chamber, the passage being 3' in width but unfortunately only 4" high.

Beyond the chamber the crosscut continues for 30' to another natural cavern, 20' high with well scalloped walls and banks of stratified natural fill, but no exit other than the continuing mined passage which after 110' of easy going leads to a junction, where a minor east-west vein or stringer appears to intersect the line of the crosscut. On the r. of the crosscut here is a 30' long mined chamber, but on the l. a bouldery passage leads into quite a roomy flat roofed natural chamber, 10' high and wide, with two pits in the clay floor near its far end. The further pit is blind, but the nearer, against the r. wall, drops into a low natural passage, one route into the Near Streamway (see below)

Returning to the crosscut, 100' of mined level lead to a 'T'-junction with the workings on No.1 Vein.

Chute Passage Level.

This is rather a puzzling section of passage. Sections of a natural predecessor which from time to time appear in its walls and roof, and its slightly winding course, suggest that the whole level is in fact a modified natural passage, possibly the western continuation of the Great Rift in the furthest reaches of the mine. This passage is the best route into the far reaches, avoiding the "grotty arch" on No.1 Vein.

370' of easy going, passing a few indications of the natural origin of the passage, and a 50' long mined branch on the l., lead to a mined chamber, stacked with deads, again on the l. Concealed at the rear of this is the entrance to :-

Chute Passage.

A crawl over the deads leads into natural passage, and a steep muddy chute up into a narrow 12' high aven. A low chamber with mounds of fill, and then an attractive 4' high well scalloped passage lead on, but after 90' the passage ends, splitting into a too tight descending fissure and a high level wriggle into a tiny fill choked aven.

Sliding back down into the mine level, 220' more of easy walking, passing another short mined l. hand branch, and scrambling over some minor falls, leads to a 4-way junction. To the l. here is a squarecut mined level from which a small stream flows - the Eastern Crosscut. Straight ahead is 160' of level ending in a forehead, and to the r. the continuation of the Eastern Crosscut, with mined out and deads stacked cavities on either side, leads after 60' to the junction with No.1 vein workings.

The Eastern Crosscut.

This, unlike the Central Crosscut, is basically a near straight 6' high mine level, the only natural features occurring 245' from the junction with Chute Passage Level, where the stream emerges from a small natural streamway on the l - this is just body sized for 10', and then narrows. The deserted continuation of the stream passage, on the r., is silted to within a few inches of the roof, and cannot be entered.

The crosscut runs on northward to the base of the 20' rise up into the Cavern Vein East workings (see above), with on the r. just before this rise a muddy natural chamber. Scrambling up over the boulders and mud here allows access to a few more feet of level, opening into a very short section of low level workings at the end of Cavern Vein East. A level straight ahead is run in after 15', but on the r. is a unique "forehead" cut in consolidated fill, which occupies a sizeable but choked cave passage following the line of the vein. The fill consists of alternate layers of gravel and sand, each about 2" thick, and steeply dipping in places - a puzzling feature.

The workings on No.1 Vein.

The workings and natural passages along the line of No.1 vein are described as entered from the Central Crosscut.

(a) West of the Central Crosscut.

The Central Crosscut joins No.1 Vein at a 'T'-junction. Turning r. (west) here one follows a roomy passage, dry at first but with a very low natural bedding cave under the l. wall carrying what can in some conditions be quite a large stream, which in wet weather overflows across the level.

After 50' another mined chamber is reached, with levels continuing to the l. and straight ahead. The stream flows from the latter, and following this for 40' a natural aven is reached, with the stream entering at floor level on the l. On our first visit the inlet appeared to be almost sumped, but some digging in the floor further downstream lowered the water level, and Graham Stevens was inserted. This tactic, for once, did not pay off - after 20' of aqueous going in a 3' diameter tube, 2'6" of which was occupied by the fluid medium, the roof dipped underwater.

The source of this stream, which is that which flows through the Near Streamway, and probably the Far Streamway as well, has not yet been traced - a thorough inspection of surface sinks remains to be made, although this point is well under the shale and grit cover on the surface, the rear edge of the limestone outcrop being north of Cavern Vein.

The mine level continues on beyond the stream inlet for another 90' to a forehead - the western limit of the No.1 Vein workings in this part of the mine. Returning to the junction chamber, the branch level (heading south-east) appears to be another crosscut, perhaps driven to pick up the south-west continuation of the vein or fault along which the Far Streamway is developed. A few yards along the branch level there is a low mined chamber on the r., and then 150' of splashing through shallow water brings one to a fall (a run rise?). This is passable, but 12' beyond is a second collapse which totally blocks the level.

(b) East of the Central Crosscut.

Turning l. at the 'T'-junction at the end of the Central Crosscut, the stream which flows from the level to the west is found crossing the floor and flowing into a low bedding under the l. wall - the head of the Near Streamway. An easier route into the streamway is a tube on the l. 30' further along the level, just before a brief section of arching beneath a rise.

Beyond the arching the passage enlarges quite dramatically into two roomy chambers, the first 18' high and 20' wide. The smaller second chamber shows some slight evidence of being a modified natural cavity, but the first appears to be a totally mined flat working. At the end of the second chamber is another short section of arching, again beneath a high rise. In this case there has been some collapse, and one must crawl over boulders beneath a rather frighteningly insecure section of arch ("the grotty arch") supporting a tottering wall of boulders and debris rising high into the gloom above. The passages beyond this section are easily, and more safely, accessible via Chute Passage Level.

The "grotty arch" opens onto a spacious 'Y'-junction, with on the r. 190' of roomy level leading to a forehead, with at its foot a tantalising slot in the floor, emitting the rumble of a stream - almost certainly the Near Streamway water c.100' downstream of the explored limit of that passage. Bearing l. at the 'Y'-junction, a little over 100' of passage leads to another junction. On the l. here is a 50' branch level into Stream Chamber, the usual point of entry of the Near Streamway.

The main level continues, passing two short (30' and 60' respectively) branch workings to the r., to a complex junction area. To the r. is a passage leading immediately to a 'Y' fork, the r. branch being a 180' long mined passage to a forehead (it continues the line of the Eastern Crosscut, and was perhaps originally intended to explore the region south of No.1 vein), and the l. branch the beginning of Great Rift Level. To the l. at the junction is the commencement of the Eastern Crosscut, and the route back to the Caverns Area via Chute Passage Level.

The Near Streamway.

The branch level from No.1 Vein drops into the roomy boulder strewn Stream Chamber, with the stream threading its way between the blocks littering the floor. There are three possible exits from the chamber, the low and wet downstream passage, the upstream passage (again a bedding at floor level), and an obvious larger arch into a second chamber, where a mudbank bears inscriptions testifying to previous visitors in the 1940's and 1960 (Durham Cave Club).

The downstream passage from Stream Chamber is a flat out wet gravel for 20' to a very tight squeeze (c.8") over the lip of a 2' waterfall, dropping into a low but wide chamber. Over on the l. a debris slope drops

down from the roof - this point is more or less directly under the main No.1 Vein level. At the far side of the chamber the stream flows off into an impenetrably low bedding.

Low entrances from both Stream Chamber and the adjacent chamber with the inscribed mudbank lead into the upstream passage, a wide but low bedding, divided into two by a rock pillar for the first few feet. Beyond the pillar the passage widens to almost 30', with a gravel floor, but the height steadily diminishes, until 50' from the rock pillar the way on appears too low. However, the far r. hand side of the bedding, concealed behind shingle banks, is a little higher, and allowed progress for a few feet further.

On the 6th February 1976 Grahams Womack and Stevens excavated a channel in the shingle floor at the end of this r. hand route, and after a little work gained access to a continuation of the streamway beyond, with the passage narrowing to 12', but gaining a little height. 90' of easy crawling led on to a junction, with on the r. a bedding chamber lined by mudbanks, 2'6" high and 30' long.

Plotting the survey of this area showed that the end of this bedding chamber came very close to the natural chamber with the two pits in its floor, opening off the Central Crosscut. A week after the initial exploration of the new section of the streamway, Andy Skelton and John Dale dug out a low passage on the r. at the end of the bedding chamber, and made a passable connection with the clay pit nearer the wall.

The stream passage continues as a bedding, reducing in size to c.7" wide by 1' high, and after 80' of tight crawling ending too low in a partially choked area, from which a vocal connection was established with a boulder ruckle in the floor of the passage leading into the chamber with the clay pits, a few feet from its junction with the Central Crosscut.

The upper section of the Far Streamway, entered via a tube from No.1 Vein level 30' from its junction with the Central Crosscut, proved to be a similar bedding passage, at first an easy but damp crawl, to a small 8' high chamber, and then a flat out wet crawl to end in the same bouldery area as reached at the end of the section of streamway explored on the 6th February - a through trip is not quite possible, half the passage being blocked by an unstable ruckle of boulders dropping in from the mined passages above, and the remainder being just too low to pass.

The total length of the Near Streamway is just over 500', a little over 200' of which was 'new ground'.
Great Rift Level and the Great Rift.

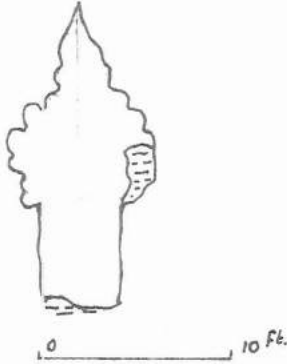
The roomy mined passage running east from the complex intersection of the No.1 vein workings and the Eastern Crosscut is Great Rift Level, the route to the furthest, and perhaps the most interesting, reaches of the mine.

At the actual junction itself, a choked hole under the l. wall emits, in wet weather, a tantalising rumble of water. A short dig here failed to gain entry to any further passage, but a few yards further along the level a second hole was found, which was cleared to reveal a tight natural passage. 10' of narrow muddy crawl led to the source of the noise - a very small stream indeed, falling from a fissure in the roof into a tiny pool, and disappearing into impenetrable fissures. Running back towards the first 'dig' was 10' of small silted passage.

Continuing along Great Rift Level, 90' of mined passage leads to a 'Y'-fork. The l. hand passage appears to continue the line of No.1 Vein, and runs for 145' to a forehead. This passage breaks into a natural chamber 25' from the fork, with a narrow arch up a slope on the l. opening into a smaller chamber, the floor of which drops down to a low crawl heading back westwards. This passage, 4' wide and initially 2' high, is floored by a long mound of clayey fill, which appears to be of some depth. After 60' of easy crawl the roof suddenly steps down to within 3" of the fill. Projecting the line of this passage westwards for another 50' or so would bring it into the region of the Chute Passage Level/Eastern Crosscut junction. It seems possible that this passage is a fragment of a much longer one which to the west continued along the line of Chute Passage Level, and to the east

ran on into the Great Rift.

Returning to the main level and bearing r. at the 'Y'-fork, a low and debris choked fissure on the r. is passed where running water can be heard in wet weather. A lofty chamber is then entered with an unenterable (without scaling tackle) high level passage, but all this seems to be the work of the miners. 115' from the 'Y'-fork, however, natural passage is met again - the level suddenly breaks out into a very impressive rift,



Cross Section of Great Rift, where first met.

15' high and 8' wide at mid height, tapering both above and below this. The miners have widened the lower part of the passage, but the upper parts remain unmodified, showing much scalloping and some relics of the original clay fill, on ledges above the modified section.

After a few yards of rift, there is a branch level on the r, 70' of low passage (mostly mined, but the l. wall in the initial section appears to be natural) with on the l., half way along, a low natural crawl running off, ending after 30', after a small aven, where it is blocked by a calcited boulder.

Continuing along the main level-cum-rift, a sharp bend to the r. is met, with a squarecut mined tunnel continuing straight ahead, behind a pile of boulders. The mined tunnel ends after 85' in a small blind rise, but the Great Rift

continues, gaining height. Due to the narrow nature of the sections of the rift at mid height here, the roof is lost to view, but the height is at least 40'. A variety of wedged boulders, sections of arching, and miners' platforms stacked with deads also discourage exploration of the high levels here.

After a few yards yet another junction is met, another 'Y'-fork, both branches being arched over. The passage straight ahead is arched for a few feet, the arching then giving way to a roof of wedged boulders and deads 10' up, which in turn gives way to a roof of consolidated sandy fill, the passage ending in a "forehead" in this material after 60'. The lofty natural rift appears to continue above this short branch level, and an attempt to follow it was made by climbing up above the arched section, into a precarious area of stacked deads and rotting timber. A massive overhanging wedged boulder 20' up defeated the explorer, although the rift could be seen to continue above and beyond this.

The Great Rift is thus lost for a while, and the main route on, the l. fork at the junction, is at first a completely artificial passage. Narrow natural fissures soon appear again in the walls, and 60' from the junction there is a 7" slot in the l. wall, which appears to drop down into a larger natural passage. Attempts to enlarge the slot were made, but the level roof is rather shattered here, and the necessary hammer work was deemed unwise.

Continuing on down the level, a pronounced downhill trend becomes apparent - in all the Great Rift Level must drop 20'-30'. 250' from the last junction natural features appear again, and then more arching commences, set between natural walls. It is possible to climb up above the arching, into a collapse area, suggesting passages above.

The arched section is a little less than 70' long, and at its end the most impressive section of the passage begins - the miners' modification is confined to a little widening at the base, above which scalloped walls soar up over 50' into the darkness. A rather awkward 12' climb up here surmounts the arching, and the upper part of the rift is gained, heading back above the arched section, to another climb, this time up a loose

wall of boulders and debris. At the top of this the passage turns l., away from the level beneath, and the floor slopes steeply up, to an abrupt change of character, the upper part of the rift narrowing in to a few inches, and the fill rising up in the wider lower section to give the appearance of a low bedding with a narrow roof slot. Some further progress could perhaps be made here, but digging would be required. This point is perhaps 30' above the floor of the level below, and 40' horizontally from the first climb up. If this section of the Great Rift is the same passage as was briefly seen earlier, a gap of c.250' remains unexplored.

Eastward, the rift continues, of the same impressive dimensions, for another 150' (passing another brief section of arching), to end in a lofty chamber, where the Far Streamway is met. The stream flows from r. to l. in a half collapsed conduit about 3' below the original position of the level floor. On the l., a spacious opening 15' up, above a wall of deads, is the route into the downstream section of the Far Streamway. Straight ahead a conventional arched mine level recommences, whilst down on the r., between wedged boulders, is the low and watery entrance to the upper section of the streamway.

The Far Streamway - Upstream Section.

The low entrance drops down into a few feet of low passage running parallel with the Great Rift, and then the passage turns away to head south-westward, becoming very low and wet. On our initial visits to the system no-one could be coaxed into this uninviting passage, but on the 13th December 1975 Ian Davison (watched with awe by Kev Solman and the Errington brothers, who preferred discretion to valour) launched himself off upstream, and proceeded for what he measured as $37\frac{1}{2}$ body lengths (c.220'), along a passage more or less dead straight, and generally 7' wide and 1'6" high, with over 1' of water for most of the way. Ian eventually turned back where the airspace dropped to little over 1" to produce a near-sump.

This point is still over 600' (straight-line distance) from the downstream end of the Near Streamway, and assuming that the two streams are one and the same, a considerable amount of passage must remain to be explored. A combination of very dry weather, and a clearing of the collapsed conduit which takes the stream beneath Great Rift Level, might result in determined waterproof cavers being able to make some progress.

The Far Streamway - Downstream Section.

At the intersection of the Great Rift Level and the Far Streamway, the major phreatic development of the Great Rift, which has been running south-eastward, suddenly changes direction and follows the line of a fault north-eastward, along the downstream section of the Far Streamway.

This passage is gained by gingerly climbing up the wall of deads out of the level into a roomy square chamber, its floor 15' above the level, from which a tall but narrow rift (obviously following the line of the fault - the displacement of the chert beds on either side is quite noticeable from the chamber) drops down into the stream again. A wedged beam here makes the climb easier for those with short legs.

The stream enters from a boulder choke under the l. wall (from the level it can be followed through a short arched conduit at the foot of the deads wall, into a small wet chamber, where there is some danger from loose boulders, but the exit from this is choked). The streamway is initially 25' high, and 5' wide at the base, a very attractive passage, with what have once been very fine formations (the passage is at one point almost blocked by stalagmite flows), many of which have been broken off by the miners.

After 150' of easy walking, the streamway widens into a chamber 30' long, 12' wide and 8' high, with the stream sinking into a tiny tube under the l. wall. The way on is a low crawl, and the vertical development of the Great Rift appears to finally end here, the passage resuming the character of the Near, and upstream section of the Far, Streamway - a low bedding.

The stream reappears from under the l. wall to make the going damper, and a 4' high chamber after 40' gives some respite before the passage becomes a really wet crawl. Beyond, 80' of straightforward wallowing in a 10' wide passage with just under 1' of airspace leads to a junction with an inlet, a trickle of water coming in from a small passage on the l., concealed behind banks of soft mud. Demolition of these allowed access to the inlet, a low crawl for 12' into a small chamber with not quite enough room to turn round, beyond which the passage turned r. - a thin man could probably follow this inlet further, if he thought it worthwhile.

Looking at the survey, it can be seen that the small streamway intersected by the Eastern Crosscut, if it followed a course roughly parallel with the Great Rift Level, would join the Far Streamway at about the same point as this inlet does - however, the 'gap' is over 1,000', and this must only be a slight supposition, unlikely to be proven or otherwise.

Downstream of the inlet, the bedding roof of the streamway begins to slant downward, and the water deepens, over soft mud. The passage appears to sump - at any rate the airspace decreases so as to be unusable - after perhaps another 30' or so.

The total length of the downstream section of the Far Streamway, including the small chamber beneath and behind the deads wall, is around 400'. The resurgence of the stream remains a mystery at the time of writing.

Mined Passages beyond the Far Streamway.

The arched level leading on from the end of the Great Rift opens after a few feet onto a junction. On the r. is a mine level apparently following the south-westward continuation of the fault or vein on which the downstream section of the Far Streamway is developed, and running parallel to, and only a few feet from, the upstream part of the stream passage. That some degree of mineralisation is present is evident from the floor debris - quite reasonable specimens of Azurite (a hydrated copper carbonate) associated with Barytes can be picked up.

This branch level ends after 140' in a forehead, the further reaches, beyond a 20' long mined chamber on the l., containing 2' of water held up by minor roof falls.

The main level, straight ahead at the junction, continues for 130' to end where it is backfilled by deads, which at first reduce it to a crawl and then slope up to the roof.

The reference in Dunham to this area of the mine is rather difficult to interpret, since he makes no mention of the streamways or the Great Rift. He suggests that the mine workings continue eastward to cut Hunter's Vein, which according to the O.S. Geological map trends north-east to south-west, i.e. parallel to the Far Streamway. Possibly the vein on which the stream passage is aligned is in fact Hunter's, although the O.S. map suggests that this is a few hundred feet further east, beyond the backfilled termination of the level.

An inspection of the survey suggests that the original pattern of natural passages in the section of the mine east of the Entrance Level was simpler than appears at first sight. From the line of chambers and rifts, now much choked by fill, along Cavern Vein, a phreatic conduit seems to have branched off in the vicinity of Lamp Cavern, along the line of Chute Passage Level (Chute Passage itself is probably a remnant), and

via the 60' crawl opening off the first l. fork from Great Rift Level, into the Great Rift itself. A second major line of cave development, almost parallel to the first, but probably much more recent, is seen in the streamways, with perhaps two feeders, the present stream inlet, and a second inlet represented by the series of chambers and passage fragments through which the Central Crosscut is driven (with a low level bedding still carrying a trickle of water). The two systems, the old phreatic conduit and the more recent streamway, eventually join, uniting to form the downstream section of the Far Streamway. The line of chambers and passages along Cavern (and perhaps White and Nacky as well) Veins, might represent an even earlier stage of development.

Cavern Vein West and the western section of the mine.

Bearing r. at the 'Y'-junction at the end of the Entrance Level, 50' of easy walking leads to a large natural chamber, where the level joins Cavern Vein. This chamber, flat roofed and stacked with deads in a very similar manner to the larger caverns on Cavern Vein East, is about 25' wide and long and 15' high, with no exit other than the mined level beyond heading westward along the line of the vein.

After 70' another natural chamber is entered, with on the r. a debris slope leading up to the entrance of the longest section of natural passage in the western part of the mine, which is:

Scallop Passage.

The slope up leads into a flat roofed natural chamber, at the far end of which the floor drops away again into Scallop Passage proper, a superb deeply scalloped rift 10' high and 2'6" wide. After 70' of easy going, the clay floor slopes up, concealing the scalloped walls, into a crawl of very squarecut cross section. This hands-and-knees crawl ends after 40' in a very tight squeeze under wedged boulders, up into the final section of the passage, a 3' high crawl with another squeeze, with the scalloped section of the walls just beginning to show again above the fill, before the end of the passage, and abrupt and complete fill choke, is reached.

The total length of the passage, which runs in a straight line almost due north of the level, is (from the level) 200'. The trend of the passage suggests that it is an old phreatic route connecting the development on Cavern Vein with that on White Vein. If the line of the passage is projected beyond the present choke, the line of the Entrance Level is crossed after 150' (some fragments of fill choked tubes are visible in the roof here), and after 320' the choke at the end of the small scalloped passage - very similar in nature to Scallop Passage - which runs south for 25' or so from the largest natural chamber on White Vein

Returning to the level on Cavern Vein West, a further 80' of walking brings one to another modified natural chamber, of no great size, with on its l. a step up into a branch level running for a few yards into some short but lofty vein workings - more evidence of the parallel southern branch of Cavern Vein. A few feet further along the main level is a fork, with on the l., over some shale falls, an arched branch level, the commencement of the Western Crosscut.

Following Cavern Vein westward from here, evidence of natural cavities is soon lost, and the vein seems to have been more profitable to the miners. 850' of fairly sound level, with some high vein workings in the roof in places, and some good exposures of veins of galena and barytes, eventually terminate in a total collapse, with a small stream entering from under the boulders.

The original forehead is described (Dunham) as being 1,900' from the adit junction, so this fall appears to conceal another 800' or 900' of level, the mineralisation towards the end being reported as changing to witherite (barium carbonate).

The Western Crosscut.

Scrambling over the shale falls at the crosscut entrance, and passing beneath another veinworking on the southern branch of Cavern Vein (this branch appears to join the main vein a short distance west of this point), a little over 800' of easy passage, all mined apart from the occasional minor natural fissure, can be followed to a muddy chamber where the western section of No.1 Vein is met.

No.1 Vein West workings.

High level workings appear to extend east from this point, but could only be reached by a difficult climb, which has not been successfully attempted. On the far side of the vein is a passage completely filled with deads, an apparent continuation of the Western Crosscut beyond the vein, and to the west are 400' of vein workings.

These workings take the form of a high rift like passage, the walls being decorated with calcite flows in places, and also some spectacular streaks of malachite and azurite. Passing the remains of two or three wooden hoppers, the end of the level is reached - a last, rather remote, natural chamber, which was probably completely fill choked when cut by the miners, the passage ending in another of the typical Lunehead "foreheads" in consolidated cave fill. The chamber is narrow, not much wider than the level, but shows some good scalloping at c.12' above floor level.

The Survey.

The survey carried out of the Lunehead system is basically to BCRA Gr.4c, the majority of the passages being thought of as too level to justify the use of a clinometer - which was, however, used in steeply sloping sections of passage. Suunto instruments and fibron tapes were used. It had been feared that the old rails still present in many of the mine levels would deflect the compass, but the closures achieved on the few loops that exist suggests that this concern was misplaced - the Chute Passage Level / No.1 Vein / Central Crosscut loop, with a total leg length of over 1,400', closed to within 6'.

The line surveys included in this journal are taken from a larger drawing of the system made at a scale of 100':1", with insets at larger scales showing the Caverns Area, the Near Streamway, and Chute Passage, as well as a large number of passage cross-sections drawn at 25':1". Dyeline copies of this master drawing (size 36" x 30") are available from the Hon. Sec., at a cost of 35p.(inc. p.&p.)

The Hudeshope Area.

Hudeshope Beck, a tributary of the Tees running south from the high ground of the Wear/Tees watershed, to join its parent river at Middleton-in-Teesdale, twice cuts through the outcrop of the Great Limestone - this duplication being due to a major group of mineralised faults, downthrowing southwards, running east-west across the valley about 3 miles north of Middleton.

The lower of the two stream sections is an impressive gorge, Jack Scar, containing a 450' long resurgence cave, Jack Scar Cave (see MSG J1.5). The upper stream section is a much shallower gorge, although there is a well developed limestone bench running south from it along the west side of the valley. This upper area has attracted MSG attention since the early years of the Group, and especially in the last 18 months. A number of small caves and interesting features have been unearthed, and some water tracing carried out, although the area is not yet "worked out" by any means.

The caves and sites of interest at present known, are here listed from south to north, as reached from the most convenient point to leave a car, the tips of an old level at the end of a rough track running up the east side of the Beck.

Standing on the old mine tip, and looking up the valley, on the opposite side of the stream is the long line of Newberry Scar, the outcrop of the Great Limestone, broken midway by the obvious tips of an old trial level at the foot of a hush. Above the scar, and a few yards south of this hush, is a shakehole containing :-

Newberry Pot 1.

A large opening drops 15' (ladder required) into quite a roomy chamber developed on a joint more or less parallel to the Scar and valley side. To the south the chamber closes to a tall rift rather less than 6" wide, which can be seen to extend for some distance. To the north a climb down leads to a pool, beyond which the passage narrows to an impassable slot.

Proceeding north along the line of shakeholes at the rear of the limestone bench, and crossing the hush, some rocky shakes are passed, and then a shallow grassy gully is met - a few yards up this, to the west, a small stream flowing down from the fellside above abruptly sinks into the entrance of :-

Newberry Pot II.

A tight slot (2' x 10") in the gully floor drops 41' down a widening rift into an impressive rift chamber. The pitch requires ladder, a stake belay, and in all but dry conditions, the stream diverting (this can be accomplished with relative ease a few yards further up the gully).

The lofty rift chamber, 40' long, is again aligned on a joint parallel to the scar face, the pitch descending near its north end. The north end of the rift closes abruptly to a tiny slot, issuing a small stream. At the south end the walls close in, leaving a narrow wet crawl at floor level. Beyond is an aven, and a climb over a boulder, before the stream flows away into an impassably narrow fissure. Total length of the Pot is c.70'.

The stream sinking here has been fluorescein tested (21-5-76) to a rising from sumped fissures 30' inside the old trial level at the foot of the hush, a short distance further south. The dye was seen here 3 hours after putting it in the Pot, although it may have actually taken less time to get through. The level ends in a forehead after c.200 yards, and shows no especial features of interest.

A hundred yards or so north of Newberry Pot II another shallow gully is met, in wet weather bringing down a small stream, which this time sinks into a definite shakehole - this is :-

Newberry Pot III.

This has been the scene of two or three sessions of digging and hammering, and has as yet yielded only frustration. A damp rift drops 10' to a constriction - no more than 6" wide, with one side a rather unstable wall. Beneath, the rift widens and drops away into the gloom. Depth again seems to be in the order of 40', and there appears to be another roomy north-south rift chamber of unknown extent below.

Continuing north along the limestone outcrop, another hush is crossed (with a completely collapsed mine level issuing a small stream, at its base), and then another, larger, tributary stream is reached, Coving Sike. The Sike flows down a narrow rocky gully, in wet weather dropping over a waterfall to join Hudehope Beck, at the base of the limestone. In drier conditions the water may sink at one of a number of places, to reappear from tiny tubes (one accessible as a damp wriggle for 10') at the foot of the waterfall.

A few feet above the waterfall there is an open sink, a fissure dropping 10' into a pool, with no way on beyond. 50 yards or so further up the gully, however, on the south bank, is the obvious entrance of :-

Coving Sike Pot.

The rift like entrance drops onto an easy 15' climb down into a spacious chamber, 'L'-shaped in plan, at the far end of which the shingle floor slopes down to an impassable slot, taking the stream.

On the r. hand side of this second part of the chamber, a scaling pole was used to gain entry to a tube entering 14' up the wall. Eyeholes to the r. of the tube lead into a small aven, but this was blind, and the tube was the only way on - 20' of winding very tight body-sized crawl, to a point where, beyond an even lower section, a widening could be glimpsed, and rushing water heard. A very thin man might make further progress here.

Total length of the Pot is c.55', and the depth c.25'.

The limestone bench continues north of Coving Sike, to an obvious stream sink, which is :-

Coving Sike North Pot.

The stream sinks into a bouldery shakehole, and can be followed down a 10' drop through ruckle into an impassably narrow rift which appears to sump. The stream has been rhodamine tested (7.12.74) to a rising from a grassy bank a few feet from the west bank of Hudehope Beck, a couple of hundred yards further up-valley.

If one scrambles down to the side of Hudehope Beck from here, the north end of Newberry Scar is reached, the cliff running back southwards to the waterfall and risings at the foot of Coving Sike. Within a few feet of the north end of the Scar is a low cave entrance at the foot of the cliff:-

Scar End Cave.

A squeeze over the drystone wall built across the cave entrance leads into a 4' wide 2'6" high arched passage. After 25' a 4' high joint aven crosses the roof, and the clay floor beneath steps up, reducing the height of the passage beyond to little over 6". A solo dig here by the writer allowed a 15' flat out clayey gravel to a junction with a rift chamber - running to the l. for 10' and to the

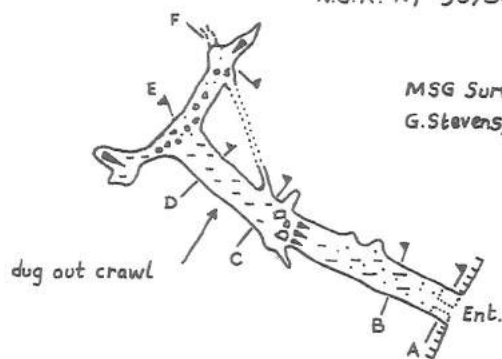
SCAR END CAVE

N.G.R. NY 937304 Alt. c. 1,300'

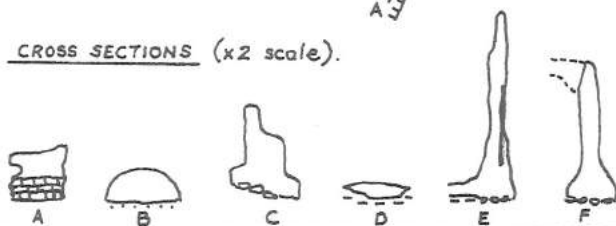
Length 70'

MSG Survey BCRA Gr. 4C.
G. Stevens, Graham Womack
21-5-76.

dr. ELW 76



CROSS SECTIONS (x2 scale).

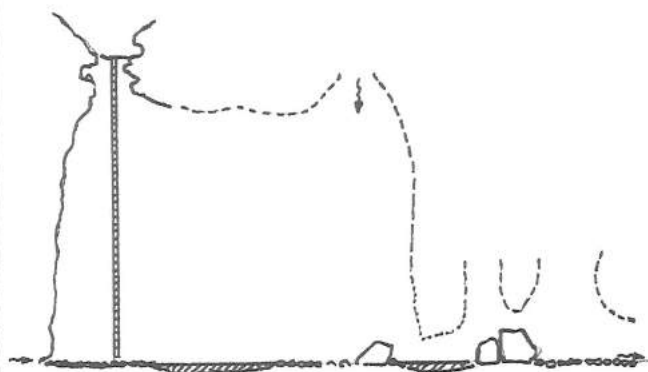
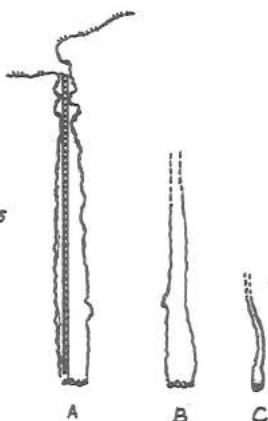
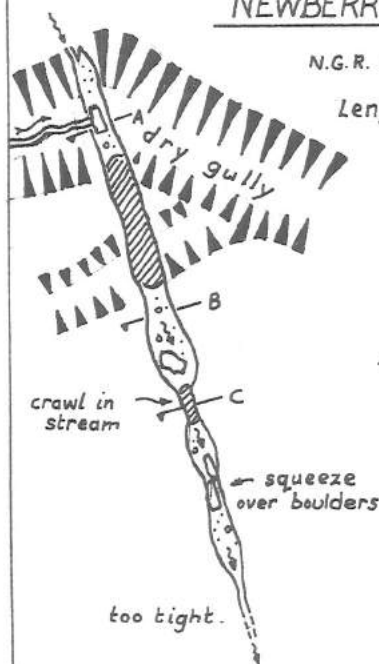


NEWBERRY SCAR POT II

N.G.R. NY 938302 Alt. c. 1,325'

Length 75'. Depth 42'.

MSG Survey BCRA Gr. 4 B.
K. Errington, P.F. Ryder
22-3-75



Projected Section on 165°

PFR.

CAVES and POTHoles, ~UPPER HUDESHOPE AREA

Scale (except where stated)

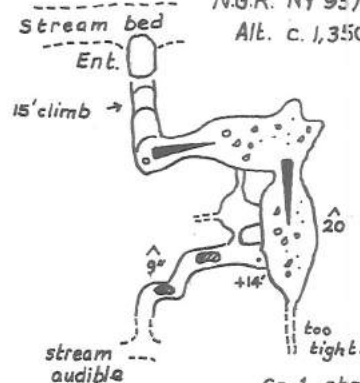
0 25 50 Ft.

Surveys MSG 1975/76

COVING SIKE POT

N.G.R. NY 937305

Alt. c. 1,350'



Gr. 1 sketch
G. Stevens 21-5-76

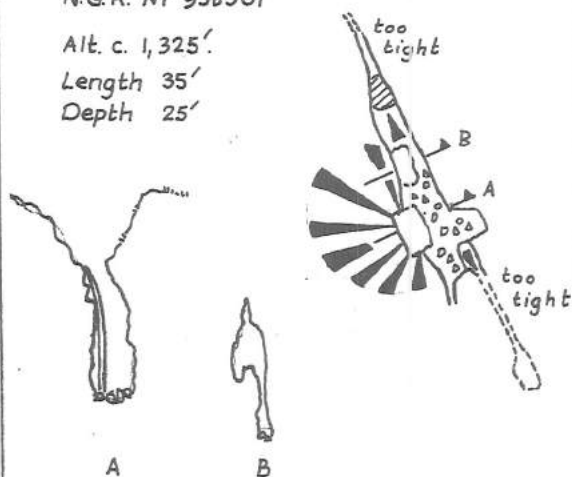
NEWBERRY SCAR POT I

N.G.R. NY 938301

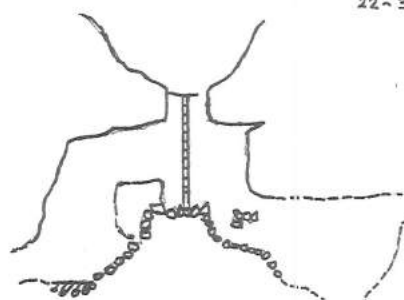
Alt. c. 1,325'

Length 35'

Depth 25'



MSG Survey BCRA Gr. 3B
K. Errington, P.F. Ryder,
22-3-75.

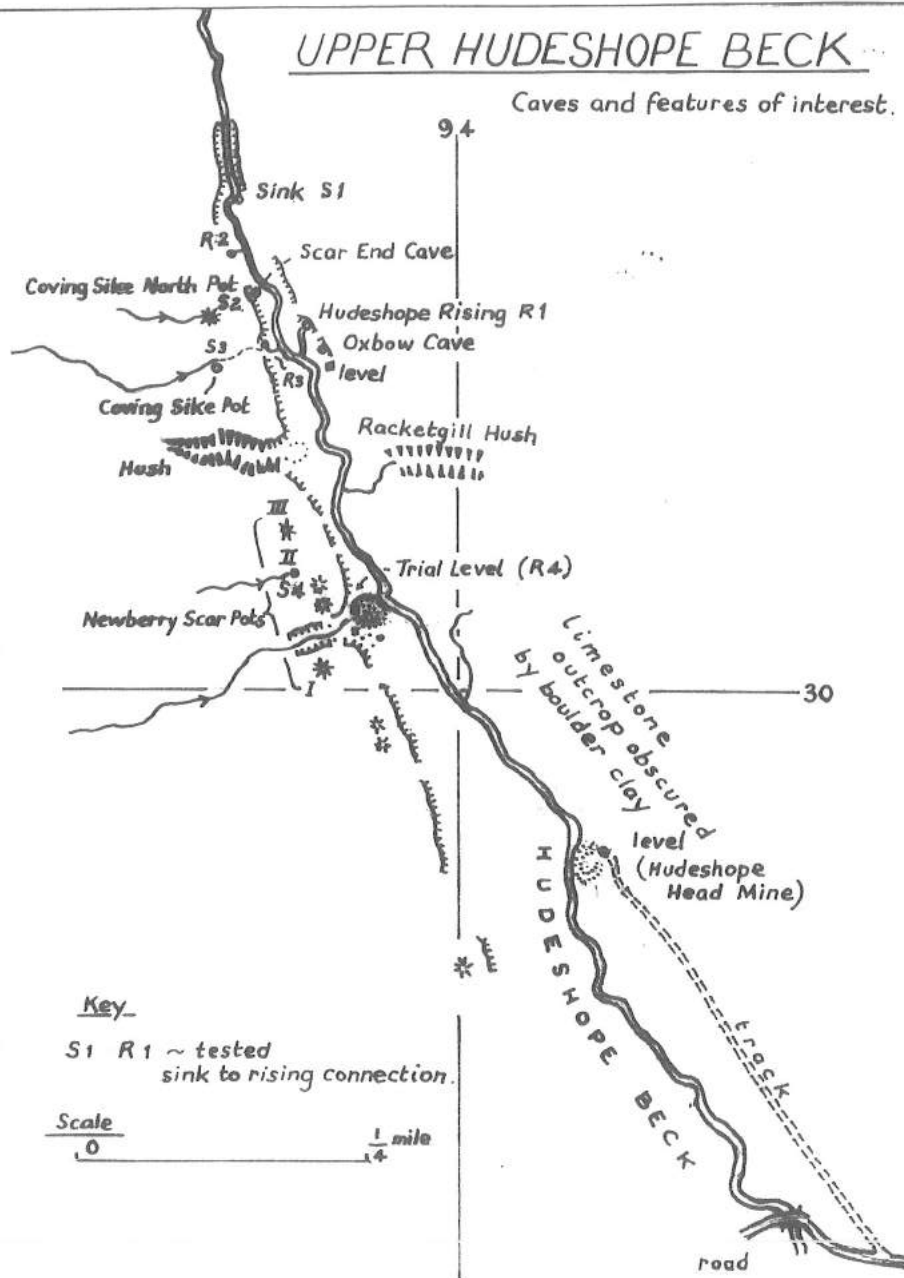


Projected Section on 162°

PFR.

UPPER HUDESHOPE BECK

Caves and features of interest.

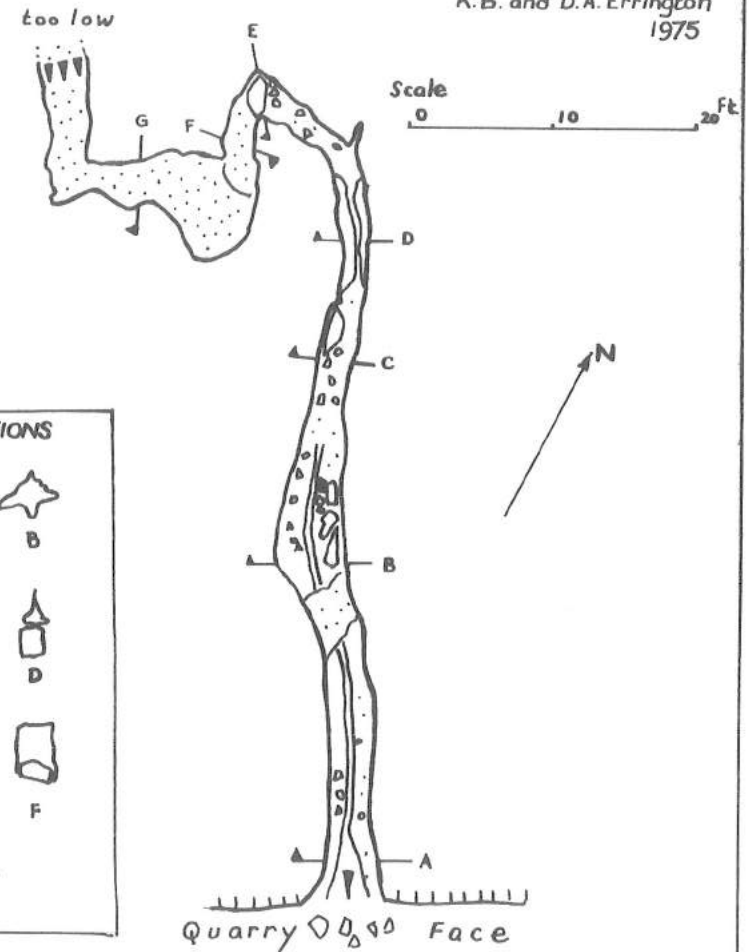


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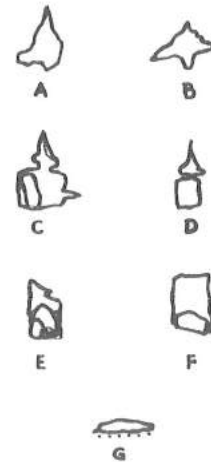
CRAWLEYSIDE CAVE

Stanhope, Weardale.
N.G.R. NY 992398 Alt. c. 800'.
Length 100'

BCRA Gr. 3-5 survey,
K.B. and D.A. Errington
1975



CROSS SECTIONS



KBE 1975

r. for 15', and is 12' high in parts, its most notable feature being a 4' long stalactite. The only exit from this rift is a 3" wide draughting slot at roof level. Total length of the cave is c.70'.

Scar End Cave is the most northerly feature of speleological interest (apart from the rising from Coving Sike North Pot) on this side of Hudeshope Beck. Beyond the rising is quite a long but shallow limestone gorge on Hudeshope Beck itself, but beyond a few shallow nooks and crannies there are no caves in it. The one feature of interest in the gorge is a sink in the bed of the Beck, on the upstream of the two corners of an obvious double bend in its course. This has been tested to :-

The Hudeshope Rising.

This very noticeable rising, on the east side of the valley more or less directly opposite the foot of Coving Sike, is one of the features of the area which have long attracted MSG attention. It was at one time (see MSG J1.4) theorised that the water rising here might be derived from sinks further afield than the Hudeshope Valley, before the sink in the stream bed mentioned above was noted (see 'Ends and Oddments' section of MSG J1.6).

The rising is in fact quite impressive, the stream, which can be quite sizeable, flowing out of a 2' high arch and cascading down over shelves of the sandstone which underlies the Great Limestone here, before joining the main Beck. Once inside the entrance arch, the roof lowers, to a flat out bedding crawl, in the water, which swings r. and suddenly ends, about 18' from the entrance, where the stream emerges from a variety of impassably tiny tubes and beddings. Flow through time from the sink (300 yards away) is inside half an hour, and it had been hoped that quite a well developed cave system might exist here, but the passage briefly seen seems relatively immature.

A few yards south of the rising, and again at the base of the limestone, is another obvious cave entrance - this is :-

Oxbow Cave.

It had been hoped that this might provide a "back door" to the system behind the rising, and an impassioned assault with entrenching tool by the writer and Chris Pattison saw large volumes of clay fill removed, but all to no avail. Perhaps 15' of low crawl were gained, to where the passage looped back towards the valley side, and a voice connection was established with a tiny hole in the cliff midway between the cave entrance and the rising. It seems that the cave may be a fragment of a former system now largely removed by valley incision.

There are no other features of speleological interest on this side of the valley (which is thickly plastered with boulder clay), except for a small sink and rising in a prominent gully about quarter of a mile south of the rising, and two mine levels, one a few yards south of Oxbow Cave (this is a trial dating from five or six years ago, but already blocked by a roof fall 50' in), and the other at the back of the mine tips at the end of the track, which can be followed for several hundred yards to a "shaky" section.

WEARDALE

Crawleyside Cave, Stanhope.

This short but interesting cave was noted and surveyed by Dave and Keith Errington, of Consett, in early 1975. The cave is situated in the west end of the Great Limestone quarries which follow the line of the limestone outcrop north of Stanhope, to end alongside the notorious Crawleyside Bank road, a long and steep hill leading north out of Stanhope towards Edmundbyers and Consett.

The cave consists of a single passage, showing some good phreatic scalloping, reached by an easy 10' climb up from the quarry floor. The passage, mostly a narrow hands-and-knees crawl, swings l. after c.60', and the roof drops down, to a bedding plane with a sandy floor. A short dig here allowed a low crawl on to another bend, where the roof lifted into a 2' high bedding chamber, with some stalactites, but at the end of this a bank of fill rose to within inches of the roof. Total length of the cave is c.100'.

Bollihope Burn Caves.

Bollihope Burn is a major southern tributary of the Wear, joining its parent river at Frosterley. The Great Limestone, with its gentle eastward dip, is exposed in the valley bottom and sides for several miles.

In the lower part of the valley, half a mile above the confluence with the Wear, is the important Jacob's Well Cave (see MSG J1.3), now partly destroyed by quarrying. Several miles further up the Burn, upstream of the Stanhope - Middleton road, members of the Durham University Speleological Association have found three small caves, in the course of a series of visits to the area.

Bollihope Burn Resurgence Cave. N.G.R. NY 982350

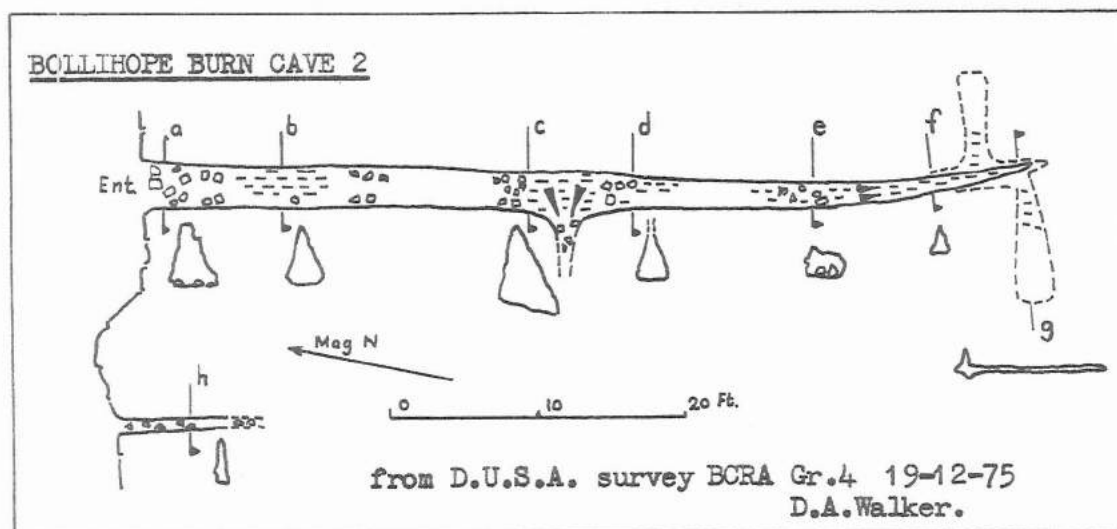
The further upstream of two resurgences on the south bank of the Burn, thought to be fed by sinks in the bed of the Burn half a mile further upstream. In the course of several visits during 1973 and 1974 DUSA members tunelled into the boulder ruckle here and exposed a low aqueous bedding. In the summer of 1974 the water level had dropped sufficiently to permit a wet squeeze to where the water issued from an impenetrable bedding on the r. A visit on 19-2-75 revealed that a large boulder had fallen and blocked the entrance again. Total length of passage gained was little more than 15'.

Bollihope Burn Cave 1. N.G.R. NY 978349

A small cave on the north side of the Burn, beside a small tributary. A small and not at all obvious entrance opens onto a squeeze into a 10' high aven chamber, with no continuation other than a tiny bedding. Length 10'.

Bollihope Burn Cave 2. N.G.R. NY 979349

On the south side of the Burn in a prominent scar, an obvious rift cave containing many sheep bones, and probably explored previously. A more or less straight rift passage, of triangular cross section, runs south, to close down abruptly after 55'. There are impassably low beddings to either side at the end.



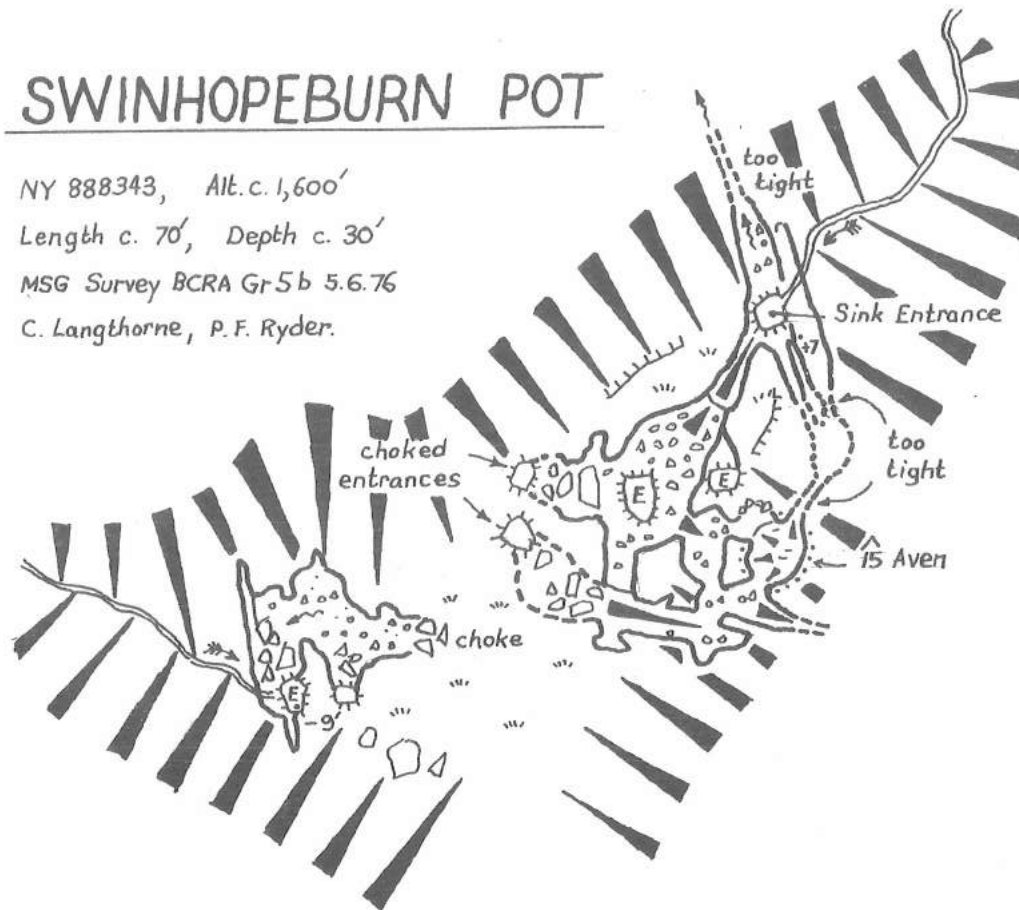
SWINHOPEBURN POT

NY 888343, Alt. c. 1,600'

Length c. 70', Depth c. 30'

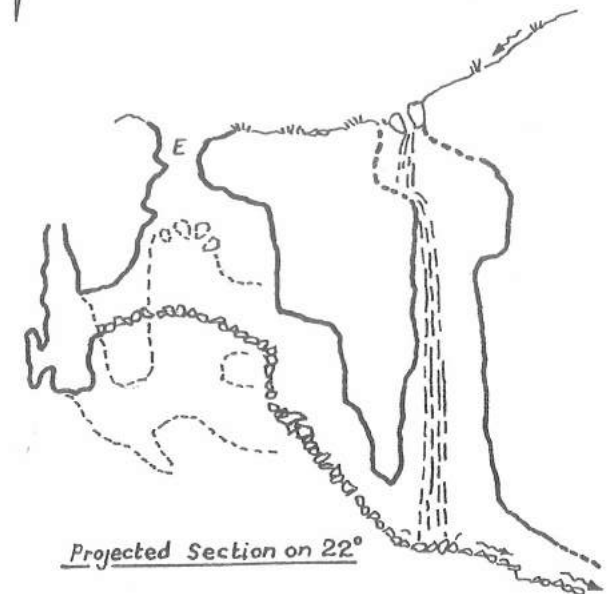
MSG Survey BCRA Gr 5 b 5.6.76

C. Langthorne, P.F. Ryder.



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Swinhopeburn Pots.

Another of the sites of interest found by the Errington brothers, these pots are situated in a long row of shakeholes and small sinks running along the bench formed by the Great Limestone outcrop on the north side of the Swinhope Burn, across the valley from Elph Cleugh and Swinhopeburn Caves.

Swinhopeburn Pot 1. NY 893348 Alt.c.1,600'.

This is situated in a large bouldery shakehole about 300 yards north of Swinhopeburn Cave in the valley bottom. The most obvious open hole in the base of the shake drops 12' (free climbable) into a chamber, with daylight entering from two more, half choked, entrances amongst the boulders. Narrowing descending rifts lead off from each end of the chamber, that to the south round a couple of bends to a crawl into a 15' high aven, and that to the north down a steep slide into a 30' aven, with a small stream splashing down from above. The top of the aven can be entered from the hole in which the stream sinks, at the east end of the shakehole, if a few boulders are removed.

The stream flows off from the base of the aven down a 3" wide rift, heading back into the hillside, with the dip of the limestone (the resurgence is as yet unknown). At the opposite end of the aven another aven or chamber can be glimpsed through an impassably narrow rift - this is probably the same cavity as that which can be seen along a similarly narrow rift opening from the 15' dry aven. Total length of the hole is 70', and the depth 30'.

At the west end of the shakehole is another entrance, dropping 9' into a low chamber 15' long, ending in a boulder choke, with the trickle of water which enters sinking into a rift a few inches wide, down which stones can be dropped for 15' or so.

Swinhopeburn Pot 2.

This is situated about 100 yards south-west of Pot 1. A 4' square hole in a shake, obvious from its cover of fence posts, opens onto a 30' ladder pitch, very earthy at the top, into a blind rift.

Swinhopeburn Pot 3.

If one follows the line of shakeholes north from Pot 1 for about half a mile, passing a few holes containing minor nooks and crannies, a small stream sink is reached, with a narrow descending passage accessible for 25' to a boulder choke, at a depth of perhaps 12'.

The Alston Area.

The Ayleburn Mine Cave - Recent Extensions.

A full description of this system, as then known, appeared in MSG Journal 3 (1970). The cave consists basically of a long streamway, intersected by mine workings. In 1970 the upstream passage from the point of entry from the mine workings had been explored upstream to within 500' of the sink, and downstream to a sump (MSG extending this downstream section in 1969, by 2,800'), a total length of over 4,800'.

During 1975, three separate further extensions were made to the system, the first being :-

The Far Upstream Passage.

When MSG members surveyed the Ayleburn system in 1969, the upstream limit of exploration and survey was a low wet bedding about 60' upstream of the end of the sandy oxbow.

In February 1975, Keith Errington, in his own words "out of sheer curiosity", crawled on along the low damp and wide upstream bedding. For some distance passage height was rather less than 1', although there is no real difficulty. The roof then rises again, and a pleasant section of passage is entered, a hands-and-knees crawl about 10' wide, winding round several bends, and decorated with some attractive formations. This easy crawl soon lowers again, to another flat out grovel, ending where the bedding forks, the stream entering from a constricted sump on the l., and a gravel floored bedding too low to enter, without digging. to the r.

Survey, in April 1975, showed the final bedding of the Far Upstream Passage to be only c.30' from the downstream limit of Ayleburn Pot, a similar half choked bedding - digging here might well allow a through-trip, and a "natural" entrance to the Ayleburn system. Total length of the Far Upstream Passage is c.300'.

The Dry Inlet.

When the upstream section of the Ayleburn Mine Cave was first visited and surveyed by MSG members, a dry "inlet" passage was noted on the r. (south) of the stream passage immediately beyond the boulder ruckle above the waterfall. Stuart Hodgson crawled c.100' up the inlet, finding it rather constricted, and no further attempt was made to explore or survey it.

On the 28th June 1975 the inlet was entered again, by Keith Errington and Kevin Solman, and pushed to a conclusion. An estimated 300' of narrow crawl was followed, with many sharp corners, through two squeezes, to end in a small chamber (c.4' wide and high, and 12' long), beyond which the tube continued, but was completely blocked by a fine display of formations, further progress would have meant massive vandalism.

The passage has not as yet been surveyed, and it seems possible that it may be a fossil inlet, or a long and complex oxbow to the streamway - the former seems more likely.

The Downstream Sump.

On 2nd November 1975, Jerry Murland, a member of CDG, made an attempt to pass the Downstream Sump, below Rumney Cavern, in the 1969 Downstream Extension. After a long and hard carry (the Erringtons acting as sherpas) he entered the sump. A constricted 25' dive led to airspace, a low and muddy canal, which after a further 55' sumped again. After a further 50' dive he turned back, due to equipment failure. At the time of writing a planned second attempt on the sump has not yet been made.

Foreshield Burn Caves.

Foreshield Burn is a northern tributary of the River Nent, about four miles east of Alston. The Burn divides into two feeders just below the outcrop of the Great Limestone, each feeder cutting a small gorge in the limestone. In each gorge is a small cave, surveyed in 1974 by the Erringtons.

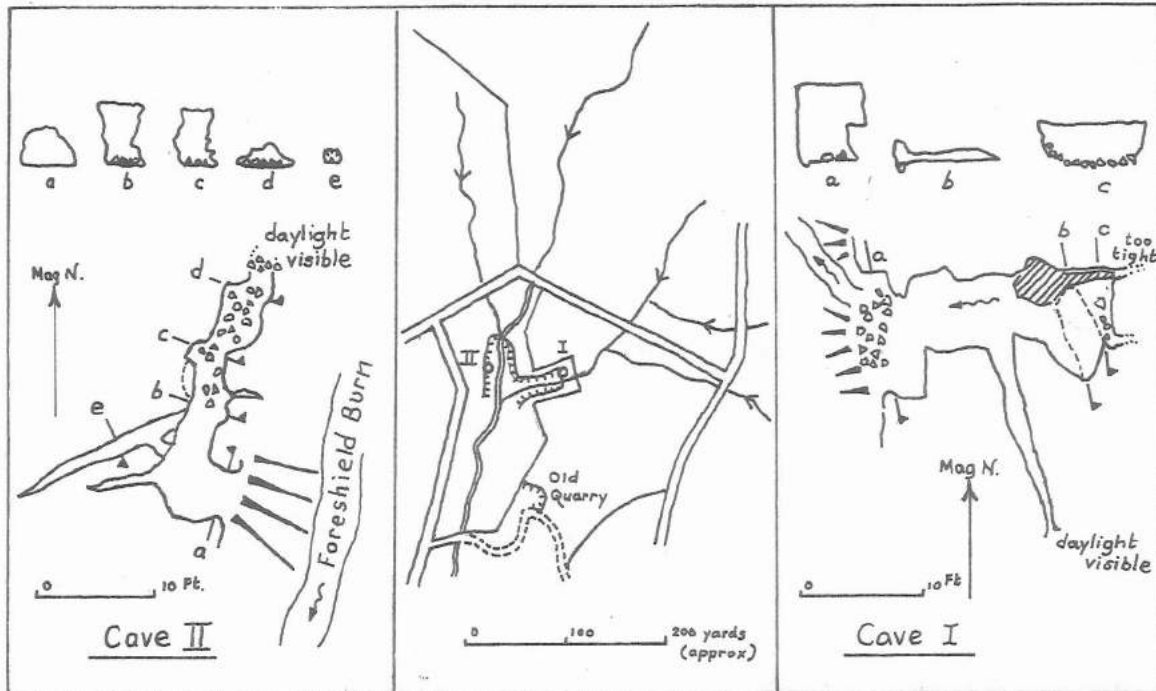
Foreshield Burn Cave 1.

At the head of the eastern gorge, the stream rises from a low bedding leading into a 6' high cross rift, with the water entering from impenetrable fissures - fed by sinks in the stream bed in the field above. Length 26'.

Foreshield Burn Cave 2.

In the northern gorge, 8' up on the south side of the stream just above a waterfall. A stooping height dry passage leads to a collapse where daylight is visible. Length 30'. Just upstream of the collapse are small risings fed by sinks further up the Burn - this water flow may have originally formed the cave.

Foreshield Burn Area - Sketch Plan



On the west side of the northern gorge, just below the waterfall, is a short old mine working which has the appearance of being a modified natural cave. Another short old mine level was dug into in the eastern gorge, and found to contain a magnificent display of gour pools and cascades - its entrance was re-sealed to discourage vandals.

Clargillside Caves.

In September 1975 Pete Jackson (of the Northern Cavern and Mine Research Society) told PFR of a cave entrance which he had noted in Clargill, some six miles south-east of Alston, whilst on a surface walk inspecting old mine workings.

On October 11th 1975 PFR and Stuart Hodgson, in the Hodgson landrover, visited the area, and after a brief search located the cave entrance - a few feet from the east bank of Clargill and rather less than half a mile west of the Alston to Middleton road, at NY 772367. The cave is developed in the Scar Limestone (the lateral equivalent of the Middle Limestone of the Askrigg Block) which here dips gently northwards, with the lie of the land, resulting in quite extensive areas of outcrop of what is quite a thin (c.30') bed.

A quick inspection of the area revealed two further entrances nearby, all part of the same system. A small stream flowing off the impermeable strata overlying the limestone sinks in a rocky shakehole about 50 yards from Clargill, and a line of collapse depressions mark the underground course of the stream running down towards the entrance originally noted, which obviously formerly functioned as a resurgence.

Two separate sections of stream passage were found to be accessible, the Upper Cave, entered at the sink and choking beneath the first of the collapse depressions, and the Lower Cave, running from the lower collapse down to the former resurgence entrance beside Clargill.

The Upper Cave.

Moving a few boulders in the sinkhole opened up a narrow passage, an easy 10' crawl to a junction. On the r., behind a large boulder, a small inlet stream entered from an impassably low bedding, heading in the direction of a shakehole about 30' away which was taking a little drainage from the boggy moor above. To the l. at the junction was the downstream passage, a flat crawl beneath a roof tube which was virtually choked with formations, mostly of "old and encrusted" appearance. After passing further small inlets on both r. and l. the passage ended in an earthy choke, beneath the surface collapse depression, with the stream sliding away to the r. into an impassably low bedding. A rough survey (bodylengths and compass bearings) showed the length of the cave to be c.80'.

The Lower Cave.

The main entrance, the obvious hole a few feet from the bank of Clargill, drops down into a 4' square passage where the stream is met, sinking in a narrow fissure to the l. Upstream, after a brief constriction (where the passage divides into a roof tube and a wider lower section, as seen in the Upper Cave), an easy crawl leads to a pile of debris and rubbish beneath a second entrance, a hole directly beneath the fence which runs parallel to the Gill.

A little digging in the rubbish pile here opened a route into the upstream passage beyond, an easy hands-and-knees crawl opening into a wide bedding chamber, with the stream following the l. wall round in a long curve, to end in a boulder choke, with chinks of daylight entering from the lower of the surface collapse depressions. Total length of the Lower Cave is c.70'

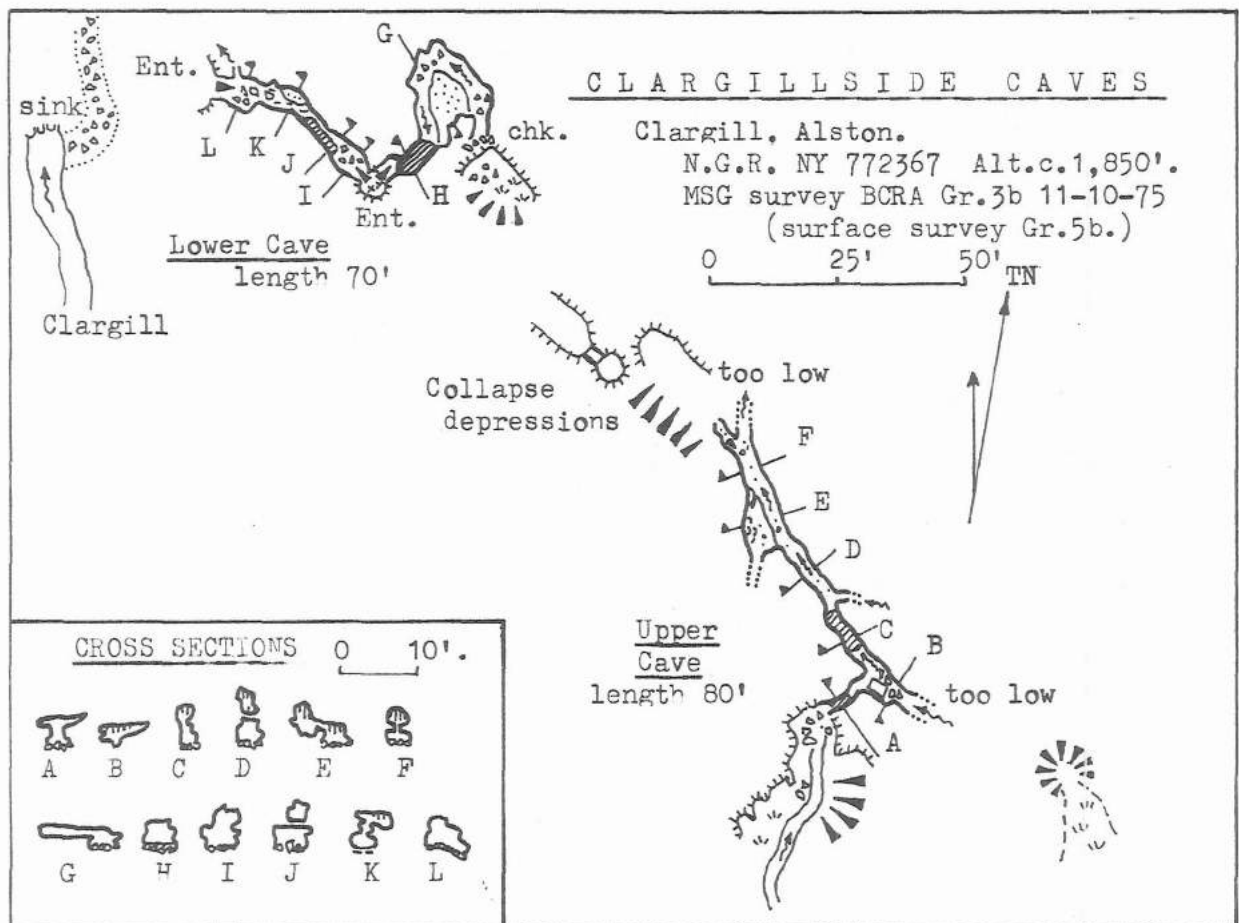
A gap of 70' separates the ends of the Upper and Lower Caves, but it seems unlikely that further accessible passage can be entered here.

The Development of the Caves.

Both Upper and Lower Caves show interesting evidence of a two-stage development, the initial stage being represented by the roof tube, and the second by the lower level bedding development. The two routes seem to part company at the downstream end of the Upper Cave, where the older high level passage ends in an earth choke. It is probably the collapse of this route that has resulted in the surface depressions, indeed, a "natural arch" remains between two of them, a relic of this passage

The stream which flows through the system now sinks just inside the main entrance to the Lower Cave, and the water doubtless joins that of Clargill itself, which, in normal conditions, sinks in choked fissures in its bed only a few yards from the Lower Cave entrance. This sink was rhodamine tested to a rising from a bank of earth and boulders a quarter of a mile or so further north, at the head of a gorge like section of the Gill.

It seems possible that the present Clargillside Caves may merely be the upstream section of a much longer system, which has been broken into and pirated by the downcutting of Clargill itself



Yad Moss Cave.

This recently explored system, situated at c. 1,960' O.D., is probably the highest cave of any length in the Northern Pennines. The cave drains an area of outcrop of the Scar Limestone to the south of Crook Burn, about quarter of a mile east of the Middleton in Teesdale to Alston road, virtually on the watershed between the valleys of the South Tyne and Tees.

The low bedding entrance, disgorging a small stream, is on the south side of the Crook Burn in a small limestone gorge, and had been noted by MSG members several years ago, but not thought especially promising. It was left to Tony Cansell, of the YURT, on New Years Day 1974, to enlarge the slit like opening by pulling away some turf and sods, and make the first entry. As with many caves, the initial impression was false - after a few feet of wet gravel the cave enlarged to a handsome walking size passage. Tony pursued this for a hundred feet or so, until it lowered to a hands and knees crawl. Exploration was resumed a fortnight later by Martin Davies and Nev Andrews (YURT and YURT/BACC respectively), who continued along the stream passage, digging through an outcropping mineral vein with their bare hands at one point, until finally stopped by a constriction 470' in.

Rather more than a year later (the YURT being preoccupied further afield) the cave was returned to, this time by the Errington brothers. They carried out a Gr.4 survey of the system, and then hammered their way through the terminal constriction, to allow access to another 150' of low streamway, ending in a blockage cemented with flowstone which defied even their engineering efforts. They contented themselves with an assault on the main sink which feeds the cave, which yielded 30' or so of constricted cave.

Yad Moss Cave consists of a single streamway running along the strike of the Scar Limestone, here dipping eastward at 10°-15°, and fed by a group of small sinks and shakeholes about 600' south-east of the cave entrance. The present limit of exploration of the streamway is a little under 200' from the Main Sink.

The low inclined bedding from which the stream resurges narrows to 15' of wet crawl, which suddenly emerges into a 7' high passage, in cross-section a tube with a vadose trench in the floor, the trench running into the entrance crawl, and the tube continuing for a few yards to a boulder choke which cannot be more than a few feet from the side of the gorge.

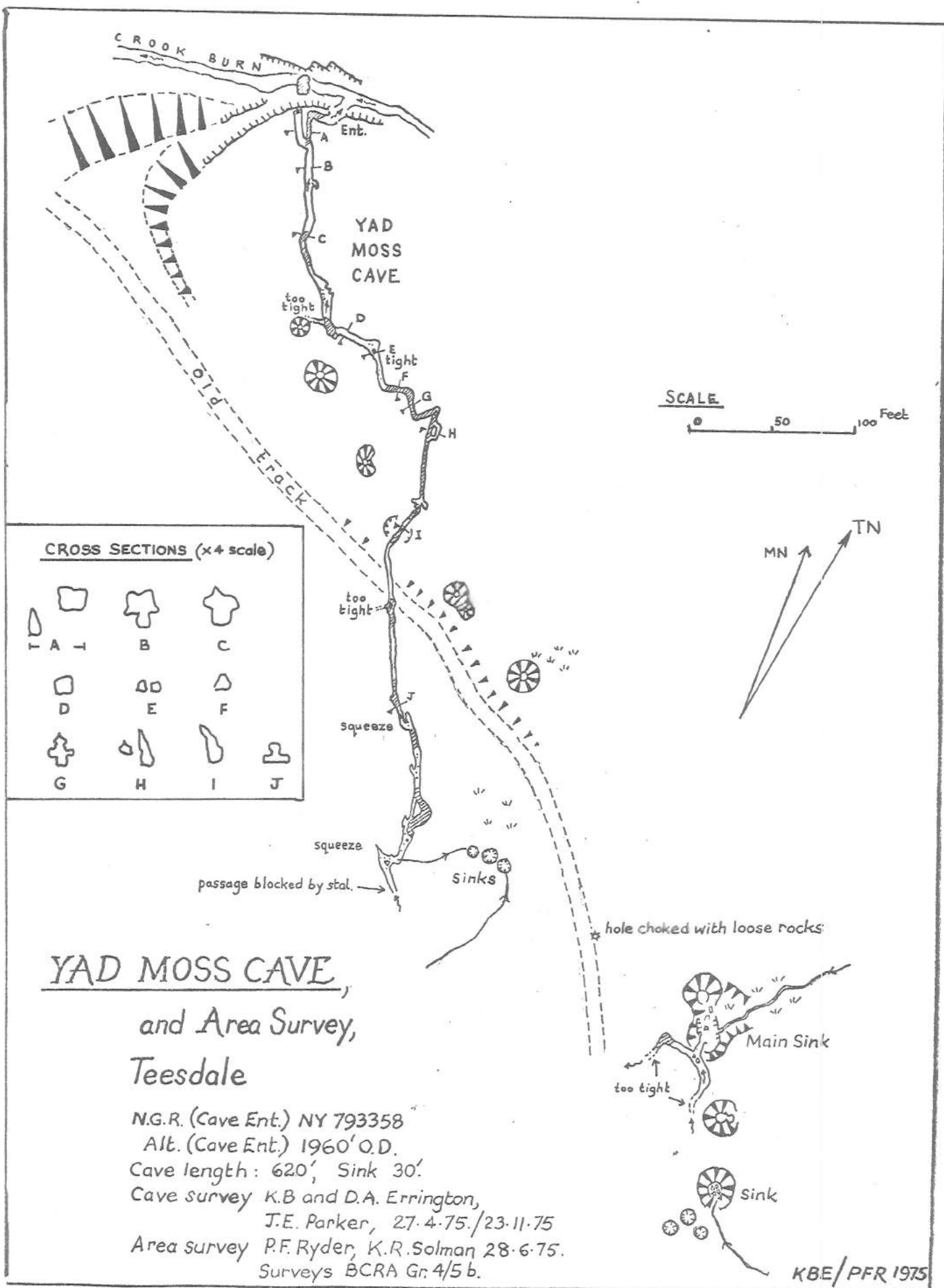
Upstream, the height of the passage decreases to a hands-and-knees crawl, with profuse formations (similar to those in Clargillside Caves, of "old" and encrusted appearance). After a little over 150' a constriction is reached, caused by a mineral vein crossing the stream passage. Beyond the passage is a long crawl, passing a small oxbow on the l., to a low squeeze, marking the beginning of the 1975 Extension.

Beyond the Squeeze, passing a pool and a shingle bank, a small but well decorated chamber is reached, with the stream entering through impenetrably small fissures. The way on is another squeeze, through an oxbow on the r. Further crawling leads to another squeeze, under broken stalactites, to where a fallen rock cemented with flowstone completely blocks the way on. Total length of the cave is 620'.

The sinks which feed Yad Moss Cave are found by following an old grass track southwards from the mouth of the gorge. About 500' from the Crook Burn this track passes a boggy area on the r., with three small peaty shakeholes - the present limit of exploration in the cave is about 20 yards west of these. Continuing along the old grass track for another 50 yards, a large shakehole is seen to the l. - this is the Main Sink.

In the base of the Main Sink shakehole is the constricted entrance to Yad Moss Sink Cave - a very narrow rift, with some danger from loose rocks, which drops into a small chamber. On the l. is an inlet passage, becoming too tight almost immediately, carrying a small stream probably derived from a shakehole about 100' south of the Main Sink. To the r. is a squeeze down into a downstream passage leading to a 90° bend where it divides into an impassably narrow rift and a low water filled bedding - a very thin determined caver might be able to make some progress here.

Yad Moss Cave is perhaps most interesting in that it shows that quite lengthy caves can exist in relatively thin limestone beds at high altitudes in the Northern Pennines - there are considerable areas where such conditions exist which have as yet not been examined by cavers. A full account of the Yad Moss system will appear in YURT Report 3, currently thought to be in preparation.



Tutman's Hole. N.G.R. NY 680460.

The remote resurgence cave of Tutman's Hole, high on the Gilderdale Burn some three miles west of Alston, was probably first explored by lead miners in the 18th century, and has been known to cavers for many years. In 1969 members of the Yorkshire Underground Research Team visited the cave, and made a survey of the system, in the course of which they found a 150' long inlet passage which had not been entered previously (see YURT Report 2, 1970). The upstream limit of exploration in the main stream passage at this time was a bedding with two or three inches of airspace above a foot or so of water floored by "quicksand". This point was still several hundred feet short of the sink in the bank of the Burn which was presumed to feed the cave.

Members of the Durham University Speleological Association took advantage of the dry summer of 1975 to visit Tutman's Hole, and manage to pass the upstream bedding, their efforts being rewarded by another 1,000' of passage, bringing the total length of the cave up to 2,050'.

Tutman's Hole is another of the Scar Limestone systems. From the roomy boulder strewn entrance chamber the stream passage continues as an easy walk, passing the constricted East Avens Inlet on the l., and then gradually lowering to a wet crawl, and the ducks which were the limit of exploration until 1975.

Beyond the two ducks the streamway bears l., into a stretch of passage running almost due south for 150', a hands-and-knees crawl in a shallow canal, hung with fine formations - Venice. At the end of this the passage turns r. and continues for another 300' or so of lowish going, with one low airspace section with a parallel, equally wet, oxbow (Perpetual Motion), to Turtle Chamber, with a 15' aven. Another 90' of streamway leads to a 'T'-junction. To the r. is a narrow passage, a former inlet, becoming too tight after 50' - this seems to be heading towards the Gilderdale Burn at a point a little over 200' downstream of the present sink. The main stream passage is to the l. at the Junction, and develops into a 12' wide bedding crawl, with some formations, for a little over 150', ending where it narrows and lowers to become impassable.

This point is a little over 150' east of the stream sink, a narrow shaft in the east bank of the Gilderdale Burn, where part of the Burn drops 8' and flows away down an impassably narrow rift.

Hunter's Hole. N.G.R. NY 659415.

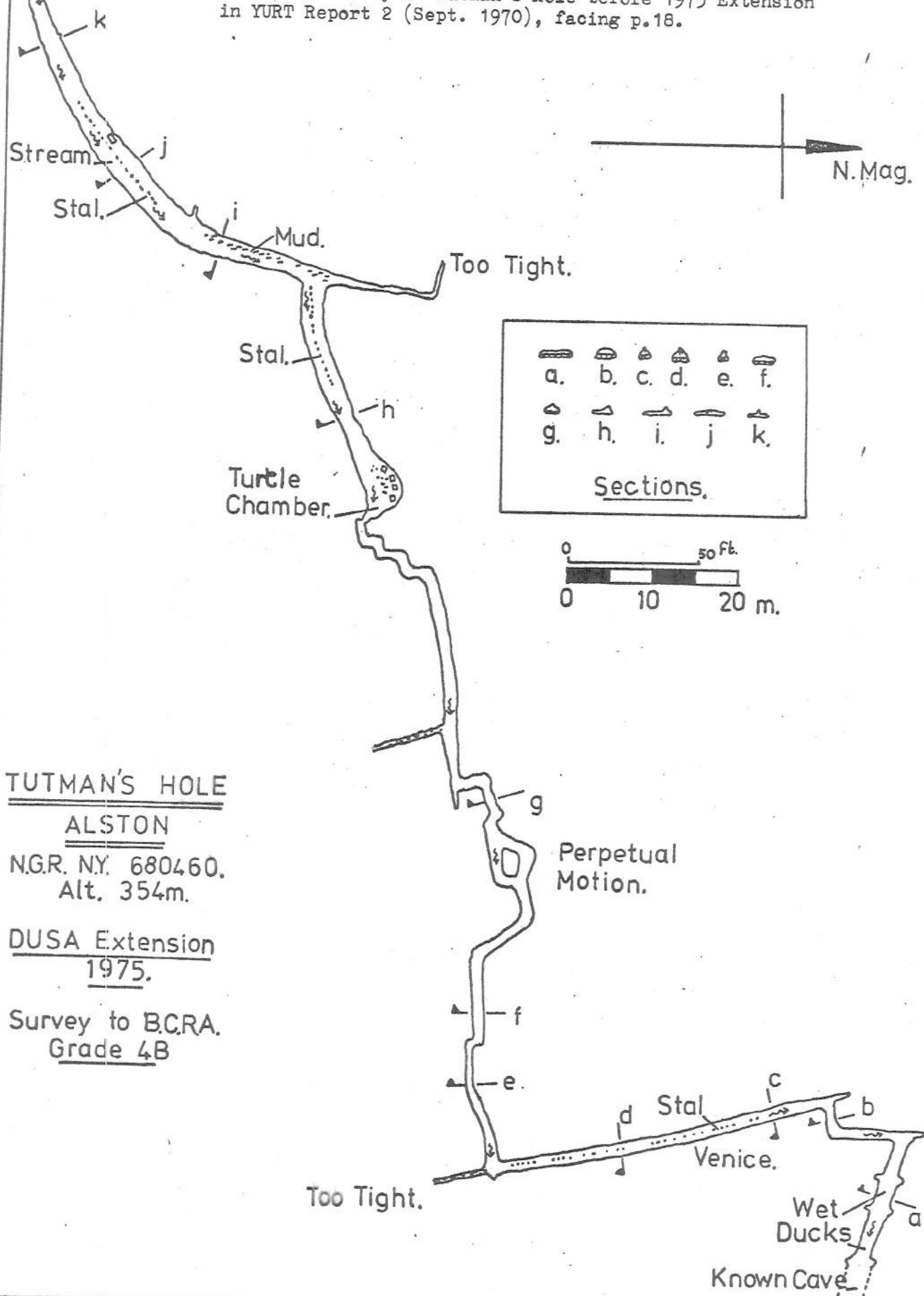
Hunter's Hole is a resurgence cave on the Rowgill Burn, half a mile's rough walk south of the Alston to Penrith road, and again is developed in the Scar Limestone. The short (120') but roomy cave ends in a spacious sump (see survey in MSG J1.3., 1970)

On the 1st November 1975, diver Jerry Murland, supported by the Erringtons visited this site, and entered the sump (which has a much more inviting appearance than most Northern Dales sumps). After an easy dive of 130'-140', in a roomy underwater passage with a large airbell midway, he surfaced into quite a large chamber, the main route on from which was a bedding inlet, becoming too tight after c.100'. A further examination of the cave is being planned.

Bedding Plane.

- 38 -

BCRA Gr.5 survey of Tutman's Hole before 1975 Extension
in YURT Report 2 (Sept. 1970), facing p.18.



TUTMAN'S HOLE

ALSTON

N.G.R. NY. 680460.

Alt. 354m.

DUSA Extension
1975.

Survey to BCRA.
Grade 4B

Vale of Eden Area.

Swindale Pots.

MSG members have paid two recent visits to Swindale Pots, an interesting group of sinks and small pots in the Main Limestone above Brough, on 26th August 1974 and 31st May 1975, descending five pots requiring tackle, and some smaller holes. We make no claim to having "worked out" the area, only to have looked at the more obvious open holes.

The Swindale area has been a focus of MSG attention for some years (see MSG J1.2, 1968). The three holes at Cross Pot, half a mile north-west of Swindale Pots, have been described previously (see MSG J1.7, 1974, pp.6-9).

Approaching Swindale Pots from the gate at the corner of the walled lane, quarter of a mile from the Middleton to Brough road, the various holes so far examined are :-

(1) West Pot.

In a shakehole south-west of the main (west) sink, and taking the water from several small "gripping" ditches. A roomy rift drops 30' to a broad ledge, then a narrower 10' pitch onto a slope down to where the water sinks in impassably narrow fissures. Total depth is about 50'.

Tackle - 50' ladder, 20' belay, 60' lifeline.

(2) West Sink.

At the head of the elongate bouldery depression, where a small stream cascades down over gritstone ledges to sink in gravel. To the r. of the sink a tight rift drops 10' to a 20' long crawl, to where the water entering sinks into a gravel choked bedding.

(3) Blackbone Pot.

Two shakeholes south of the West Sink. There is a roomy chamber beneath and amongst the boulders glooming the shake, but the Pot itself is entered through a squeeze down over a boulder on the east side of the depression.

Descending rift to a 30' ladder pitch, takeoff being over a rather dubious chockstone, landing in an impressive chamber, on the far side of which a 6' climb up leads into an eyehole into a parallel shaft, 15' pitch to floor (the ladder can be pulled to across to use on this second pitch without rebelaying). A very narrow meandering rift leads off - has been forced for 10' but becomes very constricted, but draughts noticeably, and running water audible somewhere ahead. Total depth 65', length 50'.

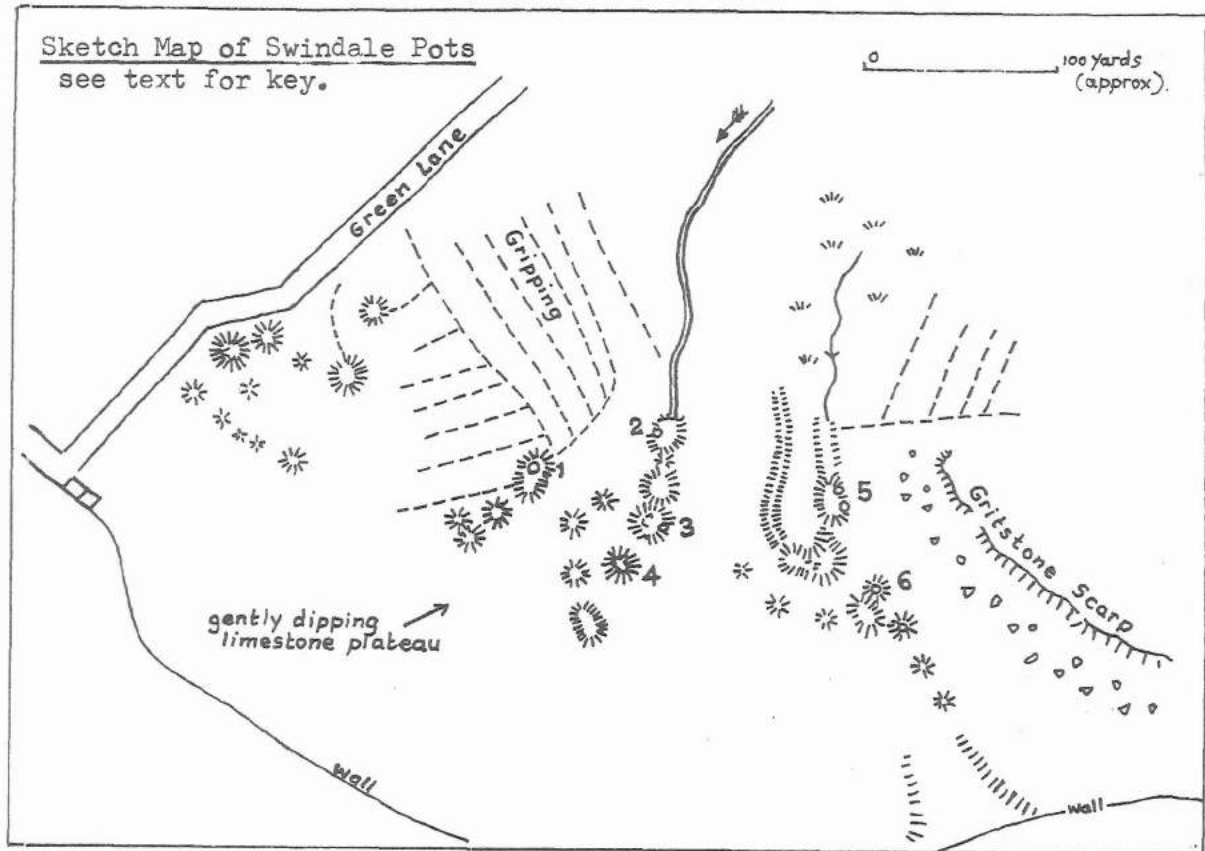
Tackle - 60' ladder, 20' belay, 80' lifeline.

(4) Gate Pot.

South again, at the end of the row of shakes associated with the West Sink. Squarish open pot 15' deep, easily scrambled down, with old gate lying in the bottom. At the north end a 10' deep narrow rift (continues down but too tight) but the main route is an obvious large rift. 24' pitch onto mound of decaying sheep, straight ahead is a boulder choke, but back beneath shake is a ruckly chamber and a further hole down to a choke. Total depth 40' below floor of open pot, 55' below moor.

Tackle - 30' ladder, 20' belay, 50' lifeline.

The West Sink stream probably originally sank at Gate Pot, but as the plateau surface has lowered by erosion, the sink has retreated down dip (northward), through Blackbone Pot to the present sink.



(5) East Sink Pot.

The East Sink takes a smaller stream, merely drainage from a marshy area and some more gripping. The water sinks into a boulder ruckle, but against the east wall of the sinkhole are two narrow slots, the entrances to East Sink Pot.

Each slot is a 30' ladder pitch into a rift running parallel with the edge of the sinkhole. At the foot of the south shaft the rift opens into a chamber with a hole between boulders in the floor allowing a glimpse of a black void beneath. This is more easily reached via the North Entrance Shaft - a hole in the floor of the rift here leads to a slope down and a final 10' drop to the floor of the impressive Main Chamber. An 8' climb leads into another part of the Chamber, with an impassably narrow flood sink exit.

Total depth of the Pot is c.60', length c.100'.

Tackle - 60' ladder (North Entrance), 20' belay, 100' lifeline.

(6) Blackbird Pot.

A few yards south of the shakehole complex around the East Sink (which contains one or two minor holes as well as the main pot) is a large bouldery shake, with two smaller holes adjoining to the north-east.

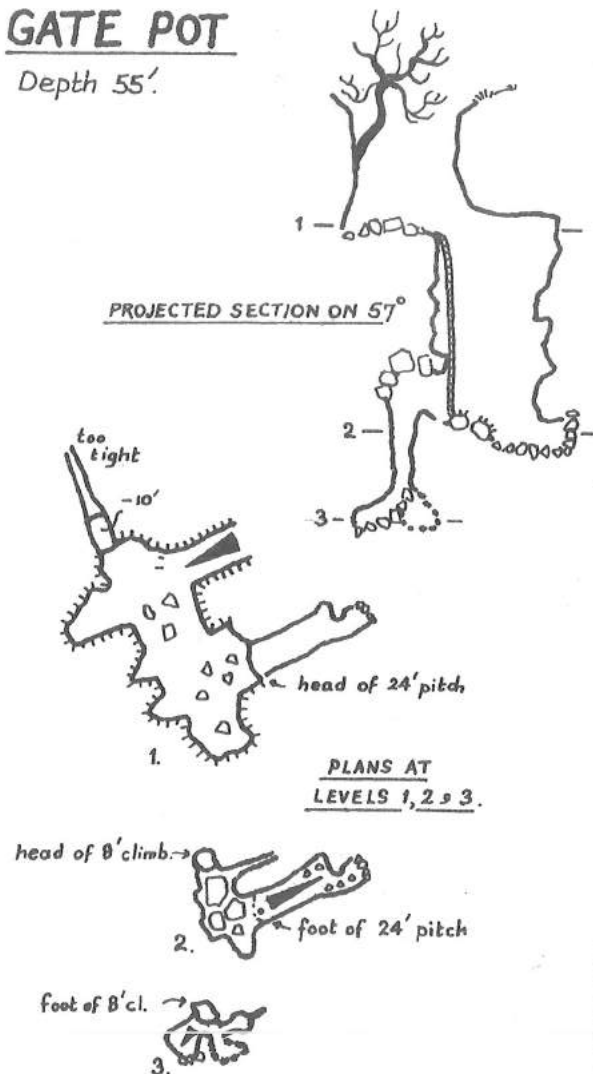
In the northern of these two holes two small entrances drop 10' into a roomy semi-daylight chamber. The northern entrance is the easier. From the chamber a 35' ladder pitch leads to 20' of rift passage, becoming too tight. Half way down the pitch one can step off the ladder into a chamber beneath the entrance chamber. Total depth is c.50'.

Tackle - 40' ladder, 20' belay, 50' lifeline.

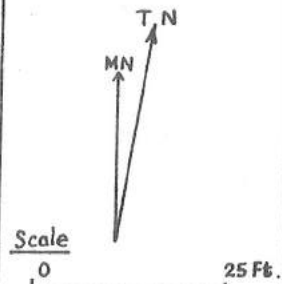
In the southern of the two shakeholes, a few yards from Blackbird Pot, is a narrow 25'-30' shaft - this was not descended.

GATE POT

Depth 55'.



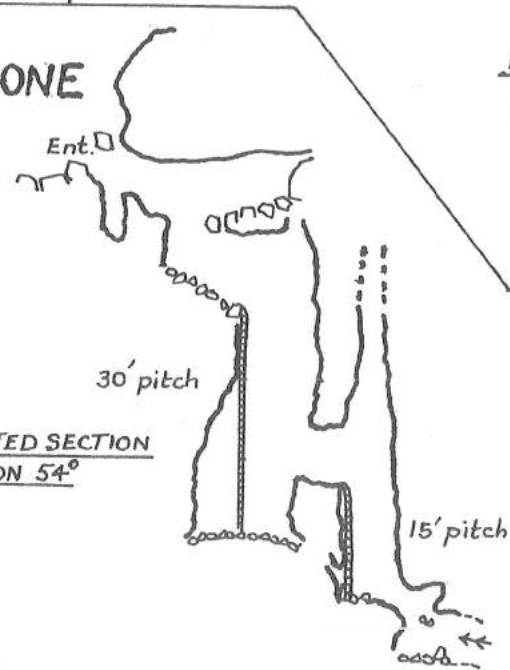
BCRA Gr. 2/3 Sketch
Surveys 1974/5



BLACKBONE POT

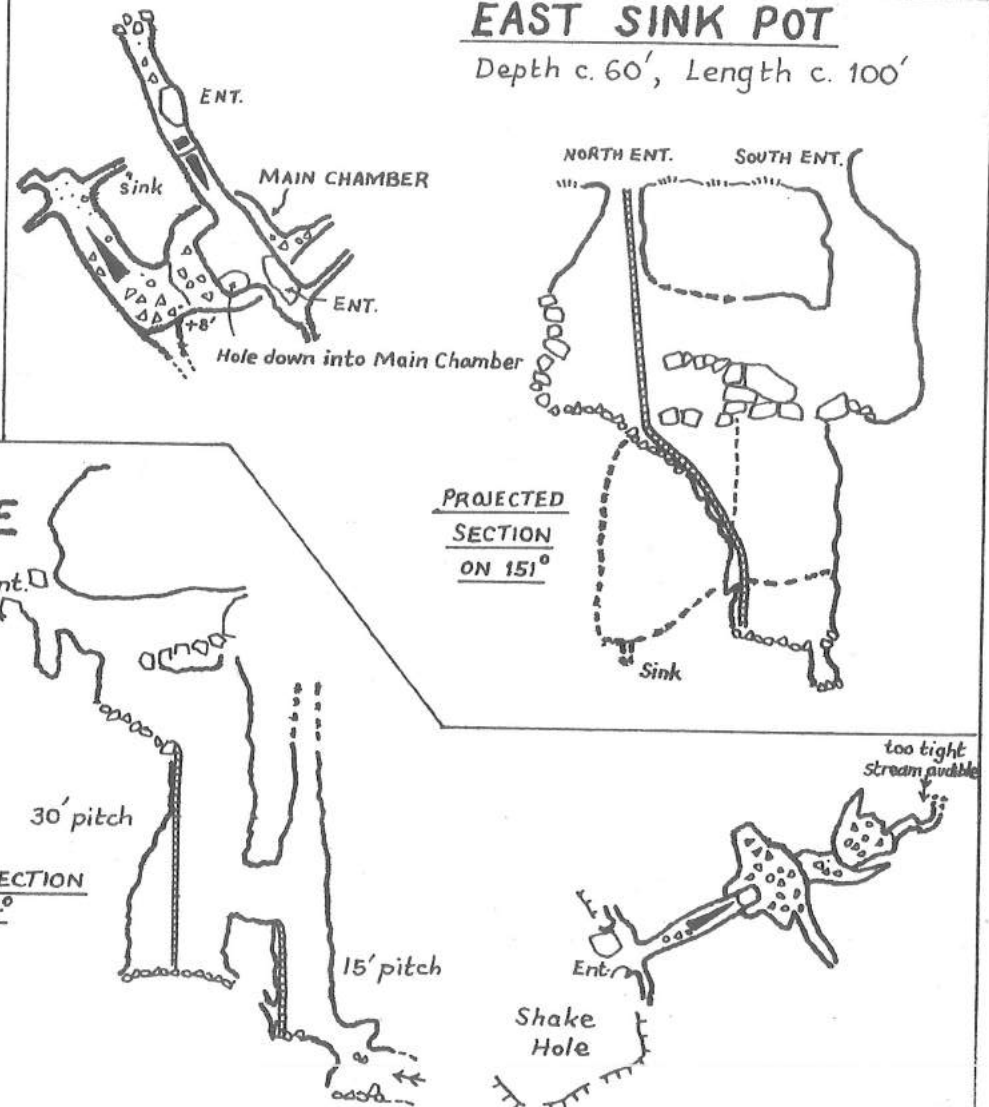
Depth 65'
Length 50'

PROJECTED SECTION
ON 54°



EAST SINK POT

Depth c. 60', Length c. 100'



Smeltmill Beck Cave.

In the last MSG Journal (No.7) a "definitive" account of Smeltmill Beck Cave was published - this, of course, was fatal. On the next MSG trip into the system, in "high flow" conditions, assorted observations as to where the various streams entered the system were made, which demand a total rethink as to the hydrology of the system. This work has not yet been completed.

Also on this visit to the cave yet another new inlet was found, on the eastside of the Main Streamway between the end of Red Deer Rift and the Main Junction. At the time of writing, much hammering and squeezing has gained 60' or so of constricted passage - work continues. Future MSG publications will doubtless reveal more of the Smeltmill Beck story - an ever continuing saga since the earliest years of the MSG.

Badger Cave. N.G.R. NY 858132 Alt.c.1,100'.

In 1968 MSG members inspected an area of Main Limestone scarp on the south side of the Argill Beck valley, a little over a mile south of Smeltmill Beck Cave. In the Wooded escarpment above the farmhouse of Rampson, the 65' long Scroggy Bank Cave was found. A second cave was noted, a few hundred yards further east, but obnoxious odours, coupled with a suspicion of lurking badgers, precluded exploration.

As with all such minor but unexplored holes, the "promise" of this site grew in the imagination as its memory faded, and a return was eventually made, en route to Lunehead, in late autumn 1975.

Elaine Wells, clad in a brand new goonsuit, was enticed into the entrance (which is situated in a prominent cliff about 80 yards west of a sizeable but impenetrable rising), to find the passage almost blocked by straw - strange. Grovelling through this, she encountered a tight squeeze over glutinous mudbanks, and retreated. PFR, in "non-caving" gear, then took over the assault, and forced a filthy grovel for 25' or so to a small chamber, with a very tight fissure straight ahead and what appeared to be the main route to the l., a mud slope down into a bedding passage. The mud contained old rubber gloves and other debris, which was rather puzzling (unless discarded by badgers, which are reputed to be scrupulously clean creatures, and may, like cavers, wear rubber gloves for caving).

Discretion prompted an exit. However, the cave was dubbed "very promising" (it was heading in the rough direction of the rising), and a return was made a month or so later. PFR, more properly equipped, was again the spearhead of the party (i.e. the only one to actually enter the hole) - but alas, the bedding proved too tight. A attempt at feet-first "digging" only succeeded in disinterring some large plastic sheets (more evidence of badger's home-making?) and blocked the constricted passage completely.

Verdict - an unpleasant little cave, 35' long.

Badger Cave - Sketch Plan.



Stenkrith Caves, Kirkby Stephen.

The caves in Stenkrith Park, Kirkby Stephen, seem to have escaped the attention of cavers for many years, probably because of the (logical) tendency of cavers to concentrate their attentions, as regards looking for new caves, on limestone areas. The Eden Valley in the Stenkrith area is not cut in limestone, but in an unusual rock type known as Brockram, a Permian breccia, which was laid down as a series of scree and debris fans at the foot of the fault scarp, then recently uplifted, of the Pennines, in a desert valley far removed from the fertile Vale of Eden of today. The Brockram consists of angular limestone fragments, the debris from the Carboniferous limestones of the Pennine massif, set in a matrix of red sandstone. Thus a high percentage, by volume, of the rock is in fact limestone, and in the river gorge in Stenkrith Park it does behave, geomorphologically, much as a true limestone, with the development of subterranean drainage systems, and other karstic features.

Situation

The main road from Kirkby Stephen to Nateby, about $1\frac{1}{2}$ miles south of Kirkby Stephen, crosses over the River Eden at Stenkrith Park. It is easy to drive across the road bridge without suspecting the existence of the deep and narrow gorge beneath, where the Eden cuts through the Stenkrith Brockram, parts of the river passing underground through a variety of passages and fissures, and the remainder spiralling down rapids and cascades into the deep pools at the lower end of the short gorge.

The two main caves are situated directly beneath the road bridge, one on each side of the river. Further upstream, beyond the railway bridge a few hundred feet west of the road bridge, the gorge widens out again to a broad valley. There are one or two small caves and fissures between the road and the railway bridges, and upstream of the latter, but none have so far been penetrated for more than a few yards - the longest is a dry cave on the east side of the Eden just upstream of the railway bridge. Only accessible by wading or swimming, this cave consists of a single quite sizeable passage ending in a shingle choke after c.30'.

Exploration.

The cave system on the north side of the gorge, with its several obvious entrances, must have been known to local people for many years, and its relatively easy passages pose no problems to amateur explorers when the water levels are low. The cave was first brought to the writer's notice by Martin Davies of the YURT, who visited it in the course of gathering material for 'Northern Caves'. An article describing the cave (as "Stenkrith Cave"), along with a rather inaccurate sketch plan, appeared in 'Descent' No.25 Sept/Oct '75. The local name for the system, "The Devil's Grinding Mill", has here been preferred.

The writer first visited the caves on August 9th 1975, in the course of an afternoon drive with non-caving friends. It was a hot sunny day, and the cave entrances proved an invitation impossible to resist, old clothes and a lamp just happening to be in the car boot. The Devil's Grinding Mill was explored, and then a resurgence on the opposite (south) side of the gorge noticed, about 10' above river level.

The resurgence proved to be from a low bedding, with a roomier hole just above it, dropping into the stream. This was entered, and 300' of passage explored, to a partial choke of flood debris. No mention of this cave had appeared in print, and Martin, when contacted, admitted having noticed the resurgence but not having had a close look. In any but low water conditions the initial wet bedding might prove somewhat intimidating, and the cave, whilst possessing no serious obstacles, is certainly more constricted and less inviting than the Devil's Grinding Mill opposite, so it seems possible that a new exploration had been made. The system was named Millrace Cave.

STENKRITH CAVES

Stenkrith Park, Kirkby Stephen.

N.G.R. NY 773076. Alt. c. 600'

DEVILS GRINDING MILL: Length 730'

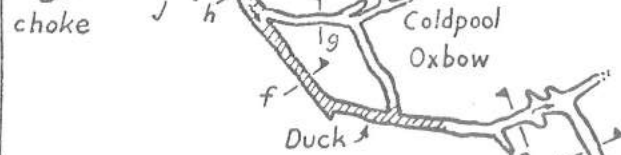
MSG Survey 20.9.75 BCRA Gr 4/5 b.

MILLRACE CAVE: Length 360'

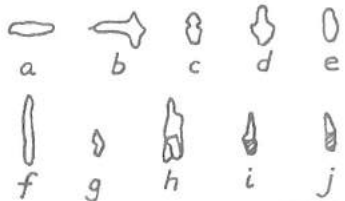
MSG Survey 23.8.75 BCRA Gr 4 b.

P.F. Ryder, K.R. Solman, G. Stevens, E.L. Wells.

c. 120' to sink in E. bank River Eden
tested 1-11-75 (pyranine)

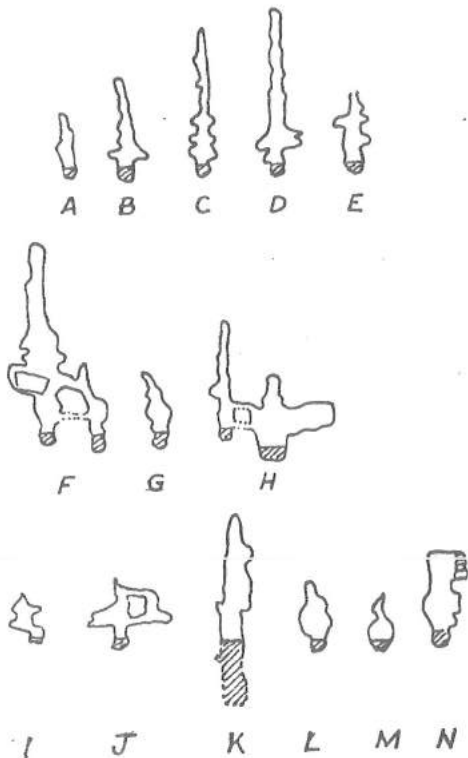


MILLRACE CAVE, CROSS SECTIONS



MILLRACE CAVE

DEVILS GRINDING MILL, CROSS SECTIONS



Runnel
Ginnel

road
bridge

too
tight

RIVER
EDEN

RIVER
EDEN

Sink

choke

Ent.

Ents.

Ent.

tested

sink

Scale (Plan)

0 25 50 75 Feet.

Scale (Cross Sections)

0 25 Feet

tested 1-11-75
(rhodamine)

DEVILS
GRINDING
MILL

too
tight

Three further visits during the autumn of 1975 saw the remainder of Millrace Cave explored (by Kev Solman and Graham Stevens), and both systems surveyed. A little water tracing sorted out, to some extent, the hydrology of the area. The massive iron girders of the railway bridge frustrated an attempt to carry out a survey of the river bank between Millrace Cave and its sink, deflecting the compass needle by almost 180°.

Description of the Caves.

The Devil's Grinding Mill.

This cave consists basically of four major rift-like passages running roughly parallel with the side of the gorge, connected by shorter passages running at right angles, passage length totalling 730' in all. Above the waterfalls where the river gorge turns north, all four major passages intersect with the gorge side. When visited, only the southernmost of the passages was enterable from the gorge here, the other three being totally choked with tree trunks, old oil drums and the other miscellanea which a river brings down in flood times.

The Devil's Grinding Mill has three entrances, the sink mentioned above, and two resurgences, one directly into the river gorge, and the other at the east end of the longest of the parallel rift passages - an almost straight rift 160' long, developed on a major joint which controls the line of the gorge side for several hundred feet above the cave.

The parallel rift passages have their floors at a level perhaps 10' above that of the gorge outlet, into which the water falls as a pair of cascades, most impressive in high flow conditions. The passages in the system are typically high (10'-15') and narrow (2'-3' wide at the base, but narrowing upwards). The only passages to show a slightly different cross section is that from the Sink Entrances, which is more tubular beneath a narrowing roof rift. Most of the passages are wet, but the water is rarely more than knee deep, except in the gorge outlet passage below the cascades, where it deepens to over 6'.

Most of the water entering the cave from the various sinks at the head of the gorge flows via the cascades to the gorge outlet, but there is a small flow along the longest rift passage to its exit, at the foot of a low cliff in the Park, some distance from the river bank. A few feet from this entrance is another small rising, from a narrow rift passage which is accessible for 25' as a tight sideways crawl, to where it splits into impenetrable fissures. A sink in the north wall of the gorge a few yards upstream from the sinks for the main cave has been tested to this rising, the flowthrough time (in "normal" flow conditions) being about 1½ hours.

The combined streams from this little cave and the adjacent entrance to the Devil's Grinding Mill flow southwards through the Park for 50 yards or so, and then sink in a choked depression, the water resurging again 50' away, from impenetrable beddings in the river bank.

Millrace Cave

On the opposite side of the Eden to, and about 40' upstream of, the gorge outlet of the Devil's Grinding Mill, a stream emerges from a low bedding 10' up the cliff. The resurgence bedding is enterable but tight, and an easier entrance to the cave is through a small hole a few feet above. The two entrances join in a wide but low bedding, with over to the l. an impassably narrow rift running back to daylight in the gorge side.

The bedding slopes upwards for 30' or so, to where the stream spills out over the lip of a pool, and the passage changes character to a more tubular cross section, of about 4' diameter, and runs straight for 80', rising

steadily up a series of rapids and small cascades. This passage, "Runnel Ginnel", ends in a T-junction, with on the r. a narrow rift becoming too tight within a few feet, and on the l. the upstream passage, an easy hands-and-knees crawl for 35' to another junction. Straight ahead is a wet crawl, with a stalgmite flow coming down to within a few inches of the water level to form an easy duck, and to the r. a step up of a foot or so from stream level leads into Cold Pool Oxbow, an easy 40' long crawl, curving round to rejoin the streamway once more, and passing a branch on the r., which divides into two narrow and debris choked fissures which are probably only a few yards from the river bank outside.

Cold Pool Oxbow rejoins the stream passage in a small chamber with a large fallen block, one of the few places in the cave in which it is possible to stand upright. Beyond, the streamway narrows again, and becomes a rift with deepening water, ending 50' from the chamber, where the rift above water is totally choked by flood debris, the stream appearing to enter at some depth below the water surface - water depth here being in the region of 6'.

The end of Millrace Cave is c.120' from a sink (beneath a grassy bank, at a point where no rock is exposed in the riverbank) which was tested to the cave, the flow through time for the dye from sink to cave entrance being $1\frac{1}{4}$ hours.

Total surveyed passage length of Millrace Cave is 360'.

Development of Stenkrith Caves.

One of the most striking features seen on the survey of the systems is the parallel nature of the major passages in both systems, three of the major rifts in the Devil's Grinding Mill and Runnel Ginnel in Millrace cave being orientated on between 47° and 54° . The fourth (Sink Entrance) rift in the Devil's Grinding Mill, and the streamway in Millrace Cave between the duck and the chamber at the far end of Cold Pool Oxbow, are aligned on 62° and 48° respectively. The proven connection between the riverbank sink just upstream of the Devil's Grinding Mill sinks, and the rising beside the Lower Entrance of that cave, suggests that another parallel hydrological route may be developing.

The majority of the passages in both systems appear to have developed as the result of rapid vadose downcutting, which is still continuing - in flood conditions most of the passages contain a considerable depth of fast flowing water. The only passages to show any possible evidence of a phreatic stage of development are the Sink Entrance passage of the Devil's Grinding Mill, and perhaps parts of Millrace Cave.

The Stenkrith gorge is apparently of Post Glacial origin, and it seems likely that the majority of the passages in the two caves are an even more recent development. The parallel nature of so many passages may result from the initial opening of a set of major joints by pressure release, following on the incision of the deep and narrow gorge. The invasion of the opened joints by the Eden, and consequent vadose modification, would soon follow, a process which appears to be still continuing.

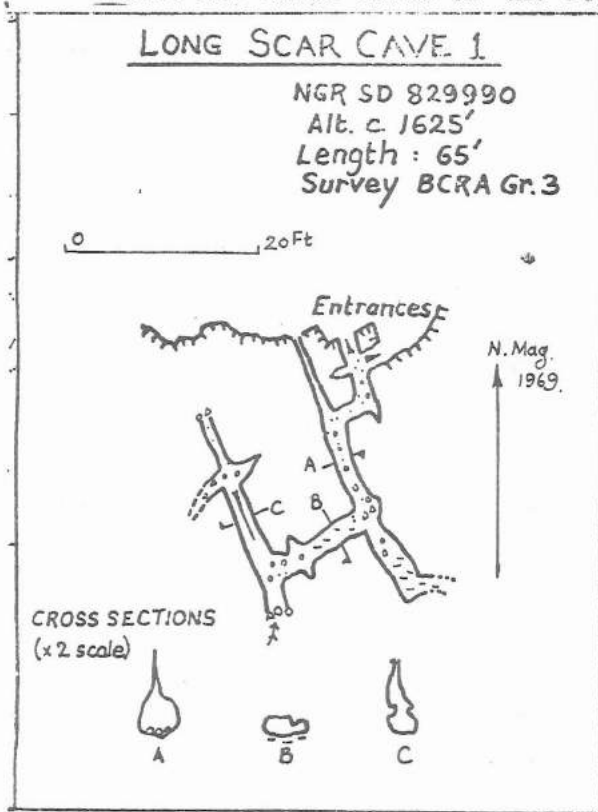
Evidences of phreatic solution, which would suggest that at least parts of the cave systems pre-dated the cutting of the gorge, are problematical, and possibly the nature of the rock type would preclude this type of development. If this is the case, it would seem unlikely that cave systems will develop in the Brockram other than where there has been a mechanical opening of the joints, allowing the ingress of aggressive vadose water (as is suggested in the case of Stenkrith Caves). Further work is needed to examine all areas of Brockram outcrop and assess the degree of karstic development, before the extent to which it behaves as a "true" limestone can be understood.

Swaledale Area.

Long Scar Caves, Great Sleddale.

The isolated and remote area of Main Limestone outcrop at the head of Great Sleddale Beck, one of the headwaters of the Swale, had been visited by MSG members previously, but as usual, some "loose ends", in the form of two resurgence caves at the foot of Long Scar, beside Great Sleddale Beck, remained to be tied up. A return visit to the area was at last made in the late summer of 1975, and as usual, no spectacular discoveries were made.

There are three caves as the foot of Long Scar, here numbered from east to west.



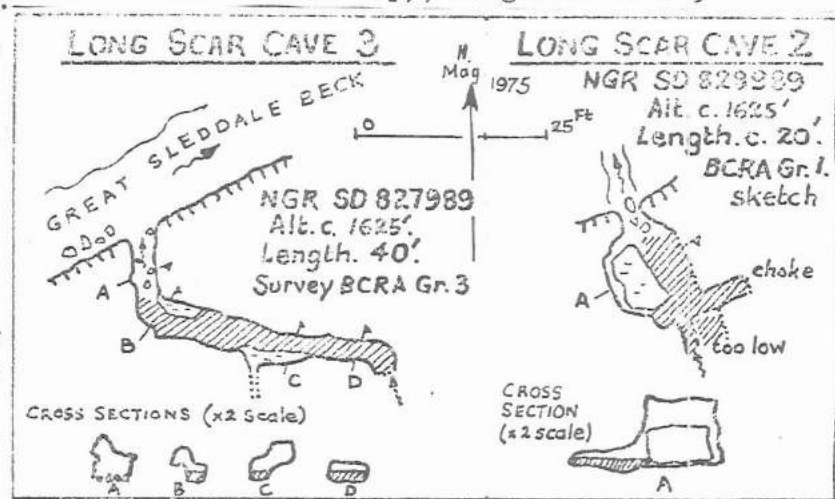
Long Scar Cave 1 - probably a fossil resurgence, with two tube-like entrances near the east end of the Scar. 65' of dry crawly passages in all, with no real prospect of extension, except perhaps a choked hole at roof level at the southernmost point in the system, which draughts strongly.

Long Scar Cave 2 - several hundred yards further west, at the foot of a dry valley running down from Great Sleddale Pot (an impressive sink/pot, 82' deep - see MSG Journal 4 - the spacious nature of which contrasts sharply with the constricted grovels of the resurgence caves). The water resurging here is probably that from the Pot.

The small entrance chamber is mostly occupied by a large fallen slab, obstructing the way into the watery bedding visible beyond. A route through silt banks alongside the slab was eventually excavated,

and a damp squirm allowed access to the bedding - which promptly shut down to 4" high! A passage to the l. was totally choked almost immediately.

Long Scar Cave 3 - continuing west from Long Scar Cave 2, the sheer face of Long Scar, which appears to be developed along the line of a mineralised fault, drops straight down to the side of the Beck. Just before an embayment in the Scar, housing an old copper mine (shaft flooded 10' down, good specimens of azurite can still be found on the tip), Long Scar Cave 3 is found, with a small arched entrance at stream level, with a small stream emerging. 40' of aqueous crawl, with no room to turn round, leads to the end, where the roof suddenly drops down, and the water appears to emerge from inch high beddings. Examination of the Scar outside, which the course of the cave roughly parallels, shows a disturbance of the strata at about this point - the cave probably ends at a minor fault. The source of the cave stream is not certain.



EAST GILL CAVES 2 & 3

Keld, Swaledale. N.G.R. NY 897020 Alt.c.1,275'.

Cave 2. Length 490'.

Cave 3. Length 30'.

MSG Survey BCRA Gr.4/5b. 1975

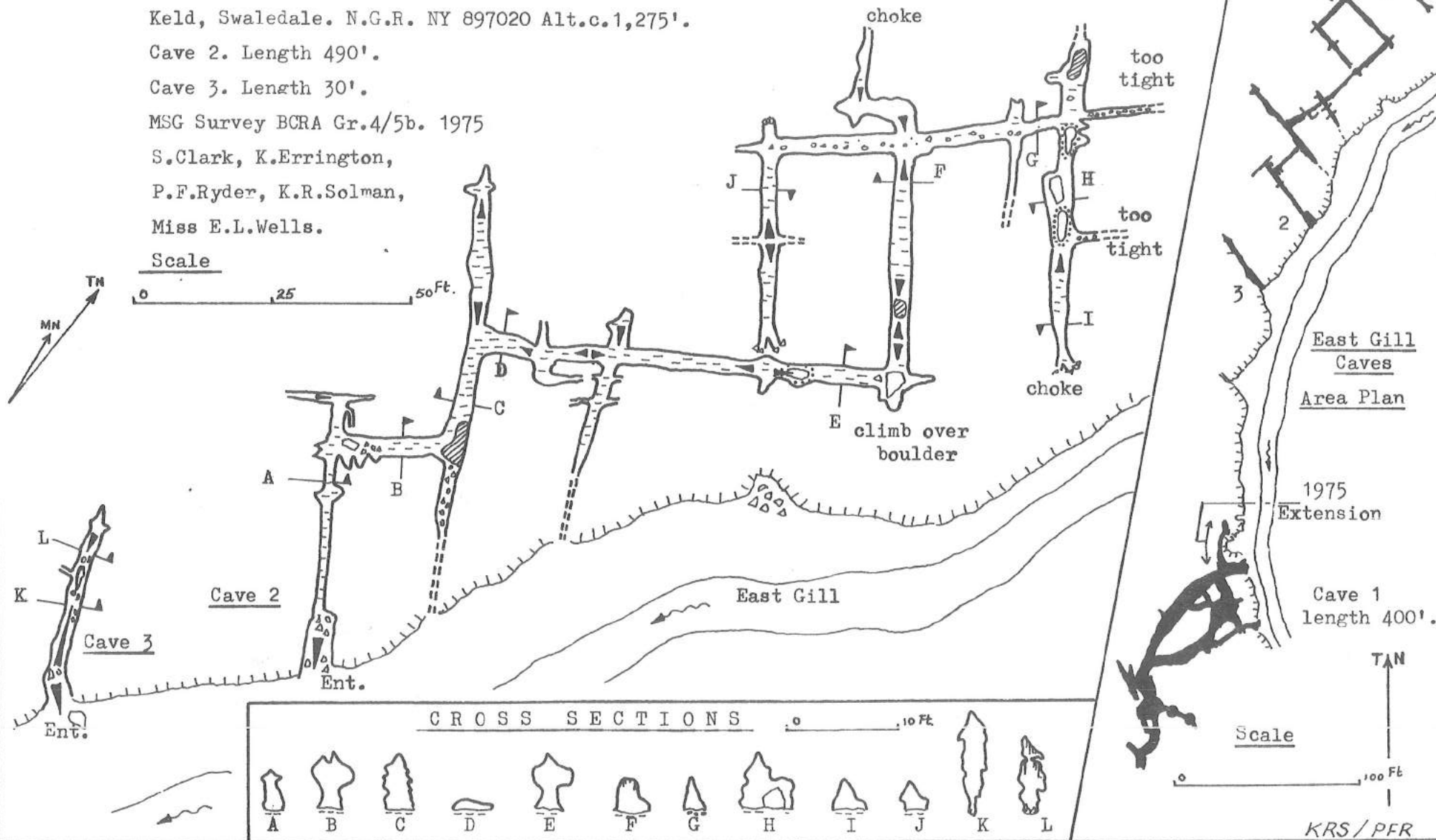
S.Clark, K.Errington,

P.F.Ryder, K.R.Solman,

Miss E.L.Wells.

Scale

0 25 50 Ft.



East Gill
Caves
Area Plan

1975
Extension

Cave 1
length 400'.

Scale

0 100 Ft.

KRS/PER

Windegg Mine Caverns.

Windegg has recently been visited to tidy up some of the loose ends from the 1970/71 survey (see MSG Journal 5). We were pleasantly surprised to find instead of the old shaky entrance shaft a superb plastic tube down which to slide (and from which to struggle, or even fail to escape - a 10' ladder is best). Dave Carlisle of E.M.R.G. was responsible for this excellent job.

The mined/natural passages up the 3rd Rise were revisited, and a through trip completed via natural passages (length 200 ft.) between the tops of the first two rises. The natural passage on the westside of the level was explored for c.40' to a ruckle.

These passages inspired us to look again at the passage from the chamber at the south end of Crystal Rift which was heading this way. A squeeze at the south end of the chamber enters near the top of a high rift (South Rift). A climb down to the floor followed by a climb up at the other end of the rift leads to a collapse area with a narrow rift to the r. and choked rifts ahead.

Back in the old "final" chamber a west branch led to a climb down boulders into another rift. This led round a corner to a junction where on the l. a narrow rift became too tight (but was in fact the rift on the r. at the top of the climb in South Rift), and straight ahead the rift pinched out.

Survey of these passages (total length 230 ft.) superimposes them in an unlikely fashion on the West Traverse Rift passages, and this discrepancy remains to be investigated. Intriguingly, a bat was sighted flying south near the end of Crystal Rift.

Still seeking a route south, we speculated that Sigma Rift (considered too dangerous to explore further) should soon meet up with the choked rift heading south from Bridge Chamber, so the choke in Bridge Chamber Rift was re-examined. A traverse at mid passage height led into the ruckle to a tight hole through boulders which belled out into a black space with the floor 20' below. An extremely awkward squeeze through the boulders led to a climb down the rift to the boulder floor, but the rift ahead was fully choked at all levels only 6' beyond the climb.

Interest in Windegg has waned once more.

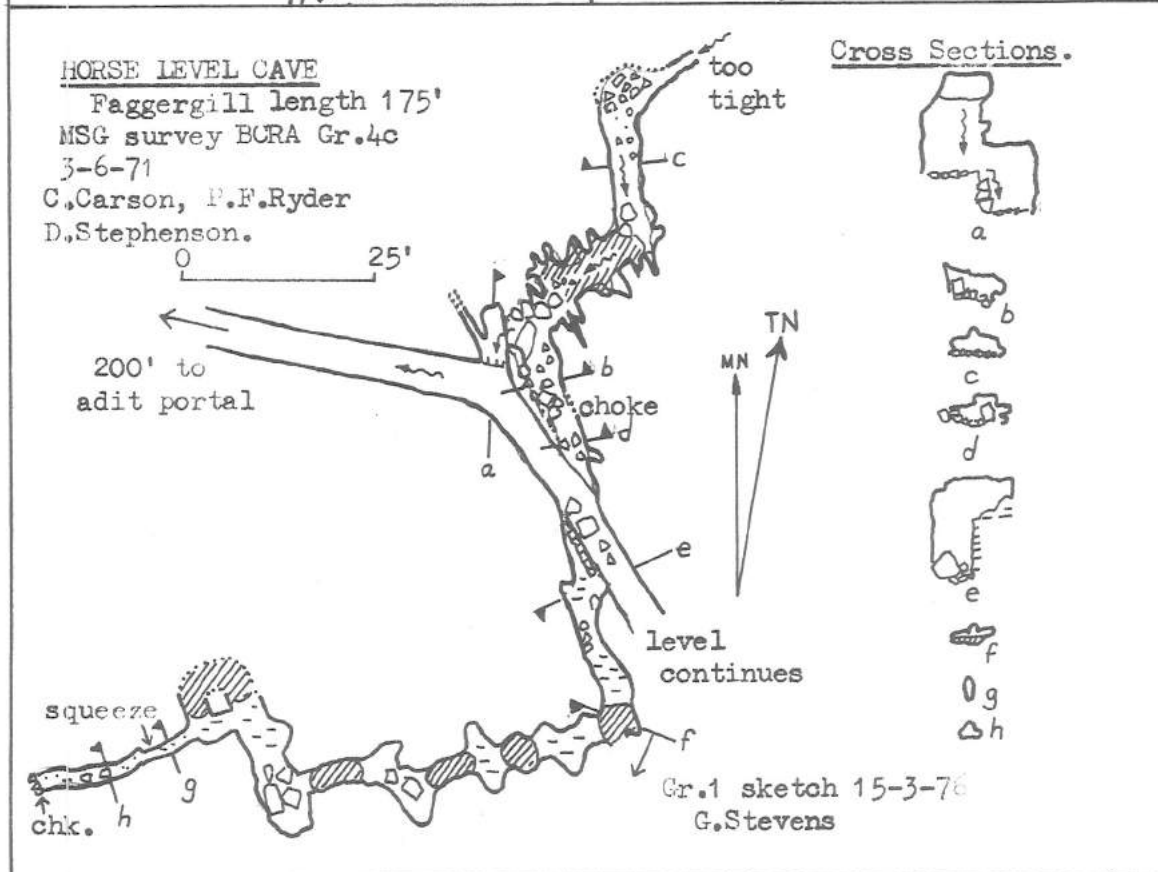
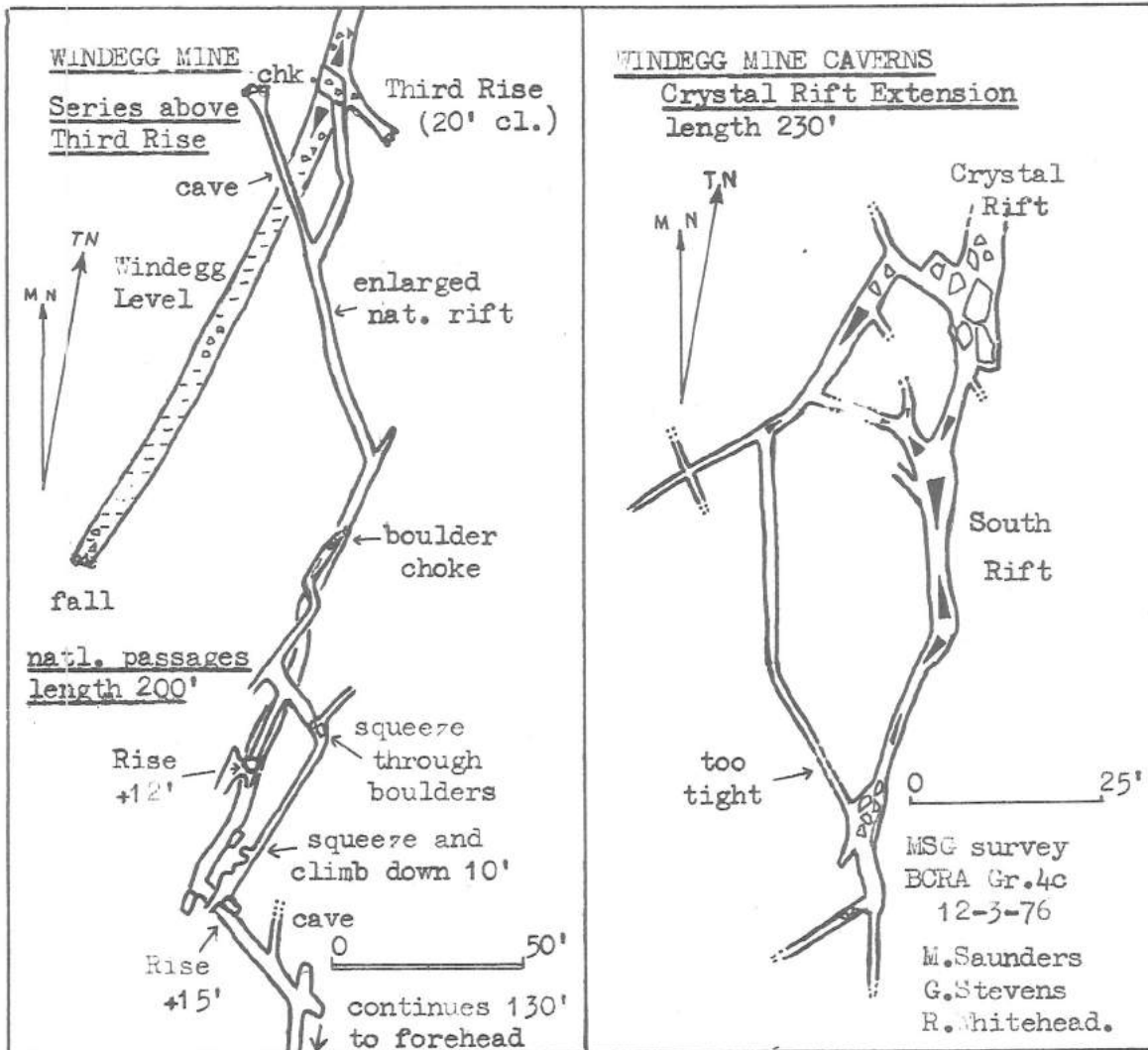
Graham Stevens.

Horse Level Cave, Fagnergill N.G.R. NY 990071.

The short section of natural cave in Fagnergill Horse Level was first "found" by MSG members in 1970. 240' from the level entrance a small stream splashed down into the level from a 13' mined rise on the l. - climbing up this led into a small natural streamway, upstream choked after 50' and downstream (dry) after 12'. 30' further along the level the passage was intersected again, and the dry "downstream" passage here was accessible for 20' to a low bedding containing a pool.

About a year later, Nev Andrews (BACC & YURT) visited the cave and pushed on through the pool, exploring another 50' or so of low passage with more pools and small collapse chambers.

On 15th March 1976 Graham Stevens had a look at this passage, and after following Nev's five year old trogmarks to the previous limit of exploration, managed to pass a narrow squeeze (a rift 2' high and 9" wide) into a further 25' of



tight silty crawl, ending in a silt choke and blockfall - a fairly "final" end.

Whilst Graham was looking at the "downstream" passage, the remaining members of the Teeside contingent who were accompanying him had wandered off up the active upstream passage, and assaulted the final choke, making 6' of progress before the passage became too tight.

Total length of Horse Level Cave is now c.175'. The cave appears to be associated with sinks on the east side of the head of Faggergill, originally flowing south to perhaps feed one of the risings (dug unsuccessfully many years ago by MSG) near Faggergill House - there appears to be no connection with the major system draining west to Roughton Keld, on the west side of the valley.

Devis Hole Mine Cave, Grinton. N.G.R. SE 052961

Since the publication of the account and survey of the natural cave system in Devis Hole Mine, Grinton, in MSG Journal 7, several further Devis trips have taken place. The only notable "discovery" in this period has been of the northern section of Occidental Series, in the far reaches of West Level - a series of passages, mostly crawls, of less intricate plan than the Central Maze, and containing some quite notable formations.

A full description, survey and discussion of all parts of the Devis Hole Mine Cave has recently appeared elsewhere ('Phreatic Network Caves in the Swaledale Area, Yorkshire', P.F.Ryder, Trans. B.C.R.A. Vol.2 No.4 Dec.1975, pp.177-192) and is unnecessary here.

Total length of natural passage (including that modified by the miners) in the mine is now in the order of two miles.

Whitcliffe Scar Caves, Richmond. N.G.R. NZ 131020.

The dry slip-rift caves of Whitcliffe Scar, Richmond, have been visited on several occasions in the past two or three years. In the area of Whitcliffe Scar Caves 1, 2 & 3 there are several other short caves and rifts, and an area survey, incorporating surface features and slope transects, is planned.

Whitcliffe Scar Cave 3 was the scene of another Graham Steven's extension in 1973, when the passing of a squeeze (on the l. at the first junction, entering the cave through its Lower Entrance) revealed another 150' or so of bouldery unsafe rift.

On the 14th December 1974 an MSG party visited and surveyed Whitcliffe Scar Caves 1 & 2, finding them to be a little longer and deeper than had been previously estimated. At the far end of Cave 1, an intriguing feature was noted - a small (6" diameter) phreatic tube, split by the fracture which has opened up the main rift passage. No other solutional features were seen in the caves.

The exit of the surveying party was enlivened by the intervention of the local police force, who insisted on searching the party, grotto bags, ammunition cans etc. for rustled sheep.

WHITCLIFFE SCAR CAVES 1 & 2

Richmond, Swaledale

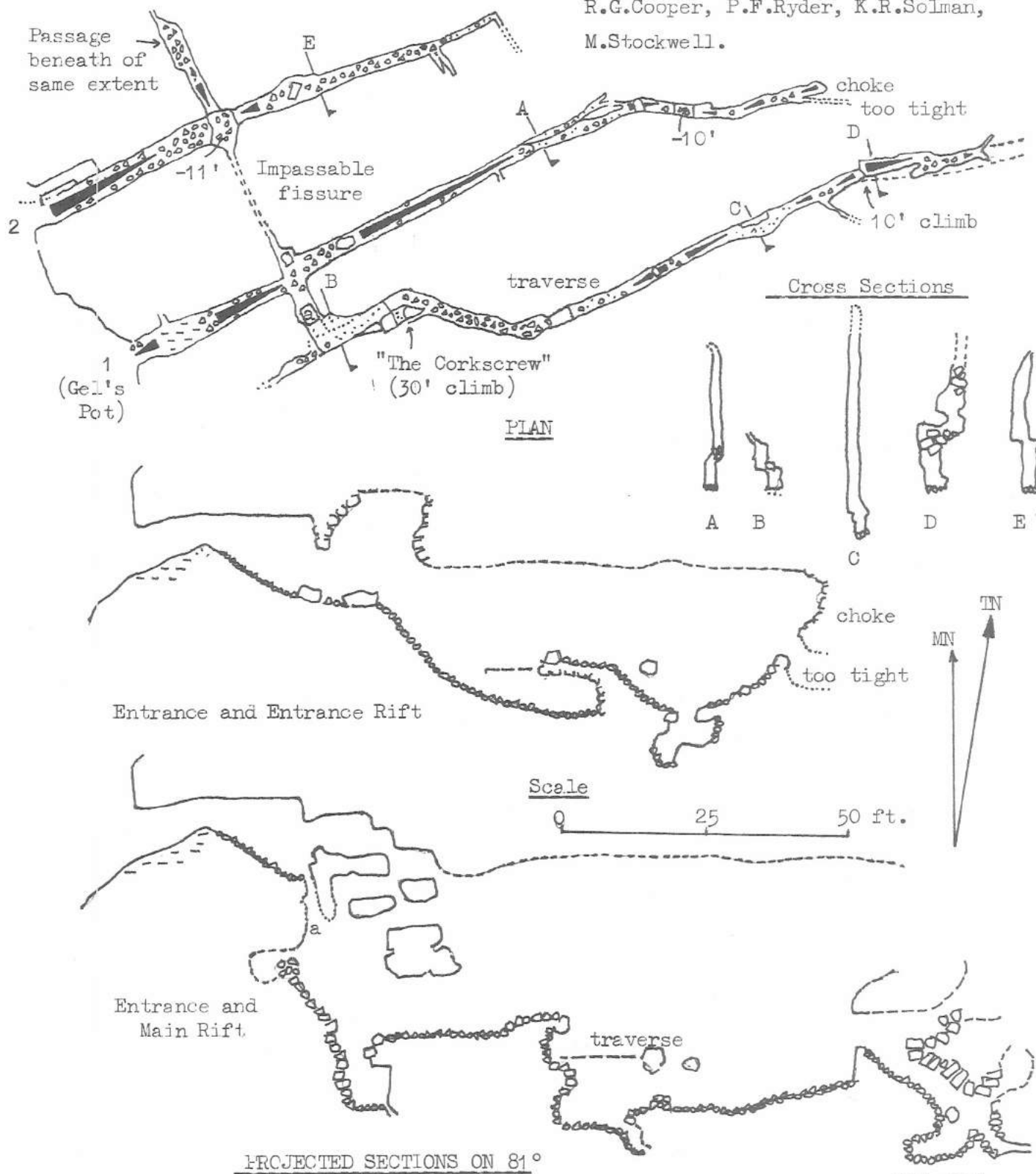
N.G.R. NZ 131020 Alt.c.900'.

No.1 Length 350' Depth 55'

No.2 Length 135' Depth 28'

MSG Survey BCRA Gr.5b 14-12-74

R.G.Cooper, P.F.Ryder, K.R.Solman,
M.Stockwell.



PFR 1974

A short article describing some gritstone fissure caves in the Central Pennine moorlands around Saddleworth, by Ric Halliwell, appeared in M&G Journal 7. The Halliwell researches into this area, both on (and under) the surface, and amongst literary sources, continue.....

Fissure Caves in Saddleworth.

Fairy Holes.

The earliest recorded descent of this cave which has been located was in 1816. In the description of the descent passage names are used thus suggesting that the cave was already well known. Mr W.M. Robinson describes how -

"Having had an ardent desire for some time to visit those dreary caverns, generally called Fairy Holes....I set out together with a few friends, towards the latter end of June; being provided with lights and other things necessary for the journey..... We lighted our candles it being quite calm: the entrance for about six or seven yards is rather straight with a vaulted roof, until it gives a turn or winding, when it descends almost perpendicular for a considerable length: when we arrived at the bottom we came to a broad passage called Cupid's Alley, it has two passages, one to the right and the other to the left, the former not extending very far. Proceeding to reconnoitre the other we came to a corner that was rather dangerous.... At this corner there are projecting rocks about twelve feet high, and rather difficult of ascent; arriving at the top, we found the road very good for a considerable way, then descending and turning back to the right under a large heap of rocks, to the same place where we ascended: the rocks at the corner, the passage became rather straight for some yards, then opening to a broad deep dreary chasm, which is called the Devil's cellar.... The rocks on both sides are almost perpendicular and nearly parallel to each other: we proceeded down the cavern until we came to the bottom, and finding the rocks lay upon the shoal, which was a plain indication that we were at the bottom of the subterraneous vault; then returning back we measured the road and taking the angles, the result was, from the bottom to the top 45 yards, and about 30 yards perpendicular from the surface of the earth, or the first entrance of the cavern...."

A survey of the cave was made by J. Platt in 1825 but enquiries have failed to reveal where the plan was originally published although it was reproduced in a paper by H. Broderick (1902).

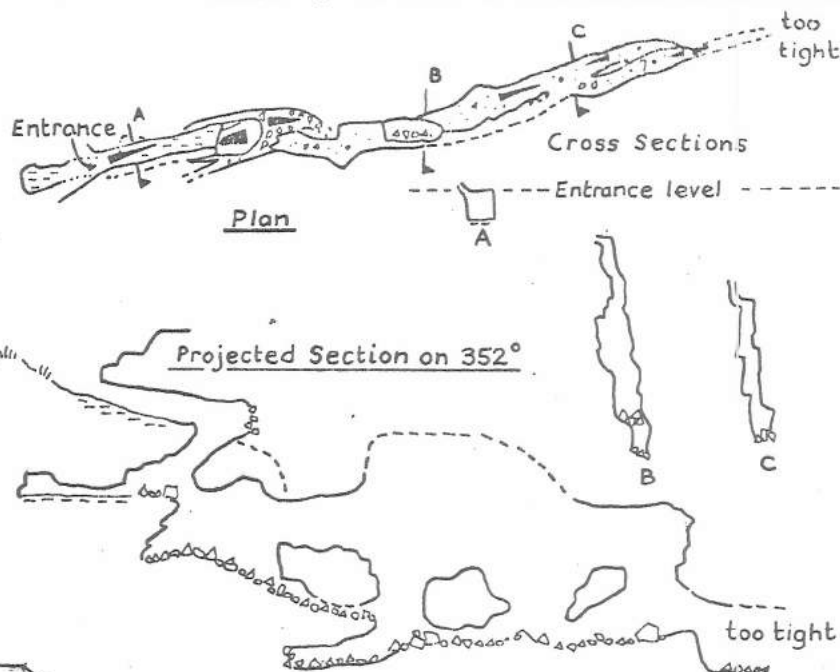
The next description to be located is in Saddleworth Sketches by J. Bradbury (1871). This quotes the Robinson description but provides additional information on the lengths of the various passages.

"Although I have made an attempt to penetrate into these recesses - I have always been reluctantly compelled to abandon the project as too dangerous an enterprise on account of the falling in of the earth from the roof and the noxious gases which have accumulated some little way down the caverns. Consequently as I cannot guide the reader myself into these regions of fairy sprites I must leave him in the hands of those who have been more fortunate than myself..... According to later accounts, Mr Robinson did not thoroughly explore the cavern of which the following are the dimensions :- Piccadilly, 7 yards; Queen Mab's Bedchamber 3 yards; Doby Street, 6 yards; Cupid's Alley, 6 yards; Nicholson's Gallery, $8\frac{1}{2}$ yards; Fox's Kennel, 4 yards; George Street to Falstaff's Corner, $9\frac{1}{2}$ yards; Halliwell Street, $9\frac{1}{2}$ yards; Broadbent's Passage, 10 yards; Devil's Cellar, or Confusion Street, 8 yards; Knox's Retreat, 2 yards;

FAIRY HOLES

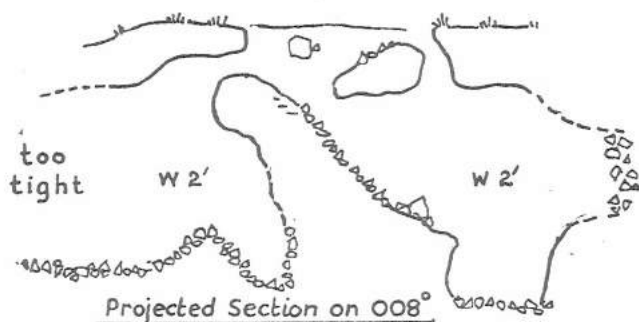
Alderman's Hill,
Saddleworth.

N.G.R. SE 015047 Alt. c. 1,400' O.D.
Length c. 150'. Depth c. 36'.
Survey BCRA Gr. 5B.



TWIN SHAFTS

Alderman's Hill, Saddleworth



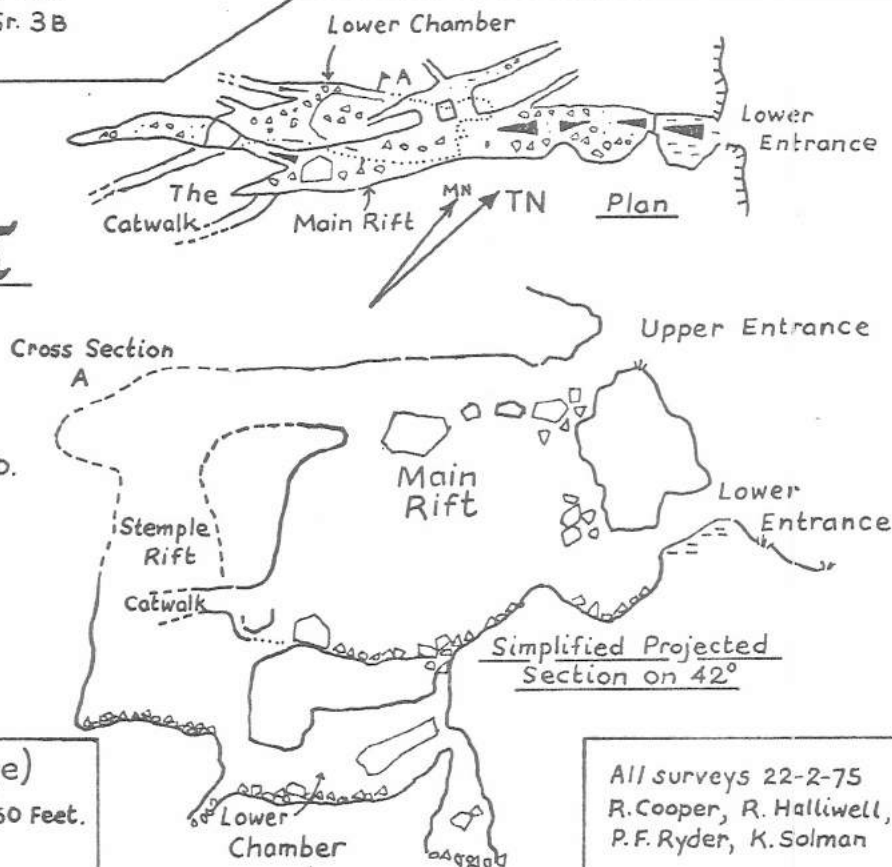
N.G.R. SE 015046 Alt. c. 1,400' O.D.
Depth 36'. Survey BCRA Gr. 3B

CAVES OF THE SADDLEWORTH AREA

DIGGLE WIGGLEPIT

Ravenstone Brow,
Diggle,
Saddleworth.

N.G.R. SE 017076 Alt. c. 1,250' O.D.
Length 150'+. Vert. Range 65'.
Survey BCRA Gr. 3-5B
(Provisional Drawing)



Scale (for all surveys on page)

0 25 50 Feet.

All surveys 22-2-75
R. Cooper, R. Halliwell,
P.F. Ryder, K. Solman

Coney Street, 9 yards; St John's Street, 6 yards; Beelzebub's Pantry, $3\frac{1}{2}$ yards - making the total length to be 92 yards."

On 19 April 1886 Fairy Holes was visited by "... a party, consisting of the Saddleworth Literary and Philosophical Society and a contingent of the Oldham Microscopical Society and Field Club..... By the kindness and foresight of our Saddleworth friends we were provided with most things needful for such an exploration - lamps, candles, ropes, indiarubber tubing for telephonic purposes, a spade, a hammer, a ladder, a pocket compass, and tape for measuring dimensions, articles which proved of invaluable service... I shall leave to others who are better word painters and who wield more facile pens, to describe the manner of proceeding, and the many accidents and hair-breadth escapes in the imminent deadly breach, merely premising that each of the explorers, candle in hand, after moving backwards along the first passage, which was nearly horizontal, was finally let down by a rope into the abyss below. The descent was of no great depth, but of great difficulty, our further progress being comparatively safe and easy, though calling for our utmost caution and vigilance, and an occasional vigorous use of the spade. We found ourselves in a long narrow vault, which on subsequent measurement was found to be about 150 feet long, including the perpendicular descent and the first passage, the width of the passage at its greatest rarely exceeding three or four feet from wall to wall, and in some places was so narrow so as not to permit of two persons passing each other. The distance from floor to roof, as might be expected, varied considerably. In some places it might measure from ten to fourteen feet, at other points the roof stooped low owing to one or a number of disturbed and overhanging blocks approaching the floor, while in another case masses of rock, that had disengaged themselves from above, rested on the floor and had to be clambered over. In both these cases there was not too much room for the passage of a single person in a stooping or crawling position. Above our heads, as will be imagined, there was not an unbroken and continuous roof, but a succession of blocks of stone, from a few pounds to many tons in weight, all sharp, angular, and jammed and locked together, and supporting themselves by their own weight. The floor was paved by similar blocks, some of them so large as to seriously impede our progress, and at times rendering it necessary for use to use some force to squeeze ourselves through the space left, or to clamber with difficulty over them. Doubtless both the blocks beneath our feet and those above our heads had at one time or other fallen from the top and sides of the chasm in which we stood - those in the roof shutting out the light of day, those beneath our feet closing a crack in the earth of unknown depth. The horizontal length of the fissure, which takes a north-westerly direction, following the trend of the hill, is likewise uncertain, but the fissure itself is probably somewhere connected, though perhaps indirectly, with the great faults which give rise to the valley of Saddleworth or some of their offshoots..." (Nield, 1887)

In Broderick's paper (1902), commenting on the survey by J. Platt, he states that -

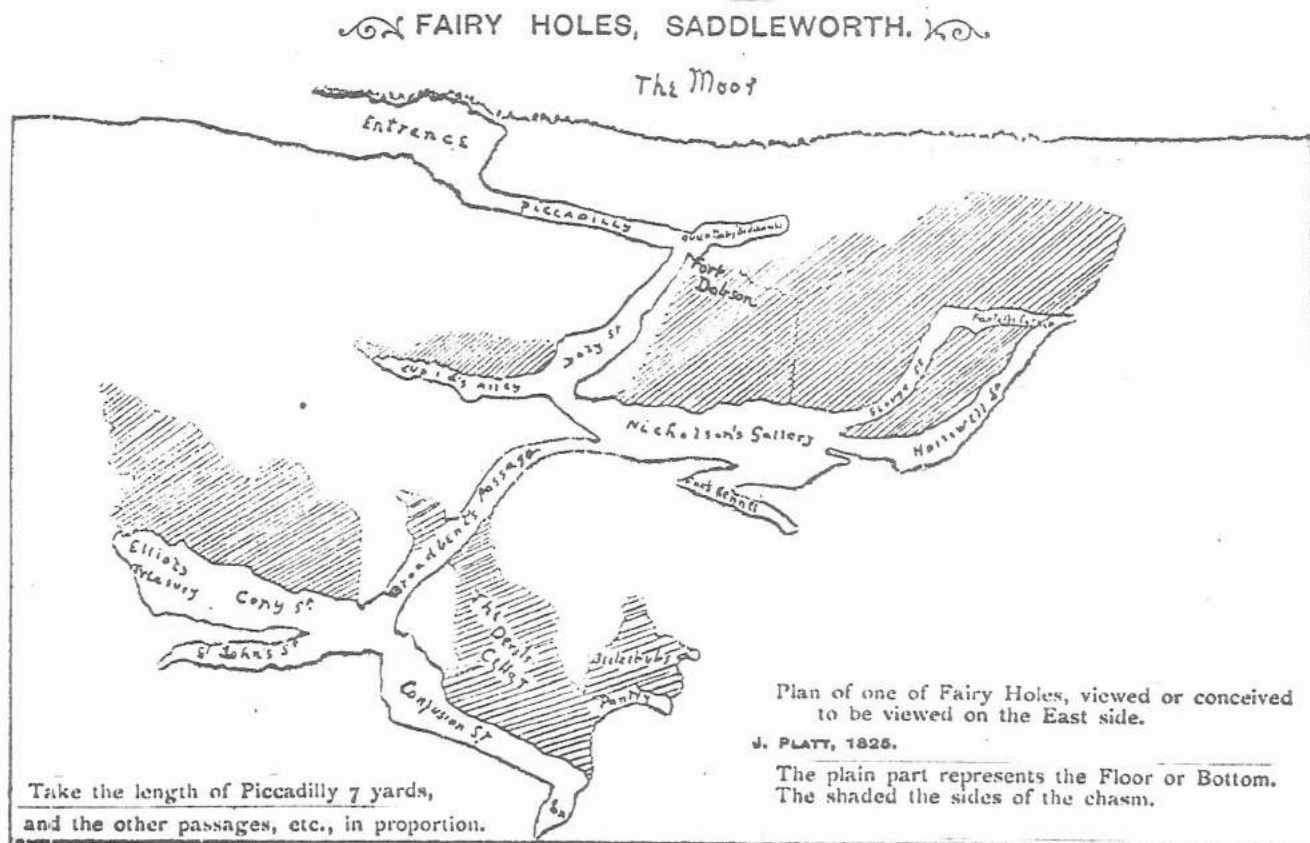
"On a careful examination of this cave, I find the plan made by J. Platt, in 1825, is very accurately done. Queen Mab's Bedchamber has ceased to exist, owing to a fall of rock, and approach to the lower part of the cave is stopped by a fall of rock at the top end of Broadbent's Passage."

The Yorkshire Ramblers' Club Journal (1949) records a visit to Fairy Hole by H and A Humphreys in 1907, and the cave is also described by Moorhouse (1935)

"The Fairy Holes are also in the same neighbourhood, being situated on Alderman Head, overlooking the main Holmfirth-Greenfield road. The name also includes a number of small holes, only a few inches in breadth, which abound in this district and which were believed by the old inhabitants to be the home of fairies."

One of the series offers interesting possibilities for potholing. This differs from Warm Hole, being more in the nature of a horizontal cave in the bottom. After crawling and scrambling along a narrow passage the explorer drops by means of a stone slab into the lower level of the cave and in front there is a long narrow chamber of about 100 feet in length."

Although Fairy Holes were listed in Pennine Underground (Thornber, 1965) the description is inaccurate as also is the grid reference. The cave is not mentioned in Northern Caves partly I believe because the authors couldn't find it. A brief description of the cave may be found in MSG Journal 7 and a survey of it accompanies this article, together with Platt's survey of the cave in 1825.



Diggle Wigglepit.

Although Moorhouse (1935) states that another fissure "lies on the hillside above Diggle" no description of Diggle Wigglepit has been located other than that in the climbing guide (Howard, 19)

"...., the winter of 1957 when A Howard and A Whitehead were told of a cave It was these two who made the first descent of this, the largest cave in the area, with over 300 feet of passages...."

The cave was vaguely described in MSG Journal 7, but a trip in February 1975 was used to survey the system. The lower entrance and Main Rift are standard "windypit-type" passages ending in the Catwalk which appears deceptively easy to enter but has so far successfully

resisted all attempts to do so. The lower chamber and Stemple Rift may be reached via a hole in the floor approximately 3m. back from the Catwalk. This hole may be awkward for tall people like PFR and earned the hole its name of Wigglepit. Beyond the short crawl is a tight rift to the west which can be followed for about 10m. The lower chamber is reached by bridging and free-climbing down the rift and contains many very loose boulders in the roof, floor and walls. In May 1976 Stemple Rift was climbed by RAH and Graham Proudlove (CPC) and after some problems with loose walls, and being forced to use shoulder jams 10m. up, the high level part of the Main Rift was reached. This was followed out on jammed boulders, via an awkward bridging movement, to the Upper Entrance.

The route into Diggle Wigglepit via the Upper Entrance approximates to the description given of Fairy Holes in P.U.!

Warm Hole.

This fissure cave is located on the side of Chew Beck near Chew Reservoir and has not yet been visited personally. According to the Y.R.C. Journal (1949) it was first explored in 1899 and again in about 1906 (personal communication, A. Humphreys). The Y.R.C. Journal states -

"Mr W. Waring went into the narrow cracks ahead until 180ft of rope was out. Repeated 1931 by a party led by Mr S.S. Williamson of the 1899 group."

Slightly more information was found in Moorhouse (1935)

"The most interesting of these is Warm Hole, which is situated (sic) on the moors near the head of the V-shaped Chew Valley. The cave opening is hard to find."

This was first descended in 1899 after which there was a break of nearly 34 years before a thorough exploration was made by a party of Oldham ramblers, under the leadership of Mr Frank Hill.

The depth is in the neighbourhood of 80 feet and the hole is shaped rather like a twisted well shaft, dropping in a series of steps from 15 to 30 feet high. One enters by way of a small cavern which has a rectangular hole in the floor. This hole curves under the cave floor and then drops away to the first level."

A local contact has been found who knows the exact location of the fissure and it is intended to descend and survey the cave in the near future.

Acknowledgements.

I would like to thank D.C. Mellor for locating the paper by Broderick and Oldham Central Library for providing me with photocopies of several relevant articles.

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R.A. Halliwell
University of Hull

Recent Work in North East Yorkshire.

Since the last journal appeared, MSG activities in the North York Moors have been very sporadic. Most work has been done either on "evening trips" from Hull, or while passing through the Moors en route to the Northern Dales.

(1) Dowson Pot, Hutton-le-Hole. N.G.R. SE 710878

An initial visit to this pot on 30th December 1974 produced a quick survey. The pot appears to be a Pre-Glacial river sink, formed before Hutton Beck cut down to its present level. The entrance is an opening about 3ft wide and 3½ft high, sited below a tree, at the northern end of an old river cliff, and about 15ft above the Beck. During dry weather the Beck sinks in its bed opposite the pot, the water remaining underground for almost a mile, to eventually emerge at Bog Hall Rising, near Keldholme (Hodgson, 1970).

On this initial visit a squeeze about 10ft in was passed at roof level, opening out into the top of a 17ft deep shaft about 4ft in diameter. The bottom of the shaft was filled with boulders and a small fissure heading back under the entrance passage was choked by tin cans, bottles and wire. At this time we believed we were in the first shaft (Hayes 1942), although there appeared to be no way on (a narrow fissure was reported to open into a second shaft or aven).

On 2nd February 1975 KRS, Rob Cawkwell and Steve Clark re-visited the area with some digging gear. The intention was to dig in the shaft, in the hope that a way on could be found, to connect with the other shaft. However, after 2½ hours work the shaft had been dug down for only 3ft. A low bedding containing many boulders and clay was found but, not looking very promising, it was left.

A final visit by KRS and Pete Ryder on 9th January 1976 solved the mystery of the missing shaft. The one which we had entered previously was the original second shaft. The first one lay five feet in from the entrance, but had been filled in by the local farmer to prevent sheep falling down it. At the bottom of the second shaft a little digging allowed access to the first - though the abundance of rotten tins, bottles and loose rocks prevented more than just a glimpse to confirm that this was indeed the first shaft.

During the course of these visits the following zoological records were made (Solman 1976)

Scoliopteryx libatrix (Herald Moth) found hibernating in the second shaft, in a small group, on 2/2/75 and 9/1/76

Nymphalis io (Peacock Butterfly) found hibernating in the low bedding at the bottom of the second shaft on 9/1/76

Plecotus auritus (Long-eared Bat) found hibernating in the second shaft on 2/2/75.

(2) Fadmoor Caves, Helmsley. N.G.R. SE 675896

Prior to 1975 caves 1 and 2 had been surveyed by the MSG. Both were thought to be ancient phreatic remnants, discovered during quarrying operations (Hayes 1942)

On the 11th January 1975 KRS and SC visited the area to see if there were any similar caves as yet unrecorded. In the north wall of the quarry, almost opposite cave 2, a small phreatic passage was discovered - although at the time it was blocked about 3ft in by a large boulder and much clay fill. A visit was made the following weekend armed with digging gear and RC to assist. After about forty minutes the entrance was opened up. Kev was the only one who could squeeze in (and even then it was without his helmet and cell on).

The entrance to cave 3 lies about ten feet below the land surface and is a clay floored phreatic tube up to 1½ft high and 2ft wide at the most. After 11ft the passage turns abruptly right and 10ft beyond there is just enough room for a small contortionist to turn round. Beyond, the passage narrows and after 12ft becomes too low. The cave is very well scalloped throughout.

A possible continuation of cave 1 was found in the same quarry wall, about 90ft east of cave 3 - this remains to be dug. This dig and caves 2 and 3 are all developed in the same bedding plane, whereas cave 1 lies about 6ft lower.

A single specimen of *Scoliopteryx libatrix* (Herald Moth) was found hibernating in the entrance passage of cave 3 on 2/2/75

(3) Lingmoor Cave, Hutton-le-Hole. N.G.R. SE 710878

This cave lies in the same old river cliff as Dowson Pot, and about 100ft further south. The entrance was formerly walled up, probably to keep foxes out (Hayes 1942). Unlike the pot, there appears to be no vertical development. However, both cave and pot are developed on roughly the same joint direction and are heading south. Lingmoor Cave is 7ft to 10ft wide and about 2ft high throughout. The passage ends in clay fill after only 20ft.

(4) Manor Vale Caves, Kirkbymoorside. N.G.R. SE 696868

Three small phreatic caves are located in the North Riding County Council Yard. Numbers 1 and 3 lie in the cliff on the west side of the valley. Both are only a few feet long, and end in blank walls, which may be artificial (Hayes 1942). Number 2 is the longest cave, being about 85 ft in length, and incorporating a couple of avens. The walls in several places are covered with flowstone. The passage ends too low where the clay floor is overlain by calcareous deposits. All three caves lie only 10-25ft below the land surface. The valley in which they are developed is now dry (Buckland 1824).

On 9th March 1975 a single specimen of *Scoliopteryx libatrix* was found in cave 2 on the roof of the low side passage, just inside the entrance.

(5) Noddle End Windypit, Hawnby. N.G.R. SE 526886

All the accessible windypits in the North York Moors have now been surveyed and the results together with other relevant details have been submitted to BCRA for a future Transactions article. During the course of visiting the windypits only one major new extension was made - this was at Noddle End, where about 100ft of rift was found.

The extension was made to the southern limb of the "West Transverse Fissure" (Fitton and Mitchell 1950). This limb prior to our visit was known to extend for only 12ft to where there appeared to be a roof fall blocking the way on. This fall was first passed on 25th January 1975 by Graham Stevens.

A squeeze under a large boulder led immediately into a "chamber" about 5ft long, 6ft high and 3ft wide. From here a squeeze down a hole in the floor, followed by a very short crawl and a squeeze up a hole, passes the fall. The fissure continues for about 10ft with a width of 4ft to a steep slope down. From this point the fissure narrows to 2ft wide, and continues a further 80ft to a choke, being up to 35ft high. About 50ft from the squeezes, the floor is covered with small rimstone pools, calcited boulders and calcited rabbit bones. The latter could have entered the rift if one assumes that it once opened to the surface, as has been postulated by Fitton and Mitchell. The walls of the extension are also covered with deposits of flowstone, together with helictites and curtains. In this respect the windypit is unique, although it should be pointed out that the other windypits do show occasional flowstone deposits. Ten feet from the end of the fissure a 17ft pitch amongst the loose boulders of the floor terminates in a junction of narrow rifts, all too tight to enter after a few feet.

Noddle End Windypit is now 575ft long and 95ft deep.

(6) Saltergate Sinks, Newtondale. N.G.R. SE 838946

Higgits Scar and Yewtree Scar in Newtondale were visited on 9th February 1975 by KRS and SC in the hope of finding slip-rift caves (none were found). However, what appeared to be an abandoned stream sink was found, lying on the south bank of the gully which separates the two scars. The impenetrably narrow (2") slot appears to spiral down for a few feet at least, and the surrounding rock shows definite signs of scalloping, possibly indicating former water flow into the sink.

(7) Silpho Quarry Cave, Scalby. N.G.R. SE 958917

Located in a disused Corallian Limestone quarry, about four miles WNW of Scalby. A phreatic passage, about ten feet below the present land surface, was opened by the removal of a large boulder. The cave was found to be 4-5ft wide and up to 3ft high. However, clay and boulders floored the passage and after about 20ft this rose to within a few inches of the roof.

A single hibernating specimen of *Nymphalis* io (Peacock Butterfly) was found just inside the entrance on 9/2/75

(8) Phreatic Tubes at Smeffel, Lockton. N.G.R. SE 858901

Located in a small disused limestone quarry, about six miles NE of Pickering. A couple of small phreatic tubes are developed 12-14ft below the land surface. The largest tube is only 2ft high. Both are clay filled to within a few inches of the roof, although

the larger one has the clay removed for the first 4ft. Although not enterable, these tubes, together with the other phreatic remnants found, indicate that underground drainage through the Corallian Limestone was more widespread than has previously been thought.

(9) T'unc Mouth Cave, Kirkby Mills. N.G.R. SE 708867

This phreatic cave lies above 12ft above the River Dove in a river cliff of Corallian Limestone. The passage is about 3ft wide and high for most of its 30ft in length. As with many of the caves already mentioned, it lies about ten feet below the present land surface.

On 9th March 1975, in the terminal aven, a hibernating individual *Scoliopteryx libatrix* was seen. This aven has a visual connection with the river cliff via a small narrow joint.

Small Slip Rifts in North East Yorkshire.

(1) Hobthrush Hole, Over Silton. N.G.R. SE 450934

Located half way up a cliff face with a wide view out over the Vale of York, this was found to be a slipped section of cliff, which formed what could suitably be described as a rock shelter. The hole was about 10ft up the cliff, and the entrance 5ft high and 4ft wide. The shelter was 15ft long and 6ft wide, with two small avens, both about 7ft high, near the end. Two small windows looked out across the Vale. A small "tube" passage led into the hillside near the far end, but this was too tight to enter. It could be seen to continue for at least ten feet and may have been phreatic in origin.

(2) Kirkdale Howl Rift, Helmsley. N.G.R. SE 675866

The old quarries of Kirkdale Howl were visited on 16th March 1975 by KRS, DIS and SC. They were found to contain several fissures and small remnants of phreatic tubes. A small slip rift (probably formed due to quarrying activities) was found. It appeared to be only 15ft long and 5ft high, but was too tight to enter. In the opposite side of the Howl a 12ft section of cave was found.

(3) Newgate Bank Rift, Helmsley. N.G.R. SE 62-90-

Discovered during road repairs by NRCC (Manor Vale Division) during late 1974. "A heavy compressor and pneumatic drill fell into a rift, which opened up whilst a workman was using the drill - much to his surprise". The opening up of the rift was said to be "recent", which I took to mean late 1974 or early 1975. The hole would appear to have been about 3ft wide and at least 10ft deep. It was subsequently filled in by the workmen.

References.

- Buckland, Rev. William. 1824 *Reliquiae Diluvianae*, p.54
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Hayes, R.H. 1942 "Some Caves in Ryedale, N.E.Yorks" *British Caver* Vol.9 pp.36-43
Hodgson, S.D. 1970 "North of the Vale of Pickering", *MSG Journal* 3.
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Kevin R Solman,
University of Hull

Some Old Mines in North East Yorkshire

The Jurassic strata of the North York Moors contain, in addition to a variety of small caves and "windypits", an interesting assemblage of different types of old mine working - MSG members have in recent months visited whinstone, ironstone, alum and jet workings. Three of these workings are described below -

(1) Lease Rigg Whinstone Mine.

In MSG Journal 7 an account and survey of Silhowe Whinstone Mine, near Goathland, were given. In 1975 another whinstone mine, that at Lease Rigg, was surveyed. The entrance to this mine is via an old "air hole", and is located about fifty yards downstream of the bridge at N.G.R. NZ 812047, about one mile WSW of Grosmont. The original workings were of more considerable extent than at present accessible, and the section entered and surveyed by MSG members is one of the more recent parts of the mine, not being shown on a map of the workings made in 1909.

Unlike Silhowe Mine, Lease Rigg is dry and totally lacking in dripstone formations. Both mines were worked along similar lines, a three-tier system of galleries in the whin dyke being developed (in Silhowe Mine much of the rock separating the galleries was blasted away in the years leading up to the closure of the mine). In both mines each horizon of working consisted of two parallel galleries connected at intervals.

The workings of Lease Rigg Mine are now in a very dangerous state. When visited on 9-3-75, the entrance was buried by a small land slip, which was soon cleared. In several places the roof of the galleries is severely cracked and large slabs of rock lie poised and ready to fall at any moment. Several of the passages end in roof falls and not in foreheads. The remains of an old winding drum and some cable were found near the top of the air-shaft entrance.

A copy of a plan of Lease Rigg (or as it was then known, "Esk Valley Whinstone Mine") Mine in 1909 has caused some confusion, being hard to interpret. The writer has redrawn the plan in a form that can be more easily understood. With the aid of the plan, two further entrances to the workings have been located - the Quarry Entrance, now blocked 70' in by a fall, and the Adit Entrance at river level, which now has 9" of airspace above deep water. An attempt to gain an aqueous entry here has not yet been made, but hopefully access to the pre-1909 workings may be possible here. The passages connecting the older workings with those now accessible are all blocked by massive roof falls.

The 1909 plan shows several passages "ending" without apparent foreheads - this probably indicates that these passages were still being extended. There appears to be no evidence of a link from the lowest level of the currently accessible passages with the drainage level, although again roof falls may conceal this.

K.R.Solman.

(2) Kettleness Alum Mines. N.G.R. NZ 832160

These mines are easily approached from the public footpath which runs north-east along the coast from Kettleness. The path leads down past a large level quarried area, overlooked by the ridge of the "ness". A scramble down a gully in the north-east corner of this area leads to a 7' wide ledge 10' down the sea cliff. At this point the cliffs are about 100' high (so take care not to slip!). Two entrances open from the back of the ledge, the first into 290' of dry workings and the second into 170' of slightly damper passage.

LEASE RIGG WHINSTONE MINE,

Grosmont, North Yorkshire.

NGR: NZ/812046

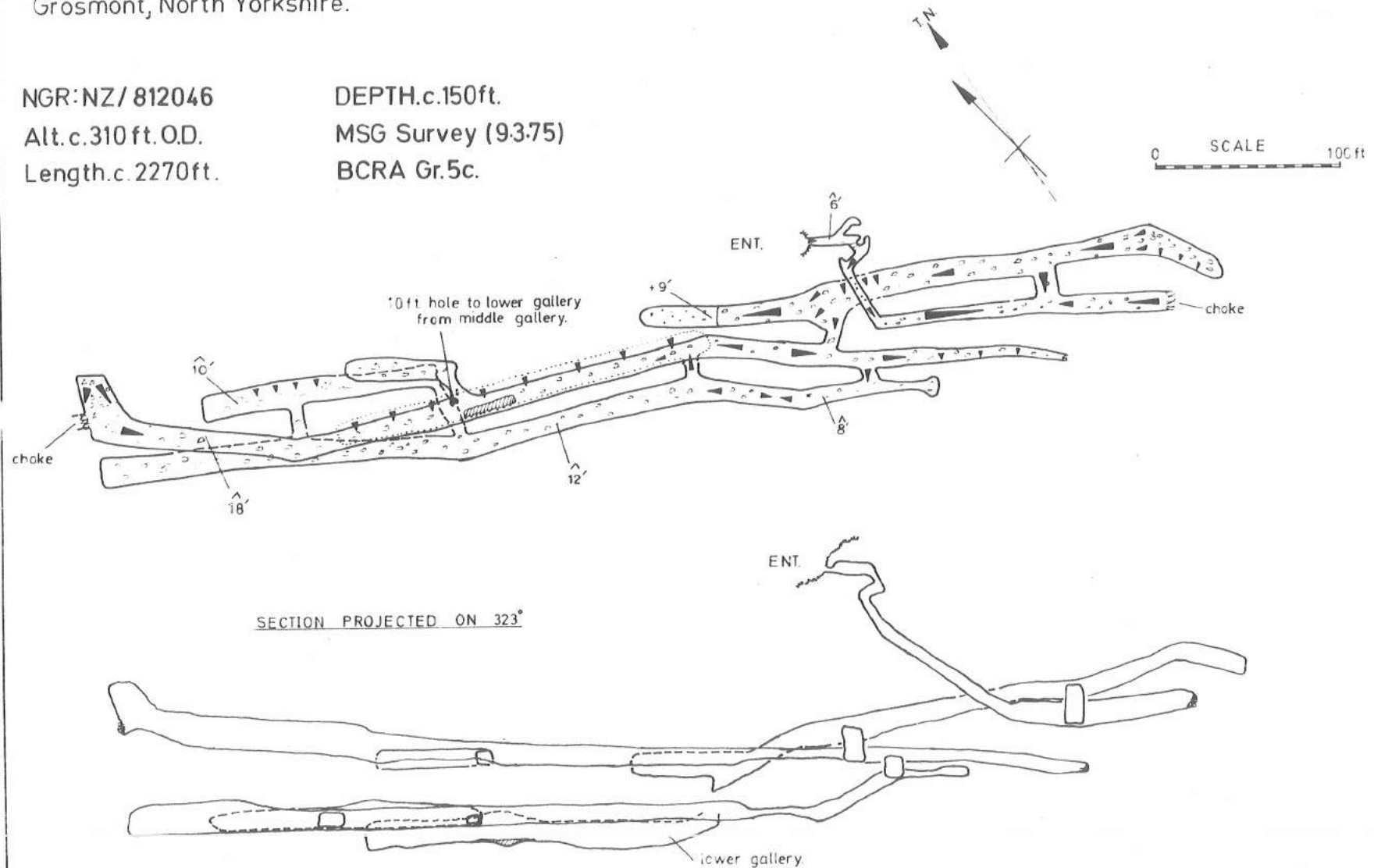
Alt. c. 310 ft. O.D.

Length c. 2270 ft.

DEPTH c. 150 ft.

MSG Survey (93/75)

BCRA Gr. 5c.



HRS '75

KETTLENESS ALUM MINES

Nos. 1 & 2, Kettleiness, North Yorkshire.

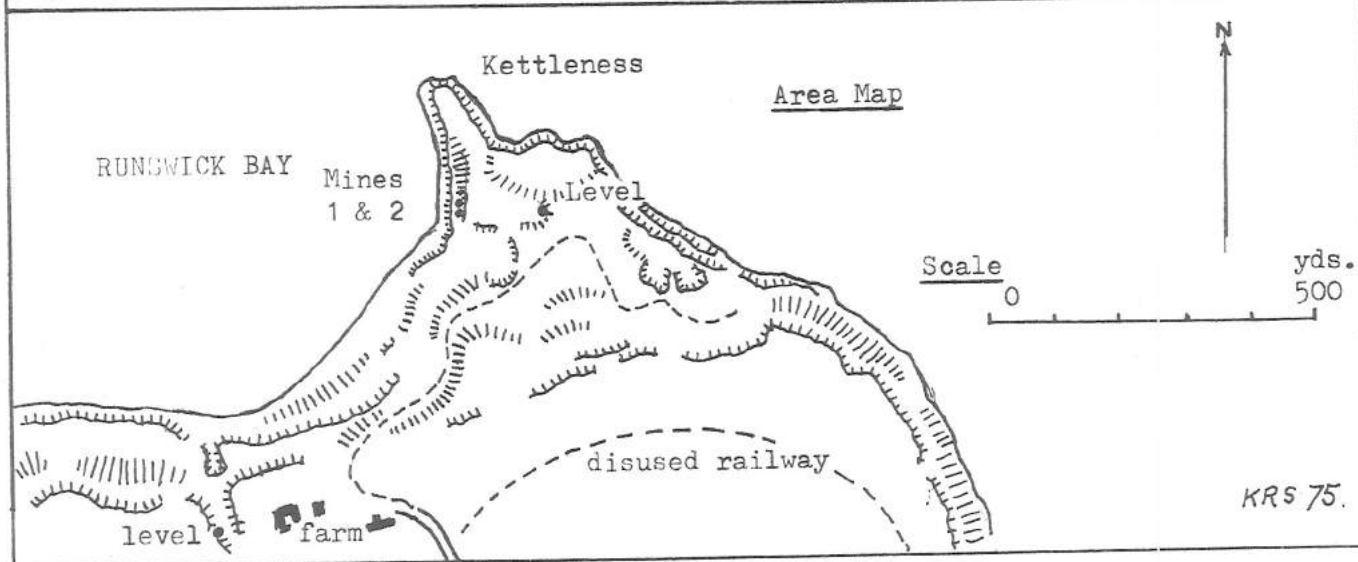
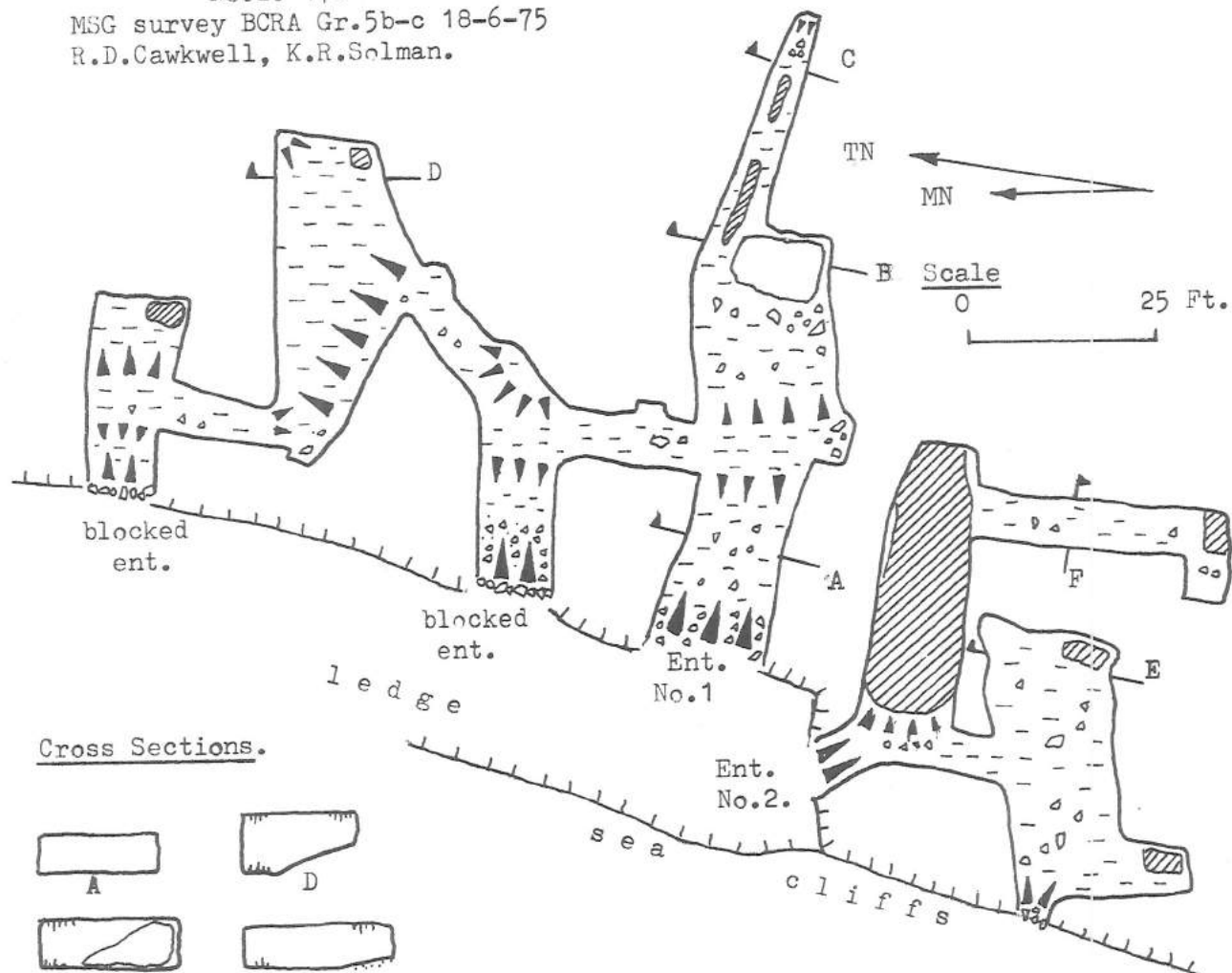
N.G.R. NZ 832160 Alt.c.100'.

Length - No.1. 290'

No.2. 170'

MSG survey BCRA Gr.5b-c 18-6-75

R.D.Cawkwell, K.R.Solman.



Mine No.1.

The entrance is a crawl over boulders for a few feet. Once inside the passage attains a height of 5' and a width of 16'. The roof here, as indeed throughout the entire mine, is totally covered with small white and brown alum crystals. The mine appears to have been driven as three or four separate galleries, from the ledge, with interconnecting passages - the only entrance remaining open is that of the southernmost gallery, the others being blocked by cliff fall.

Fine stalactites and stalgmities decorate the galleries, some having a jet black colouration which contrasts well with the alum crystals, and at the end of one gallery is a bright orange rimstone pool. Average passage height is between 5' and 8'.

Mine No.2.

The entrance is down a short shaly slope, to a branching of the passage. To the l. is "Dove Lake", about 30' long, containing 3' of putrescent mud and water (beware of low flying kamikaze pigeons). Just before the end a drier passage, well decorated with flowstone curtains, runs off on the r. for 30' to a forehead.

The r. passage from the entrance leads into a gallery 40' long, 20' wide and 5' high, with a small "window" in one corner opening straight into the face of the 100' high sea cliff.

At the south-east end of the plateau like area directly above the ledge containing the entrances to mines 1 & 2 is another mine entrance, a level arched over with brickwork, containing many fallen pitprops and a couple of feet of water - this ends after 30' or so in a fall.

If one returns to the head of the footpath, at the hamlet of Kettleness (where the road ends), and walks 150 yards west along the cliff top, a deep gully (with a small stream) is met, dropping steeply down to the sea. About 100' down this gully, on the west side, is a level entrance - passing a small blind branch on the r., a solid rock-cut passage uns for a little over 100' to a forehead. This short mineworking seems to possess interesting acoustic properties - standing at the entrance a faint dull thumping noise can be heard, as of a distant waterfall. However, inside, there is nothing more than occasional drips from the roof, and the "thumping" merges into a dull distant roaring - yet there appears to be no exit from the passage from which this sound could come, only solid rock walls and roof. An explanation would be appreciated!

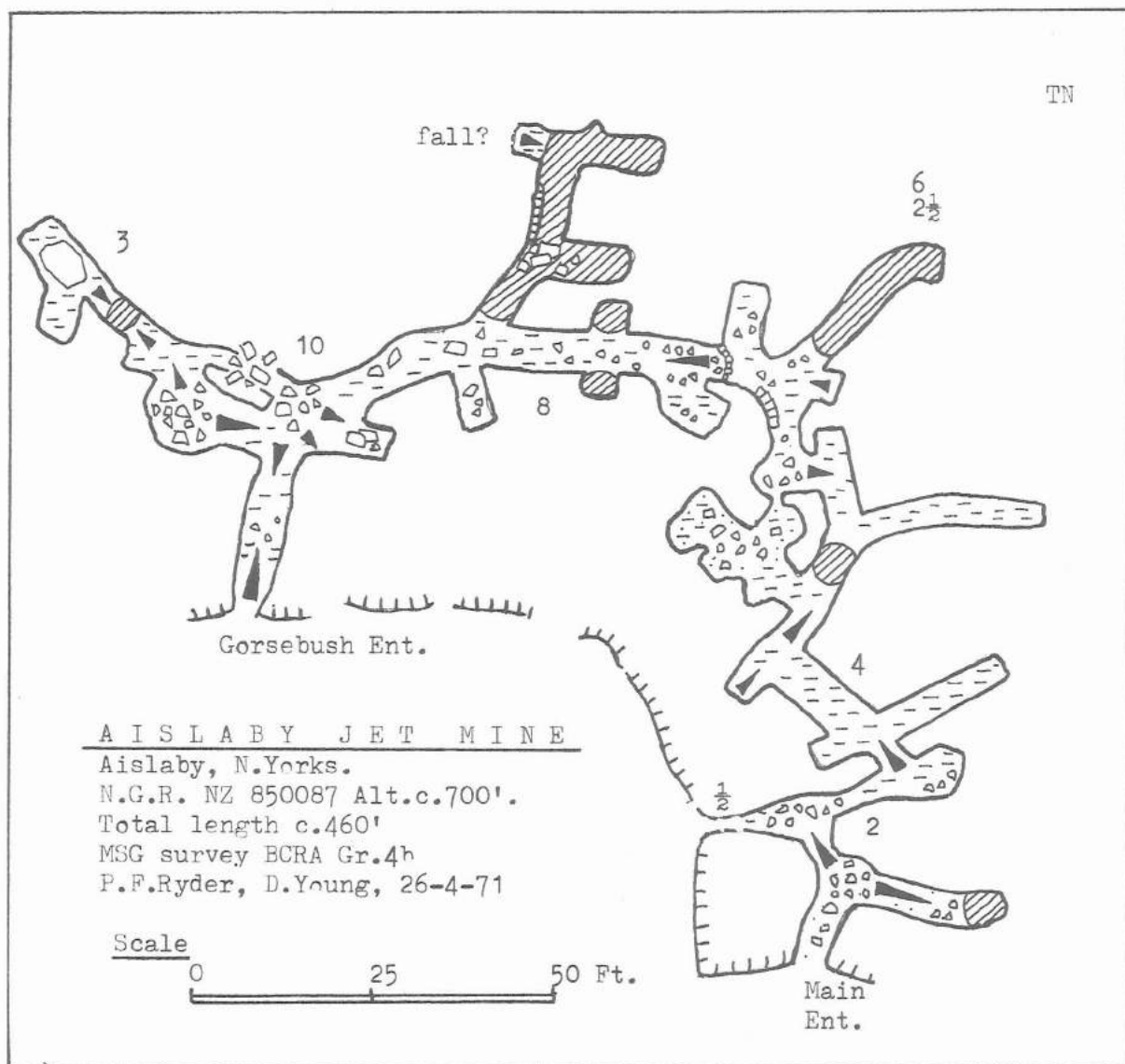
K.R.Solman and P.F.Ryder.

(3) Aislaby Jet Mine. N.G.R. NZ 850087.

This is not a recent scene of MSG activity, being visited quite some time (five years) ago, but a description and survey have never been published, and the context of this article seemed a suitable opportunity for remedying this deficiency.

After receiving information from a workmate of "caverns measureless to man" at Aislaby, PFR and Dave Young had an evening trip out to the site on 26th April 1971. The "caverns" turned out to be a series of old mine workings, of no great extent but quite interesting. From exposed seams of jet we decided that this must be an old jet mine - although no documentary evidence has been traced (again, further information would be appreciated).

The two entrances to the mine are situated in a scarp,



the north edge of the wide Esk valley, commanding extensive views both inland and down over Whitby and the river mouth. The entrances are c.80' apart, and are connected by a rather winding passage, with a variety of short branches and headings opening from it, on either side, none more than a few yards in length. There are a few minor roof falls, and one passage which terminates in what may be a fall, but in general the workings are in a fairly sound condition. The jet seam is well exposed just inside the western (Gorsebush) entrance.

Total length of the workings is c.460'

P.F.Ryder.

Other Jet Mines in Cleveland.

There are probably quite a number of small workings similar to Aislaby Jet Mine in the Cleveland area, driven in search of either jet or alum.

Atholl Lawton has noted some old workings, thought to be jet mines, whilst walking in Snotterdale, a branch of Scugdale (the valley above Swainby, near the north-west corner of the Cleveland Hills). There are two mines, entered from an old quarry at the head of the dale, just above a forestry track at N.C.R. NZ 517013. The workings appear to be similar in character to the Aislaby Mine - several entrances connected by passages with several small headings opening from them. Total length of passages in the two mines is something in excess of 100'.

One of the more fascinating aspects of caving in the Northern Dales is the number of interesting sites, other than caves, which one comes to visit, and where one's interest in geology or natural history is awakened. Many readers of this Journal will be familiar with the West Stainmore area - a few miles of woods and rolling farmland containing a few of the Northern Dales finest caves, between the bleakness of Stainmore itself and the fertile lowland of the Vale of Eden.

The following article is reprinted from 'The Westmorland Naturalists' Gazette', Vol.27 (September 1957), and may well be of interest.

Flying Moles of West Stainmore.

A rare sub-species of the common mole (*Molus vulgaris*) has recently been recognised in the West Stainmore area, and its habits and mode of life perhaps deserve to be more generally known amongst British naturalists. The existence of the sub-species has long been known to local residents, but scientific recognition has only come of late, and there may be many who are not yet even acquainted with the existence of one of the more fascinating of England's small mammals.

Many people, laymen as well as keen students of the world of nature, must have seen the corpses of moles dangling from a strand of barbed wire atop a drystone field wall, in the West Stainmore area. It is true that, in less civilised areas of the country, farmers and gamekeepers have been known to kill moles and other small animals, and hang up their victims in public places (this is a direct survival of a Pre-Celtic rite, the symbolic re-offering of the dead to placate the Great Earth Mother). Such primitive superstitions have long been eradicated in Westmorland, however, and the "mole gallows" so often seen is no more than a utilitarian means of catching and killing moles.

One might think that a single strand of barbed wire, hung 4" to 6" above a wall top, would not be the most effective means of capturing what is (in most areas) a predominantly burrowing mammal. However, this device has been found to be the most effective in controlling the West Stainmore sub-species of mole - *Molus vulgaris harrisonii* - due to the unique adaptation of the creature. The West Stainmore moles do possess limited powers of flight.

Physiology of the West Stainmore Moles.

This bizarre evolutionary adaptation of *Molus vulgaris* is well seen in a consideration of the physical morphology of the creature. *M. vulgaris harrisonii* possesses a bone structure more like that of a bird than of a burrowing mammal, bone cavities resulting in a skeletal weight of only one third to one half of that of *M. vulgaris* sp. Despite the apparent fragility of the animal's skeleton, the hind limbs are powerful and muscular. The most striking physical characteristic of the sub-species is, however, the development of a web of leathery skin between the fore and hind limbs.

The nature of this rudimentary "wing" has led to the suggestion that the sub-species owes its origin to the interbreeding of moles and bats (which are often found occupying the same habitat, limestone caves, throughout the Northern Pennines). This concept is thought unlikely by some, but important work carried out early this century by the naturalist and explorer Blenkinsopp, in South America - far removed from the pleasant pastures of West Stainmore! - may be of relevance here.

Blenkinsopp's Mole.

Flighted moles (which have now been recorded in a dozen or so widely separated localities throughout the world) were first recorded in the highlands of South West Venezuela in the mid 19th century. Their habitat and mode of life were investigated in detail by Sir Henry Blenkinsopp (see 'Journal of the Tropical Natural History Society, Vol.25 part iii, 1906, pp.354-376) in 1903. Blenkinsopp's Mole (*M. equatorialis blenkinsoppii*) is a flighted sub-species showing very similar adaptation to *M. vulgaris harrisonii*, although being rather larger, which was shown to result from the mating of Venezuelan fruit bats and the Equatorial Mole. Both creatures shared the same environment, the massive limestone caverns so common in the Venezuelan uplands, and Blenkinsopp observed male fruit bats swooping down to pick up moles from the cavern floor. After mating, which took place at roof level, the bats were observed to release the moles, which fell back to the floor of the cavern.

This fall, however, frequently proved fatal to non-flighted moles (Curtiss, the American naturalist, showed in a series of experiments in 1936/7 that falls in excess of 20' are generally fatal to specimens of *M. vulgaris* - see 'Journal of the American Naturalist, Vol.76 (1942), pp. 28-47), and thus offspring rarely resulted from the union.

Mating of bats and *M. vulgaris* has not yet been observed in the West Stainmore area. The caverns, or "shacks" in the limestone of this region are, however, frequently of rather limited vertical extent, bringing the normal habitats of the bat (the roof) and *M. vulgaris* (the clay floor) into very close proximity.

Adaptation Theory.

A second theory as to the origin of *M. vulgaris harrisonii* is that the unusual physical features of the sub-species are purely an adaptation to environment. In a dissected limestone area, *M. vulgaris* is often forced to live on very steep hillsides, or in limestone caverns and fissures having their egress in precipitous cliffs. The ocular deficiencies of *M. vulgaris* are well known, and unadapted colonies of moles have been observed to have a high mortality rate due to the tendency of their members to fall down declivities and the sides of crags, with fatal results (as would be expected in the light of Curtiss' experiments). An adaptation to the flighted mode of existence, as in *M. vulgaris harrisonii*, would result in a lessening of this mortality rate.

Habits and Habitat of *M. vulgaris harrisonii*.

The molehills, the surface expression of intricate subterranean mole-warrens, of *M. vulgaris harrisonii*, can be distinguished from those of the unadapted parent species by their central concavities. These molehills in fact mark the point of the exit of the mole from the ground at the commencement of a flight. The creature is thought to proceed along the warren tunnel at a considerable pace, before thrusting upward with its muscular hind limbs, and breaking up through the soil (hence the central concavity in the molehill), its momentum enabling it to become immediately airborne.

The moles rarely fly singly, but in considerable numbers - flights of 30 or 40 moles, in tight formation, have been observed on occasions. Sightings of airborne moles are, in fact, uncommon, since flights tend to be nocturnal. The moles tend to fly at no great height - 3' to 4' above ground level seems to be the norm. Considerable damage to standing crops, and even livestock, has been reported, collisions doubtless being ascribable to the ocular deficiencies of the creature alluded to above.

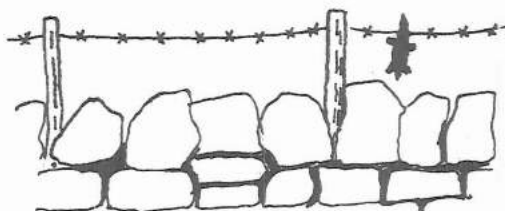
The experienced game keeper can track the courses of flights of *M. vulgaris harrisonii* by the telltale evidences of broken vegetation, damaged hedges and fences, etc. Once a mole flight path has been established - and such routes seem to be used night after night - it is a simple matter to suspend a strand of wire a few inches above a walltop. The leaders of the flight will sense the presence of such a substantial object as a stone wall, and gain altitude to skim over its crest - with, if a wire has been set, fatal results.

Savage as it may seem, this "wiring" has proved to be the most efficient method of controlling *M. vulgaris harrisonii*, and many of our readers must have seen its rather sad result.

Flying Moles in Legend.

The actual numbers of the West Stainmore sub-species, unhappily, seem to have declined in the present century. Local antiquaries, such as the Rev. Barker-Smith ('A Westmoreland Diary', Blakes of Kendal, 1897) have collected folk tales and legends describing the catching of great flights of moles in the 15th and 16th centuries, the creatures being so common at this time as to provide a valuable source both of skins and meat. Early ballads, such as 'The Greate Moule of Broughe' mention moles of much greater size than those still living - perhaps just a legend, or perhaps another sub-species, now extinct?

Simple country people point out the grassy depressions ("shack holes") which line the limestone uplands, as being "mole holes", features which the cynical scientist of modern days ascribes merely to the solution of the limestone by rain water. Yet a few years ago, the very existence of flighted moles in England was thought impossible, and even today many people find the attributes of this fascinating sub-species such as to tax their credibility.



"Mole Wire" set on top of wall.

P.R.Awelom
F.R.Mol.Soc, Ph.D.

Richmond Copper Mine.

A survey of the Lower Series of this mine was published in MSG Journal 3 (1970), without a description. Recently the Upper Passages have been surveyed and the rises investigated. The full survey, here reproduced, is self explanatory and only a brief supplementary description is given here.

The mine is located at the side of the footpath along the west bank of the Swale less than $\frac{1}{2}$ mile upstream of the bridge at Richmond. From the bridge the route along the bank is over the remains of a stone slab cartway used for taking ore from the mine to Richmond Station. The history of the mine has been somewhat enigmatic (see e.g. Riasstrick 1975), however, a detailed account is to be published shortly (Hornshaw 1976). It seems that the main workings were developed over a few years in the early

1900's although some of the passages near the entrance may be much older. Drainage was provided by the drainage level north of the working level and the problem of ventilation was solved by using bellows to pump air when necessary. Today, most passages seem adequately ventilated although the crosscut heading south through the shale falls is a bit stale. This was an unsuccessful trial for a lead vein.

The best route to the Upper Series is via the Slanting Rise which is easily climbed (novices prefer a handline). Above it the passages contain several sumps back down to the lower level and one rise discharging water from a higher level. Climbing this with a scaling pole showed the water entered 30' up seeping straight through a solid (sandstone?) roof. The rise in the shale fall crosscut was 35' high with water entering similarly by seepage.

The rise discharging water into the drainage level was scaled with the dry rise to the west and a connecting passage about 25' up. The water came down a calcited slope from a low archway into the bottom of a further rise. This is at least 30' high but one cannot look up for the water! A search of the surface above the mine revealed no sinks to account for these flows, they are presumably percolation from a higher aquifer.

The scaling pole (14' long in 2 sections) was also used to scale into a short length of high level passage west of the shale fall crosscut. The rise above the wooden platform in the main level also leads to a short passage. The other rises either lead to workings directly above the lower levels or are blind.

All the main passages end at foreheads. Although there are two roof falls in the small passages near the entrance, it would appear that virtually the entire mine is depicted on the survey. The length of 4,030' dispels legends of "miles of passage" and "through trips to Hudswell" popular amongst Richmond locals.

- Raistrick A. 1975 The Lead Industry of Wensleydale and Swaledale
Vol.1 The Mines p.96.
Hornshaw T.R. 1976 N.Yorks County Record Office Journal No.3
in press.

Dr.G.Stevens and G.Womack.

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RICHMOND COPPER MINE

Richmond Yorkshire

N.G.R. NZ 165006

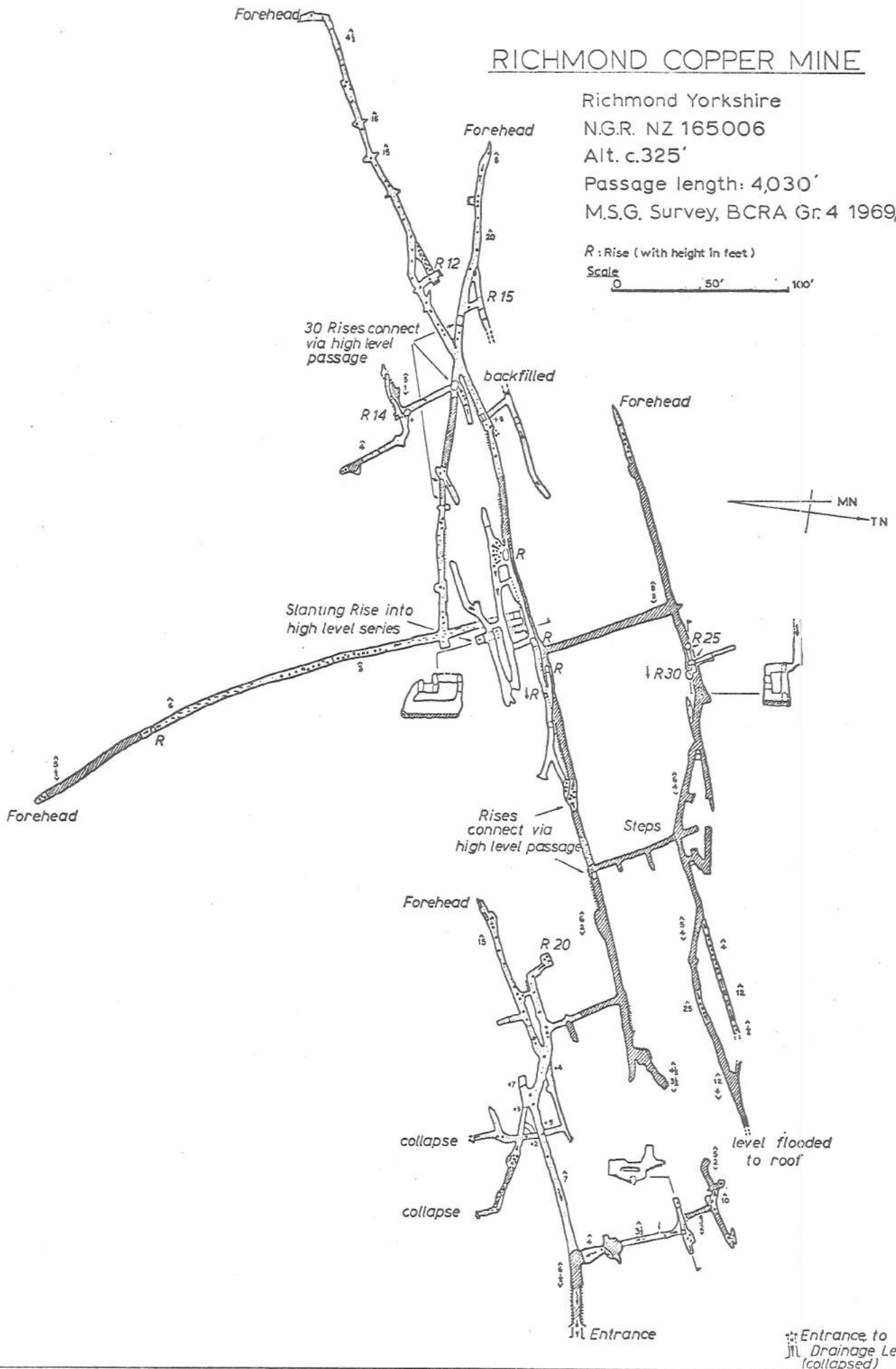
Alt. c.325'

Passage length: 4,030'

M.S.G. Survey, BCRA Gr. 4 1969/75

R : Rise (with height in feet)

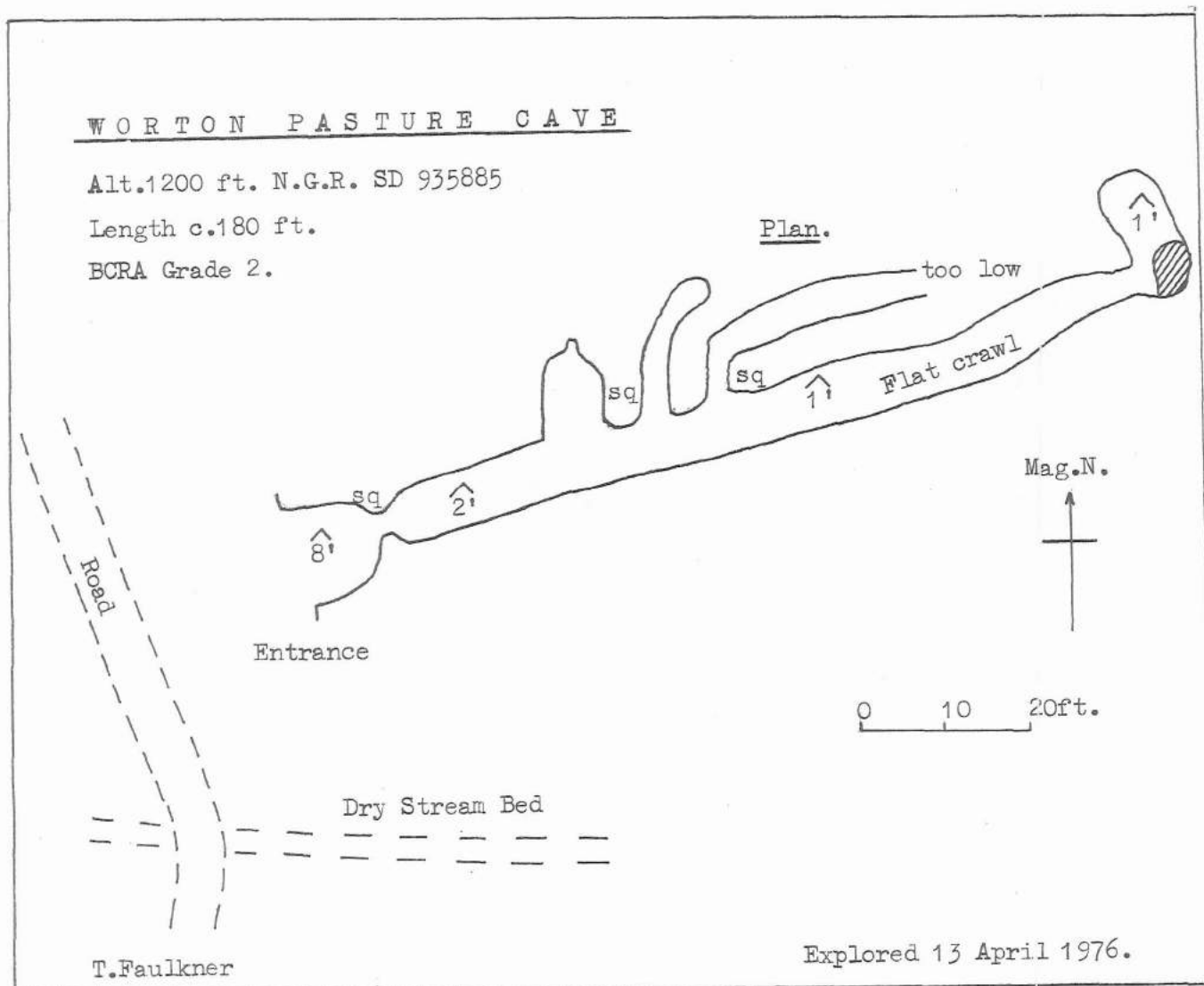
Scale 0 50' 100'



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