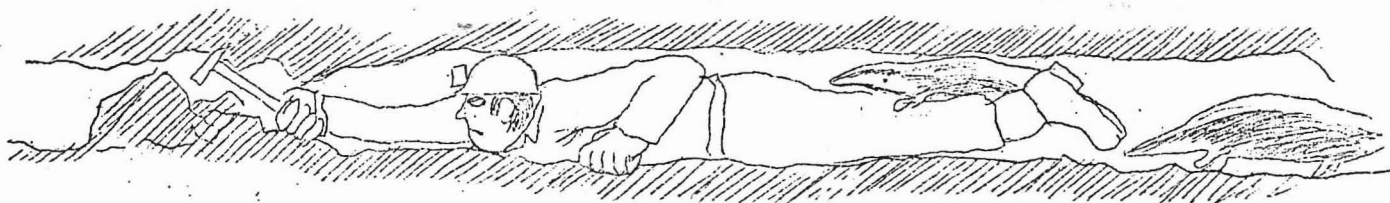


MOLDYWARPS SPELEOLOGICAL GROUP REPORT III**M.S.G. REPORT No. 3 May 1968.**

The main articles in this Report concern Smeltmill Beck Cave, discovered by the MSG in 1967. Exploration, and consequently publication, of the cave were held up by the access restrictions imposed during the recent foot-and-mouth epidemic. The cave has now been fully explored, and it is hoped that a survey will be commenced in the near future - although this will be a very arduous task. Our thanks are due to Mr Lord, of Hewigill House, Winton, for allowing us to visit the cave, which is on his land.

Searching in other areas has failed to reveal any similarly spectacular finds - once or twice we have thought we were on the brink of a major discovery, but this has not been so. A little digging has revealed extensions of Hard Level Gill Cave (again) and Trough Scars Cave,, but the importance of these finds cannot be underestimated. However, they are duly included in this Report.




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The Discovery and Exploration of Smeltmill Beck Cave

On Saturday 6th May, 1967, Messrs. Cooper, Longstaff, Robinson and Ryder of M.S.G. set out for Swindale Pits, equipped with 50' ladder. The only transport available was motorcycles, and a halt was forced by heavy rain on the A66, a mile or so short of North Stainmore.

A dry gully was noticed passing under the road here, running down to a scar below the road where some trees could be seen. This was investigated, for the possibility of shelter as much as for caves. On reaching the top of the scar, it was seen that what was a dry gully on the limestone became a very large stream below the scar, and that beside the bank of rocks and grass from which the stream emerged were two low cave entrances.

Caving clothes and helmets were donned, and the cave entered. A wide depressing bedding cave was found, some two or three feet high with about a foot of icy water. This was followed for c.60' until the air space suddenly diminished, which was seen as a good reason for making a hasty exit from the cave, deeming it another 'dry weather and wet-suit' possibility. A few minutes after we had made our exit, the rain stopped and the sun came out. Almost simultaneously a rush of water came down the 'dry' gully running under the road, and the water level in the cave entrance suddenly rose several inches. This hardly encouraged a desire to return to the cave.

Thus Smeltmill Beck Cave was forgotten until the 22nd of September, when it was remembered, and the weather being dry, and wet-suits being taken, Messrs Robinson and Ryder, and Colin Carson, returned to 'check' the cave. An hour or so was spent pottering around and finding another hundred feet or so of wet crawl, before, on the way out, another low wet passage was noticed near the entrance. This was 'pushed' through a variety of crawls and ducks, with occasional higher rifts, until it suddenly opened into a high well-decorated streamway. Unbroken rock shelves, which had to be broken down to pass, confirmed that this passage had not



The l. passage at the 'Y'-junction is of "stooping" height, but becomes larger. A duck can be avoided by a long ox-bow. The water deepens, and at c.300' from the 'Y' junction a chamber is entered. The only way on is a small squeeze to the r. over a mantelshelf under the water surface ("Hope"). Beyond is a 'T'-junction. To the r. soon ends, to the l. a second 'T'-junction is reached after c.40'.

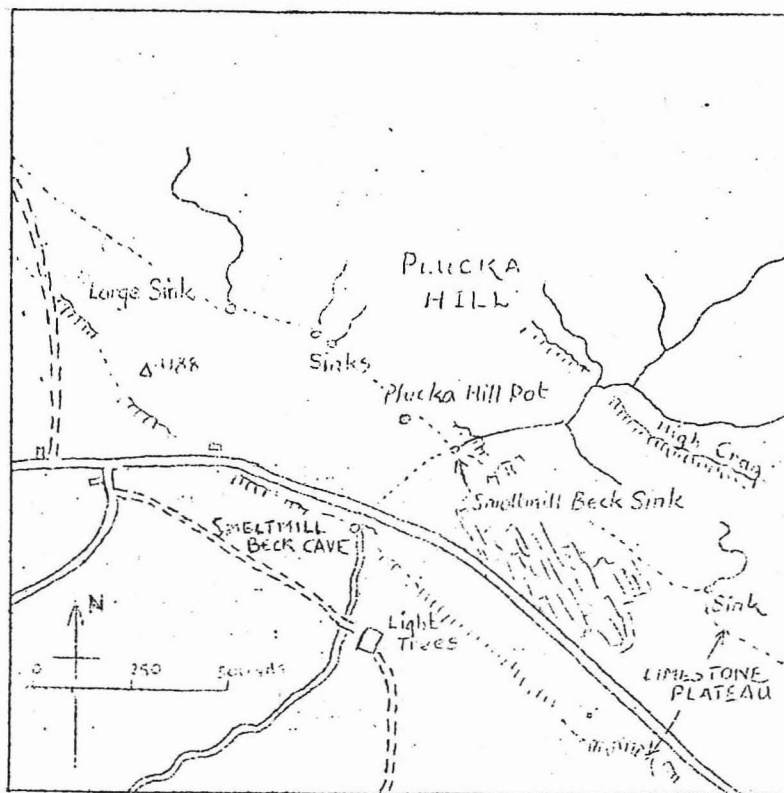
In the passage to the l. here the water becomes shallower, and the roof lowers, until one is forced to crawl on hands and knees over a crusty mud floor ("Hand Wrecker"). Eventually the passage heightens and ends in a 'T'-junction. To the l. is a sump in static water, with to the r. two more silted sumps. one passable in dry weather for c.40' until it splits into three more sumps.

Returning to the second 'T'-junction after "Hope", the passage to the r. leads to yet another silted sump. The water in the passages beyond "Hope" is fairly static, and swarming with cave shrimps and other forms of life. These passages obviously flood to the roof.

The total length of the cave is estimated at a little over a mile. A survey attempt, by an MSG/OUCC party, failed due to damaged instruments.

After rain the entrance series of the cave floods to the roof in a very short space of time, and it would probably prove fatal for any caver who was in the entrance series ("The Ducks") at this time.

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#### Situation of the Cave

The Main Limestone forms a wide outcrop along the N. side of the valley of Argill Beck, with a prominent line of scars. Between Palliard Scar ( NY 863.134) and Borrowdale Beck ( 834.160) no surface stream normally crosses the outcrop. O.S. Maps show Smeltmill Beck (850.147) flowing across the limestone, but this stream normally sinks in its bed above the A66. This water presumably joins the stream which flows from Smeltmill Beck Cave, above Light Trees farm (NGR Cave entrance 848.147). Smeltmill Beck Cave is the only resurgence of any size for this stretch of limestone

From surface observations, the bulk of the cave stream seems to be provided by a large sink at 845.154, where a sizeable stream, flowing in a suprisingly large valley, falls into a sink-hole choked with masses of boulders and a profusion of rusty oil cans.

A little further east, at 848.151, two smaller streams sink near to one another, one into an impassable crevice, the other rather mysteriously beneath a substantial stone wall. A pot-hole nearby is choked with rocks and dead animals c.15' down.

Between these sinks and Smeltmill Beck are a few small sinks and many shake-holes. A little digging in one of these revealed Plucka Hill Pot (850.149), a pleasant water-worn shaft, 25' deep, taking a small stream, with no horizontal development.

Some distance east of Smeltmill Beck is another stream sink (857. 145) which may feed the cave stream. A few yards from the sink is a rift in the limestone, filled with decaying sheep remains.

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Reports of MSG Meets Spring 1968.

### 3/2/68 HILTON MINES

J.Cooper, A.Holmes, J.Longstaff, P.Ryder.

Hardside Low Level, Middle Level, and Dow Scar High Levels were explored. The latter two interconnect, and lead into a maze of intersecting passages and chambers, well furnished with attractive minerals - amber fluorspar, galena, pyrites, barytes, witherite and calcite were collected.

10/2/68 -- Smeltmill Beck Cave (see above), and J.Longstaff, M.Mountjoy, P.Ryder, visited Hilton Mines again.

20/27 Jan., 9 March /68. HARD LEVEL GILL CAVE. J.Longstaff, P.Ryder.

The passage running north from the small chamber where the two passages - the "tube" and a crawl through a boulder ruckle - from the entrance chambers of the cave join, was forced. This passage formerly ended where a leaf of rock came down to within four or five inches of the floor.

The floor, of hard packed sand and gravel, was dug away, until one could squeeze through. Two right-angled bends made this procedure very awkward. The passage beyond is winding, and just of sufficient size to allow flat crawling. After c.30' an exceptionally tight corner coupled with a lowering of the passage terminated exploration and a retreat was made, with great difficulty, there being no room to turn around. The dug squeeze is especially difficult in reverse.

23/3/68 ALUM POT J.Cooper, C.Carson, P.Robinson, P.Ryder.

Heavy rain had flooded Lower Long Churn, and the only cave entered was Upper Long Churn, which proved extremely wet and sporting.



Spring Meets - continued.

G.Langthorne, J.Longstaff.

30/3/68 - PRIORSDALE C.Carson, J.Cooper, P.Robinson, P.Ryder.

Once again the cave at Priorsdale rising was examined, again without any further passage being found. The rising was flowing strongly - the stream perhaps a little larger than that resurging at Crackpot, yet no water could be found sinking in Little Gill - the small sink seen here on our previous meet being no longer active. No new caves were found in the Little Gill area.

A mine level in the Ashgill area was found and explored, and surprised the explorers with a magnificent display of calcite formations which would be worthy of merit in many caves. Forests of foot long straws grow from many of the old timbers, and there are blood-red stalactites c.2' long and 4" in diameter - these are very fragile, as are many other formations which have grown in a comparatively short time. In one place there was a magnificent nest of cave pearls - proof that the level is little visited - and should remain so. Thus its location is not revealed here. The level was followed for something over half a mile, and showed no signs of ending when the party turned back.

13/4/68 - SWINDALE AREA C.Carson, J.Cooper, J.Longstaff, P.Ryder.

The object of this trip was to search for caves on the moors N. of Brough. Three small impenetrable sinks and two small impenetrable risings, a considerable selection of shake-holes, and an abundance of unexploded military hardware were found.

15/4/68 - S.Hodgson, M.Marshall, P.Ryder. SWINNERGILL

Swinnergill Cave was again visited, but no new passage of any significance was found. A lead level, previously visited by A.Holmes and J.Longstaff, was explored for a considerable distance, and showed many features of interest.

18/4/68 - TROUGH SCARS CAVE J.Cooper, P.Ryder.

A previous visit by two MSG members to the larger of the two caves in the gorge had resulted in the discovery of a low side passage on the r side (entering) of the main bedding plane. A large but surprisingly trundleable rock was moved, and access gained into a small 'chamber' c.3' high. After another 15' - 20' the passage became too low, although another chamber, at least a foot high, could be seen beyond. The 'extension' shows protruding rock shelves, evidence of the phreatic origin of the cave.

20/4/68 - COVERDALE C.Carson, J.Cooper, S.Hodgson, P.Ryder.

Waterforth, a large resurgence above Carlton (which J.K.Arrowsmith of the DPC had told us of), was found, and the removal of a little earth opened the entrance of a passage. Hopes of this being a new master system were choked, as was the cave, after c.60'. If one can pass the boulder choke, there must be an extensive system here, as what seem the probable sinks, at Howden Lodge (NGR 043.847), are over a mile away. Two short caves were found near the sinks, one c.25' long, and reminiscent of Coving Sike Pot, the other c.20' long, and choked with loose rocks, broken glass, rusty iron, dead sheep etc. A third entrance was half filled with similar rubbish, and courage could not be summoned to crawl in. A cut from the rusty iron or broken glass could lead to unpleasant infections.

27/4/68 CHAPEL - LE - DALE MEET - J.Cooper, C.Langthorne,

J.Longstaff, P.Ryder. Great Douk Cave was followed from 'daylight' to 'daylight', with some route finding difficulty in the wet crawls and tight passages near the upstream end. Sunset Hole was descended to the head of the 50' ladder pitch - no tackle being available.

4/5/68 GOD'S BRIDGE CAVE C.Langthorne, P.Ryder.

The main stream passage was visited, but quickly vacated, due to threatening weather, light failure, and a fairly high water level. The cave between the main entrance and the resurgence was surveyed to Grade III - but the entrance in to a section of the stream passage directly

PRESERVATION -- A CAVING CODE FOR SMELTMILL BECK CAVE.

After noting with dismay the gradual destruction of the fine formations in Crackpot Cave over the past five years or so, it is perhaps judicious to consider a 'Caving Code' for Smeltnill Beck Cave. The nature of the problem, however, is somewhat different from Crackpot, where easy access has not deterred potential vandals, mostly, but not all, inexperienced novices.

The entrance series of Smeltnill should deter all but the keenest type of caver, and thus there should be no trouble with the novice fringe. In fact the nature of the cave is such that it is virtually intolerable to anyone without a wet-suit or exposure-suit - for exposure creeps on very quickly as one is continually in and out of the stream, and is soaked through on first entering the cave through the Ducks. Therefore our first recommendation is that no-one without a wet-suit or exposure-suit should enter the cave. This may seem rather harsh, but a person with exposure is bound to destroy, or mar, unintentionally, many of the formations.

(The M.S.G. Treasurer, whose attire included 'long-johns' and woolly pullovers, on a trip to Cairn Chamber, will vigorously confirm this - Ed.)

For similar reasons we consider that the maximum number of cavers in a party should be limited to six - the optimum being four. For those at the rear of a large party must always move at a tremendous pace compared with those at the head, and thus unintentional damage to the cave may result. Also, the leader cannot control all the members of a large party, and ascertain that they inflict no intentional damage. The cave is often narrow, with flowstone cascades on either side, and stalactites and helictites hanging below helmet level.

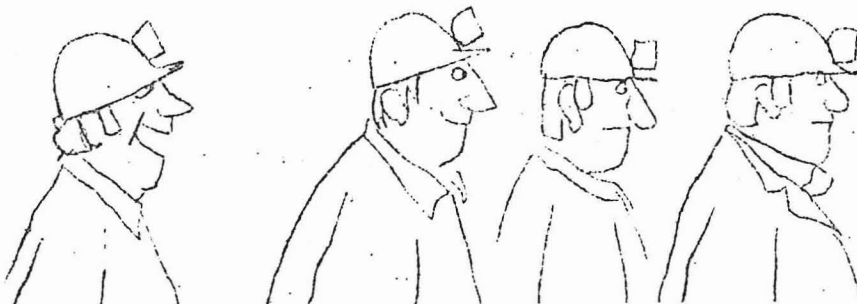
The cave walls are largely covered in a hardened (ancient) mud deposit, on which in many cases flowstone is to be found. This mud deposit is very friable, and thus the flowstone may suffer. At a number of places this deposit forms a false floor, or ledges, on which flowstone has accumulated. Such false floors must not be trodden on, as they will almost certainly collapse. In such cases the route to be taken is in the stream itself, even though this may entail crawling flat out in the water. The only exception to this rule may be made in the 'Rift' section of the cave, where traversing above the stream is sometimes unavoidable.

Apart from these specific recommendations occasioned by the unusual nature of the cave, we also urge parties to stick to the Caving Code, and in particular not to deposit spent carbide anywhere in the cave except in the main stream, where it is rapidly washed away. Carbide is not only unsightly, but may harm fauna which have been observed in Smeltnill.

Please follow all these recommendations, and preserve Smeltnill Beck Cave for future generations of speleologists.

Colin Carson.

2 Miles to the Stalactite



### Cave Surveys.

The following cave surveys are now in the possession of the MSG, mostly with the Treasurer -

Ayle Burn Mine Cave, Alston, C.U.C.C. (before the DCC Extension).

Crackpot Cave, Swaledale.

Fairy Hole, Eastgate in Weardale. A D.C.C. Survey, of the first part of the cave, up to 'The Choir'.

Harehope Quarry Cave, Frosterley. DCC Survey.

Hope Level Mine Cave, without far reaches of upstream passage,  
NPC Survey.

Hope Level Mine Cave, Far Reaches (from the first wet crawl to the end)  
DCC Survey.

Jack Scar Cave, in "Caves and Caving" 1938, BSA.

Mawkins Caves (Moking Hurth), NPC and UTCC Survey.

Pate Hole, Westmorland.

Sowan Burn Cave, the stream passage, NPC Survey.

Swinnergill Cavo, Swaledale, MSG Sketch Survey.

'W.S.R.S. System' (Moking Pot), MSG Survey.

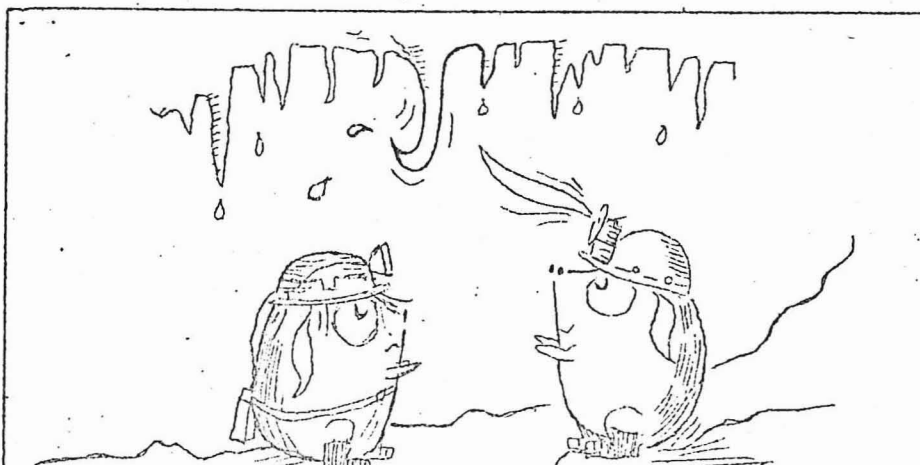
West Side Pot, ULSA Survey.

Assorted MSG Sketch Plans.

In NPC Journal, Summer 67 are various surveys of caves in the Mallerstang and Wild Boar Fell area, as well as Ackrey Gill Cave, Cotterdale, and Cliff Force Cave.

Thanks are expressed to those who have contributed surveys, or loaned surveys to be traced.

The MSG survey of God's Bridge Cave has proceeded a little further - it is hoped that this will soon be completed. £3 from the Treasurer's little wooden box, the accumulated subscriptions of loyal members, has been spent on a prismatic compass, purchased by Colin Carson. This should ease surveying difficulties, and it is hoped that we may even make an attempt to use it, along with the tagged non-shrink plastic clothesline, in surveying Smeltmill Beck. Willing surveyors are another prime requirement.



In the past year or so various MSG meets have been held for the purpose of searching for 'new' caves. Unfortunately, many of these have proved unfruitful, with a few exceptions.

"Promising" areas are generally found by plotting in the outcrop of the Main, or Great, Limestone, on O.S. 2 $\frac{1}{2}$ " maps, and noting where streams sink in, or reappear at the foot of, the limestone outcrop. Unfortunate experience has taught that many of these sinks, where they do occur, are either impenetrably narrow, or are hopelessly choked, and that many risings issue from masses of tumbled boulders. The majority of the larger risings seem to show massive collapse - as at Crackpot, Cliff Force, Thackthwaite (where digging has revealed cave entrances), and Priorsdale, Oxnop Beck and Waterforth (where little progress has been made). In some cases a stream may flow from a tiny fissure, although a dry entrance may give access to the same stream flowing in a sizeable stream passage (as at Moking Hurth and Sowan Burn).

If reference to the geological map shows the limestone to be dipping, longer distances between sink and rising may be expected, with the waterflow following the dip of the strata. The Main Limestone of Binks Moss, 4 miles SW of Middleton-in-Teesdale dips eastward. In the eastern (lower) part of the outcrop little water sinks, but there are two sizeable risings, at NY 895.254 (Wester Beck) and NY 899.252, which must be fed by sinks further west. Both risings are almost predictably choked with tumbled rocks, and little solid limestone is visible near them.

O.S. Maps are often misleading in the size of stream they show - a fault possibly traceable to different areas being mapped in different weather conditions. Sizeable streams (e.g. that sinking in Cross Pot) may be entirely omitted, while tiny gullies, hardly damp in normal conditions, may be shown as streams (as on Bonks Moss). Often streams which normally sink in their beds are shown as flowing on the surface - as is Smeltmill Beck, which flows under the A66 only after very heavy rain.

In general, when searching on Main Limestone outcrops, it is wise to examine all risings before walking along the upper part of the outcrop to peer into multitudes of shakeholes and small sinks. Even where open shafts in shakeholes occur, they often show no horizontal development. In some areas limestone plateaux may be riddled with vertical shafts, piercing the whole thickness of the limestone (e.g. Tailbrig and Swindale Pots), none of which lead into cave passages. It has been theorised that caves tend to develop upstream from the rising.

Exceptions to these general rules do occur - as in the W.S.R.S. System, or Moking Pot, above Moking Hurth, and Blue John Hole, Birkdale.

When a rising is found alongside a surface stream which flows over the limestone, one should check whether the water is not merely derived from local sinks in the bed of the main stream. Such cases are obvious in dry weather conditions, when the whole stream sinks and reappears nearby, but may be confusing in other conditions, when sinks may be below water level (as at God's Bridge). Sinks in a surface stream bed may, however, flow under surface watersheds to feed more distant resurgences, e.g. the Whitey Gill - Oxnop Beck system, and Swinnergill - East Gill. The caves in Swinnergill seem puzzling, as if development has begun at the sink and proceeded downstream - both Swinnergill Cave and Kirk suddenly close down to impassable fissures after three and two hundred feet, although nearer their entrances both caves have large stream passages.

Limestones other than the Main may also show interesting cave development, and doubtless much remains to be discovered in them. Searchers for caves in the Undersett, or Four Fathom, Limestone, may take hope from the example of Hope Level Cave, nearly three thousand feet of passage, often quite large, in twenty-four feet of limestone. Thackthwaite is another long cave in the same limestone. Here the solution of the thin limestone by the large stream has meant massive collapse of the shale band above, which can be seen in the cave roof. The cave stream may be derived from sinks in the Main Limestone, and seep down through the shale.

The thickness of the Main Limestone varies from one area to another. At Lunthead the bed is c.102' thick, yet in other areas it diminishes to 30 - 40'. The average thickness is c.70'.



The Melmerby Scar Limestone, near the base of the Yoredale Series, in places attains a thickness of over 300' - scope for cave systems comparable with those in Craven. This limestone is well seen in the scarp of the Pennines overlooking the Vale of Eden, and in such valleys as Hilton Beck. Unfortunately much of this area is somewhat inaccessible by road, as well as being littered by unexploded bombs and shells. Sinks and risings do occur. The stream flowing out of Dogber Tarn sinks in a shallow rift, and probably reappears from a scree several hundred feet lower. There may be a cave system here, but there are no obvious entrances.

Purely phreatic caves, formed beneath the water table, cannot be predicted from maps as can some stream-cut caves, and the only way to find them is by inspecting all limestone exposures - scars, the walls of gorges etc. There are few dry cave systems of any length in the northern Dales, except those cut by old mines. Some of these caverns were very extensive, but most are now inaccessible due to collapse of mine workings. Caverns are documented in the Flushiemere, Silverband, Lunehead and Cow Green mines. A smaller dry cave series is seen in Kisdon Cave, also cut by a mine level, near Keld (see MSG Report I). Cavities and rifts in old mines, where minerals have been extracted, should not be mistaken for natural caverns - although they may have existed as such before the deposition of the minerals.

'Caves' in strata other than limestone often turn out to be mine workings. Where natural caves do occur, they are generally due to land slipping, and are of short length. Caves of this type have been reported in the Chalk of the Isle of Wight, and in the igneous rocks of the Scottish Highlands. The caves of Whitcliffe Scar, above Richmond, although they are in the Main Limestone, may be partially due to action other than that of water.

The MSG Index of Northern Caves (at the moment covering Wensleydale, Swaledale, Teesdale and Weardale) lists 66 caves and 20 potholes or groups of potholes (which show no marked horizontal development, as distinct from a 'cave' entered via a pitch). Of the 66 caves, 39 contain active stream passages. 4 of these are entered at their sinks and 27 at the risings. 10 of the 86 entries are in strata other than the Main Limestone.

#### The MSG Index of Northern Caves.

This is a card index compiled by the Secretary, of all caves, potholes and promising sites (sinks and resurgences) in the Northern Dales. Calculations from the entries reveal that the approx. total length of cave indexed is 43100', and interesting statistics about the average cave one is liable to find in Wensleydale, Swaledale, Teesdale and Weardale. This cave is a resurgence, with a total length of 653' 0 $\frac{1}{2}$ ", of which 389' 5 $\frac{1}{2}$ " are active stream passage. The average stalactite is  $\frac{5}{8}$ " in diameter, 1' 3 $\frac{3}{4}$ " long, and hangs vertically downwards from the ceiling.

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Subscriptions are due for renewal from 1st January 1969.

