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EDITORIAL

We are fortunate once again, in this, No. 2 of our new style Journal, to have plenty of new discoveries to report; discoveries perhaps not having the glamour (?) of Magnetometer Pot and Hammer Pot, but nevertheless of significance and interest.

It must be an unusual situation for an editorial staff to find difficulty in keeping up with offers of articles from Club members, yet this is our happy lot - but we must once again apologise for a considerable delay in producing Vol. 2 No. 2.

A host of circumstances has contributed to this delay, not least of which has been the disorganisation subsequent upon Jack Myers' illness. We are all very pleased that Jack is making a good recovery. In fact, he is already in strict training for future trips in Mossdale, and sent out an S.O.S. for knee-pads the other week to assist him in his creeping. Not only our own club members, but also his many friends in other clubs, wish him a speedy recovery.

How long can our "new discoveries" Journal continue ? Well, we are already in a good position for the next one, and are hopeful of many current digs and scratchings. In the meantime, congratulations to everyone concerned with this spate of new caves and pots. Keep those spades and hammers rattling ! Further good hunting also to our friends of the Richmond School (Yorkshire) Caving Club, who discovered the extension to Crackpot Cave, and the Durham Exploration Club who assisted with its exploration and survey. We are pleased to acknowledge our debt to them for the article on this cave.

Glückauf !

A.Jowett.

THE DISCOVERY AND EXPLORATION OF PEG LEG POT (LOWER EASEGILL CAVERN)

Introduction

Alan Jowett

One of our vice-presidents, notorious for his sharp wit, has described our club as the only working anarchy in the world. There is a lot of truth in what he says; the committee tries its best to organise things, but for the most part everyone does what he likes. Surprisingly enough, such a system produces dividends, for members scatter far and wide over Craven and more remote districts at weekends, frequently returning full of enthusiasm for new sinks, risings, digs and holes.

Instead of attending the Club meet fixed for 5th October, 1958, Dick Hylton, Alan Jowett and Dave Raine went walking on Easegill and on Leck Fell; the wind screeched around their ears and the rain came down in sheets. They found Lower Easegill in flood, but by boulder-hopping managed to cross without getting wet. Dave showed the others a dig that he was interested in, but already Dick had noticed a hole in some large boulders which was engulfing great amounts of water. This hole is on the eastern bank of the gill about two hundred yards above the Upper Easegill Kirk. They spent some time unsuccessfully trying to dam off sufficient water to make a descent possible, but then departed for Leck Fell - full of enthusiasm (and chicken soup from Alan's thermos flask).

Later in the day they found Lower Easegill flooding heavily; the sink was now taking vast quantities of water, and there was no sign of the water backing up. It seemed highly likely that there was a negotiable passage below, and they determined to press-gang others into having a look the following weekend. It was no simple task to get back across Easegill, but the wooden fence across the gill, suspended from a log, provided the necessary footholds.

Sunday, 12th October

J.O.Myers

The description of the newly opened sink engulfing gallons of water sounded so inviting that the following Sunday, Dave Raine, Dick Hylton and I went up to have a look at it. The day was fine and the bed of Lower Easegill was dry. We had a look at the obvious open fissure, finding a small chamber, below which the way on was obstructed by a large limestone boulder. Below this it appeared that there might be a bedding plane leading off, which might be reached by a restricted opening between the boulder and the wall of the chamber. Dick got part way down the hole, but not far enough to see the way ahead.

Operations were suspended for lunch after which we walked up the gill and took some photographs. Dick and Dave then returned to the hole while I walked down to Leck Beck Head and back. On returning to the hole, I found no sign of the others to begin with until I saw Dick's artificial leg cast aside on the ground near the entrance. I found Dave in the small chamber and Dick down below the boulder having got in more easily without his leg. He reported that there appeared to be a small passage ahead but that further digging would be required to clear a way. We decided to leave the clearing job for thinner and shorter men.

Sunday, 19th October

(In a letter, W.Holden reports the activities of the above day.)

Present were :- David Raine, Colin Green, David Gibbons and "Rocky" Holden.

The entrance was first enlarged by the use of a hammer and chisel, a large piece of rock being removed to give much easier access to the passage below. Holden then forced his way through the

entrance passage, pushing all rocks and rubble ahead of him. Soon the passage was cleared and in company with Raine, they explored some 300 yards of new cave to a point where, having traversed over one shaft, they were stopped by a second. Not having any ladders with them, they were unable to descend and returned to the entrance. Green and Gibbons, who had remained outside, then made a trip into the new cave and explored some of the avens and other side passages.

Sunday, 26th October.

Alan Fincham

Reports of new passages and undescended shafts of substantial size; the proximity of this new cave to Leck Beck Head and thence to the hypothetical master cave; the background knowledge of the excellence of the known cave systems of the area; all these combined to produce a good number of both thick and thin men assembled at Greenclose on this Sunday morning.

In addition to these reports, came the rather disconcerting news that entry to the cave was effected for the first time only after a noted member of the club had removed one of his lower limbs to enable him to negotiate the initial squeezes. This latter item of news leaked away and came to the ears of Jack Aspin who replied by telegram to George Cornes: "Congratulations stop. Am sending saw stop. Manually removing cavers' legs stop." A communication well calculated to mystify the G.P.O. and perhaps stir the Lancashire C.I.D. to preventive action !

Disregarding these reports, but not without some trepidation, a strong party of N.P.C. left Greenclose for Bull Pot Farm by convoy, arriving at an early hour.

The weather was fine and dry and on arrival at the entrance we found Lower Easegill much to our liking; not a drop of water was running. This was as well, as with the entrance being but a few feet above the stream bed, flooding could rapidly occur.

As members changed, it was evident that there were two schools of thought present. One preferred to wear waterproof suits in case it was very wet, and risk sweating to death; the other preferred to sweat freely and risk freezing to death. Such was our knowledge of the new cave.

By stages, and after a short bout of boulder removing, the various members present eased themselves round the sharp corners of the entrance series clutching an assortment of ladders, lifelines, shovels and other implements. In the usual N.P.C. "and the devil take the hindmost" mode of exploration, I found myself in company with Batty and Jowett pressing on down the cave.

At first nasty corners, then into a short section of large tube passage, ancient looking and choked off at both ends with a fill of clay and rocks; sharp right here through a little rock window and a pool of water, a short distance further on and a climb down of some 10 feet. We then entered a winding passage of comfortable size which we followed to a point where a shaft opened in the floor, and just beyond this lay a second shaft.

Thus far the ground had been covered by the first explorers, but being without tackle they had been unable to proceed further.

Faced with two undescended shafts, some discussion now centered round which we should descend first. As the second shaft looked the more capacious and shallower, we decided on this one. An easy 24 foot climb brought us to a floor of sand in a wide fissure-type chamber lying at right angles to the passage we had just come down. Walking towards the far end, we found another short descent to a lower level. Batty chimneyed down and then reported that there was no way on as all was choked with sand.

While we were waiting at the top of this last descent, we noticed a low muddy bedding crawl on the right. I crawled into this and was at once aware of a soft breeze blowing into my face. With memories of the like situation in the exploration of Magnetometer Pot, I crawled forward in the mud-filled trench of the passage floor. After only a short distance, I was surprised to find that I could not see anything very clearly in front of me, my light being lost in the gloom and realised that we were into something rather more spacious than hitherto. I scrambled out rather gingerly on to a slope of black cracked mud and then, yelling something suitably encouraging back to the others, descended the mud slope into the centre of the new chamber.

"Surprise Hall", as we decided to name it, is the largest part of the cave, roughly triangular in plan, with a steep mud slope descending to a drop of some 10 feet into the trench of a large passage which forms the chamber's far wall. I climbed down on to the passage floor which was of clean washed boulders and sand, where I was joined by Jowett, Batty and Thurston.

"Downstream" to our right the passage continued for some 100 feet, to a large sump pool beyond which there was no obvious way. A fissure above this pool was later investigated, but did not yield anything of much interest. "Upstream" to our left the large passage continued beyond the point where a boulder was wedged across it. The passage we had entered was of a large tube type with a floor of sand and stones and many solution pockets and such like in the roof and walls. In some parts, the left hand wall appeared to be partially a fill of boulders and sand.

At first it looked as though we were likely to continue for some way, such were the dimensions of this tunnel, and yet within some 200 feet the roof became low and the passage ended in a choke of sand and stones. At this point the only possible way on appeared to be through a very low silted-up bedding passage on the right which was blocked at the highest point by a boulder. A little work here enabled us to squeeze through and descend to the floor of a parallel fissure passage. The prospects were not encouraging, and Jowett and Thurston decided to retrace their steps and search for any side passages that may have been overlooked.

Gordon Batty and I climbed down to the lowest point of our new found extension and slid through a low hole into a little space just big enough to accommodate the two of us. In front of us was a real rabbit burrow, a circular roof section with a floor of tacky black mud occupying just too much of the space to make the tunnel negotiable. At this point we might well have abandoned further exploration but we were gladdened and intrigued to hear the sound of a stream running at the far end of this horrid little tube. As we had not encountered anything more than the merest trickle of water in the cave so far, we thought this might be significant. We decided to try and dig our way through.

While we were engaged in digging out the mud from the floor of the tunnel, we were visited by the surveyors, Myers and Heys. They inspected our activities, listened to our stream and then, concluding that it was going to take some while, departed. Sometime later we were again disturbed by rumblings and other noises which heralded the arrival of Holden who joined in our excavation project. By this time things had become interesting. Beyond a small rise in the mud floor of the passage, the tunnel could be seen to increase in height and the floor slope away downhill. I was intrigued to find that when balls of mud were thrown forward over this rise, there followed a brief period of silence and then a dull "sploosh"; clearly there was a gradual slope down to a pool.

At last we found it possible to force our way through, the latter stages being accomplished more by a process of boring one's own tunnel through the mud than by digging. We arrived at a low T-junction with a muddy slope to a sump pool on the left and an ascending passage on the right from which a small stream flowed and disappeared into the sump pool.

We set out to explore the upstream passage which we followed for some 100 yards, in which length it varied from a fissure to an oval-shaped section. At the upper end it divided into two, the left being very tight and the right ending beneath a dangerous looking boulder choke.

This passage appears to be quite an independent part of the system and only connected to the main cave by the little mud tunnel through which we had come. It seems likely that the source of the stream is from some other sink higher up the gill, since this passage runs back towards the gill. This passage we called "Reverse Passage" since we had explored it from the lower end upwards.

While we were engaged in these muddy and wet wallowings, the surveyors were tying up the detail of their survey and Jowett, Cornes, Tucker, Raine and Reynolds were investigating other side passages and exploring the depths of the first shaft, over which we had traversed.

Exploration of the side passages in the Main Chamber Alan Jowett

John Thurston and Alan Jowett decided to leave Gordon Batty and Alan Fincham to their digging and returned to look for other passages in and around Surprise Hall. The only one of significance in the main passage is on the west side near where the passage decreases appreciably in size. They found that this passage ended in a pitch of depth of about 20 feet after some 20 yards of creeping. The pitch was laddered and Thurston and Tucker descended into an oval-shaped chamber; a small amount of water fell from an aven on the far side and sank into a gravel floor, with some indication of a bedding cave taking the water.

The exploration of the Rift Pitch Alan Jowett

The same party decided to wend their way out and descend the rift pitch on the way; the absence of the ladder they had taken into the side passage prevented anyone else from making the descent. Ladders had been belayed on to the obvious boss at the head of the pitch making a very awkward takeoff; since they had to be unhitched in any case to add the extra ladder, a fresh belay was used through an eyehole well above the top of the pitch. This provided an excellent takeoff and a beautiful clear climb down the shaft.

Alan Jowett descended first. The shaft is at first cigar-shaped varying in maximum width from 6-10 feet; lower down it narrows steadily, finishing as a climb in a long, narrow rift. The ladders just reached the bottom, giving an estimated depth of 70 feet. At the bottom is a narrow but very high rift carrying a small stream; this was followed downstream for several yards until the rift narrowed. Dave Raine and John Thurston who followed felt that the rift could perhaps be pushed further, especially with the aid of hammers to knock off some inconvenient sharp projections.

Upstream and very near the foot of the ladder is a climb into the small passage from which the water issues. Trevor Reynolds first entered this by traversing across from the ladder about 20 feet above the floor. The passage branches after a few yards, the left hand dry branch soon closing in. The right hand branch carries the water and soon develops into a low canal passage about two thirds full of water. This could also perhaps be explored further.

On a later visit to the pot, a party thrust its way through a very narrow passage at the head of the 24 foot pitch and arrived at the top of another pitch estimated to be about 70 feet deep. The survey notes made it fairly obvious that this was another pitch into the big rift, but it was hoped that it came in downstream from the narrow section previously reached. Roger Rhodes and Brian Heys explored and surveyed this, but were unlucky to finish up in the same section of rift passage entered by the others.

Conclusions

Over the next few weekends our exploration and survey was completed, although we never managed to finish the survey of the far stream passage. On Easegill standards the pot is perhaps disappointing, but is nevertheless very sporting and in a less-favoured district would likely be very popular.

FASHION NOTES FOR THE SPELEOLOGIST

(From our Dale Head correspondent)

This February you will be noble, elegiac and faintly robust in Mud. Mud flatters you where you least expected, your calves, your shins, your lobes take on a cool and flattering vibrancy all their own. Mud comes in six muted variations on a theme: Speulchre White, Bog, Gravel, Phlegm, Dusty Corpse and Stucco..... The predominating fabric will be canvas difficult and even repulsive to wear, it will lend you a subtle, intangible authority and distinction.

It is a restless, anxious world for the tuft-hunter and toady.

Grid Reference 700 846

It was late in 1952 when Jack Myers first examined the possibilities of a certain shakehole in a small valley on High Cow Close, Fountains Fell. He dug for an hour or so and was finally able to crawl in to the head of an eighteen foot pitch.

On 15th November, 1952, Jack Myers, Bert Bradshaw and "Rocky" Holden left Crow Nest with ladders, diggers, etc. for the newly found hole. After seeing Mr. Caton at Neals Ing Farm, they obtained permission to explore the hole and the first real effort at Antler Pot thus began. Jack descended first, followed by Bert and they quickly had a ladder on the pitch. "Rocky" followed behind, dislodging a boulder from the roof which pinned him to the floor and which, after much shouting and cursing, was removed by Bert. This delayed the calculated descent of Jack by half an hour, putting him behind schedule for the whole of one week.

The first pitch led into a chamber some 25 feet high and roughly 12 feet circular. Leading from this chamber was a low wet crawl and after 15 minutes digging a 6-inch airspace revealed that the crawl opened up somewhat. With a little persuasion, Jack disappeared along the crawl accompanied by deep gurgling sounds from the water. A short way along this crawl was a loose flake of rock which he unfortunately disturbed. It fell over, and almost on him, blocking the way ahead and he had to return to the chamber emerging from the water like an unfed walrus. After some discussion he said that to get past the fallen rock would require a shot of gelignite so the three rather dejected troglodytes made their way back to the surface.

A funny thing happened back on the surface. In the act of getting changed, a loud bang from a gun was heard and pellets whistled overhead. Jack stood only in his clean woollen underpants and vest and threw himself down on the very muddy floor. Mr. John Lambert, the game keeper, came over the valley and almost split his sides when he saw the prostrate Myers lying in clean underwear up to his eyes in mud. It appeared that Mr. Lambert had been shooting at a rabbit and it was in a completely different direction from where we stood. Jack was mildly annoyed but, after a good laugh with other members of the party, came to appreciate the comic nature of the incident. So ended the first real attempt on Antler Pot. For the next effort we must move forward to 1958.

Early in 1958, Brian Hudson and Gordon Batty had a further look at Antler Pot. After they had descended the pitch, Gordon crawled up the wet crawl to the fallen rock which had stopped Jack Myers. He tied a rope round the rock and then brought the loose end out with him. They both then pulled at the rope and managed to move the fallen rock out of the way, after which they were able to crawl a further 30 feet to a reasonable sized chamber. The stream here disappeared between a ruckle of boulders and after some digging they decided to return to the surface for lunch and also heavy digging tackle. On descending to the crawl again, they found the crawl itself filled with water so they abandoned the attempt for the day.

The following weekend they again returned to Antler Pot. The wet crawl was still full of water but Brian Hudson, taking a deep breath, disappeared into the black water. After three minutes, the water in the crawl started to disappear ! What had happened was that on the first trip through the crawl, they had accidentally blocked up the outlet for the water which had backed up at the entrance to form a three feet deep siphon. Not many people would have tackled this particular obstacle, but the smell of virgin ground had activated Hudson's nostrils. Again through the crawl a second dig took them into a more roomy and dry crawl, about 30 or 40 feet along which they came to a small boulder choke which they were able to penetrate into a large chamber containing several dry inlets. They chose what appeared to be a downstream passage and arrived in another chamber with a rift

leading from it and giving access to the head of a 50 foot pitch where they had to turn back owing to a lack of the requisite tackle. On their return journey, they probed various peculiarly shaped rock which broke instantly and which on closer inspection revealed that it was not a rock at all but a large and very fine antler. It was carefully deposited at one side to be picked up at a later date. None of the inlet passages could be pushed very far, so they were soon back on the surface. Back at the cottage, news of the antlers caused quite a stir.

The following weekend, six Northern Pennine Club members assembled at Antler Pot with surveying tackle, digging equipment, extra ladders, cameras and the lot. A quick descent brought them to the head of the undescended 50 foot pitch. This was quickly laddered and Gordon Batty and Brian Hudson were the first to descend. At the bottom of the pitch the water gently sank into a loose pile of stones which was cleared, only to reveal another low wet crawl. At the time this crawl was very wet, affording only six inches of airspace, but Brian Hudson still pushed a fair way along it but had to come out, blue with cold. The whole party surveying on the way out, returned to the surface and steadily falling rain.

The next and final descent was undertaken by a party comprising R.T.Hylton, Gordon Batty and W.Holden. The main purpose of the descent was to push the wet crawl at the bottom. After a reasonably dry passage through the crawls, we made our way down the second pitch and reached the lowest crawl. This was explored for some 50 feet to where a mass of mud and water almost reached the roof. Here it was decided to retire and end the exploration of Antler Pot. On the way out it was agreed that we should take out the antlers and only made slow progress to the surface. After taking the antlers to Mr. Caton, we took them back to the cottage and Dick Hylton sent them off to Jack Newrick for an examination by specialists.

We are still awaiting their identification and details of this find.

CRACKPOT CAVE (FAIRY HOLE)

Summer Lodge, Swaledale

John M Parr (R.S.Y.C.C., D.U.E.C.)

Introduction

This cave has been known for several centuries, but it is quite certain that previous exploration terminated at the Wringer. Generations of ramblers have sheltered in the commodious Entrance Chamber while waiting for the rain to stop before resuming the usual hackneyed journey to admire Summer Lodge Tarn. Hundreds of small boys have also used the Entrance Chamber as an out of the ordinary playground. A comprehensive survey of the initials, names and dates carved or smoked on the walls has not been made, but several dates have been noticed that date back to the end of the 18th century.

History of exploration is scanty and references are few. With the exception of an entry in an old gazetteer, which describes it as a "horrible natural cleft in the limestone", all references to Crackpot Cave are in modern caving literature. Cullingford mentions it but seems to have a poor opinion of it. Thornber also mentions its "one chamber, mostly low". As far as I am able to discover, no survey has ever been made of any part of the system. No speleological study of the cave and its possibilities had been carried out, which, in view of its impressive resurgences and the large size of the Entrance Chamber, is rather surprising. This was the position when members of the Richmond School Caving Club turned their attentions to the cave in October, 1956.

Location

The entrances to the system are to be found at the foot of a 30 foot high limestone cliff on the western bank of Summer Lodge Beck above Summer Lodge Farm. This is reached, after a stiff climb, by following the metalled road from Low Row to Crackpot hamlet and continuing straight on until a gate is reached and the road degenerates into a rough track. The house on the right is Summer Lodge Farm, and permission to explore the system should be obtained here. Going through the gate, Summer Lodge Beck is seen on the left. If this is followed upstream, the valley soon becomes deeply incised. If the western bank of the stream is followed, a dry stream bed will soon be noticed coming down from the right. Cross this and then immediately strike diagonally up the main valley side. Within 200 yards an impressive waterfall is seen about 100 feet above the main valley bottom. This is fed by a large resurgence emerging from the talus slope at the foot of the Great Limestone escarpment. This resurgence, together with other smaller ones in the immediate vicinity, provide about half the volume of Summer Lodge Beck under normal weather conditions. At the top of the scree slope and at the foot of the limestone free face a wide but low bedding plane cave entrance can be seen. This is the Main Entrance and it was the only means of access to the cave until the Kneewrecker Entrance, 75 feet to the south and at the same level, was excavated.

Exploration

In October 1956, M.J.Camm and the author visited the cave and explored all the known passages and we were immediately impressed by the volume of water flowing through the Entrance Chamber and also by the spaciousness of the majority of the passages. These are much larger than any other cave in the Swaledale area, and great hopes were aroused that the system might be extended. The Wringer, however, if not absolutely impossible, seemed to be a rather tough proposition, and could not be passed without some rather tricky excavation. At this point the rumble of running water could be heard somewhere ahead and working on the theory that where there is water there's hope, it was decided that an effort should be made at this point. At the earliest opportunity, a strong party

consisting of M.J.Camm, C.Hinson, D.Addison, P.F.Walker and the author returned and managed to dig a way under the enormous block into the passage which could be seen ahead. Unfortunately this narrowed down within 15 feet into an impenetrable fissure six inches wide and three feet high. A small choked vertical fissure was noticed on the left and a light shone between boulders revealed that it dropped about four feet into a bedding plane. The smallest member of the party, C.Hinson, working under very severe conditions, managed to dig this out to some extent but several large boulders proved too heavy for him to lift and so D.Addison and the author set to work. We managed to move most of them either by lifting them clear, or pushing them into the bedding plane below. As this involved standing on one's head in an eighteen inch wide fissure, work was only possible for a few minutes at a time, but the passage was eventually cleared sufficiently for C.Hinson to force his way through. After great struggles and the most remarkable contortions worthy of a vaudeville act, the rest of the party followed him into a small bedding chamber. The rest of the obstacles in the Corkscrew were removed, providing a reasonably easy passage. The way on lay through a tight window half choked with clay into the very small crawl known as the Gut.

Further progress was temporarily halted by a large block precariously perched in the roof. The sound of water was by this time much stronger, so on the next visit the block was stemmed and made safe. By dint of much excavation, the Intestines were passed and a wide bedding plane about three feet high entered. This spaciousness was short lived, the passage rapidly ending in an extremely tight fissure four feet high and nine inches wide. Many a happy hour was spent here before the easy way was discovered, pushing and pulling the more corpulent members of the party through this fat man's agony. One on occasion, P.F.Whitaker was involved for nearly threequarters of an hour and eventually emerged badly scraped and without his nether garments. Beyond this fissure, the way on lay through a narrow gully cut in mud in a wide but very low bedding plane until a small rocky chamber was reached. The tantalising sound of water proved to be a large and rapidly flowing stream which unfortunately both entered and left the chamber by way of siphons, neither of which appeared much hope for the future. Feeling very disappointed about this impossible termination, the party was about to withdraw when, by a lucky chance, the author crawled into a small passage about one foot wide and two and a half feet high. This was soon choked with rock but through gaps the passage was seen to enlarge slightly. The rock being very shattered in this zone, work proceeded with care and after several hours' labour the author forced himself in with dire results. For ten minutes I doubted if I was ever going to move again but, leaving large areas of skin and overall behind, I managed to force myself into a really fine cave. C.Hinson also squeezed through, but M.J.Camm found it impossible.

On this occasion we made a rapid reconnaissance as far as the far siphon and Cullingford'd Folly, leaving more detailed exploration until the following weekend.

This was accomplished by the same party and all the major passages were explored including a descent of the Pitch, and the penetration of the Kneewrecker passage as far as the Mud Crawl. Returning, D.Addison had the misfortune to be pinned down in the very tight passage leading out of Camp 1 Chamber by a large boulder which gracefully descended from the roof onto his prostrate shoulders. As he was leading at the time, the rest of the party behind him tried to force a way through to the other side to put in a two-way effort in removing the rock. A new passage was forced into the Intestines Series and, as this eliminates the most difficult and dangerous section of the cave, is now invariably used, the other section being partly sealed off. David was freed with some difficulty, it being found necessary to break the block up into small fragments, but was nevertheless little the worse for wear.

By February, 1957, all the major work had been finished, with the exception of the excavation of the Kneewrecker Entrance. This was dug in from the cliff face through the talus after a careful study of the possibilities of opening a new entrance into the Kneewrecker Passage in order to eliminate

the trials and tribulations of the Intestines Series. The Mud Crawl provided the only real barrier as far as size was concerned and this was deepened from each end using entrenching tools until a link between the known passage and the new entrance was established in March, 1957.

Survey was completed in August, 1958, the long interval between exploration and survey being due largely to other commitments.

Main Entrance to Camp 1 Chamber

The Main Entrance is a low bedding plane in appearance about 25 feet wide and four feet high in the centre. It is obvious that the Entrance and the first 25 feet or so of passage have almost been completely choked by material falling from the cliff face above. Immediately above the Entrance, the cliff is freshly fractured and the local farmer told me that a big fall of rock occurred during the winter of 1947, presumably due to frost wedging. Immediately inside the Entrance, the floor, which is made up of a slippery mass of clay and boulders, drops at an angle of 45°, while the roof remains level and flat. It is soon possible to move upright and a short passage branches off to the left, soon to rejoin the Entrance Chamber forming an "oxbow-like" formation. The significance of this is not clear. If the boulders which form the floor extend down to the base level of the stream at this point, which seems likely in view of the position of the boulder choke at the end of Kneewrecker Passage, then an oxbow origin seems probable, but stopping along prominent joints may equally be responsible.

At the foot of the boulder slope, the flat roof drops slightly but the passage is of spacious rectangular section type so typical of the larger passages in this system. The stream is met where it sinks under the ruckle of boulders blocking the entrance, only to reappear at the foot of the talus slope outside. This is a combination of the Main Stream Passage water and the Thin Stream flow. The Main Stream water emerges from an impenetrable bedding plane siphon on the left of the passage, whereas the Thin Stream water emerges from a very narrow fissure on the right. This is the water from a small sink at the top of the cliff.

The Entrance Chamber maintains its height but widens considerably and is floored with a chaotic mass of unstable, large, angular blocks. A small passage branches west running sub-parallel to the presumed course of the Thin Stream water. It soon ends in a couple of clay-choked, narrow fissures which offer little hope of advancement.

The continuation of the Entrance Chamber swings S.E. and decreases in size and the floor rises in a series of small steps. Near the most prominent of these steps, a hole in the floor on the left enters a very tight crawl which eventually rejoins the main passage near the Wringer. On the right a hole in the angle of the roof leads to a fine circular chamber. This has a very low, wet and muddy crawl running part of the way around its perimeter at a lower level. The main passage ends in a rock wall but a small hole in the floor on the left leads into a small chamber. This in turn has three holes in its floor, all of which lead into the aforementioned Wringer crawl. Dropping through the largest of these holes, the next obstacle is the Wringer, an enormous block which appears to fill the passage. Closer inspection reveals an awkward wriggle beneath it to enter the continuation of the passage, a low bedding plane. This was the previous limit of exploration. Yet another hole in the floor appears on the left where the passage narrows savagely. This is the Corkscrew: opinions are divided as to whether it should be tackled feet first or head first. Whichever method is chosen, the decision must be made before attempting the obstacle as it is impossible to turn round. The complex evolutions needed to pass the Corkscrew beggar description, but it drops into a low, broad chamber with sufficient room for three or four people. Various low bedding plane crawls lead off from this chamber, but the way on is to the right, through a tight window into a vicious corner and thence into the Gut. This presents no real difficulty: it is just uncomfortable and somewhat unsafe. The floor

rises steeply but fortunately so does the roof and the main route turns right, through a window into a small boulder-strewn chamber. Looking N.W. an impossibly narrow fissure communicates with the passage above the Corkscrew. In the west corner of the chamber, a tight wriggle through the boulders leads into a wide bedding plane with a floor of fine gravel, a pleasant contrast to the sharp rocks and sticky mud of the Intestines. In 10 feet the really spacious part of the cave is entered. This is a dry, flat roofed passage, averaging about 10 feet wide and between five and eight high. The limestone is very cherty here, and nodules of black chert stand out grotesquely on "stalks" of limestone. To the right the passage ends in a roof fall of dangerously perched blocks and various shattered fissures which probably communicate with the Intestines. A great bank of sandy mud has some interesting mud stalagmites. To the left the passage gets smaller for a short distance but soon opens out into the large Camp 1 Chamber. The solid limestone floor of the passage gives way to the usual chaotic mass of perched blocks of the larger chambers and passages.

In this last-mentioned section, calcite formations appear for the first time. They are mainly straw stalactites but some normal stalactites and curtains occur in the angles of the roof. The fallen blocks are much pitted by solution but not in the form of ripple marks (which are singularly rare in this system) but in large pockets. Incipient stalagmite growths are common in spite of the recent nature of the falls.

Kneewrecker Entrance to Main Stream Passage

The Kneewrecker Entrance, excavated in March, 1957, is a tight slit at the foot of the cliff face about 80 feet S.S.E. of the Main Entrance. It is best tackled feet first and an acute turn to the left at the bottom brings one into a small chamber partially filled with enormous blocks of rock. It is easy to imagine this chamber to be the result of the collapse of a bedding plane complex by stoping.

The entrance to Mud Crawl is difficult to find, but if the south side of the chamber is followed round, a small hole near the N.W. corner will be found at the angle between wall and floor. This should be attempted head first and a short drop leads into the flat bedding plane known as Mud Crawl. This is now much easier than formerly, the passage of many bodies having worn somewhat of a groove down the centre. In wet weather, percolation converts the normally damp mud into a quagmire and some strategically placed stalagmite bosses do not make for an easy traverse.

The Mud Crawl enters the main Kneewrecker Passage three feet above its floor. To the right the passage continues for some 60 feet, finally ending in a boulder choke in which tree roots are prominent. These are assumed to belong to a rowan tree growing some 50 feet above on top of the cliff. This is a striking example of the penetrative power of tree roots and leads one to wonder about their efficacy in wedging off blocks. The choke is very close to the Main Entrance.

To the left the Kneewrecker Passage continues with various minor changes in level and direction for some 150 feet. It is a dismal, small rectangular passage with frequent cold pools and mud banks which must be crawled through. Areas of bare limestone floor with various nicked projections and odd boulders have given this passage its name. It is difficult to understand the mechanism operative in the formation of this passage, but perhaps it has acted as an overflow channel under pressure when the siphon at the north end of Main Stream Passage has banked up water. Some 50 feet from the end of Kneewrecker Passage it suddenly opens out into a broad but low passage some 5-6 feet high, an enlarged bedding plane. A flat clay floor has few rocks and straw stalactites are plentiful. It is obvious that this section has not been water active for some considerable time. A low bedding plane leads off on the left but is choked within a few feet. A few feet to the east, a hole in the roof communicates with a small fissure chamber which has a strong draught. Unfortunately it becomes very narrow and is choked with boulders, but it offers possibilities for extension.

With a drop of four or five feet over boulders, Main Stream Passage is reached.

Main Stream Passage

This, to my mind, is the finest part of the system. The Main Stream Passage is some 20 feet wide and 15 to 20 feet high, of rectangular cross-section with flat roof. Careful examination produced a theory to account for the formation of the flat-roofed, rectangular passages so obviously controlled in their final form by the numerous joints and bedding planes in the Yoredale limestones. At stream level in the Main Stream Passage several miniature oxbows have been found, generally only a foot or so in diameter, but occasionally large enough to crawl through. These have the near-circular cross-section so common in solution tubes. It is easy to visualise solution widening the bedding planes and joints above the tube by percolation and by pressure solution in times of high water table level. Such action would loosen the overlying joint bounded blocks and they would fall into the tube to be eventually removed by solution. Thus the tube would be enlarged by stoping adapting as it grew the rectangular cross-section controlled by both joints and bedding planes. Stoping would not be restricted to the roof but would also affect the walls. It would also be logical to assume that such large passages would be developed along lines of weakness such as master joints or fault planes and such is the case in Main Stream Passage which follows a master joint for much of its length. In two places, Block Chamber and Column Chamber, the stoping mechanism is obviously still active as these enlarged sections of the Stream Passage are still largely floored with angular blocks fallen from the roof. The Block in Block Chamber is a particularly fine example weighing many tons. The cavity left in the roof of the chamber by its fall is still clearly visible. But why should the stoping process continue in some places and not in others? It may be that Block Chamber lies in a fault zone although direct evidence is not forthcoming on this point. But Camp 2 Chamber, to be considered shortly, definitely has its main axis running along a fault and is dangerously active. It has been possible in successive visits to watch fissures grow and widen and blocks collapse from both roof and walls. On several occasions the sound of blocks falling has been heard in different parts of the system. Whether the stoping theory is acceptable or not, it seems to fit the facts as known as well as any.

To return to the systematic description. The Main Stream enters a siphon at the foot of the rock wall which is the northern termination of Main Stream Passage. The siphon is in the form of a bedding plane much obscured by large boulders: the water is next seen in the small chamber in the Intestines.

Continuing upstream, the passage is wide and high and progress is largely by wading, although occasional sandbanks occur. The floor is smooth limestone with occasional boulders. After about 100 feet. Block Chamber is reached. This is simply an enlargement of the Stream Passage by stoping, probably in a fault zone as outlined above. Great mounds of blocks litter the floor, many of them dangerously unstable. In the S.W. corner, Formations Passage entrance can be seen entering some ten feet above the floor. This bedding plane, very low at first, contains some excellent formations including rimstone and crystalline pools, nests of cave pearls, moonmilk and floating calcite flakes. Unfortunately, unless one is extremely careful, the restricted nature of this passage severely jeopardises their survival. It is possible to rejoin Main Stream Passage near Column Chamber by a slippery 12 feet drop, although this is tricky.

Column Chamber is some 90 feet beyond Block Chamber and is named after the magnificent calcite column which it contains. This, as well as being an exquisite form, is very interesting by virtue of the insects which it contains, embedded in its translucent layers. Many long, pure white stalactites hang from a prominent bedding plane on the west side of the chamber. Also highly interesting is the nature of the floor. This is at two levels (see section j-j') and it is quite possible that this represents a more advanced stage in the removal of the stoped detritus (inherent in the formation of these

chambers) than that in Block Chamber. At one time in its history, the floor, made up of recently collapsed loose blocks, presumably extended right across the chamber at the present level of the floor at the east side. These blocks have since been removed either by flood action or by solution, whereas the blocks on the east side, washed only by heavy floods (being outside the normal stream channel), have survived to act as a filter trapping the sediment which is only carried in any quantity when the stream is in flood.

Upstream from Column Chamber the passage grows smaller with a concave roof and the water becomes waist deep until the siphon is reached. At this point, the water appears from several narrow fissures below the water level. This probably represents the northern limit of the SW-NE fault zone responsible for Cullingford's Folly and Camp 2 Chamber. To the left of the siphon, a precarious boulder slope rises for some 30 feet but there is no way past.

Column Chamber to Hellfire Alley

From the SE corner of Column Chamber just past the Column, Bridge Passage runs with a general uphill trend to Cullingford's Folly. This passage, a low fissure three to five feet high and three feet wide, is unusual in so far as it has at some stage in its history been filled to a depth of three feet or more with a fine muddy silt layer later covered with a film of dripstone. This has been excavated naturally by torrent action to form a deep gully with mud walls. At one point, the dripstone cover remains, forming the Bridge. Evidence of severe local movement, presumably either caused by stoping or by movement along the adjacent fault plane, is to be found in the large number of straw stalactites embedded in the silt in a vertical position. The muddy crawl rises steadily until after about 70 feet Cullingford's Folly is reached.

Cullingford's Folly is one of the highlights of the system and is named after a certain reverend gentleman who considered that anyone visiting Crackpot cave was himself a crackpot. It is a magnificent circular chamber with a sloping boulder floor, solidly cemented with dripstone, rising to the south. At the northern end it is perhaps 25 feet high; at the Pitch end 10 to 12 feet. The roof is flat and covered with the most fantastic collection of straws I have ever seen. Some are four feet long with thickened tips; others curve sinuously. Many fine stalagmite bosses occur around the periphery of the chamber and a double column near the entrance to Bridge Passage has been fractured and laterally displaced several inches. Whether this is due to local subsidence of the boulder floor, which seems to be false in places, or to local fault action, can only be surmised. Perhaps the fault has triggered local subsidence.

At the south end of Cullingford's Folly, a low bedding plane leads off almost at roof level. There is no difficulty of access as the floor is high at this point. After a few feet, a vertical drop of five feet into an enlarged E-W fissure gives access to the top of a 25 foot boulder slope. It seems likely that the Pitch fissure is directly on the fault and there is definite evidence of movement at this point. The rock is very highly fractured and only one person should move in this section at a time. A handline is an advantage here. I have received an unconfirmed report that part of this section has collapsed recently: (*) this only serves to emphasise the need for extreme caution.

At the foot of the boulder slope, Camp 2 Chamber is entered. This is one of the most dangerous and dismal parts of the system. No formations reflect the light. It is just a chaos of fractured rock. For the first 20 feet it is only five to six feet high although broad until a step down is reached and the height becomes comfortable although the width of the passage decreases. The floor is made up of precariously perched slabs and blocks of rock. A small inlet passage enters from the south, its mud floor and smooth walls contrasting markedly with the shattered, peeling walls and rocky floor of Camp 2 Chamber. Unfortunately, after about 40 feet it ends in an overhanging clay and boulder choke. At the SW end of Camp 2 Chamber the Main Stream is again met with in Hell Fire Alley. It

is at this point that subsidence and collapse has taken place since the first exploration and the walls are cracking dangerously: it is no place to linger. A perfect solution tube can be seen in the roof and large chert nodules abound. There is little doubt that Camp 2 Chamber is developed along a SW-NE fault plane and further evidence of faulting can be had if the water is followed downstream to the siphon. It is a short but uncomfortable journey. The passage shrinks to a low crawl and the gradient of the stream increases. Progress is from boulder to boulder until amidst the roaring of the water roof meets water. This is unusual since siphons are usually still pools. It is possible that it is just a duck, but the size of the passage makes experiment impossible.

Upstream from Camp 2 Chamber a natural stone dam holds back a five feet deep pool but a short stretch of difficult overhanging traverse reduces its effective depth to about two feet. Some very amusing incidents have occurred here. The end soon follows. A bedding plane which gets progressively lower until it is only 18 inches high enters a tight vertical fissure which is only six inches wide at its foot, one of the feeders to the Main Stream. It is possible, if foolhardy, to climb ten feet up the fissure into a tiny chamber in loose boulders. The whole area is a mess of loose rocks, many of which shift on the slightest provocation. Digging is most decidedly out of the question.

On the left, a thin stream emerges from a tiny passage, but again, penetration is impossible. Straight ahead a steep, sticky mud slope leads through a hole in the roof into a short stretch of dry fissure where the limestone is surprisingly solid. The mud floor has a number of slump pits, indicating a possible lower level. The passage soon ends in a dripstone-coated, overhanging boulder choke. A strong draught emerges from the chinks in the boulders but all efforts to penetrate it have failed. By the survey, this part of the system seems to be near ground level somewhere near the Summer Lodge mine dam. So ends the system to date.

Geological Features

(a) Faults

Faults have played a major part in the development of this system. The surrounding area is part of the rigid Askrigg Block dipping 3-4° East. Although rigid, very small faults are present, many of them mineralized and giving rise to the now extinct local lead mining industry. These small faults fall into two groups, NNW-SSE and SW-NE and members of both these groups have left their mark on this system. The SW-NE faults are most strongly developed and best appreciated underground. Notable are the fault which controls the passage trends and the shattered nature of the rock in Cullingford's series and the arc cutting the Main Stream Passage at Block Chamber. It has been suggested that the Entrance Chamber is aligned on a small fault but I can find no definite evidence of this either underground or on the free face outside. Faults appear to be wholly of the compound type giving a shatter belt rather than a fault plane. Throws are small; often no more than a few inches displacement is sufficient to create vast effects underground.

(b) Nature of the Great Limestone

It may not be out of place to say a few words here on the lithology of this horizon as most cavers are familiar with rather different limestones. The Great Limestone in the Summer Lodge area is about 100 feet thick and overlain by sandstone. An impermeable shale forms the base. The limestone is impure, medium grey in colour, and gives off a bituminous smell when broken. Fossils are uncommon except for crinoid ossicles and *Dibunophyllum* sp.. The odd productid also occurs. The horizon is thinly bedded with the interval decreasing towards the top. It is reasonably uniform lithologically and I have found no shale bands in the system. Joints are very numerous, there being two sets: master NW-SE and minor almost due N-S.

(c) Calcite formations

These are the really outstanding feature of the system. So much has been written about the absence of calcite formations in caves located in Yoredale limestones. The explanation is easy to see. Most, if not all, of these caves are overlain by a relatively impermeable grit or sandstone cover which usually also has a drift cover. This prevents the extensive percolation of ground water necessary for the formation of significant calcite formations. But the limestone at Summer Lodge forms a fairly extensive hill bench, the sandstone cover having been removed by ice action. As a consequence, percolation is rapid and large in volume. Formations are therefore large and extensive.

There is a complete lack of formations until Camp 1 Chamber is reached. Beyond this point the roof is covered with long white straws except in areas where stoping is still taking place, eg. Block Chamber and Camp 2 Chamber. Normal stalactites are very fine although localised, the best examples being found in Column Chamber. Columns and curtains are less common but still fine. Some fine bosses occur in Cullingford's Folly.

In Formations Passage a wide range of pool deposits occur, many of them rare, eg. floating calcite.

Some peculiar mud stalagmites occur in Camp 1 Chamber. These are simply splash formations and do not appear to be calcareous. Anyone who visits the system will be left in no doubt as to the following of the dogma that calcite formations CANNOT occur in Yoredale caves. That they do not occur is due to the overlying strata inhibiting percolation. Where this cover is removed then the formations, as in Crackpot, would do credit to several well-known Yorkshire show caves.

Hydrology

The source of the water forming Main Stream is unknown. All major sinks in the area have been tested without result. It is quite within the bounds of possibility that the water comes from beneath the surface divide from a catchment area in the Wensleydale basin, but this remains a hypothesis.

Evidence of flooding can be seen in various parts of the system but it is extremely doubtful that the water ever rises more than a couple of feet in Main Stream Passage.

Two other resurgences, one of considerable volume, lie just to the south of the Main Stream resurgence. These have no known connection with the present system and their sources remain unknown. One emerges from solid rock as a thin stream but is too tight. The other large one emerges from beneath a vast mound of talus and excavation, if not impossible, would be a very difficult and lengthy job.

Fauna

Not numbering a biologist among our party, zoological observations have been few and far between, but the following may be of interest.

There has been one noted occurrence of an albino fish. One member of the team, C.Hinson, attempting to pick up what he took for a white stalactite lying on the bed of Main Stream, was somewhat startled when the object swam away upstream at a high speed. Considering the amount of splashing inevitable in the journey along Main Stream Passage it is not surprising that other observations have not been made.

A grey bat has been seen on a number of occasions both in the Entrance Chamber and at Camp 2.

The insects embedded in the Column appear to belong to the mosquito and earwig families.

Conclusion

The discovery of this new cave system has given the lie to the gloomy forebodings of certain notable members of the Craven speleological circles who predicted that nothing of importance would be found in the Swaledale area. Perhaps the length of survey is short by Craven standards but the discovery is one of considerable speleological importance illustrating the importance of roof collapse in cavern formation as well as it does. Shale bands are not universally applicable ! It is also a fine example of the two cycle theory in operation, the main factor in the lowering of the water table being the deep incision of Summer Lodge Beck.

In addition, the discovery of a really fine cave, second only to Mossdale in importance in the Yoredale limestones, has encouraged us to redouble our efforts to discover similar systems in Swaledale and its environs.

I should like to acknowledge here the great assistance given by by various members of the Richmond Club in surveying and encouragement. It would be unfair to mention individuals but David Addison and Colin Hinson together with Paul Whitaker were truly outstanding in their efforts.

Finally my thanks must go to Jack Myers of Leeds University without whose encouragement this might never have been written.

* It has ! A handline is no longer necessary. J.O.M.

Scaling Ladders in Penyghent Gill, 1951, 1958 and ?

J.O.Myers

Penyghent Pot was finished and sundry digs and prospects had turned out blank. New exploration was not forthcoming through conventional channels; however, having not long before read "Subterranean Climbers" where the accent is rather heavily on the use of scaling poles, I remembered our ex-W.D. scaling ladders stacked in the tackle store. Surely there must be some caves lying around which just needed the application of scaling technique to give some satisfying lengths of new exploration ? A memory of reading a Y.R.C. description of a cave ending upstream in a waterfall, somewhere down Penyghent Gill, stirred vaguely.

One Saturday afternoon early in 1951, I went down Penyghent Gill with John Walmsley and found the obvious cave entrance of Upper Hesleden Cave II. A simple hands and knees crawl on a clean limestone floor led in 47 yards to a nice pool chamber with a waterfall about 16 feet high coming from a sizeable passage. Here indeed was a ready-made job for scaling tackle. The following week, Budge Burgess, Jim Marshall and I returned with several lengths of scaling ladder which had hitherto been mainly used for reaching the cottage roof and similar jobs. Getting up this quite short climb, we found the ladders to be rather more flexible than desirable, but not dangerously so on this length. Once at the top we hung a wire ladder down and proceeded upstream with the scaling ladders. The way continued as an easy walk in a passage 8 feet or so high and two to four feet wide, with good straw formations, for some 150 yards, where it ended in a high aven down which was falling a cold shower of water. We could see a passage about thirty feet or so up from which the water was coming. The aven was smooth and overhanging all round, quite typical of Yorkshire pothole. We had insufficient ladder to get up this so retired. The following day Budge, Ken Harris and I returned with more ladder and erected enough to reach the top of the aven. Ken decided to try to get up, but found after climbing about twelve feet that the ladder was bent up hard against the overhanging wall. It appeared that if he was to climb much higher the whole thing would come over backwards. We had no immediate solution for this so retired baffled, surveying out to the waterfall aven.

On the next trip, we took more ladder, the party including Alan Kirk, Bob Ashworth, Brian Heys, Bert Bradshaw and myself. We put up enough ladder to reach over the lip of the fall, but could not place it in any way to avoid the excessive bending. We began to think how we might brace the ladder, having with us three spare lengths of ladder and some cord. While we were sorting this out, Alan decided that meal-time had arrived and produced, from goodness knows where, his pillow case stuffed with sundry foods, sat down at the side of the chamber and proceeded to munch steadily.

Nearly an hour later we had sorted things out. By lashing an eight foot length of ladder at right angles to the main length about a third of the way up, and a single four foot length at two-thirds of the way up, we found that the cross pieces came hard against the curving walls of the aven as soon as the main ladder was loaded, and appeared to give excellent rigidity to the whole set-up. Being the lightest, Bob was allowed to go up first. Nothing gave way, so the rest of the party followed, including Alan who had just finished eating in time. At the top, the passage soon lowered to a pool of water, but this was easily passed and in another few yards a waterfall chamber was entered. This did not look quite so high as the last and there was a ledge about halfway up.

We rigged a wire ladder on the previous climb, Scaffold Aven, and brought enough scaling ladders up for the new climb, Showerbath Aven. Here the ledge provided an excellent natural support for the ladder at the halfway mark and we got up easily if somewhat damply into another easy walking stream passage with a roof bedding plane well decorated with straws. This proceeded upstream for

somewhat over a hundred yards until it ended in the largest aven of all. This one was very high, perhaps sixty feet or so, and water splashed off a ledge about halfway up, showering over all the available floor space, hence the name Thunderstorm Aven. This place was beyond the limits of our simple equipment and so the place remains to this day unexplored. It could be scaled perhaps by getting up to the ledge and going on from there. There is probably not a great deal of limestone left on top of the aven, but perhaps still some distance to go back to the sink from which the water comes. We never established the exact point of sinkage for the stream in the cave, although it must fairly certainly be coming from the nearby beck which flows down from Out Slets. Its flow appears to be practically constant no matter what the weather, which suggests a choked sink in a stream bed. Not far upstream of the first climb, Waterspout Aven there is a strong inlet, only active in wet weather, which is probably a flood sink from the lower part of the same surface stream. A Fluorescein test showed that a sink midway between these two parts of the same stream flows the other way and emerges at a spring further down the main valley.

During the exploration of this area, we noted a number of interesting possibilities which included two other scaling jobs. One is Upper Hesleden Cave I, which has a slightly restricted meandering stream passage to a waterfall chamber. We did not tackle this one as bends in the passage were a trifle too acute to allow of the passage of the short lengths of scaling ladder. Lower down Penyghent Gill is a steep-sided tributary valley on the east side of which is a low cave opening about thirty feet or so above the stream. The cave entrance is dry, but a spring emerges from the ground a few feet below it. Although the cave is easily seen from the road, it is not recorded in caving literature. In 1951 a short solo reconnaissance revealed that the passage led to a wet bedding plane crawl where the sound of a waterfall could be heard ahead. In spite of this enticing sound, other exploration commitments prevented the cave from being revisited by the club until November, 1958, when Dave Raine, Dave Gibbon and I had another look at the place. The bedding plane was forced to a fine waterfall chamber about twenty feet high with an obviously negotiable passage at the top, and so a further scaling exploration can now begin. Unfortunately, the bedding plane is a trifle low in places and foam on the roof indicates that dry weather should be chosen (if possible) before spending long hours in the cave.

In these days, when one is tempted to think that everywhere must have been looked at by someone, it is worth remembering that this cave, which can be seen from a main road, has been left for seven years with its possibilities suspected and yet no-one else has taken it up. We hope to tidy up the exploration of this and a few other odds and ends in the area in time for the next issue of the Journal.

Reference: Y.R.C. Journal Vol. 7, No. 21, 1934, p 258.

It always rains on Sunday - especially an N.P.C. meet Sunday; and this diary originates from a number of cancelled meets.

Dismal Hill Cave (3rd August, 1958)

In view of the atrocious weather conditions, our meet scheduled for A.G.Pot at Bank Holiday was cancelled. Fortunately we had no novices up for the holiday, and so the Old Guard found itself in the happy position of being able to go and do what it fancied instead of doing some abominable pothole that they felt they had to do in order to impress and inspire new members. A small party selected the Birkwith area as likely to provide amusement without undue effort or fatigue.

Five of us first of all made the through trip from Calf Holes to Browgill Cave, and surprisingly enough the only member of the party who had previously been in the system was Bert Tucker. The cave provided just what they had hoped for - amusement without undue effort or fatigue.

But it left us dissatisfied, and so we set off to "collect" a few more of the local caves. We decided to leave Birkwith until the last with a view to having a splash in the canal to finish off the day, and the next entrance we found after much searching was that of Dismal Hill Cave (and what a dismal hill cave it did indeed look). The description of the cave given in "Britain Underground" is rather vague, and we had little idea of what was coming apart from the description of the entrance, which is accurate. We crawled into the bedding cave, climbed down the pitches, crawled through a low cave with a gravel floor, and entered a rift. This closes in after a few yards at both ends, but in the floor is a very low bedding cave.

I made a half-hearted attempt to penetrate this which is not mentioned in "Britain Underground", but retreated to let someone of lesser girth go through first. Tony Newton went in and I followed cautiously and squeezily, repeatedly demanding reassurance that it was getting bigger all the time. I didn't relish in the least having to retreat feet first. However, it obviously was getting easier (and wetter), and soon Tony announced that he was into a large stream passage. I called on Dick Hylton and Colin Green to follow on while Bert kept a lone vigil on the outer end.

The stream passage we entered is a big one, and the stream it carried on that day was a very big one. Tony and I went downstream while Dick and Colin went upstream.

The water deepened downstream and we were soon traversing in the roof over a canal; it was at this stage that we suspected we were in an extension of the Birkwith canal - or even over the canal itself. We looked for signs of previous exploration and were disappointed to find them, although it was obvious that it was no well-trodden path that we were on. Rock flakes, footholds and handholds were very sharp, there were very few nail scratches, and formations showed little sign of damage. We continued to traverse downstream, always over the canal, until the roof traverse developed the shape of a cross and then closed in. Tony was able to go a few yards further than I could; he reported that the canal continued, but there was foam on it suggesting a siphon. Also there were two sets of initials with the date, July 1956. There are some very pretty formations in the roof traverse, and in particular I can recollect an ochre-stained curtain and some magnificent small crystal pools.

Upstream, Dick and Colin found that much the same happens. The water deepens after a few yards and soon becomes too deep to negotiate; however, an apparent end to the cave can be seen, with the walls closing in leaving only a small opening above water level. The roof traverse closes in almost immediately.

We were intrigued by this stream passage, realising that it was probably an intermediate section between Old Ing Cave and Birkwith Cave, and during the next few days we were told various stories which intrigued us even more. Norman Thornber was aware of a rumour that some local lad had in bygone days entered Old Ing Cave and eventually emerged from Birkwith. Jack Myers met an individual who knew an individual who had been through from Dismal Hill to Birkwith. A member of another club told me that he had once been trapped in the upper reaches of Birkwith by a sudden rise in the water level; the water was very high when we were in Dismal Hill, and perhaps the signs of a siphon that Tony saw are only there at high water.

There was certainly sufficient to create interest; a section of cave we had no record of and rumours of a through trip. We decided that further investigations were warranted when the opportunity presented itself.

Birkwith Cave (7th September, 1958)

I would not have missed our trip into Birkwith cave for anything. It is admittedly an easy cave, but nevertheless enjoyable, especially for anyone who is sufficient of a Water Baby to relish exploring the canal.

The cancellation of our Nick pot meet was, for me, one of the happiest decisions the N.P.C. ever made - cancelled on account of weather conditions again, thundery showers being forecast. So seven of us went up to the Birkwith area with the idea of surveying Birkwith Cave and Dismal Hill Cave and trying to make a connection between them.

We persuaded Brian Heys, Peter Haworth and Roger Rhodes that they had the best physique for surveying Dismal Hill Cave. The rest of us went into Birkwith equipped with a rubber dinghy, Trevor's air-bed (secreted from Club H.Q. without his knowledge) and a measuring tape but no compass. Gordon Batty, in reply from a question from Dave Gibbon, assured him that the cave was perfectly dry apart from the water.

We soon reached the canal, having forgotten all about any surveying, and inflated our "boats"; the plug for Jack Myers' dinghy was missing, so we had to improvise with some well-pulped paper - but more about this later. I tried floating on the air bed and it obliged by immersing me to about the same degree as an iceberg - that is about threequarters underwater ! Loud guffaws of course from the rest of the party. Well at this stage one might as well complete the job of getting soaked, so I tested the canal to find out if it was too deep even for someone of my height - it was.

We next tried the dinghy. Gordon knelt in the front and I sat in the back with legs dangling in the water. Gordon could well use a few steering lessons, for we proceeded very slowly up (and down) the canal looking, as Brian Beardwood put it, "Like a ruddy lighthouse, lamps rotating, and slowly disappearing into the distance". Eventually we reached a place where Gordon could climb out onto some rocks and I returned for Brian. We soon sorted out the steering problem, and proceeded straight past Gordon until the dinghy could go no further. These dinghies are rather wide, and the walls of the cave had closed in until we were firmly jammed between them. It was obvious though that the air-bed would go further.

We returned Gordon, I climbed out and Brian went to pick up Dave and the air-bed. Gordon and I decided to try going forward on the rocks and were surprised to find that the water was quite shallow at that point for several yards; we went out of our depth on either side of this stretch and so returned to our sanctuary on the rocks. The rest of the party soon reappeared, and Brian decided to enliven matters by falling in as he climbed out of the dinghy. He quickly silenced Dave's guffaws by

tipping him out also. Dave became the first of us to be completely submerged - and I am surprised that the surveyors in Dismal Hill could not hear our shrieks of mirth.

Eventually we sorted things out and, "determined but moist" like Sam Oglethwaite, set off to conquer the rest of the canal. At this stage it didn't much matter about lying partially submerged on an air bed, so I set off on it up the cave. A few yards beyond where we had got to in the dinghy the flat roof changed to a gothic arch; the walls closed in, the arch rapidly decreased in height, and the cave ended in a wall of rock. There is no hope of getting any further except by diving. A few yards before the end is a low arch in the right hand wall; it is possible to peer under this by submerging half one's face. There is something on the other side, but it is quite impossible to get through on any kind of float; something like a Mae West life jacket would be more suitable for this. However, there is no sign of ventilation from beyond the arch.

We inspected the roof with our lights carefully but fruitlessly, hoping to find a roof traverse which would take us to Dismal Hill Cave. We blew whistles for some time, and the surveyors in Dismal Hill had been asked to do likewise; but neither party heard the whistles of the other. The retreat was not without incident. We lost the bung from the dinghy and the support party only just made it back to the halfway rocks without foundering. Dave set off back for land on the air bed, but punctured it before reaching the shore - we could hear his desperate threshings over the last few yards from our rocks. Further attempts to improvise a plug for the dinghy from string, mud, cloth, and other miscellaneous items failed, and the first of two final trips back to land was made with a finger placed firmly over the plug hole, and a vigorous paddling to reach shore before the unfortunate finger dropped off. Ashore we scrounged some soggy cigarette packet from Dave; there is something about soggy cigarette packets which make them excellent for improvised plugs, and we were soon able to rescue Gordon without further incident. This isn't by any means the first exploration of the Birkwith canal, but, by Jiminy, I'll bet Fred Carnot's army could not have made a more slapstick job of the operation !

On the way out Gordon and I had a look at the low passage which continues straight back from the beginning of the canal. It rapidly becomes very low and develops into a wide bedding cave containing many old formations which reach from roof to floor. A striking feature about this passage was that it carried a strong draught which was going out from the canal - but there was no noticeable draught anywhere else in the cave. Perhaps there is some high level connection between Birkwith and Dismal Hill Caves, but if so it is not negotiable to humans.

Old Ing Cave (7th September, 1958)

It was still quite early when we emerged from Birkwith, so Gordon and I decided to have a look at Old Ing Cave; the entrance is exactly where marked in "Britain Underground", although on our previous visit we had not been able to find it. Just inside the entrance we were surprised by an odour of perfume, but assumed that our senses of smell were playing tricks. However, further down the cave we caught up with three obvious novices - we presume that one of them was using a particularly pungent hair oil. These three were attempting some quite hair-raising traverses in a vain attempt to keep their feet dry; little did they know what was coming ! We followed them along, asking silly questions and being helped across awkward pools; presumably they hadn't noticed that we were already completely saturated.

Eventually we did reach the final pool. Our leader, complete with immersion suit, went in thigh deep and pronounced the end of the cave. Gordon and I insisted on seeing what a siphon looked like, and whilst our guides pottered back up the passage we investigated the pool in more detail. Its about 20 feet long, 6 feet wide and well over 6 feet deep. We could not reach the far end, but could see that the walls did not close in completely; a gap about a foot wide and three feet high (above

water level) continued - and we thought that with luck it might take us into Dismal Hill Cave. But we shall need our Mae Wests on again before the connection can be attempted.

Old Ing Cave (19th October, 1958)

It was several weeks before I found a convenient opportunity to visit the caves of the Birkwith area again. But in the meantime a lot of good work had been put in by Brian Heys and others. Brian had surveyed Birkwith Cave, and then, presumably to complete the area, surveyed the Browgill-Calf Holes system.

Brian and Roger Rhodes also had taken dinghies into Dismal Hill Cave and investigated the canals in detail. They chose an abominably wet day to do this (the Sunday we had to cancel our Rumbling Hole meet), when the water must have been at least a foot above its normal level. The first time we went into Dismal Hill Cave, Tony Newton had seen foam on the downstream canal and it is not surprising that foam was there in abundance when Brian went sailing. He apparently pressed on through it to the "bitter" end however, and according to Roger returned looking as though he had been wallowing in a tank of frothy bitter. They found that both ends of the cave terminated in siphons.

On the present occasion, Alan Fincham and I plotted to finish off the job with the aid of frogman suits; we had the final pool in Old Ing Cave and the low arch near the end of the Birkwith canal to investigate. He went up with the Leeds University Speleos who were having a beginners' meet in the area, and I went up "en famille". Brian Heys and an unknown frogman also appeared, equipped with a rubber dinghy.

My previous visits to the Birkwith area all seem to have yielded these little extra adventures which make the day especially memorable - and this trip was no exception. The family and I went up to Old Ing cave, and Alan Fincham said he would be up shortly, probably with others. I was intending to introduce Jowett Minor to his first wet cave, anticipating that he would enjoy a paddle down the nearer section. As we were preparing for the descent, Kathleen observed, "There's a black cow coming to visit us." I looked round at the black cow, and like all black cows, it was a bull. I raised the alarm as it started to trot towards us, and we managed by a few feet to beat it into the cave. I can honestly say that this is the first time I have ever been forced to go caving. The bull stamped and snorted around, tossing Kath's red plastic mac in the air, and we just sat and waited, wondering what kind of reception the others would get. Eventually we heard voices, and I went to the entrance just in time to warn Alan and another individual as the bull started charging. They also fled into the cave, and were shortly followed by rucksacks and other pieces of equipment. Fortunately, this latter performance had been observed from a distance by others, who disappeared over the nearest wall and then collected a farmer who was handy. As Alan and I made a desperate sortie from the cave, shouting rude words and flinging rocks (with good effect), a highly amused farmer appeared on top. "Nay lad, he's nobbut a baby", says he, and then proceeded to chase the beast over the moor in his Land-Rover. Its all very well saying things like that when you're in a Land-Rover !

After this little adventure we got down to business. The frogman suits were donned outside the cave, and we had the pleasure of being able to plunge through deep pools in comfort while others struggled to traverse over them or gasped for breath. We inspected the final pool in detail, but there is no continuation above water. Underwater the passage is still large and would be of interest to cave divers. The frogman suits were ideal for this kind of investigation; they retained sufficient air to allow us to float across the pool without effort, and the smallest of nooks and crannies could be investigated thoroughly - and, above all, we remained completely dry.

Birkwith Cave (19th October, 1958)

On coming out of Old Ing Cave, we met Brian Heys and his colleague; they had been in Dismal Hill Cave unsuccessfully trying to lower the water level by removing a flake of rock. They decided to accompany Alan and me on another inspection of the Birkwith canal, and one of the Leeds Speleos, armed with immersion suit and two inner tubes, decided to come also. Our battle flotilla of one dinghy, three frogmen, and bod with inner tubes must have made quite an impressive sight as it departed up the canal. We examined the end carefully and convinced ourselves that there was no way through either above or below water. Alan and I bobbed under the low archway and were delighted to find ourselves in a parallel canal about 60 feet long and three feet wide with a gothic arch roof up to four feet above water level. At each end the walls close in and the roof dips. In it are some fine white stalactite curtains and straws up to three feet long. This canal presumably forms a closed air pocket at high water; the formations appeared to be quite untouched by the water.

Conclusions

Our investigations in the Old Ing to Birkwith Cave system were completed on this trip. The rumour of a through trip is just a rumour now disposed of. There are still sections of unexplored cave but entry into these is not possible without spades, hammers, and in all probability cave divers; also it is not quite certain which streams are entering the system. Although our hopes of a through trip have been dashed, we are able to look back on many happy hours spent in this rather neglected cave system.

Notes on the Birkwith Area Survey

Brian Heys

Prior to this August there has been little N.P.C. interest or activity in this area and there is not much reliable information in the Club Records. There have been rumours of interconnections between some of the caves, so to fill this gap in the records and clear up the rumours we started a survey of the known caves. Due to new discoveries elsewhere, attention was diverted from this project but the results to date are being published to show what prospects there are for further work.

Our first survey trip was Dismal Hill Cave, whilst at the same time Alan Jowett & Co. were in Birkwith Cave. On this occasion we were traversing in the roof above the canal and though we whistled we could not establish contact with the other party. Till then we had believed a connection was possible. On a later trip we took in a dinghy and managed to progress at water level for a further 30 feet beyond the limit of our roof traverse. The water level was abnormally high so we made yet another trip under drier conditions and a swimmer was able to add another 20 feet in a narrow fissure which eventually got too narrow.

When we surveyed Birkwith Cave we did not have a long enough measuring line to measure the canal. It has therefore been plotted as 110 yards long, the figure given in "Caves and Caving" volume 1, p 119. This means the unknown connection must be very short.

We already had a survey of Old Ing Cave but as it was of doubtful accuracy we decided to repeat the stretch from the entrance to sump. The inlet passage is from Arthur Gemmel's survey and is believed to be reliable.

When Gordon reported the low passage continuing from the downstream end in Birkwith cave we wondered if there could possibly be a connection with the known upstream passage from Calf Holes so we decided to survey this also though it was outside our initial area of interest.

This latter passage which is mostly crawling ends in a rather fine waterfall chamber - worthy of a scaling ladder trip, though there is only about 100 yards further to the sink which presumably feeds it.

At the same time we did the downstream passage in search of the known through way to Browgill. We had more or less abseiled down Calf Holes and it was therefore very desirable to find a through way. I had not been in before and so we surveyed a bit of branch passage which was off the route before managing to get through the right bit of tight crawl into the part of Browgill which I knew from a previous trip.

Our knowledge of the water flow in the area is still far from complete. Only one fluorescein test has given a result; fluorescein from the sink near the mouth of Dismal Hill Cave was seen later in the canal in the cave. It may be that it reached the canal through an underwater opening in the side of the canal or it may have come through the length of the cave from the sump. It was not seen in this upstream section but that might be because it was flowing so swiftly at the time. It certainly did not pass through the crawl.

The flow from Old Ing to Dismal Hill must be presumed because of the large size of the stream involved and the connection on to Birkwith is obvious from the survey.

The source of the stream seen at the entrance of Old Ing is doubtful. The survey marks three sinks to the north and east of the entrance but the most obvious of these, about 100 yards to the north, appears to be rather low in level and on occasions to take too much water to be feeding Old Ing.

Most of the water falling down Calf Holes comes from the rising 200 yards to the northeast which is presumably fed from a group of sinks 200 yards further east. This is near to the sink we have presumed to feed the upstream passage of Calf Holes and it is difficult to decide just which feeds which.

The writer is grateful to Bill Holden, Roger Rhodes and Peter Howarth, all of the N.P.C., and to Arthur Maxwell, imported from Rugby for an aquatic trip, for all the help they have given in the survey.

WATCH THIS SPACE !

At this point in our Journal should have appeared an account of the Club's activities at Silverdale Gill Pot.

Since the very early days of the club's existence, members have from time to time dug in this pot, which we feel convinced is the key to Brans Gill Head.

As we go to press, we hear that at last there is hope of our efforts being rewarded. The water producing the rumble which has spurred us on over many years is at last in sight - at the bottom of a 25 foot pitch.

The top of this pitch needs some hammering, but everyone is very optimistic that the exploration of Silverdale Gill Pot will be prominent in the next issue of our Journal.

The weekend after our new explorations in Lower Easegill, we should have been full of enthusiasm for pressing on into the further reaches, but on the Saturday night there was some rain and the Sunday morning was rather unsettled. As the entrance to the new cave was in the stream bed, we thought we would leave it for a better day and go somewhere else for a change.

We had heard tales of a new discovery in Barbondale by the Gritstone Club, so I suggested to Jack Myers that we go and have a look at it. There was also a cave in Dentdale which Jack and I had long ago thought would justify a scaling ladder expedition, so we planned to combine the two in one expedition. Roy Wilkinson and Alan Jowett also chose to come with us.

On the way, Roy told me what he had heard of the new Barbondale cave and I began to suspect it was a cave we had done in 1952. We stopped at Ingleton and checked with the Gritstone Club that it was in fact the same cave, so that when we reached Barbondale we decided to press straight on and deal with our second objective.

High Gill Cave, or alternatively Gawthrop Cave, is situated on the east bank of High Gill about a quarter of a mile above Gawthrop. It is most easily approached by following up the track at about 750' O.D. from the Barbon-Dent road to High House. The entrance is quite obvious above where a large spring runs down the side of the hill.

The opening is about three feet high over debris but the entrance chamber is about eight feet high and is walled up for about half its width. The first 100 yards is straightforward but the roof lowers steadily down to three feet high towards the end. Apparently someone has worked on this section to make it more accessible and there are stacks of rubble along the walls rather like miners' deads. At 100 yards we enter a chamber 25 feet high and 50 feet long with the major part of the stream entering as a waterfall at one end. Thus far is well known.

Whilst Jack and I surveyed in the first section, Alan and Roy were at work with the scaling ladder. We had taken 20 feet of ladder and fortunately there was a large rectangular boulder in the middle of the chamber which provided an ideal first step. Roy ascended first and secured the top of the ladder and then the heavier members followed. The take-off at the top was a little awkward since we had to traverse a few feet over rather shaky rock covered by stalagmite and then crawl between cemented blocks. Once through all was easy and we were in a large chamber, with floor of scattered blocks and profusion of stalactites. We had to crawl over or under these blocks at a few points in the first 50 yards, but after that it was easy going in a generally roomy winding stream passage. There was one difficulty which I was the only one to appreciate; throughout this section the passage floor was in a bed of shale which must have been at least 5 feet thick and my commando sole boots gave hardly any grip. Normally underground I am quite satisfied by them but on this occasion the others in nails were far better off.

Halfway along this new section, we had to crawl for a short distance near where two large stalactites almost fill the passage and then at 480 yards from the entrance we came to a stop. A heap of limestone blocks practically filled the passage and the hole in the roof from which they had come, whilst the stream splashing down through them deterred us from a very close investigation.

On our way in we had kept a watch for signs of previous visitors and at one point in a short dry oxbow, there appeared a corduroy knee print. When we got back after surveying the new section to the top of the waterfall chamber we found a heel print so we must admit we were not the first in. In the absence of any local knowledge of new explorations and in the light of the work carried out in the old section we are led to believe that it has been visited by the "Owd Man"* and since forgotten.

When we came out we walked up the stream for about half a mile to the waterfall where the water drops over a scar of shale but did not notice any distinct sinks. Then on the way down I noticed that a portion of the water was sinking in a fissure in a small cliff on the right bank. It was only a few minutes work to divert the stream and lift out a few boulders before I was able to slip in. Roy soon followed but Jack and Alan thought it was too small for them. After the initial constriction we were in a passage about 10 feet wide and four feet high dipping down with the bedding which was locally about 1 in 3. The large passage did not last long and after about 50 yards we were crawling again, then we entered another chamber well decorated with formations with floor of fallen blocks under which the small remaining stream disappeared. Keeping to the left to avoid a particularly fine stalagmite-covered bank we crawled through into an extension of this chamber. On the left a small inlet brought in a slightly larger stream than the one we had followed and this stream then disappeared in a low passage heading back towards the main part of the chamber.

As I was anxious to get back early we did not press any further but retreated to report back to Jack and Alan who were mildly sceptical about the abundance of formations.

The next weekend Jack, Roy and I were back again, this time with Peter Haworth and Alan Fincham. We were surprised to find on this occasion that no water was reaching the new hole and it was instead sinking about 100 yards further up by a ruined sheepfold. The fissure in the stream bed was quite open but too small to offer much hope of entry. We returned to the new hole and trimmed it by hammer to Jack's size. Peer and Roy went ahead while the rest of us surveyed in.

We caught up again in the stalagmite chamber and learnt that the inlet passage was not of much interest. The downstream passage from the far end of the chamber on close investigation seemed to close right down, so we returned to where the stream disappeared amongst the fallen blocks in the middle of the chamber. The way through was easy enough - it only involved lying down in the stream and wriggling through for a couple of yards.

After that, the next 100 yards was mostly hands and knees crawling with an occasional fallen block to scramble over. For a large part of this the floor was eroded sandstone, rather harder than the shale we had met in the lower cave. Then we came into another chamber with even more stalactites than the earlier one. One we particularly noticed was Y-shaped, being attached to the roof at two points.

The end of the chamber seemed closed by a stalagmite grille, but as we estimated that we were very close to a link up with the lower cave, we decided to sacrifice this grille to make further progress. Unfortunately this progress was not very much - a small chamber and we were into a boulder ruckle which did not look very attractive. We left it at that. Afterwards, having plotted out the surveys, it seems quite certain that the two caves are separated by a short boulder blockage but there is still rather a problem about the connection.

When we were in the lower cave we did not notice any appreciable inlets apart from that right at the end. On our visit to the upper cave the stream was sinking about 100 yards above the entrance and as we checked later, a stream of about the same strength was issuing from the lower cave, whilst only a very small stream was then in the upper cave. It seems very probable that there is still a main stream passage to be found continuing at the same level as the lower cave underneath the ruckle whilst the water which we saw splashing down through the ruckle was only the small fraction from the upper cave. With the showerbath turned off, another visit to the ruckle may be more profitable.

On our second visit we noticed another peculiarity about the drainage of the area. As we walked from the road to High House we noticed there was much less water in Oliver Gill than in High Gill

whilst according to the map Oliver Gill is fed by streams rising high up on Crag Side and High Gill is fed by a small group of springs within a mile of the cave.

After we had finished underground we had a quick look up Oliver Gill and found most of the water was coming from Mickle Gill whilst the main stream was sinking at about 1300' O.D. A line of shakeholes running from here to Doctor's Spring feeding High Gill strongly suggests that this is the line of underground flow. We also checked that there is no obvious leakage from Flinter Gill above here to contribute to Doctor's Spring.

*The Miner

MIRACLE OR SIPHON ?

Giggleswick's ebbing and flowing well has perplexed and entertained for many centuries. It is a temperamental phenomenon which never seems to work for visitors, but locals are insistent that it performs frequently.

What causes it to ebb and flow has been a source of many arguments, but the most popular theory is that a siphon in the limestone is the cause. A far more romantic explanation has been unearthed however, by Tot Lord from manuscripts in the Pig-Yard Club Museum.

These reveal that, set face downwards in the base of the well, there is an inscribed stone bearing the legend of a miracle performed long ago by a priest to show an evildoer the wickedness of his ways:-

"Ye water dyd run yn even course botte Prioure Richard Moore bie ye power from above dyd mak it to rise and to fall yn a most curious manner so that he (the evildoer) dyd afterwards paie hys tithes and dyd forsake hys evylie waies."

Whilst the 1" O.S. maps of Scotland show scattered caves all over the Highlands and around the coast, the ones of particular interest to speleologists are limited to a band of Cambrian limestone which outcrops in patches between Durness on the north coast and Strath Suardal on Skye.

At Durness the only large cave is Smoo Cave (N.G.R. 29/418672). Here the Allt Smoo falls down an open shaft just south of the main road and flows through a big chamber to the sea. A small branch passage contains a separate rising whose source has not yet been ascertained.

There are a number of shakeholes in the area just south of this, but the only other cave so far noted is a small series of chambers in the east bank of the Allt Acnaidh (29/388632). There is also a small sink at 29/373623, the water from which rises about 300 yards to the north west.

The next area southwards to have been investigated is Glen Traligill where a complex system of caves is found in Cnoc nan Uamh (29/276206). Although no tests have been made it appears probable that the water in these caves comes from sinks at 29/283193, 29/280198 and 29/277198 which together yield a substantial river. The Uamh an Tartair is the entrance to the upper part of the system which rises from a pool, proved by survey to lie under the Uamh Cailliche Peireag 250 yards to the south. Downstream the Waterslide, a cascade on a 30° slope, reaches, at a depth of 140 feet, a constriction and then an apparent sump, but a branch passage to the right bypasses this and leads to a very definite sump at 160 feet.

The sink at 29/277208 on the main Traligill stream appears to be a separate system and probably rises 200 yards downstream. It sinks again at the Lower Traligill Cave 29/270209 where it is probably joined by the Cnoc nan Uamh water. In dry weather this cave can be descended down a 30° slope to a depth of about 60 feet, but in wet weather it acts as a rising.

In normal weather there is a rising from a cave at 29/267213 but in dry weather the water does not reappear till below the waterfall at 29/264315, and a point 100 yards below this.

Uamh nan Caluman 29/258219 appears to be only a series of oxbow passages in the side of the gorge.

In the next valley south of Traligill, the Fuaran Allt nan Uamh 29/261178 is a very powerful rising but it does not give much promise of entry. The caves (29/268170) marked on the 1" map appear to be part of a big system but are now very solidly clay filled. Near the sink at 29/271163 is a small shaft and chamber in rather rottem rock. The most promising point in this valley is a hole about 100 yards below the waterfall at 29/275172. The narrow entrance in the north bank of the stream leads into an upper level of dry roomy passage which terminates in a heap of boulders which must lie somewhere near under the surface waterfall. The stream which passes under the main passage is probably the water sinking nearby and is last seen in a sump, but the bigger stream probably originates from a sink 300 yards above the waterfall.

This latter rises from a pool but sinks amongst boulders which look like a promising dig.

In the Elphin area are the Uamh an Tartair 29/217092 and Uamh an Poll Eoghainn 29/205094. The first contains the bigger stream, the Abhainn a'Chnocain which can, in dry weather, be followed to a sump in a low passage; but in wet weather it backs up over 30 feet to the top of the first pitch.

Normally the stream reappears about half a mile NNE of the sink but in wet weather it rises again 100 yards east of the sink.

The Uamh an Poll Eoghainn has so far been descended 60 feet but it merits a dry weather visit since its water rises 350 feet lower down and threequarters of a mile to the north.

Near Loch Kishorn is a small cave at 18/860444. Although the entrance is through a deep pool on the west side of the stream, the cave is dry and does not extend far.

On Skye, a small pot has been noted at 18/595183.

Several of the other small outcrops of Cambrian limestone have been investigated but have not yielded anything of interest.