



## FOREWORD

The current club year ends on September 30th and nominations for officers and committee must be received by the secretary on or before that date. The committee has not yet decided the date of the Annual General Meeting, but under our rules it must be held during the month of October, and it appears that the date will be either October 20th or 27th. It has been the custom during the present year to hold the committee meetings at Hillgrove on Sunday afternoons, but this resulted in a certain amount of interference with the caving activities of members, and it has been decided to hold future meetings in Bristol on Friday evenings.

The committee has unanimously agreed to recommend that Honorary Members should be granted full voting rights, but in addition suggest that all such members be elected at an A.G.M. The committee also tried to draft a resolution concerning the election of Honorary Members, but nothing came of this.

Both the committee and the several members who have written to the secretary on the subject are agreed that the Hut Sinking Fund should come from the normal club income, and it has been suggested that, if need be the annual subscription must be increased to keep in step with the increased cost of maintainance and replacement. The committee has decided to put a resolution to the A.G.M. on the subject and will ask the meeting to agree to a suggestion, that the A.G.M. shall decide each year how much can be taken from club funds and put into a" special Hut Sinking Fund.

Metal ladders. The secretary is very concerned at the rapid rate of deterioration of this tackle. Only last year we had a major overhaul, but now it has been found necessary to withdraw at least three ladders from circulation. The tackle has been in constant use during the past year for normal caving trips, but we must impress on all members that ladders and club ropes must not in any circumstances be used on digs.

The U.B.S.S. has instructed us to ask members making use of the pressure lamps in G.B. Cave to make quite certain, that the burners are sufficiently heated before trying to light the lamps.

This issue, due to the absence of "copy", is four pages shorter than usual.

Hon. Sec., Frank Frost, 22, Wolseley Rd., Bristol, 7.

Phone, Bristol 44221.

Hon. Treas., G. Williams, 1, Redhill Drive, Fishponds, Bristol.

We welcome the following new members:

J.G. CROSSLEY, 14 Cote Lea Park, Westbury-on-Trym, Bristol.

C. INESON, Wills Hall, Bristol, 9.

E.W.R. MARTIN, 5 Upper Sandhurst Rd., Bristol, 4.

R. NUNWICK, 8 Houlands, Welwyn Garden City, Herts.

K. ROBERTS, 27 Morlands Rd., Kenton, Harrow, Middlx.

Change of address, etc.

H.E. BALCH, 8. Davies Terrace, Tucker St. Wells, Som.

P. CAHILL, Foresters Drive, Wallington, Surrey (after December 22nd.)

Lt. T.R. SHAW, R.N., 24 Forester Rd., Bath, Som.  
For Dr. R.E. DAVIES, please read Prof. R.E. DAVIES.

Forthcoming marriage:

Pat Cahill to Peggy Joan Pemberton, on September 22nd, 1956.

Future events:

G.B. Guest Days: Sept. 29/30th, Nov. 3/4th, Dec. 8/9th. For the new arrangements, see Journal No. 57 page 8l.

Subscriptions for 1956/57 are due. The rates are: 10s. for ordinary members, 12s. 6d. for family membership and 1s 6d for affiliated clubs. They are to be sent to the Hon. Treasurer.

MENDIP NOTES.

The summer has brought a new spurt of activity with it. Some of the work done has been recorded in the log book, but some is hearsay. The following brief notes are made from these sources, but it is to be hoped that they will be later amplified by articles written by the protagonists.

Swildon's Hole.

A marathon trip over the Bank Holiday week-end was made by Dennis Kemp and his party, who were down in Paradise Regained for nearly three whole days. During this time they blasted their way through a further six feet of the narrow rift at the

end of Blue Pencil Passage in the direction of the stream, which can still be heard but not seen. It is still hoped that this may meet the main streamway beyond the Sump II complex. Various parties of helpers brought them supplies during the weekend, including three members of the Stoke-on-Trent Pothole Club, who were making their first descent of Swildon's on the 5th August.

On page 108 of this Journal, Kemp remarks that if water continues to accumulate in the antechamber to St. Paul's, there will be another sump in Swildon's in some years time. This is not strictly true, as Kemp no doubt knows, for water has accumulated here in the past to produce the "Chandeliers" and other lovely formations, now for the most part destroyed. When it reaches its high water mark, which can be seen on the walls of the passage where shelves of calcite project, it overflows back into Tratman's Temple. The water comes from the "Blasted Boss". Sometimes it flows forwards into the crystal pool in St. Paul's (now muddied up), sometimes backwards into the Beautiful Grotto. The solution to the difficulty is to cut with a chisel a spiral groove in the "Blasted Boss", which will take the drip forwards.

Alan Fincham and his party visited the Black Hole on the 5th August and fixed a rawbolt over on the far side, in Thunderbolt Depot. There is now a bolt at each end of the traverse and it is intended to fix a wire between them, to make the climb less hazardous.

The bar in the rift above the 40 ft. pot was fixed on the 23rd June by Robert Wooley and Oliver Lloyd. The pulley block and shackle to fit this are being kept by Luke Devenish for the M.R.O.  
(See Journal No. 57, p. 79).

## Tankard Hole

Alan Fincham estimates the depth of this cave now (22nd July) to be about 160 ft., using an aneroid barometer. The dip is about 30 to 40 deg. to the SE. The cave is very dangerous, especially at the top (among the shoring), at the bottom and anywhere in the ruckle off the main route down. The whole cave is in a ruckle of boulders varying in size from "several hundred-weight chunks" at the top to "cottage size boulders" at the bottom. The cave is gated and the keys are held by Brian Prewer (who is abroad), Mike Grimmer, Alan Fincham and Tony Rich (B.E.C.).

## Cross Swallet

Work at this swallet was continued during July under the direction of Alan Fincham. Hywel Murrell assisted with some blasting, after which the log noted that prospects were fair to middling, but the roof was threatening to collapse. A note made two days later by Bob Lawder showed that a fair amount of collapse did indeed occur. The moral he drew was, "If you want to dig a hole, dig next to intended site first".

## Cuckoo Cleeves

This has been more or less the principle adopted this year by Robert Woolley and Oliver Lloyd, who have now re-opened Cuckoo Cleeves for the second time. A second shaft was sunk and temporarily shored immediately to the W of the Wells shaft, which was constructed last year. Into the bottom of this was fitted a pent-house iron frame, prefabricated by Woolley, which was bolted to the

uprights of the Wells shaft. This will form the roof and support the sides of the cave entrance, which lies immediately to the W of the foot of the Wells shaft and about 4 ft. below it. After about 28 hours' work the cave was entered. They found it to be very much as they had left it. A foot-print in the mud in the Grotto had filled with water and contained about six asellids. A white shrimp was found in a streamway pool; this might be either Gammarus or Niphargus. The latter were found there in 1947-8. No odds are being placed on the cave staying open.

### Stoke Lane

A surveyor's job is never finished; he is always finding new passages. So it is with Denis Warburton and Phil Davies in Stoke Lane. On the 28th July, with the aid of a little rock hammering, they entered a passage to the E of the Tributary Passage just by the Corkscrew and found it to communicate with a maze of criss-cross, joint determined passages, tending in the direction of the Pebble Crawl. There is a northerly passage which leads off the latter and which terminates in a hole called Ridyard's Wriggle. Members of the party were able to establish finger-tip connection between this and their new passages. They hope that with a little more hammering it should be possible to provide a sporting alternative to the Stony Crawl.

Cheramodytes.

## RECENT CAVE DIVING IN YORKSHIRE

Earlier this year one of our Yorkshire Club members, Jim Swithenbank, exiled in the South, was telling Oliver Wells of some diving prospects that the Cave Diving Group did not seem to know about. One of these sumps in Threaplands Cave, Wharfedale was reconnoitred by Wells early in May. Diving solo on the end of a rope, he reported that "it was still going strong after 40 ft. of horizontal passage (commodious), through clear water over a sand floor." His estimated measurements of passage size were: 10 ft. wide, 3 to 4 high and 10 to 15 ft. deep. Visibility was good, about 15 ft. There was one small air pocket of no consequence about 10 ft. from base.

Swithenbank knew also of a sump in Boucher Gill Cave; accordingly plans were made to examine this on the morning of June 23rd, 1956, and to continue exploration at Threaplands Cave later the same day. That morning, a Saturday, the party assembled, dressed and organized themselves by the side of the road about a mile beyond Hubberholm. We sympathized with the passers-by; our intentions, dressed as we were, in the middle of a Yorkshire Dale, cannot have been obvious. Wells and myself in rubber suits accompanied by four helpers, carrying one breathing apparatus and aflo between them, climbed to the cave mouth. It was a warm morning and a long uphill walk, particularly for those of us dressed for colder pursuits. The coolness of the cave entrance, shaded by trees, was very welcome.

Boucher Gill is a resurgence cave. A hundred and fifty feet of well known cave passage end in a short duck, which emerges into a flooded chamber perhaps 15 ft. wide, 30 long and almost as many

feet high. For the ordinary caver this is the end of the cave; there is no way out of the rift, nor, as it turned out, is there for the cave diver. That short entrance passage, which normally would have presented no problems, had posed a few, before the diver, dressed and weighted, albeit 7 lbs. too light, crawled through the duck into the pool chamber. I followed, holding the end of the safety rope.

Wells dived three times in the increasingly murky water, while I sank deeper and deeper into the muddy floor. On his first dive Oliver found himself on a sloping floor with very poor visibility, rapidly worsening to near zero as the mud swirled around. On his second and third dives he was able to grope his way all round this muddy floor, which sloped down to a maximum estimated depth of 12 ft. in one corner. In this corner the mud coarsened to gravel size, and the way ahead could be felt as a vertical rift which was too tight for a kitted diver. It is always satisfying if any expedition is conclusive; this satisfaction is not diminished if the conclusions are negative. In this case the diver's aflo pad read, "No possible way on".

### Threaplands Cave

That afternoon at three o'clock four divers, or more correctly, two divers and two would-be cave divers, dressed and assembled their kit in the field, adjoining Threaplands Cave, near the village of Cracoe, not far from Grassington. Two hours later John Buxton and Oliver Wells, fully kitted and followed by their supporters entered the cave, Threaplands Cave like Bouthier Gill is a resurgence, but its 100 ft. of stream passage are more commodious though low and wet. Here too a duck requiring

almost complete submersion precedes the scene of activity or, for the helpers, cold inactivity. Jim Swithenbank was to be seen dressed in an oversized suit of the type that has a nearly rigid head-piece; it is provided with a small, hinged, glass window for vision and a pipe through which oxygen is supplied from the breathing apparatus. For Jim this suit was also his breathing apparatus for whenever the water became uncomfortably deep, he simply closed the window, obstructed the breathing tube and breathed the air contained in the suit. It is as well to note that his role was that of waterproof supporter not diver. (For cave diving with the type of dress mentioned above, it is usual to cut off the head-piece and replace it with a flexible hood fitting watertightly to the head and exposing the eyes, nose and mouth. A separate mask, attached to the breathing apparatus by a flexible breathing tube, also having a large perspex window, is used in conjunction with the hood. This system, besides allowing the diver greater freedom of head movement and vision, also permits him to move about when necessary and possible, unencumbered by his face-piece and breathing apparatus).

Wells having dived here before was acquainted with the initial part of the passage, he therefore led the way, laying out a line which Buxton followed. Visibility was about 10 ft. for the leader, while the second could barely see his own aflu. Passing under the air space the divers followed the passage, always crossing the ripple marks in the sandy floor at right angles. When they had gone in this fashion 40 ft. upstream, the passage became lower and wider, the depth being something less than 10 ft. At one point the mud stirred up threatened to run ahead of the leader, who had

fortunately noticed that the ripple marks had changed direction; by continuing to cross them at right angles, he entered clear water again. Soon the passage became lower still, progress became slower and the mud reduced visibility to 12 ins. The divers were forced to plough their way upwards through a low sandy slot, to break air surface 65 ft. from the point at which they had originally dived. Their submersion had lasted seven minutes.

Finding themselves in a passage of much the same dimensions and type as the entrance passage, they removed their breathing apparatus, left them on a sand bank and crawled off to see what they could find. Now and again it was possible to walk but for the most part it was necessary to crawl. At one point the way ahead lay amongst boulders looking as unstable as any in a new cave. No attempt was made to explore the boulder chamber that lay above. The stream inhabited the passage throughout its estimated 600 ft. length. Finally the water became deeper and once more roof met water in a sump. A few exploratory kicks in the pool sufficed to prove that the way ahead was open and roomy enough to allow entry.

Returning down the passage was tedious and passing through the sump cannot have been pleasant with such poor visibility. Both divers were using closed circuit oxygen breathing apparatus but of different designs. John's being less compact gave some trouble in the underwater squeezes, which seemed on the return journey to be tighter. When belaying the line they had taken the precaution of leaving 3 ft. of slack, but contrary to their hopes it had pulled across into tighter parts of the passage. The return journey again took seven

minutes and the total time for which the divers were out of contact was an hour and three quarters.

It was now the turn of the would-be cave divers, David Morris and myself, to take their first dip under real cave conditions. Our experience to date had been in the relatively clear water of an open air swimming pool, where visibility was 20 ft. or so. Now conditions were just as bad as they could be; by this I mean that I hope they are never worse, and certainly cannot imagine them being so. The dim glow of our 24 watt aflo lamps was only faintly visible in that murky water. All sense of contact with friends was lost; it was easy to imagine that the few inches of line visible floated freely, that it had no continuity and that whichever way one chose to follow would only lead deeper and further from base. Yet we clutched that wire as if nothing else existed. Ten minutes or so under water felt like two or three. We found the air space mentioned earlier to be 6 ft. long and perhaps two wide; beyond this we did not venture far.

Our plans had all been fully realized and our day was complete except for a really magnificent meal laid on for all concerned by Jim's family at Grassington. If the first dive had left us disappointed, the second left us excitedly planning the time when we would return. It was decided that four divers would have to pass the first sump, in order to carry equipment for two along that 200 yd. passage, to attack the second.

Phillip Davies,  
30th July, 1956.

## PARADISE REGAINED – SURVEY II

On Saturday 16th June, 1956 Paradise Regained was entered by Tom Andrews and Dennis Kemp, and the route from the Mud Sump to Base Camp by Blue Pencil Passage was re-surveyed (see page 111). Swildon's was entered at 11 a.m., pitches laddered and Tratman's Temple reached by 11.40. Mud Sump reached at 12.05 p.m.

A year ago there was an insignificant pool of water in the small chamber just before the St. Paul's squeeze. This was passed without really noticing its presence. Last December it had increased in size, stretching right across the passage and was three inches deep. On this trip it was larger still, some twelve feet long and nine inches deep at one end. There were some springtails jumping around on the surface. If the water continues to accumulate at this rate, there will be another sump in Swildon's in some years time.

Mick Dale and friends had bailed the Mud Sump for us at Whitsun, bringing the water level down until there was a six inch air gap through to Paradise Regained. This is how we found the sump when we arrived. We thought the water level rather high for comfort, but as the sump is normally passed without difficulty we decided to go through. It is not possible to bail with a team of two: three is the bare minimum and our only alternative was to call the trip off.

I must confess that this led to one of the worst moments I have yet experienced while caving. The method of passing the sump is to lie on your back, arms at your sides, and to push with your heels, keeping your head well back so that eyes and nose are parallel and above the liquid mud surface.

As you go through the squeeze, mud is pushed through "by your shoulders and mounts in the confined space beyond until it wells up over your head and down your neck.

To my horror, when I started through the sump, I found that the squeeze was tight. I could feel a mass of gravel beneath my shoulders; my forehead and nose were scraping the roof and the water level was up to my mouth. I kept it shut. By dint of much kicking I started to make progress and my lamp fell off leaving me in darkness, just to add to the confusion. When I was finally through my Nife lamp would give no light at all, due to the thick coating of mud; the only way to clean things is to lick then and then to spit out the mud. This is a technique I have not seen discussed before. (Despite any difficulties in passing the sump, I am quite emphatically against any scheme of blasting it away. With proper planning it can be passed, and many dozen passages must have been made now since it was opened by Oliver Wells last year. It is a challenge to the cavers' ingenuity and enterprise, and I feel most strongly that the line should be drawn at any blasting operations.)

Then came the bad moment. Tom, a trifle stouter than I am, came into the sump and stuck more firmly than I did. I was kneeling to give him a hand through, and I could see only the rim of his helmet and his glasses above the surface of the mud. Perhaps my extra volume in the pool raised the level. I couldn't find anything to pull on except his ears, but I managed to raise his head until his nose and mouth were above the surface, then found his collar, and he came through like a cork from a bottle. Tom complained bitterly that mud running out of his hair kept messing up his glasses; so that he couldn't see.

We started the survey immediately, taking it to the Base Camp by Blue Pencil Passage and ignoring all detail other than distance and bearings of the various legs. There were 815 ft. of passages.

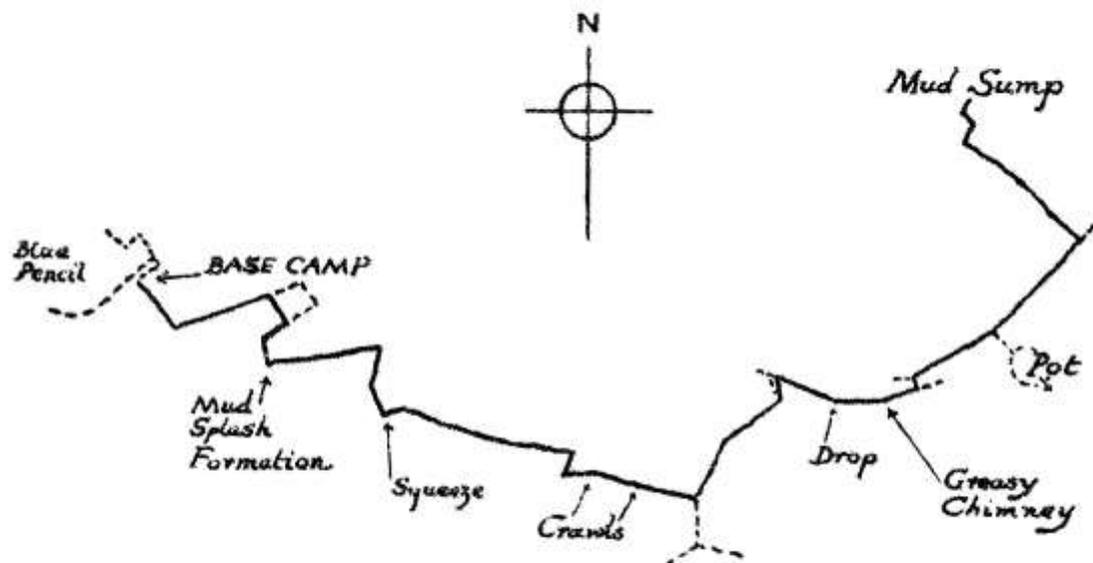
After tea and a meal we investigated the result of last December's excavating at the Bottom of Blue Pencil. The noise of the large stream came through clearly; either a low waterfall or a water slide. A new sound was superimposed - that of a tiny trickle (the Blue Pencil stream, perhaps) falling some distance into a pool, rather like a tap running into a Basin. That we could hear the stream so clearly was interesting, for there was almost no water at all running in the main Swildon's streamway, it was so dry. After a little more excavating we had more tea and left. Times for the trip out were: left Base Camp 6.30 p.m., Mud Sump 7 p.m., Entrance (including taking out the ladders ourselves) was reached at 8.55 p.m.

The survey was plotted out onto a copy of Stanton's survey of Swildon's and shows that the Base Camp is some 350 ft. from Sump II on a Bearing of 140°. It had been suggested that my previous survey of Paradise Regained was wrong and that Blue Pencil Passage communicated with the main Swildon's stream just Beyond Sump I. This second survey confirms the first, so it looks as though we are on to Swildon's III at last.

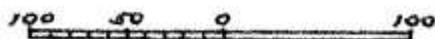
On July 2nd, 1956 three members of the Sidcot School Spelaeological Society descended Swildon's to bail the new pool of water that has formed recently in the entrance to St.Paul's series. They were G. Tomkin, M. Williams and D. Titley. They bailed and syphoned 58 gallons of water in 2 hours during a 6½ hour trip, finishing off the last remaining drops of water in the pool - with a sponge.

Dennis Kemp

## PARADISE REGAINED, SURVEY II



Feet



Tom Andrews  
Dennis Kemp  
16<sup>th</sup> June, 1956

## FROM ST. CUTHBERT'S TO WOOKEY HOLE

The underground passage of water from St. Cuthbert's to Wookey Hole has been well known ever since the celebrated case of Hodgkinson v. Ennor nearly a century ago. But some facts of great interest, which are less well known, relating to the experiments which were carried out, in order to establish the fact that this underground passage did in fact exist, have recently been culled from Mr. Balch's collection of newspaper cuttings.

The law suit has been ably summarized by Mr.J.W.Gough (Mines of Mendip, 1930; 14 - 16). Mr.Nicholas Ennor, having recently established his right to the water at St. Cuthbert's Mineries, against the owners of Chewton Mineries who sought to cut it off out of spite, constructed there six buddles in the summer of 1858, and two more in the autumn of 1859. The result of washing lead ore in these buddies was that the water which emerged at Wookey Hole, some two miles away, instead of being pure as heretofore, became contaminated with lead. This did not alter its appearance, but it made it unsuitable for use in the manufacture of the fine grades of paper, that were made by Mr. Hodgkinson at the Wookey Hole paper-mill.

In 1860, Hodgkinson brought an action against Ennor for polluting the water, and the case came up at the Wells Assizes. It was evident, however, that the fact needed to be established that the water sinking at St. Cuthbert's did in fact emerge at Wookey Hole, and this was done by a series of experiments described in the "Bath Chronicle" of October 25th, 1866.

## The experiments

"Before commencing the experiments the mode to be adopted received a good deal of consideration and discussion. Sawdust, feathers, oil and tar were severally suggested and put aside upon consideration that if, as was presumed, there was a filtration of water through beds of gravel these articles would be stopped in transit. The first matter that was put down was the red earth of the district mixed up thoroughly in the water, and the water was passed down one of the swallets for four hours on Wednesday afternoon, 3rd October, 1860. There was in the course of Thursday afternoon some apparent thickening of the water at the "Hole", but nothing but what might have been produced by the heavy fall of rain, which occurred about that time. It was evident that a condition necessary to the success of the experiments would be, that the colouring matter be of a nature to be held in solution for the longest possible period; this condition the red earth evidently did not fulfil.

"On Thursday, October 24th, 29 gallons of common ink were poured down continuously for two hours, and although a small quantity of ink apparently affected a large extent of water at the swallet, yet no appearance at all was seen at the "Hole" of any such liquid.

## Copper cyanide

"The next was a chemical experiment. On Friday, October 5th, about 108 lbs of sulphate of copper was dissolved in hot water and the mixture continuously poured down for nearly four hours. The strength of the solution so poured may be gathered from the fact that a few drops upon the end of a

stick were stirred into a bucket full of fresh water, and upon a tumbler glass full of the liquid having a drop of cyanide of potassium put into it the blue colour was instantly produced. The result of this experiment was watched with much eagerness by all the parties concerned, and after a lapse of twelve hours (samples of water being taken every half hour at the "Hole" day and night - in fact this, was done throughout the whole progress of the experiments) the test did, on being applied to many of the samples taken, show a cloud of blue, but it was not of sufficient intensity to prove the fact for which the experiments were instituted.

### Red and Yellow ochre

"On Tuesday, October 23rd, 2 cwts. 2 qrs. 23 lbs of common Venetian Red were dissolved and poured down the swallet from 2 p.m. until 5 p.m., and on the following day at 10 a.m. symptoms of red discolouration appeared at the "Hole", 17 hours from the termination of the experiment, continued to increase until 4 p.m. and finally disappeared at 8 p.m.

"On Wednesday, October 24th, from 1.35 to 7.10 p.m., 2 cwts. 3 qrs. 7 lbs. of common Ochre were dissolved and continuously poured down the swallet, and at about noon of the following day (about 17 hours after the termination of the experiment) discoloration commenced and was at its height at about 6 p.m. The water was again clear at 11 a.m. on Friday, 26th.

"It may be remarked that the discoloration was hardly observable at its worst, when the water was put into a glass tumbler, but was very apparent when the water was seen in a body.

"The decision of the Arbitration to the Court was that a passage existed between the mines and the stream at Wookey".

### The judgement

In 1863 the case came before the court of Queen's Bench, and judgement was given in favour of the plaintiff. Hodgkinson was entitled to the flow of water in a pure state, and as it had been proved that polluting matter entering the swallet contaminated the water at Wookey, Ennor was told that in future he must not allow any of the water to escape, with which he washed lead ore. The case for the miners was not very ably put, as there was evidence that for centuries past the miners had allowed lead-washing water to go down the swallets. If this had been put, it might have been held to establish a right by ancient custom, which outweighed the more recent claims of the paper-mills for pure water.

Looking at the figures in these experiments it can be seen that the water took from 17 to 30 hours to get from St. Cuthbert's to Wookey Hole, with maximum coloration after about 24 hours. Gough, however, gives hearsay evidence that the water takes 36 hours to reach Wookey Hole. The difference may well be due to the amount of water flowing, since it is well known that a smaller flow takes longer to emerge. The dilution suffered by the water during its passage was about a thousand fold: 16 - 18 gallons a minute at St. Cuthbert's as compared with 16,000 gallons a minute at Wookey Hole, during the course of the experiments.

H.W.W. Ashworth.

## BOOK REVIEWS

THE SPELAEOLOGIST, No.4, 1956. 52p., plans, illus. obtainable from R.D. Leakey, Sutcliffe House, Giggleswick, Yorkshire, at 5s p.f.

This is now the joint publication of the Derbyshire and Northern Spelaeological Groups. It is somewhat similar to the very early numbers of Cave Science or to a larger version of our own Journal. It is of more than local interest and deserves a wide circulation. Leakey described how he makes rubber immersion suits: I have seen one of these, which was very much stronger than the exposure suits obtainable commercially. The cost of material is estimated at 30s. Other general articles describe a method of rot-proofing ropes without loss of strength, and the technique of cave rescue. Records for cave lengths, depths, etc. in this country and throughout the world are discussed in a long article and there are reviews of nine cave books. Descriptions and surveys are given of a number of caves, including the notorious Penyghent Pot, the deepest pothole in England.

T.R.S.,

UNIVERSITY OF BRISTOL: PROCEEDINGS OF THE SPELAEOLOGICAL SOCIETY, Vol. 7, No. 3, 1955-1956.

189 p., 7 plans, 16 illus. Obtainable from Dr. D.T. Donovan, Hon. Treasurer U.B.S.S., Dept, of Geology, Univ. of Bristol, at 10s.

These Proceedings will be reviewed in the November Number of this Journal.

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