



I should like to thank all those who have written proffering good advice and good wishes to me in my new task. When Frank proposed that he should hand over the editorial responsibility to me it came as a great surprise and since then I have been realizing what an onerous task it is. During his years as Editor, Frank has done noble work and I hope that with your help - for you must write the articles - the Journal will continue to flourish.

The Club Library reports that one of the bound volumes of the Journal is missing. Anyone who may have this, would they please return it to Brenda Willis. It is hoped to compile a second set of club Journals and News Sheets and anyone who has spare copies, or who could spare their own copies, are asked to write to Phillip Davies, letting him know which ones they have, especially the earlier ones.

Please send me any Journal material, articles, letters, etc. - and I shall pass on to Cheramodytes, who I am delighted to see has popped up again, any suitable "rumours" without accepting any responsibility for their truth.

HON. SECRETARY'S FOREWORD

Members wishing to book accommodation at Hillgrove or the Eastwater Hut should contact E. Hanwell, 8 Hooper Avenue, Wells, and if it is intended to use Club tackle this should be mentioned. He will either send keys by post or take steps to see that access is available when they arrive. In the case of groups of non-members or official parties from other clubs, permission must first be obtained from the Hon. Secretary.

Bristol members may obtain hut and tackle keys from the Hon. Secretary, who will also deal with requests for visits to Lamb Leer.

The Committee has decided not to increase the hut and tackle fees, and these will remain at, for members, 2/- for the first night and 1/- for each succeeding consecutive night. Guests of members will be charged 3/6 per night; if they do not stay at the hut but use the Club's tackle, there will be a charge of 1/6 each.

It will be noted that the list of "Forthcoming Events" has been increased in size, and we hope that members will try to support as many as possible.

Those members who have not yet paid this year's subscription should send the 15/- to the Hon. Treasurer as soon as possible. By the time this Journal is published they will have received a "final notice" card from Mrs. Willis.

The Bristol Group appears to be quite a success and we hope that members living outside the district will come to the meetings. This may not be possible in many cases as the majority of the Bristol people prefer not to hold the lectures at weekends. On the other hand if members living away from the area would like to join us, but can only do so at weekends, I am certain we will be able to meet their wishes. A special circular is being sent to Bristol members.

May I take this opportunity of thanking all those members who, since the publication of the last issue of this Journal, have written such kind letters to me. These were very much appreciated.

There is a chance that we may lose the services of our Chairman, Luke Devenish, for a couple of months this summer. He is a little

vague about his plans, but has mentioned something about the Red Sea. If his plans materialize, our late Chairman, Mr. George Williams, will act in his place.

We welcome the following new members:-

A.J. Morris, 6 Aubrey Rd., Bristol 3.

Mr.& Mrs.A.J. Staynings, 8 Fanshawe Rd, Bristol 4.

FORTHCOMING EVENTS

May 6th Club Supper at Hillgrove. Trip to St. Cuthbert's on May 7th.

Supper about 7/6 per head. Limit 25 people.

Write immediately to: M.Holland, 10 Bramley Rd. Street.

June 3/4th Club trip to Agen Allwedd. Permission is being obtained to use the Scout Hut, latecomers can camp outside. Applications must be in 1 month in advance in order to get the permits made out by S. Wales Nature Conservancy Board.

Write immediately to: David Causer, 17 Kenmore Dr., Filton, Bristol 7.

July 2nd (Sunday) Hilliers Cave. 11 a.m. Leader David Willis, 15 Hooper Avenue, Wells.

September We hope to run a weekend coach trip to Cornwall (Zennor Area) in September, details later from Hon. Secretary.

BRISTOL GROUP

Thursday, April 6th Lecture "Mendip Archaeology" by Philip Rahtz. 6 Royal York Crescent, Bristol. 8 p.m.

Thursday, April 27th Illustrated talk on the two Club visits to France.

Details of the above from the Hon. Secretary.

Saturday May 13th Dr. Oliver Lloyd will give a lecture on "Cave Rescue" at the R.A.F. Station, Colerne. This is a joint meet with the R.A.F. Colerne Caving Club, and has been arranged at a weekend to enable those members who have not heard this talk (due to living away from Mendip and district) to come. Full details will be sent on request to any member by the Hon. Secretary.

Members should make a special effort to come along to this lecture, which will be illustrated by slides and a special film.

Visit to Steep Holm Member's interested in a trip to this island should write to or contact the Hon. Secretary.

An important note by Com.Lawder on nylon rope will be found on page 227 of this issue.

Due to lack of space it was not found possible to include this letter from Jack Duck in the last issue of the Journal:-

29.10.60

"My Dear Frank,

My wife and I would like to express our thanks to the Wessex Cave Club for kindly inviting us to the Annual Dinner last Saturday. We both enjoyed it tremendously and appreciate the honour you did us.

I am so pleased to hear the old Club is now on an even keel, and wish you all every success in the future.

With kindest regards,
Yours sincerely,
Jack W. Duck"

Hon. Secretary; F.W. Frost, 71 Hazelbury Hoad, Knowle, Bristol 4.
Telephone: Whitchurch 2022

Hon. Treasurer: Mrs. B.M. Willis, 15 Hooper Ave., Wells, Somerset.

Editor: C.J. Hawkes, 147 Evington Lane, Leicester.

THE PROSPECTS IN PARADISE REGAINED

Derek Ford

The prospects of extending the Paradise Regained series, Swildons Hole in the several directions that are offered, did not receive the attention that they merited in the early years following the first entry into the system. The discovery and exploitation of Blue Pencil Passage captured the attention of most who were interested at the time. Before 1960 the only other sustained attempt at extending the series was the fine hut abortive, climb by the U.B.S.S. in Fault Chamber. However, William Stanton's discovery of the Trouble Series seems to have renewed interest in the P R. area in general. I offer the following summary of prospects in the hope that it may further this.

Paradise Regained seems to offer major, if problematic, extensions in three distinct directions This supposition is based upon an interpretation of the relationship of the series to the rest of the known cave, and its postulated downstream extensions. Apparently the simplest interpretation and the only one that receives much support at present is that first mentioned in print by Stanton in 1957*. Paradise Regained is presumed to have channelled confluent phreatic or para- (intermittent) phreatic flow from the Swildons 1 and Black Hole Series lines towards Swildons 6 (or beyond), before the development of Swildons 2, 3, 4 and 5 which now carry water at a lower level. Stanton, Graham Candy and the author re-examined scalloping in the series in 1960 to discover if it upheld the evidence of simple map interpretation. Scalloping is, in fact, often indistinct, is not sustained over very long sections and is sometimes ambiguous where it is found. For example, one section of passage wall near the Mud Sump

points to flow in diametrically opposed directions at different times. (These findings led to an apposite, if disheartening, comment by Howard Kenney on one occasion, when he asked us "Which way is the scalloping going today?"). But taken in conjunction with evidence from sand deposits, the scalloping does seem to point to a predominant discharge southwards through Shatter Pot into the unknown.

A further element should be added to this pattern of simple confluence. In the southeast part of P.R., the passages above Keith's Chamber and Oliver Wells' maypole climb, 20 feet away, are both choked inlets which have carried sufficient water to bore a sizeable passage and develop the Airless Oxbow. The choked and bisected tube at the very head of Damascus (St. Paul's Series), lies in the same line, furthering the idea that there is an important inlet series to the south-east which brought a third, possibly distinct, stream to the Shatter Pot confluence.

The major prospects in P.R., are, therefore: a. an extension of the series back to the Black Hole system, now partly accomplished by William' Stanton, triumphantly vindicating the 'confluence' hypothesis; b. the extension of the confluence into or above Swildons 6, or caves beyond; c. an ascending inlet series in the south-east.

Concerning the Trouble Series, at the final choke shown on Stanton's recent map the passage seems to be headed well west of the Black Hole Series. The course of a major water flow through the Series is well accounted for by the passages that are already known there, so that this west-ward displacement could suggest that there is an older, high level system in the north-west of the map,

with which the Black Hole line becomes confluent. The intermittent muddy sump on the big bend in Swildons 2 might be related to this - but discretion would suggest that a simple, structural explanation of the displacement is more economical. In addition to a link with the Black Hole, some more recent, tighter connections with the stream passage in 2 may be found. Alan Fincham's 'Crystal Passage' (a collector's piece in 2), might be one end of one such, and there are several other possibilities.

Concerning the south-east inlets, from their map position and the lack of high level outlets in Swildons 1 above Tratman's Temple, it would seem rather doubtful that they carried water from that part of the cave, as known. There is a suggestion therefore, that a whole new series leading back to the surface (further down the valley or in the slopes to the south), may be found. There is no evidence for such on the surface, but much the same can be said of the Black Hole Series. The inlet tube in Damascus is about 21 inches in diameter, fully choked and difficult of access, so it is a poor prospect. The choke above the maypole climb was partially excavated by a Cambridge party and myself in 1955. It is a dry sand fill, easy to dig and dump, but the approach climb is awkward. I began to dig the choke above Keith's chamber last year and found it delightfully easy (dry sand and gravel) and clearing is no problem.

The great challenge in P.R. is the confluent drainage line to the south. The known beginnings of passages in this trend may be divided into two types: a. that cut by the phreatic waters. As the latter were large in volume it also is probably of adequate dimensions; b. various more recent tubes cut by local trickles after, or between, periods of phreatic flow. Blue Pencil Passage is one such, and in fact is the

largest known. There are others between the Bedroom Squeeze and Fault Chamber, all draining out through the southerly sides of the main passages. Christopher Hawkes has extended one a few feet to an unpromising closure and I have found another, a 15 feet deep pot which takes the splash in Fault Chamber, which is very constricted and apparently totally choked at base. All others known to me, including one which blows a strong draught when the cave is in flood, are barely fist-sized.

Therefore, the presumed phreatic route through Shatter Pot offers the best prospect here. At the base of the Pot a crawl over sands beneath a broad roof leads down to a small chamber discovered by an Oxford party in 1959. Beyond it the crawl extends for about twenty feet on a down gradient to a sand and mud choke. There is evidence that water collecting here in wet periods settles only slowly through the choke, which is thus fairly solid. The approach and working position is not good, but the chamber close by offers good dumping space. In the past Shatter Pot has been water filled to a height at least 60 feet above this choke, however, so there may be a higher outlet. 25 feet above the floor at the southern end of the Pot is a recess which cannot be probed with a light; it might be worth examining in this context.

Shatter Pot itself, a by-way with a reputation for falling stones, is a very striking piece of scenery when seen from below and well worth the descent. It is not in fault breccia, being a solutional rift containing jammed stones. In June 1960, only a large chock stone at the top offered any danger. A four-foot iron bar wedged over it would

keep a ladder clear. Twenty feet of ladder is all that is needed, but a 40 foot tether should be taken to reach the present belay on a rawlholt in the west wall.

- * Stanton. Journal of the Wessex Cave Club. Vol. 4, No.64.
Ford. Journal of the Wessex Cave Club. Vol. 6, No. 76.

MENDIP NOTES Cheramodytes

After spending three years underground, Cheramodytes creeps out of his hole and salutes the Editor, Christopher Hawkes. Rumour has it (and the author of these Notes feeds on rumour) that, tiring of his dig in Swildon's, Christopher, under the guidance of Willie Stanton, has found a promising one near the head of Cheddar Gorge, called Totty Pot. It starts with 45 ft. of bedding cave, after which a nasty squeeze leads into a small chamber quite well decorated with stalactites and white straws. Perhaps he will tell us what lies beyond.

Shatter Pot

It was in 1959 that the Oxford University men were digging below Shatter Pot in Swildon's and broke into the Oxford Chamber. Unfortunately they had a setback in late November that year, when a series of large boulders started peeling out of the wall of the pitch and fell past the man on the ladder. After that they left Shatter Pot alone, and it wasn't until October

1960 that digging was restarted there. This has been mainly the work of members of the Wessex and Shepton Mallet Clubs, particularly David Causer and Mike Boon. On 19.11.60 they started trying to settle the boulders, but it wasn't until they had used some banger on 10.12.60 and done some further tidying up on 17.12.60 that the pitch became reasonably safe. After that the digging proceeded steadily until 21.1.61, when a small breakthrough was made by Phil Davies, Fred Davies and Ken Dawe. The following weekend, 28.1.61, saw the big breakthrough, when Mike Boon found 300 ft. of new passage. It was found to be impressive, averaging 10 ft. in width and more than 20ft. in height, with a tricky 10ft. overhang to climb. After that the passage descends down the dip for about 100 ft. to a choke. On 4.2.61 efforts were made to free this choke, while Fred Davies did the survey. The direction of the new passage is south-easterly, nearly parallel to Swildon's V and VI. The furthest point is about 500 ft. from VI. Unfortunately the choke could not be freed, and on 11.2.61 it was reluctantly concluded that "Shatter Pot had had its lot".

Abandon Hope

Meanwhile Howard Kenney and Oliver Lloyd, with members of the U.B.S.S., had restarted the dig at the bottom of the 11 ft. drop in the Approach Series in Swildon's II. This dig, first started about nine years ago by Willie Stanton and Howard Kenney, earned its name of "Abandon Hope" by being particularly wet, muddy and unpleasant. On 4.2.61 the breakthrough occurred, and another 100 ft. of cave passage were added to Swildon's. It is a phreatic rift passage with two or three

avens communicating with one another at a higher level. It goes uphill in a northerly direction. On 15.2.61 it was surveyed and an effort was made to free the mud choke at the end, rabbit-hole fashion. Unfortunately, after about 35 ft. of progress, the walls closed in, so that once more Hope was Abandoned.

Ladder Dig in G.B. Cavern

Almost simultaneously with the breakthrough at Abandon Hope on 4.2.61 the Ladder Dig in G.B. went. It leads to about 100 ft. of rather low cave passage, including one grotto of about 10 x 20 ft. which is decorated with a beauty which surpasses even G.B. standards. An unexplained and quite astonishing find was the skeletons of about a dozen bats, some of them lightly cemented over with stalagmite. The passage shows definite evidence of phreatic solution of old stalagmite with a subsequent period of new stalagmite formation. A similar phenomenon is seen in the more remote parts of Swildon's, but the evidence there is not so conclusive.

Double Trouble

Led by that indefatigable Swildoner, Willie Stanton, a break was made through two horrid mud chokes into a passage some 500 ft. long; at the end of July 1960. The nature of these chokes, which are now sumps, gave the name of "Double Trouble" to this part of Swildon's. It lies at the far end of Paradise Regained above the head of Blue Pencil Passage. The second "trouble" was forced on 31.7.60, but progress in the passage beyond it was held up for over a month by a stalagmite squeeze which needed banging, and also by floods. At the far end of Double Trouble Passage there are formations of great beauty still in mint condition, including a group of delicate mud pinnacles each capped by a little piece of gravel. The

main passage goes north towards Swildon's II, but at a higher level, so that Willie thought that it might well connect with the Approach Series, only 200 ft. away. This was one of the reasons for restarting the Abandon Hope dig.

There is still a possibility of further progress by way of a stalagmite choke above which is a small hole. Through this a larger passage can be seen and lots of running water heard. Mike Thompson is doing some banging at this choke.

Negotiating the Troubles is now quite an adventure. Trouble I has to be bailed over a rocky hump, whence the water flows down into Blue Pencil Passage, and when the airspace is big enough someone can go through and bail Trouble II back into I. In this way a nine inch airspace can be made, but to prevent Trouble II from filling up it is wise to build a dam on the far side to catch the rather heavy drip which falls there.

Bristol Meetings

It is nice to know that the Bristol members of the Wessex have started to hold meetings again. Harry Savory tells me that about 20 of them spent a pleasant evening at his place on 24.2.61 seeing his lantern slides, which include some of Balch's original photographs.

"THIS CAVE IS LIABLE TO FLOODING"

Oliver C. Lloyd

Twice during 1960 it was necessary to call upon the services of the Fire Brigade to facilitate rescue of parties trapped in caves as a result of flooding. The first was at St. Cuthbert's on 24.1.60 when the entrance waterfall made it impossible for a party of 10 cavers to get out without help; the second was on 27.8.60, when similar trouble occurred again at St. Cuthbert's, and when also parties got trapped in Swildon's. After the second occasion the Chief Fire Officer of Somerset asked the Mendip Rescue Organisation to consider the advisability of posting notices outside the four Mendip cave in which flooding is likely to occur, warning cavers of this danger. This has now been done and the purpose of this article is to define those dangers. The four caves are: St. Cuthbert's, Swildon's, August Hole and Stoke Lane.

At St. Cuthbert's the entrance waterfall is normally controlled by a dam, which can be made to hold up the water in a pool, for long enough for a party to get up the entrance pitch without undue difficulty. This 25 ft. pitch is narrow and rather difficult at any time, but the force of a considerable quantity of water may make impossible something which was merely difficult, particularly for a mixed party which may contain inexperienced cavers. During floods the dam arrangements may break down. On the two occasions last year when this happened the Fire Brigade brought along an incredibly efficient little portable pump, which, removing water from the dam pool at the rate of 24,000 gallons an hour, soon dried up the waterfall and allowed the party below to climb out.

1960 was a year characterized by an unusual number of heavy downpours, so that flooding in Swildon's Hole, which had previously been unusual, became commonplace. There has always been a tendency for Swildon's to flood. The streamway passes through several narrow openings behind which the water may pile up. It does so behind Sump I, behind the Shrine, behind the Keyhole at the head of the forty and also in the Water Rift behind the second stalagmite barrier, as was so theatrically described in the last issue of this Journal.

The first startling example of flooding in Swildon's since the war seems to have been on 24.11.54, when flooding occurred on Mendip the like of which had not been seen since 1926. Nobody was down the cave at the time, but afterwards it was found that the entrance chamber had changed its shape and that the floor of the Water Chamber and Water Rift had been scoured out to a depth of from two to five feet. The floor of the 40 ft. pot had also been lowered. Normally the water here is ankle deep, but scouring such as this makes credible the stories Balch tells of earlier explorations, when the water was waist deep. A further flood occurred on 14.8.57.

The next occasion was around Christmas of 1958. On 23.11.58 a telephone line had been taken through the Water Rift and up over Suicide's Leap. Flood debris was caught in the wires, showing that the Keyhole had been unable to take all the water, so that some had flowed over the top. A further occasion was on 17.1.59, when Wallington died in the cave. On 24.1.60, the day there was trouble in St. Cuthbert's, the water was again flowing in at the grating and I had a most interesting time exploring Upper Swildon's as far as the

forty and seeing what it was like under flood conditions. As a result of three such visits now I think I can say with some degree of confidence that, when the water flows over the grating, the 40 ft. pot will be impassable and the lower opening of the second stalagmite barrier will be a sump. When the water is 2 ft. deep over the grating the Water Rift will fill up.

Anticipation of flooding is not all that easy. Swildon's will take any amount of steady rain. It is the cloudburst that causes flooding in the summer, while in the winter it is heavy rain on soil which is either waterlogged or frozen.

In August Hole the danger spot is the Tunnel. Keith Evans had an interesting experience here in 1953, when a sudden storm broke. He was about to climb the Swing Pitch when he began to hear the sound of rushing waters, and when he reached the Tunnel it was more than half full. When the dam at the entrance is working properly all the storm water goes down the terminal sink under the bridge. From here part of it finds its way to the head of the 30 ft. pot in August Hole, and so into the Tunnel, and part of it goes on by another channel to make the shower bath at the end of the Great Rift in Longwood. In theory, therefore, it is possible to bypass the Tunnel when it is in flood by taking the Escape Route up to one side. Unfortunately the dam is not always working properly, and when it gives way flood water goes down the entrance pitch. From here it goes to the aven at the top of the Escape Route, so that that gets flooded as well.

In Stoke Lane a severe storm may fill all the entrance passages to the roof as far as the first sump. Less severe storms may make the

sump impassable, because, on the far side the roof to the Sewer slopes up to the left only gradually. There is a little hand hold on the left hand side of the near side of the sump, which is normally a few inches above water. When it is more than a foot below the water you can be fairly sure of trouble. Another useful sign was noted by Tony Morrison on 3.11.57, and that was the presence of running water in the Pebbly Crawl. On this occasion he dived the sump, found no airspace at all on the far side, and wisely came straight back again.

AGEN ALLWEDD SYMPOSIUM
SEPTEMBER 26TH, 1959,
Julia James

The symposium consisted of a weekend meet in East Wales, the hosts were the B.N.S. and the main purpose was to inform other clubs of the latest developments in the exploration and survey of Agen Allwedd.

The weekend started with a visit to Pwll Blaen Onneu Pot, a cave of interest because it is in a likely position for a back entrance to Agen Allwedd. An alternative to the cave was Machen Mine where there were some excellent examples of "Moon Milk" and cave pearls.

In the evening we were excellently entertained by the B.N.S. at their Social club in Pontypool. The evening of lectures began with "Recent Advances in Mendip Caving" by Dr. O.C. Lloyd of the Wessex. The next lecture was on the caves of South Wales in which Brian de Graaf spoke on the C.D.G. efforts in Ogof

Ffynnon Ddu. The main lecture of the evening was given by Dr. Leitch of the H.C.C. on the recent advances in East Wales and especially in Agen Allwedd. He explained the geology of the area and possible positions of a resurgence. All of the lectures were illustrated with excellent slides and all followed by a suitable pause when members visited the bar next door. The evening ended with a film on the Gouffre de Padirac.

Next day was the visit to Agen Allwedd. 54 people entered the cave and the clubs represented were B.E.C., Spelaeos Anonymous, Chelsea, Axbridge, B.N.S., Hereford, Malvern, Orpheus, S. Wales and Wessex.

The cave has to be entered through the old cave which is low and requires a great deal of crawling; at one point there is "Sally's Alley" which thins out the party. The old cave ends in an unstable boulder choke. The main chamber when entered is very impressive and as one strolls along clay banks the height and width are amazing. In the main passage there are some excellent selenite crystals growing in the mud.

I had previously been to the end of main chamber and into Southern Stream Passage so I joined a party going to Summertime. The main stream passage is large and easy to walk along except for, as always in Agen Allwedd, loose boulder chokes. The Turkey passage is long and can be covered at a fast walk; the Turkey, after which the series has been named, has unfortunately been broken off. The main difficulty here is crossing Turkey Pool by float and needless to say on the return journey I fell in twice, but it was well worth the ducking to see the other side. More stream passage and into Turkey Chamber

(another section of the old cave connects with main chamber perhaps?). Once again stream passage and then into the three month old Summertime Series.

We visited two sections of this series, the Sand Caverns at the end of which there are most beautiful unspoilt formations of both mud and calcite, and Selenite Needle Passage, where there are the foot prints of an eight toed monster in the clay. These footprints, which are almost perfect, appear to have been formed by water dropping from the roof. The roof itself is covered with the most beautiful clusters of selenite needle crystals.

We had by this time a much reduced party and because people had to get back to such remote places as Derbyshire we went out, but with the common objective to return and see more of this cave which has so much to offer.

UNIVERSITY COLLEGE OE NORTH WALES
EXPEDITION TO AGEN ALLWEDD EASTER 1960

Julia James

The Expedition had the following members: Harold Lord (B.S.A.), David Jenkins (B.S.A.), John Randles (B.S.A.), N. Harper, R. Wright, J.M. James (W.C.C.).

The purposes of the expeditions:-

- 1) To finish a grade IV+ Survey started Easter 1959.
- 2) To photograph objects of interest in the Summertime series.
- 3) To fix positions of underground points with surface features.
- 4) To obtain a geological survey of the cave.

The Summertime Series, is 1½ miles from the entrance, which is a journey of 2 hours, and it is wet especially the crossing of Turkey Pool which involves traversing with feet and legs under water. Hence by camping underground the other side of Turkey Pool one can reach the Summertime Series dry and well fed, that is, in a condition for 7 or 8 hours work.

The camp site chosen was Turkey Chamber in which there is a 30 ft. wide dry passage 30 ft. above the stream.

The main obstacles unsolved were the 240 ft. of tight low entrance passage, so the expedition spent three days in blasting an entrance through the mud sump in Ogoof Gam. This project was already being worked on by the S.W.C.C. but when using a rock drill specially constructed for the purpose by Harold Lord (efficiency of the drill when working was 2 ins. of limestone a minute) the work was completed quickly.

The next obstacles were the first and second boulder chokes which involved the chaining of the kit bags. Turkey Pool was the last main obstacle, this involved four people in ferrying kit bags, two wedging themselves between the sides of the pool.

Rations for one day were as follows:-

Breakfast: Porridge. Ship's Biscuits (hard tack), margarine and marmalade.

1 pint of coffee or cocoa.

To take out with us each day:

4 ozs chocolate, 4 ozs cheese.

2 pkts Ships Biscuits.

Evening Meal: Soup with dehydrated carrots, cabbage and onions (Ministry of Agriculture & Fisheries), Fried

Tinned Meat and Pom.

Pint of cocoa and coffee made with Ostermilk.

Enough food had to be taken in for thirteen days. Other essential items of kit were cameras, 56 lb carbide (carbide lamps were used all the time), paraffin, Tilley lamp, 2 Primus stoves, telephone. Each person was allowed half a kit bag for their personal kit which was to include a sleeping bag, lilo and flying suit or change of clothes. The other half of the kit bag was to contain food, etc. This did not work and it was found that extra kit bags were required. This involved two journeys to the entrance.

The cave was entered at 9 p.m. on Monday, 4th April and four of the expedition with four kit bags took 11 hours to reach Turkey Chamber. In the next trip 1½ miles of telephone cable were laid.

Then began the serious work of surveying, but as this involved looking into every nook and cranny nearly half a mile of cave was discovered. It was found that 6-9 hours of surveying was sufficient or both survey and party suffered. The party surveyed 3-4 miles of the cave, making 8 miles of Agen Allwedd now surveyed, but there are still a great many side passages to be surveyed.

The magnetic coil, although it worked well at Christmas, was damaged in the journey in, so a nil point could not be found on the surface.

Summertime is the place in Agi for photographs - it is the most beautiful part of the cave.

The expedition on the whole was successful and a great deal was learnt from its experiences

about the organisation required to live underground, especially what food was necessary. I personally would not do the same length of time again without a competent support party which could bring in extra supplies.

The telephone was a great asset, it meant that survey readings could be telephoned to the surface at the end of each day and by morning they were plotted by the surface party and results could be telephoned back.

The medical student in the party took careful notes of all the food eaten and our weights before and after entering the cave. I lost a stone in weight so, ladies, if you want to slim, camp in Agen Allwedd.

THE SUMP
Alan Hemmings

It was not the first time I had been through the sump. It was enough the first time, standing up to the chest in cold muddy water in a narrow slit in the rock, just to overcome the dislike of ducking the head under. After a full minute of hesitation the act could be delayed no longer and I slowly lowered my head, lips tightly compressed, beneath the scummy surface and moved forward. It was all over in three or four seconds - not long enough to be aware of the coldness on the face or to say, "Here am I, doing a sump". But it was long enough for more than one story of sumping disaster to rush through the mind, and they did so.

It does not seem easy to distinguish

between air and water: they are both cold and dark. The fact that your head is again in the air is first established by the ears; sounds are different on this side of the sump. Hearing them, you take a deep breath, feel glad that you have conquered the thing, and thank God that your torch is still working and that you haven't let go of it coming through.

That very first time I stayed long enough to flash the beam on to the black forbidding walls and low arches of rock and see the stream stretching into the darkness; then hoping to find the way at the first shot, I turned my back on the unknown and took a very deep breath. Then followed the slow, deliberate submersion and the relief at seeing the candle shining in the eyes again.

No, the second time turned out differently. My friends were determined to pass the sump and make an exploration of the caverns lying downstream from it. Preparations went ahead in a serious, experimental atmosphere. Everything portable found itself wrapped in a little polythene bag, with special attentions for the matches.

We were to push on to the sump (their first) as fast as possible, allowing maximum time for what followed. When the day came, the crawling took as long as it always did. There was no hurrying through those tight holes and rough low passages.

Most of our upper clothing we left on the knobbly bank of rock in the sump chamber so as to have something comparatively dry to put on for the return.

Now the three of us line up in the little lake and I plant a candle on a lump of mud in a crevice in the rock. It looks liable to

slip in. Here we are at the narrow slit again, with bits of rubbish floating round our chests. It is tempting to investigate the rubbish in order to delay the awful moment.

Now. "One ... two... three" - but no, not this time! Try again. But before there is time to count again, the psychological moment has arrived, the water is bubbling in our ears and we are through.

At least, I am through. The other two are still back there, cut off from me by rock and water. We find that a blow on the rock can be heard the other side, but it isn't of much use as we have no prearranged system of signals. It is my job to make a light for the others, and here is my acetylene lamp making instead a lovely smell in the darkness. The flint lighter is apparently on strike, so with my neck bent beneath the low ceiling and my chin nearly touching the water, I make a table with one knee and daintily unwrap the matchbox from its polythene bag, taking care not to touch its sides with my fingers. Here's a match! At the third attempt it bursts into flame and in a moment the lamp is lit. This is better. The matches are too damp now for use, but we may as well stow them away. My pricker falls into the stream. Goodbye, pricker.

The water is very cold. I point my light down through it as a signal to the next person. For two minutes all is as still as the grave. Then there is a ripple on the water and the sole of a well-nailed boot is presented to my interested gaze. It is hurriedly withdrawn.

More minutes elapse. Should I return

to find out what is happening? Just as I am pondering this, a big breaker rolls round my chest and a storm breaks. The next person comes through in a kind of racing dive, with a mighty splashing which puts out my lamp. He is surprised to find everything in darkness.

So is the third person, who arrives a minute later, expecting a blaze of lights to welcome him. Here we are, all three of us, on the inner side of the sump, in total darkness.

There is a noise like somebody working up a sneeze. It is a flint lighter, and once again we have a cheerful light.

Wading downstream, we reach a large circular chamber with a boulder floor and beautiful markings all over ceiling and walls. It is worth our trouble to see this, and there is more to come - if we don't slip and fracture a bone.

But this is the only chamber we see. One by one we begin to shiver violently from the cold. Our teeth chatter uncontrollably. Our jaws are like ratchets round a fast-moving cog. We have the sump to do all over again: it is said to be more difficult on the return. The others gladly agree to making our way back.

What if the candle we left on the other side has gone out? As leader, it is my job to go through first, although I would rather someone else did so. I think this is the spot ...yes ... and mercifully the candle is still alight. It is worth forty or fifty shillings to see it in this place.

I re-light my lamp and point it as before. Waves stir the surface of the lake and reflect again and again from the walls. But where is the body? Nobody appears. Is it lying unconscious at my feet under the water? I feel

around gingerly with my foot. Good hard rock. No "body. Unless it is further away, caught under the rocks. The book warned us about that.

Three minutes pass. What is happening on the other side? I station myself firmly in the thoroughfare and pull at something which hits my legs. It is a human head, and up it comes, gasping for air, with the rest of its owner. Having dived too far and getting trapped under the rocks, he had returned through the sump and spent some very uneasy moments plucking up the courage to make a second attempt.

Now I see some hair floating like seaweed two inches below the surface, so I grab it and pull. A sea-lion rears up, water pouring off its shiny skin. It is our third man.

We think some pretty solemn thoughts on the way home. Luckily for us, the sump has gone hungry this time.

"TWITCH"
THE MAGAZINE FOR THE DISCERNING CAVER
R.E. Lawder

"TWITCH" is an entirely independent venture and has as its aim the guidance of the caver whatever his age, standard or locale. It has never paid a subscription to any club and has no intention of doing so if it can be avoided.

In this current issue the results of a world-wide research programme are presented under the headings:-

How do caves compare?

We found it difficult to devise a satisfactory series of tests. There is as yet no British Standard concerning any aspect of caves and moreover the cavers are far from uniform in their ambition, fitness or wealth.

Basically, the points we investigated were - are caves safe? - are they pretty? - are they easy to find and are they reasonably comfortable?

The results were collected by teams whose composition was as nearly uniform as possible and collated at our central office. Space limitations forbid the publication of more than a cross-section of the survey here; the full report will be sent on receipt of £5. and a suitable crate.

THE TESTS

Safety. Ex-Army tanks were driven over the cave and the vibration measured on a seismograph by the team below. The points in the table were awarded on a 'Safe high' basis. Only two caves failed this test, La Grotte Tremblante because the team has not yet put in its report and Chough's Cave because both

tank drivers retired hurt with gunshot wounds inflicted by an irate farmer.

Beauty. The percentage of formations by volume was estimated, the prettiest cave being awarded the most points.

Energy Consumption. An oxygen flow rate gadget was strapped to the back of each team-member. An energetic cave is assigned low points in the table.

Accessibility. Teams were chosen to be unfamiliar with the area; they were given the appropriate map and the Grid References of the entrance and their starting point. The time taken to reach the cave was noted by an umpire.

Complexity. Thirty minutes study of the survey was allowed immediately before entering the cave; an umpire accompanied the party and noted the number of mistakes made. The simpler a cave turned out to be in practice the higher the points allotted.

Wetness. The team's clothing was weighed before and after the trip. Combined with this test was the:-

Abrasion Test, where the clothing was washed, dried and re-weighed in order to establish the amount of material lost.

THE CAVES

Longbotton Gulf. A series of wet, awkward and long pitches with damn-all very little at the bottom. The entrance is a small shake-hole in a particularly featureless stretch of moor.

Grumbling Ghyll. A spacious cavern; at certain seasons of the year entry is facilitated by parachute and exit by rocket. The route to the entrance is tastefully marked by rows of old bottles.

Pwll Boathwais. Best found by marching 64505 yards on a (true) bearing 293½ from the NE corner of Llanvihangel Chapel. A collector's piece in some respects.

Ogof Tearemooff. A singularly uninviting network of cramped and wet passages leading to a small chamber containing a solitary stalactite (now broken).

Bucket Hole. An excavation in which it is just possible to get out of sight of daylight if the right arm is suitably positioned. The place is thought to show promise.

Chough's Cave. A show cave lit by fluorescent imitation stalagmites.

Polar Ammon Pot. A largely man-made hole with a unique flavour.

Poll-y-auna. A fine example of a cave in Erse earth (sorry!) which is notable for its display of ogives, ellipses and other mathematical phenomena. The stream is reputed to resurge at Messrs. Guinness in Dublin (Baile atha Cliath).

La Grotte Tremblante. This cave is, (or as it now seems, regrettably, was) one of the few to be found in the heavily-jointed and thin-bedded Lagrangian Limestone.

La Frigidaire. The third highest and most slippery ice cave in the world.

Additional Test

In addition to the quantitative tests set out above we asked the teams to summarise the entertainment value of the cave. For this purpose the opinions of the age-groups 'under 20', '20-35' and 'over 35' were separated.

TABLE OF RESULTS

Longbottom Gulf	5	2	4	3	2	Ah	Um	Ugh
Pwll Boathwais	6	4	5	1	5	Ugh	Ugh	Ugh
(Permutate ten names and ten tests: entry fee 1/- per cave).								
Chough's Cave	9	9	9	9	9	Ah	Ugh	Ah
La Grotte Tremblante (Results incomplete due to non-return of team)								

BEST TRIP

The type of cave that appeals to any individual varies so much that "TWITCH" does not feel that it can usefully recommend any one cave or type of cave. It does, however, seem possible to come to one conclusion:-

Not recommended

La Grotte Tremblante since further falls have been reported.
Chough's Cave because one has to pay to get out as well as to get in.

SOME NOTES ON MENDIP MINING IN THE 17TH CENTURY

Trevor R. Shaw

In the early days of the Royal Society it was usual to publish in the Philosophical Transactions questionnaires on various subjects and places. The purpose of these was to guide the investigations of the "curious" gentlemen and travellers of the time, many of whom possessed very wide interests and great enthusiasm for recording what they saw and found. The specialists thus ensured that amateur enquiries on their subjects were not misdirected.

Two such questionnaires occur in the Philosophical Transactions*, Vol. 1 No.19 dated 19th November 1666. On pp 330-342 are, "Articles of Inquiries touching Mines" (by the Honourable Robert Boyle), and on pp 342-343 "Promiscuous Inquiries about Mines, from the same Author". A few of the questions in the latter** are:-

1. Whether the Territorie, that bears the Mine, abounds with no other kind of mineral in some distinct part of it? ... And so at Mendip, in one part of the Hill, I saw store of Leadmines, containing severall Kinds of Ore of that metal; another part of the Hill I found to be full of Cole-pits, which had some Marchasites, but no metal; and in another place, Iron-ore,

* The full title of this journal was then:- "Philosophical Transactions: giving some account of the present undertakings, studies, and labours of the ingenious in many considerable parts of the world. "

**Underlining denotes that the words concerned are printed in italics in the original.

and mixt with Ores, which yet they did not think fit to work.

6. Whether the Diggers do ever really meet with any subterraneous Daemons; and if they do, in what shape and manner they appear; what they portend; and what they do, &c. ...

8. Whether there be not Springs, and also greater Streams of VWater near the Mine, that rise, and run their whole course under ground, without ever appearing above it?

9. VWhether the Subterraneous Springs do rise with any wind or determinate change of weather? ...

In Vol. 2, No. 28 of the Philosophical Transactions, dated 21st October 1667, a reply was published (pp. 525-527) entitled: "Answers To some of the Inquiries formerly publish'd concerning Mines. ... (by) the Learned and Inquisitive Mr. Joseph Glanvil, who premises in a Letter, that he procured the following Answers from a Person living near the Mendip-Mines, ..." An answer of particular interest is given on p.526:-

That the Country is not furnisht with many Rivers, and Waters, that rise upon the Hills: But from the bottom of the hills there are many Springs round about, both to the North, South and West; and those Waters are very Wholesome, and produce Rivers, after they have run to some distance from thence....

A further reply was published in Vol. 3, No. 39, dated 21st September 1668 (pp. 767-771): "Additional Answers to the Queries of Mines, (by) ... the Worthy and Learned Mr. Joseph Glanvil, ..." Mr.Glanvil writes

Sir, I now send you a more perfect account of the Mendip-Mines, which by the help of an Ingenious friend I procured from some very experienc'd Mine-men. ...

On p.771 is the answer to the sixth of the original questions:-

Concerning subterraneous Daemons, they have never seen any, but sometimes have heard knockings beyond their own Works, which, when follow'd by them, have afforded plenty of Ore.

Unfortunately questions 8 and 9, on underground springs, did not elicit a reply at all.

BOOK REVIEWS

Trevor R. Shaw

MAN EXPLORES THE SEA by James Dugan

(Penguin Books, 1960) 8vo., 416p., plans, sections, illus., index, bibliog.
6s. 0d.

This history of underwater exploration was first published in 1956 and has now appeared as a paper-back. One chapter, of 23 pages, is devoted to cave diving. After referring to an unsuccessful attempt made without apparatus in the Peak Cavern in 1773, the author reviews the classic dives of England and Europe and he also describes some lesser known dives in California.

OGOF AGEN. ALLWEDD IN RELATION TO THE MYNYDD
LLANGATTWG

Cave Research Group Publication No. 10. 1960 (1961) by David E. Leitch.

4to., v + 56p., map, folding plan, sections, illus., bibliog. (Obtainable from 15 Shrublands Road, Berkhamsted, at 10s.0d., p.f.)

David Leitch has done a useful job in making this important cave more widely known, for hitherto many of the details have appeared only in relatively inaccessible journals. He states that his account is not intended as a final publication and "a good deal of apparently irrelevant information has been included ... in the belief that some of it may be significant.." That is to say only that the material is not selected to develop a particular line of reasoning, and there is very little that can be called superfluous for a general report.

The geology of the area is given in some detail and then a lengthy description of the cave is followed by discussions on its formation, hydrology, fauna and certain unusual selenite formations and clay deposits. The ground above the cave is said to be more densely packed with shakeholes than any other in the British Isles, but the author's comments on these are open to doubt. He assumes that they can form only by collapse, which presupposes the existence of a space to collapse into, and is then unable to demonstrate a sufficiently extensive cave system close enough to the surface to explain this. In fact very many shakeholes are the result of gradual solution by seepage water and their formation is dependant on the amount of water absorbed in the ground rather than the pre-existence of cavities below.

The plan, -drawn to a scale of 200ft. to the inch, is largely to C.R.G. Grades 2, 3 and 4, with some passages sketched in. It is unfortunate that at the time of publication the Turkey Passage should have been surveyed only to grade 1, for the position of the whole Summertine Series beyond it is therefore only approximate.

EXPLORATIONS IN COUNTIES SLIGO AND LEITRIM, EIRE, 1959 AND 1960 (Edited by A.Fincham)

Leeds University Union Speleological Society (1960)

4to., 32p., map, plans, section. (Obtainable from the Secretary at 5s.8d. p.f.)

This publication, the first of its kind from Leeds University, has been reproduced by remarkably clear duplication, with a printed cover. It describes the exploration of five caves in the north of Eire, all of them discovered in the last few years. The account of Polliska makes good reading and, with a depth of over 420 feet, it is rightly claimed as far and away the deepest cave known in Ireland. No general conclusions are drawn on the spelaeo-history of the region, for this is in the nature of an interim report on an area where further work remains to be done.

Plans and sections to C.R.G. Grade 4 are included for four of the caves; a survey of the fifth will be published elsewhere. These surveys are exceptionally well-drawn, giving clear details of floor deposits even in the most complex passages. A map should have been included, giving the positions of the caves, and a sketch map showing the whereabouts of the area as a whole would be helpful.

NYLON ROPE
Com. P.B. Lawder

It may not be generally known that nylon rope has a nasty habit of untying itself, due to its slipperiness and elasticity, particularly if subjected to a series of jerks. An outstanding example is a recent fatality in Devonshire. An officer in charge of a party of Junior Leaders was teaching roping down on a 100 foot cliff. For this purpose two 100 foot nylon ropes were joined by a double sheet bend and the bight dropped round a convenient bollard. After half a dozen cadets had gone down the officer took his turn. He had only descended a few feet when the knot came apart and he, of course, was killed. The moral is that any knot should be inspected frequently to see whether the end is creeping, and additional precautions taken such as extra half hitches or a stopper knot on the end.

The situation described above is unlikely to occur when caving, but something similar might happen. Nylon rope, particularly in the smaller sizes, is harder to get a grip of than hemp, owing to its smoothness. On the other hand, its not being subject to rot and its ease of handling when wet are great advantages.

Nylon climbing ropes are now subject to B.S.3104/1959 and the largest size, No.4, 1³/₈" circumference, is officially advised for rock climbing. This is advertised at 7s.3d. per fathom.

STOP PRESS

Eb Hanwell has just given us the following details regarding Hillgrove Bookings:-

There is now a diary at Hillgrove, and members wishing to book the hut can book themselves in by entering their names in this. Bookings can also be made by post, with me, at 8 Hooper Avenue. If you have no reply to your request, then your booking is confirmed. I will only reply to booking requests if there is any difficulty.

As a general rule I will open the hut on a Friday night before 6 p.m., if it has been booked. If you have booked and do not receive a key then you can rely on the hut being open when you arrive.

For anyone staying mid-week, or over a longer period of time I will either send a key, or they will find one waiting for them.

The B.E.C. inform us that they are hiring a coach to travel to Yorkshire for the Gaping Ghyll meet at Whitsun. They may have some spare seats if any member is interested in transport to Yorkshire at this time.

Please contact:- Brian Prewer, c/o Greenfields Farm, Upper Coxley, Wells, Somerset.