

CLUB NEWS

If we want a new Headquarters we have to pay for it. Well, in fact we have to pay half of it, as we have been assured of a 50% grant towards the total cost from the Department of Education and Science. Our 50% represents over £2000, and we are still at least £500 short of this. Members will not be surprised to learn that fund raising activities feature prominently in the Committee's deliberations. Some, like the sale of Nife cells, brought lavish profits while providing a useful service to members; others, like the Barbecue were pleasant social occasions but only covered their costs when the empties were returned.

The Committee would like to remind members about the period membership scheme, whereby one can commit one's subscription for the next five years for £7.7.0. (Joint Members £8.0.0.). You can only lose on this if subscriptions are reduced or you die before 1972. It was feared that the scheme would be over-subscribed and the Club jeopardised of its future income, but this is still only a remote risk, and we really need quite a few more "long term" subscribers. This is not a donation; the Club will be benefitting by the increased capital, and members benefit by a small reduction in the total subscription paid. At the time of writing there is still a long list of outstanding subscriptions. Since each of these represents a debt to the Club of 30/- the cost of a 5 year payment is only £5-17-0 extra.

With the increases in the cost of copper, etc., the Club has resolved to enter the non-ferrous metal market. Mike York is putting a dustbin in the Hillgrove H.Q. for the salvage of non-ferrous metals especially brass and copper (but not aluminium). A recent collection of these metals realized £20 towards Upper Pitts funds. If you have a brass bedstead to get rid of it would be as well to ask the Hut Warden about arrangements for its disposal.

When Upper Pitts is eventually built, and we have received full planning permission recently and are about to put the job out to tender, we shall need all sorts of fittings. Some of these can be obtained by saving Green Shield stamps, and these are being collected by Jenny Murrell whose address is:-

Top Flat,
No. 1 Clifton Hill,
Bristol, 8.

The contractor will be able to do only a limited amount of work for what we can afford, and a great deal of work on the site will have to be done by members, such as glazing, electrical fittings, and so on.

Things are now getting back to normal after the Foot and Mouth epidemic. One of the lessons which must have been learnt during the easing of the restrictions is that it is finally individual landowners whose permission must be sought to cross fields to the caves. In view of its great popularity members are urged to contact the Main family every time they wish to go down Swildons. (The report of quite an unnecessary rescue over just such a situation appears later in this Journal, and serves to underline the need to seek permission from a practical as well as courtesy point of view). Much the same applies to Stoke Lane Slocker. All cavers should remember to pay their "goodwill" shilling to Mr. Stock who still owns the cave. This practice seems to have lapsed recently, perhaps because Mr. Stock's new address is not as well known as perhaps it should be. It is:-

"Erz-n-Myne",
Croft Road,
Holcombe,
BATH.

We welcome the following new members elected since the beginning of the club years:-

N.R. Clatworthy.	Hudlow Vicarage, Pensford, Nr. Bristol.
T.H.C. Elkin.	c/o The Charterhouse Field Centre, Somerset. Education Committee, Charterhouse, Nr. Bristol.
I.C. Farthing.	7 Kilarney Ave., Burnham-on-Sea, Somerset.
A.S. Gent.	c/o Kingswood School, Lansdowne, Bath.
R.G. Mines.	36 Berkeley Road, Bishopston, Bristol.
M.B. Roberts.	91 Coldharbour Road, Redland, Bristol 6.
R. Saunders.	c/o The Hunters Lodge Inn, Priddy, Wells, Som.
T. Tooth and Mrs. Pam Tooth (nee Davis)	410 Wells Road, Knowle, Bristol 4. (Joint Members).
D.C. Woods	31 Highfield Road, Horfield, Bristol 7.

The Crew, Kingswood School, Lansdowne, Bath. (Affiliated Club).

Special attention is drawn to the new address of the Hon. Treasurer:

T.E. Reynolds,
23 Camden Road,
Southville,
Bristol 3.

Erratum: Journal No. 114, Vol. 9. p. 306 (December 1967).

In a report on "The Caves of Wadbury Valley" by Donald Thomson, the following National Grid References were incorrect - they should have read:-

Clinker Cave 74294912.

Fox Fur Fungus Fissure 74054892.

The reference quoted for the third cave, Dorm's Den, was correct.

Hon. Secretary. D.M.M. Thomson, Pinkacre, Leigh-on-Mendip, Bath, Som.

Asst. Secretary. R.M. West, Elm Tree Cottage, Hallatrow, Nr. Bristol.

Hon. Treasurer. T.E. Reynolds, 23 Camden Road, Southville, Bristol 3.

Subscription Treasurer. A.E. Dingle, 32 Lillian Road, London S.E.13.

Hut Warden. M.W. Dewdney-York, c/o Hillgrove Hut, Hillgrove Farm, Priddy, Wells, Somerset.

Editor. J.D. Hanwell, 50 Wells Road, Wookey Hole, Wells, Somerset.

Journal Distribution. P.R. Cousins, 3 Kinver Rd., Sydenham, London S.E.26.

Caving Secretary. R.J. Staynings, 8 Fanshawe Road, Hengrove, Bristol 4.

ROPE LENGTHS FOR CAVING AND THEIR IDENTIFICATION

by
P.R. Cousins

There appears to be no literature which considers suitable lengths of rope for caving, the lengths in use being dictated by standard shop lengths of rope intended primarily for climbers. Since the subject is amenable to some calculation (see P.R. Cousins. 1966). It seems worthwhile examining the casual acceptance of 'retail' lengths, particularly when many clubs have for some time been buying ropes other than climbing Nylon in bulk lengths.

Ropes are used for lifelining (their most frequent use) in two ways; as single, or doubled lines, viz. where the climber is protected by a companion from above, or from below via a top pulley. A single line may use 10-20ft more rope than the nominal length of pitch, particularly if it is also used to belay the lifeliner, whereas a doubled line rarely uses more than 10ft. over twice the pitch length. For example, a 120 ft. rope could be expected to single line a 100 ft. pitch or double a 55ft. pitch. In the absence of any reliable analysis of the most frequent pitch lengths one is left to consider some of the more desirable properties of a club's rope collection on the basis of experience:-

- a) There should be more than one length; since spare rope on a pitch is easily damaged, and ropes should not be joined for long pitches.
- b) There should be as few lengths as possible to avoid confusion.
- c) The lengths should get a similar degree of usage so that they are not scrapped of old age without adequate use.
- d) If longer lengths are to be cut down ultimately to lengths not used as lifeliners, e.g. 40ft. handlines, the originals ideally should be multiples of a common unit.

Hence, one may consider some possible rope sets covering the 50 ft. to 240 ft. range used most frequently by cavers (though the upper limit might be higher).

- | | | |
|-----|----------------------------|--------|
| (A) | 50 - 100 - 150 - 200 - 250 | (feet) |
| (B) | 60 - 120 - 180 - 240 | " |
| (C) | 80 - 120 - 160 - 200 - 240 | " |
| (D) | 60 - 100 - 16 - - 240 | " |

Set (A) and Set (C) can be discounted straight away since rarely will the longer lengths (200ft. and 240/250ft.) be used on the same trip. They are likely to be underused, lying idle in store. Set (B) suffers similarly with its 180ft. length, but is otherwise an improvement as only four lengths are involved rather than five. The "expanding" set (D) is even better on the longer lengths but the spacing of the shorter lengths is such that considerable excess will occur on many small pitches. As a close spacing of the shorter lengths is important, one is left with a compromise solution. The Wessex Cave Club is now using such a set of rope lengths:-

i.e. 80 – 120 – 160 - 240 feet.

Shorter lengths suitable for handlines will appear in time, as lifelines are taken out of service.

Since it is desirable that every rope should be easily identifiable a "tagging" system has been evolved for Wessex ropes. The original scheme for identifying lengths with rubber sleeves was Carl Pickstone's, though some modifications have been added.

In 1960 nine Mendip Clubs agreed on a colour code specific to each club, so that tackle would not be confused. This code is still used by most of these clubs.

Axbridge C.G.	<u>YELLOW</u>	B.E.C.	<u>BLUE</u>	Cerberous S.S.	<u>GREY</u>
M.C.G.	<u>PINK</u>	M.N.R.C.	<u>GREEN</u>	S.M.C.C.	<u>BLACK</u>
U.B.S.S.	<u>ORANGE</u>	W.S.G.	<u>BROWN</u>	W.C.C.	<u>RED</u>

A system of marking ropes should provide as much as possible of the following information:-

- (i) Which club owns the rope, (red in the case of The Wessex C.C.)
- (ii) The Length of the rope.
- (iii) The age of the rope.

Ideally any code must be easily alterable if a rope is shortened for handlines, etc. Although requirement (iii) need only be on record for tackle masters, all the required information including this can easily be stamped on a tag. The tag can either be a metal sleeve squeezed onto the rope end, or a synthetic tag imbedded in the rope. Whichever is adopted, must be capable of being recognised under the worst cave conditions. Coloured synthetic tags appear to meet this need best of all. It is hoped that future ropes for members' use will have such a standardised "coding" system.

In the meantime, all Wessex ropes can be identified by an appropriate number of coloured sleeves, with one RED one in addition to indicate Wessex ownership. It is perhaps unfortunate that the other sleeves are not red; blue and black are used. However, these colours do conveniently indicate the age of each rope. Lengths are indicated as follows: -

	<u>feet</u>
1 RED Sleeve + 1 other	80
" " + 2 others	120
" " + 3 others	160
" " + 4 others	240

A rope with only a red sleeve must be assumed to be less than 80 ft. long, and the exact length will need to be checked before use.

One of the advantages of the present scheme is that so long as rope is bought in batches of not more than 600ft. (i.e. one of each length) the history of each length is easily traced, the excess sleeves being easily removed when cutting becomes necessary.

Reference

Cousins, P.R. Spelaeologist 2, 7, June, 1966.

Draycott Cave Dig

D.G. Everett

The cave is situated to the north of the Draycott to Priddy "New Road" where it begins to descend the steep southern flanks of Mendip to the village of Draycott. The National Grid Reference of the entrance is ST 4864.5158, and the altitude 790 ft. O.D. The prominent mouth is at the foot of a small bluff on the western shoulder of a dry valley cut into the edge of the hill. It is quite clear that the cave was exposed when this valley formed.

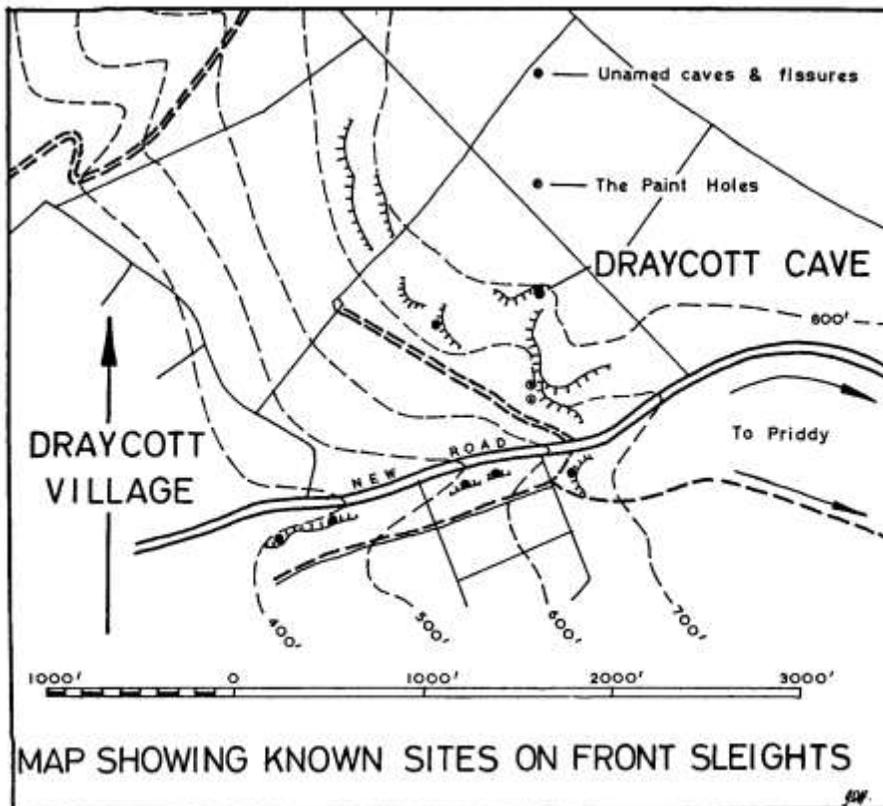
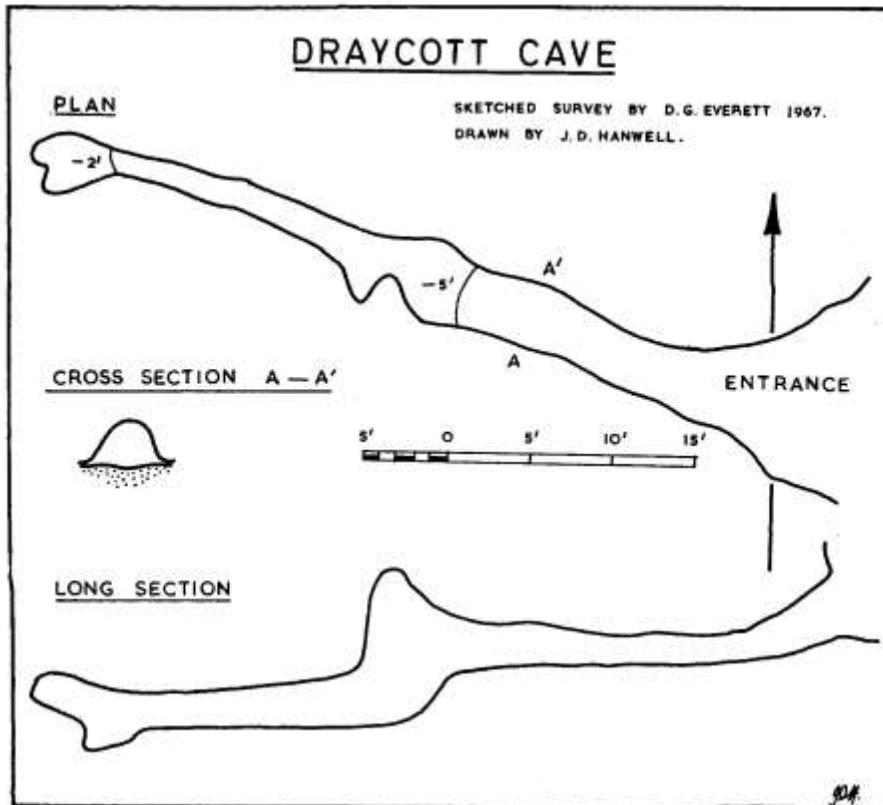
The present cave passage appears totally phreatic, being generally circular or oval in cross-section with extensive roof and wall pocketing. The floor consists of red, glutinous clay lying on sandy fill. This is being removed to give a passage averaging some 3'6" high and nearly as wide. The cave terminates after 38 feet where the gently sloping roof reaches the mud floor, as shown in the accompanying sketch plan and sections. The cross-section shows that the passage begins to widen at floor level, and it may be that we are digging near the roof of a very much larger passage, and so the prospects seem promising. Despite the elevation of the site and its location, the fill appears to be quite recent. Many bones unearthed in the upper 6 inches of mud, and at depths of 3 feet near the end, have been identified by Dr. A. Sutcliffe of the Natural History Museum, London, as being of sheep or goat no more than 200 years old.

During 1966 the cave was dug by Keith Barber, Michael Harrison, Richard Witcombe, and myself. We were helped by others from time to time, especially Steve Grimes of the B.E.C. Permission was kindly given by the owner, Mr. H. Fear of Manor Farm, Rodney Stoke. There was no reference known concerning any previous dig here, though there was an overgrown spoil heap outside and evidence of an abandoned dig inside. On publishing a note about the dig in the Mendip Caver (Vol. 2 No. 6.) we received a reply from Geoff. Baynes who had been responsible for the earlier dig. We took over where he had left off, and soon found that the biggest difficulty was in dragging full buckets through the restricted tunnel. It was decided that a narrow gauge rail track was needed and a graded trench about 3 feet deep starting from the entrance. Any offers of help would be most welcome, and I am sure many will find the dig worth a visit.

Notes on Draycott Cave

J.D. Hanwell

Those who should know tell me that my first cave was a somewhat noisy "Goughs" having been pushed there protesting in a pram. Fortunately, I remember nothing of this, and consider my "initiation" to be Draycott Cave much later. I do not know exactly when, except that I dimly recall walking in with great trepidation until it became too dark to see; I presume this must have been at the outbreak of the last war. I visited this little cave often later on out of blind curiosity but little else, thinking that few others, if any, knew of my find. Thus, I was surprised long after to see it reach the dizzy heights of a mention in the pioneer booklet "Britain Underground" (1953- p. 190.). Obviously it was also well known to A.H. and R.D. Stride at least. Curiously, it has escaped inclusion to date in the more detailed editions of Nick Barrington's "The Caves of Mendip".



A few comments on the cave seem in order for the record. It lies high up on the crest of the Mendip escarpment, between Carscliff Farm and Westbury Lippiat, known locally as Front Sleights. This most abrupt and impressive edge of Mendip is in part a result of the complex overthrusting of the limestone beds between Cheddar and Ebbor. The detailed features of the South-Western Overthrust are described by G.W. Green and B.A. Welch in their, "Geology of the Country around Wells and Cheddar" (Mem. Geol. Surv. G.B. 1965). Conveniently, Section 3 (Black Nore to Draycott) on the "One Inch" Geological Survey of England and Wales, Bristol District (1962) passes close to Draycott Cave and shows the local structure well. Briefly, the cave is developed in a narrow downfold of Burrington Oolite. This is all that remains of the core of the nappe which thrust northwards over the southern limb of the main Mendip anticline some 280 million years ago. The passage follows the NW-SE axis of the downfold which also pitches gently towards Westbury-sub-Mendip. Thus the bedding here is virtually horizontal. Personally, I feel this cave is but a high level remnant of a small immature system, which once continued southwards but has since been removed by denudation along the scarp edge. Similar, though insignificant, solution fissures exist at the foot of the prominent cliffs lower down the hillside.

In the late eighteenth century much quarrying went on hereabouts for walling material. Later, in the last century, the Burrington Oolite was found particularly suitable for "burning" in kilns, providing the much needed lime for spreading over the sleights (then heavily cropped with potatoes). There are two old time kilns within yards of the cave. At the turn of the century, when the Cheddar Valley railway became fully operational, nearby pockets of ochre were mined extensively. The "New Road" was made and drays (a local term for a large sledge) used to take the ochre to the station. The so-called "paint holes" have been filled in and long since forgotten. Building stone and railway ballast were quarried as well. With all these works it seems most unlikely that such a prominent cave in the midst was ignored. I would attribute much of the recent infill mentioned by Dave Everett (see previous article in this Journal) to these activities. So, while I cannot help being pessimistic about the chances of finding vast caverns here, I would imagine the infill near the entrance to contain some interesting finds, for the industrial archaeologist in particular.

THE MOSSDALE CAVERNS DISASTER

by

ALAN FINCHAM

The disaster of June 24th at Mossdale Caverns, Conistone Moor, will be remembered as the most tragic accident in the caving history of this country, leading as it did, to the deaths by drowning of a party of six very experienced and well equipped cavers, amongst whom were some with the most intimate knowledge of this arduous and complex cave system. The sense of shock and grief has spread very far and deep amongst both relatives, cavers and friends alike and will be a bitter memory for the rest of our lives.

Inevitably we find ourselves asking; why did this happen? Could it have been prevented? Was enough done in the circumstances? What should we learn from the tragedy and how can we ensure that it will never be repeated? The writer is one of those who, through long experience with Mossdale and friendship with some of those who died, finds himself involved in these considerations and feels that some answers must be given. In what follows a factual account of the circumstances and results of this disaster is given, although there are some matters in which the views expressed are those of the writer and are not necessarily those of the many other persons concerned.

To understand why this party ever entered Mossdale on that fateful Saturday, it is necessary to know something of the history of exploration of the system.

Entry to Mossdale Caverns was first made in 1941 by a party of cavers from the British Speleological Association who penetrated the cave through what has come to be known as the Lavatory Basin (or Old) Entrance. For some years after this exploration was carried on under the leadership of R.D. Leakey and the cave was roughly surveyed to the limits of the Marathon and Kneewrecker branches of the system. In 1947 an account of this work was published in Cave Science (Vol. I. p. 7) with a provisional survey plan of the cave.

During this phase, the exploration was impeded by the necessity of obtaining low water conditions in Mossdale Beck which made access through the restricted and wet Lavatory Basin Entrance feasible. At a later date the New Entrance was opened into the cave at the northern end of the Scar, enabling parties to enter and leave the system with greater ease and safety, even in relatively high water conditions.

However, the British Speleological Association parties seemed to lose interest in the system and further exploration and detailed survey appears to have ceased for some ten years, until in 1957 parties from the newly founded Leeds University Speleos began to visit the system with a view to producing a detailed survey of the known passages and eventually, it was

Note of the Author; Dr, Fincham has been a Wessex member for many years; is a past President of the Leeds University Speleological Society, and Chairman of the Leeds Area Team of the Cave Rescue Organisation.

hoped, of extensions to the cave. At this time cavers with any significant first hand knowledge of the cave were few, and the Leeds parties found it necessary to 'explore' the cave from the beginning, slowly gaining in knowledge and experience of the intricacies of the nearer passages and advancing the detailed survey methodically through all of the nearer reaches of the cave. In the course of this work, it became clear how great was the deficiency of recorded information on the system; several passages apparently hitherto unexplored and unsurveyed were found and the real problems in making a full survey of this extensive labyrinth were appreciated.

Not the least among these problems was the existence of a grave flooding risk, which presented an even more serious aspect when we considered the very large number of man hours which would be required to complete a full survey of this complex, and in many parts very restricted, system. We knew by inspection that in severe flood it was likely that nearly all of the passages in the nearer parts of the cave would fill to the roof; possible exceptions to this being in Boulder Hall, some avens in Broadway and the Great Aven (c.80' high) near Rough Chamber. Beyond this latter aven it appeared certain that all of the passages would flood apart, perhaps, from High Level Mud Caverns towards the end of The Far Marathon Series and a few avens in the Kneewrecker branch of the system.

During the earlier phases of the Leeds survey (1957-1960), work was concentrated in the section of the cave up to Rough Chamber and then later (1960-1962) in the complex of small passages between this chamber and the junction of the Kneewrecker and Marathon passages. This section of the cave proved to be intricate and required a great deal of time for survey and exploration. Parties were safeguarded by the installation of a telephone line from the entrance to Rough Chamber, and frequently operations in the cave were carried on from a standing surface camp which enabled constant communication to be maintained and the timing of activities to be selected at leisure. In this way the survey and exploration of all passages up to Kneewrecker Junction was virtually completed by 1962. Then came a lull in activities due perhaps to changes in interests among some of the surveyors and the natural periodic recession which clubs are subject to from time to time.

The completion of the Mossdale Survey became a thorn in the side of the Leeds club and it was two to three years before a new wave of surveyors and explorers, freshly clad in wet suits, took up the task again. The telephone line had long since fallen into disrepair, each violent flood taking its toll despite efforts at repair and replacement. The new team were not greatly interested in the 'nearer' parts of the cave and telephone lines were not then thought feasible beyond Rough Chamber (some 30 minutes from the entrance) where the cable would prove a constant impediment in the smaller passages. However, the cable to Rough Chamber was again replaced and 'contoured' as far as possible to the passage wall. This was the third full telephone cable which had been run into the cave and these operations alone had consumed much valuable time and man-power. No cable was ever installed beyond Rough Chamber, although this was discussed on a number of occasions.

1965 produced a fresh wave of activity, and in a series of lengthy sorties into the extremities of

the cave the 'new' men now made rapid progress with the survey which had been started so long ago. The Near and Far Marathon Passages were surveyed and the existence of a loop passage in the Far Marathon (Far Marathon West) was confirmed. Stream End Cavern and the ramifications of the Kneewrecker System were explored and surveyed in detail. An aural connection between the Marathon and Kneewrecker Systems was established via the extension of the Mini-cow Passage from Far End Stream Cavern, and the suspicion that the Far End Stream was not the same as the Main Stream seen at Broadway and Syphon Passage was confirmed. Work was done to try and force ways through the chokes at the extremities of High Level Mud Caverns and at the terminal choke of Stream End Cavern. In 1965 upwards of 8 major survey trips were made into the cave yielding over 7,600 feet of surveyed passage and utilising over 400 man hours of caving time. It must be recorded that Dave Adamson was prominent amongst those who completed this arduous task. The exploration and survey of the readily penetrable passages of Mossdale Caverns was then complete and it had taken many good cavers hundreds of man hours to carry out.

The next phase of the exploration was clear; to attack those few places, of which we now know, where a real extension of the system could be expected. The survey had shown over five and a half miles of passages, enough to place the system in the top ranks of British caves, and yet it was clear that this was but a beginning. Above all what was the course of the main stream beyond the sump in Syphon Passage to the rising at Black Keld? What was the origin of the intense draught felt in Far Western Passages? Of what high level series were The High Level Mud Caverns a fragment? What lay beyond the terminal choke of the Stream End Cavern? It was the promise of these challenging questions which motivated the party of six on June 24th 1967.

A party of ten cavers entered the system at about 1400 hours on Saturday June 24th. No one was left on the surface since telephone communications were not in use and the underground cable to Rough Chamber was known to be broken in several places. There had been some rain over the Grassington area in the previous few days, but the moors appeared dry and the quantity of water entering the cave was well below normal. The weather forecast for the north had been noted as 'bright periods, chance of thundery showers'. After entering the cave the party at once split; six men going on in front with the intention of examining the extremities of the High Level Mud Caverns or probing further for a way through the Stream End Cavern boulder choke. These six men, well equipped and very experienced were; Dave Adamson (U.L.S.A.)*, Geoff Boireau (U.L.S.A.), Bill Frakes (B.P.C.** and N.C.D.G.***), John Ogden (H.W.C.P.C.+ and N.C.D.G.), Michael Ryan (B.P.C.) and Colin Vickers (B.P.C. and N.C.D.G.). The remaining four cavers; James Cunningham, Morag Forbes, Collette Lord and John Shepherd, made a sight-seeing trip as far as Rough Chamber and returned to the surface which they reached at about 17.00 hrs. It was now raining lightly; the sky was overcast, but the conditions did not appear to give any cause for alarm. The four cavers returned to their base at How Gill Nick shooting hut where they

Note

- * University of Leeds Speleological Association.
- ** Bradford Pothole Club.
- *** Northern Cave Diving Group.
- + Happy Wanderers Cave and Pothole Club.

changed and made a meal. Having, at that time, no apparent cause for anxiety, three of the party then left for Ingleton leaving Morag at the hut. The rain continued to fall lightly and at about 19.30 hrs. Morag returned to the Scar and finding little apparent difference in the water conditions, she made her way back to the shooting hut; some half hours walk over the moor. Shortly after this the rain began to fall heavily and being now concerned for the safety of the underground party, she again went to the Scar, arriving there at about 21.00 hrs.

Mossdale Beck had now risen to flood proportions, an extensive lake having formed in front of the Scar. The entrance was already under water. Realising the grave situation she ran to Gill House Farm (some three quarters of a mile) for help, but found it deserted, and went on to Yarnbury (a further one and a half miles) where she contacted a Mr. Riley who drove her down to call out the rescue organisations.

The call for assistance reached the Upper Wharfedale Fell Rescue Team at 23.10 hrs. who at once sent a party up to the Scar, alerted the C.R.O. on a 'stand-by' basis and put in a request for Fire Brigade personnel and pumps. The advance party of the Upper Wharfedale team arrived at the Scar at 01.15 hrs. on Sunday June 25th and found conditions very serious with the 'New Entrance' under some 4ft. of water. By about 02.00 hrs. some attempt at stream diversion was under way, the Settle-Ingleton Team of C.R.O. had been called together with as many members of the Leeds University Club as could be found. A small dam constructed around the constricted New Entrance enabled a party of the Wharfedale Team to reach The Assembly Hall (just inside the cave) by 02.25 hrs., but they found the normally limited air space beyond Black Pool Sands, which provided the only way on into the cave completely submerged and impassable; the use of diving equipment at this stage would have been both futile and dangerous and therefore further progress was out of the question until the water level could be sufficiently reduced.

During this time the Fire Brigade had installed a number of portable pumps on the side of the beck, which were sending a stream of water past the Scar and on down to the sinks on Conistone Moor. By 03.30 hrs some 8-12 of these pumps were operating, but it was clear that this effort was having a negligible effect on the water levels despite the rain having stopped shortly after midnight. At about 05.00 hrs it had been decided that the only possible solution was to obtain the use of heavy digging equipment and divert the whole of Mossdale Beck down past the Scar. To do this required a trench some 130 yards long by 6-8 ft. deep together with a substantial dam to divert the beck from the sinks at the foot of the Scar.

By about 08.00 hrs on the Sunday the level of the beck appeared to have fallen a little and a telephone connection had been established between the entrance and the Assembly Hall. It was now found that it was possible to pass the previously submerged sections of the cave, (The Drown or Glories and The Swim) and to penetrate as far as Rough Chamber. It was hoped that the missing party might have been trapped in this rather loftier section of the system and have been able to survive the flood in one of the avens or in Boulder Hall itself. However, no sign of the party was found, and at Rough Chamber a strong stream was still flowing onward down, the normally dry, Rough Passage. This situation only occurs when

the restricted sump in Syphon Passage is unable to take all the Main Stream flow and the water will then back up and flow via Straightway to Rough Chamber and on through Rough Passage to Kneewrecker Junction where it will divide and flow in part down the Marathon and part into Kneewrecker. It was then felt that it would not be reasonable to proceed further through the restricted passages until the water flow could be reduced and the dam (which was then under construction) was operational. At this time it became clear to those of us who knew the cave that the chances of survival of the missing men were slim; the signs in the cave were of a very extreme flood, and there were only a very limited number of places beyond Rough Chamber in which a party might be safe, and of these we were uncertain. Certainly an experienced and well equipped party, such as this was, would be perfectly capable of sitting out a flood for 12-24 hours and then of getting out of the cave under their own steam, but although by midday the proportion of the beck entering the cave had been reduced to a trickle there was no sign of the missing men.

At last the water diversion and dam were functional and thought to be sufficient to protect underground parties from further flooding and at 12.40 hrs a party of six were sent in to search the Marathon Passage. This team was supported by a further party of six who entered the cave at 13.25 hrs. The telephone line to Rough Chamber was now functioning rather erratically and more rain was forecast for the area.

At 17.40 hrs on Sunday 25th June it was reported that the first search party had found five bodies in the far part of Far Marathon West Passage a short distance upstream of the junction with the Far Marathon East which carries a small stream.

Until this time all of the official statements had reported that there were five men in the missing party, five names had been given and five bodies had now been found. The shock which had fallen on all of us was now broken by a report that there were in fact six men in the party. Some while was taken to establish this fact with certainty and to determine the names of all six men. By this time (18.00 hrs) the effort which had been expended had depleted the ranks of the rescue party. It was decided that, in view of the extremely remote chance of the sixth man having survived, further efforts to locate him and to identify the bodies would be postponed until Monday. It began to rain lightly.

Monday proved to be a bad day. Heavy rain overnight had weakened the dam, the weather forecast was bad, and underground telephone communications had broken down. Eventually, when parties did get underground it was found that there was an acute shortage of men who had any real knowledge of the far parts of the cave which resulted in wastage of manpower. Finally, renewed rain caused a dangerous rise in water level behind the dam (the diversion channel presumably being of insufficient depth and width to cope with the increased flow) and all parties were withdrawn from the system by 17.00 hrs.

Tuesday June 27th saw a further effort to strengthen the diversion dam, and the 3 excavators worked at this task throughout the morning producing a structure which was about 6 feet high. More work was carried out on the secondary dams around the entrance enclosure.

There was now no thought of the operation being one of rescue, but rather one to determine the fate of the sixth man, to establish the identity of the bodies that had been found, to do what we could to either bring them out, or bury them as well as we could underground within the cavern.

One of the greatest defects in the rescue operation at that time had been the failure to establish reliable communications between the entrance and Rough Chamber and beyond. These communications were the more essential in view of the flood scare which parties had had on the previous day. Therefore, every effort was made to provide the parties working underground with the maximum security which we could achieve. Massive reinforcement of the dam was undertaken, and Harold Lord of the Derbyshire Rescue Organisation provided a very efficient transistorised telephone system which was used to provide a service to Rough Chamber and later as far as Kneewrecker Junction.

Security having been established, parties were then despatched to make a detailed search of the extremities of the Marathon Series in an attempt to locate the body of the sixth man who, it was thought, may have been swept further into the cave by the high pressure waters.

Dave and Alan Brook and Dave Howitt of U.L.S.A. with three others entered the cave about 14.00 hrs. They reached the end of the phone at Kneewrecker Junction in about 50 minutes and some 3-4 hours later they reported back to the effect that no sixth body had been found despite an intensive search of the far parts of the cave. Identification of the five bodies had been made but John Ogden had not been found.

The Brook brothers and Dave Howitt were known to have a most detailed knowledge of the remote parts of the cave and it did not seem likely that they would have missed anything. Therefore, it had to be concluded that Ogden's body was either in the Marathon Passage or possibly in some nearer part of the system. The latter possibility did not appear very likely but had to be considered and steps were taken to search other parts of the cave with the idea that Ogden might have been on the way out in front of the others when the flood struck. Also, a further party which included Ken Pearce and Dr. Hugh Kidd of Derbyshire Cave Rescue Organisation and Tony Salmon of U.L.S.A., went in to consider the feasibility of bringing the bodies out of the cave and to legally establish the cause of death. The Brooks party arrived at the surface at about 19.30 hrs. bringing with them a number of items for identification amongst which was a piece of wet suiting which did not appear to belong to any of the other bodies and was subsequently identified as having come from Ogden's suit. Dr. Kidd and party surfaced at about 21.00 hrs. and reported that they had failed to find any sign of Ogden and also that they considered the task of retrieving the bodies was unreasonable in view of the labour and risk to personnel it would involve.

A third search party led by Brian Boardman (C.R.O.) entered the cave at 22.00 hrs with instructions to search a number of minor side passages opening off the Near and Far Marathon Passages. At 03.10 hrs. on Wednesday morning Boardman reported that, whilst making an examination of the area in which three of the bodies had been found, he had

located what he believed to be the body of John Ogden, jammed vertically in an extremely tight rift only some 15 feet from the other three, but so covered with silt that only the boots, socks, laces and a part of a white helmet were visible. He had been unable to get a closer view, but the details which he was able to give agreed with the clothing Ogden was known to be wearing; thus, in part by a process of elimination John Ogden too was found drowned.

The tragedy was complete, six of our friends, six most experienced cavers, had all died together, suddenly, and in terrifying circumstances. We had always feared the consequences of a severe flood in Mossdale, yet would never have believed we would live to see the day, nor have believed the enormity of the truth.

Our determination now was to see that the bodies of our friends were, in some manner, and with respect, buried within the cave rather than left to the uncertainties of recurrent floodings. Mostly we accepted the unreasonableness of any attempt to bring them out; a project which would certainly have taxed our resources beyond realistic limits. However, it was clear that the burial of the bodies within a readily accessible blind side aven, which lies close to where four of the victims were found, was a perfectly reasonable and practical proposition, given the further support of the rescue teams and the maintenance of the dam and diversion channel. Support from the already fatigued rescue teams was immediately forthcoming; three teams of six men each were organised for the morning to undertake this arduous and distressing task and steps were taken to arrange for the aven to be sealed off and a memorial plaque placed within the cave.

By 09.00 hrs on the Wednesday, tired and still rather shocked men were greeted by rain, and a forecast of more to come; everyone waited. Then the on-lookers slowly filtered away and it became clear that the official intention was to withdraw support from any further activity within the cave. Accordingly a direct approach was made to the police at the scene with the request that the dam and diversion channel be maintained until such time as the weather conditions would reasonably permit the burial to be carried out. This request was rejected pending the decision of the Craven Coroner who, it was reported, would shortly be visiting the scene. Meanwhile support trickled away, and by 17.00 hrs when the Coroner finally appeared it was clear that there was insufficient manpower to complete the task in safety, even if the weather conditions had been favourable, and permission had been forthcoming.

At this time any further persons were prohibited from entering the cave for any purpose, including the recovery of some of the communications equipment. This step was taken by the police officers present, presumably acting on the decision of the Coroner. A considerable amount of unrest and dissatisfaction was felt by many of the rescue personnel, since understandably they felt that their best intentions were being frustrated. After some discussion with the Coroner to establish the location of the bodies and to confirm the rescuers opinion that retrieval of the bodies not realistic, it was decided that boulder obstruction should be placed in the New Entrance to prevent any unofficial entry of the cave. It was also stated that the earthworks and diversion channel would have to be removed by request of the landowner. It became quite clear that no further support for underground

action could be expected from the police in charge. With the weather becoming very wet everyone withdrew from the scene, but many people still had every intention of taking steps to complete the task at the earliest possible opportunity.

In anticipation of this move it appears that instructions were given to prevent any further entry of the cave by the immediate removal of the dam and diversion channel and the 'sealing' of the New Entrance with concrete and boulders. This was carried out the following day, as far as the writer is aware in the absence of any further consultation with the rescue organisations or other persons with special knowledge of the cave; the dam was removed and the diversion channel filled in. Officially the cave had been 'sealed' and this was widely reported in the press.

The precipitate action taken in the 'permanent' blocking of the New Entrance to Mossdale and the removal of the diversion channel at once created new problems which had not been appreciated by the rescuers, police or Coroner during the short consultations on the Wednesday afternoon. The most serious consequence was that the potential rescue hazard created by the closure of the New Entrance was vastly more severe than previously. The Lavatory Basin (Old) Entrance was still open and would be difficult to close, and although it had not been a usual method of entering the cave in recent times, it was perfectly negotiable in low water conditions. However, in high water it would very quickly become impassable, leading to the risk of persons becoming trapped under conditions in which entry and exit via the now closed New Entrance would have been perfectly reasonable. It was known to be very likely that additional entrances to the cave could be made at a number of other points in the 250 feet of shattered and unstable cliff face. Moreover, any such additional entrances would be more hazardous from the flood-trap point of view than the entrance which had now been closed. To attempt to seal off all 'possible' entrances to the system from the scar face or elsewhere is not thought to be a reasonable proposition and in the event of any party of cavers 'going missing' in the area or any actual situation requiring entry by search and rescue teams to this 5 mile system, these persons will at present be faced with a much more difficult and dangerous task than hitherto. Against this background there was the deep feeling of frustration and bitterness felt by all those who had worked so long and hard at the rescue attempt. Enormous effort by both men and machines had been expended in making the cave safe for rescue purposes and, apparently without any further detailed discussion with rescuers and cavers, this had been removed leaving a situation in which the cave is far more dangerous than previously and also effectively preventing any move towards a decent burial of the dead. Several attempts to negotiate at the official level were made at once but were all rebuffed, 'pending the inquest'.

The inquest was held in Skipton in July. A number of important facts emerged; notably the report of the Meteorological Office at Bawtry whose representative stated that they estimated that some 1.46 inches of rain fell in the Grassington area between 10.00 hrs on the Saturday and 10.00 on Sunday. Mr. L. Huff of U.W.F.R.A. in his report quotes rainfall figures obtained from Dr. G. Sweeting of Litton as being 0.75 inches between the hours of 17.00 and 20.00 on the Saturday. This was stated to be 'not unusual' and likely to occur in

the month of June once in every one or two years. Further questioning revealed that some 95% of this fall occurred between 20.00 hrs, and midnight on the Saturday. Hence, there is no doubt that the rainfall which occurred was indeed exceptional even if it did not break any Met. Office records. Also, it was established that the party had consulted the weather forecast before entering the cave on the Saturday, and that they considered that the water levels at the Scar were very low at the time they entered the cave.

After a great deal of time had been spent establishing the identity and cause of death of the six men, the jury returned a verdict of 'Death by Misadventure' and added the rider that they considered the action taken by instruction of the Coroner (in sealing off the cave entrance) 'to be a very wise one'. This verdict was returned by a jury of laymen who had not heard one word of evidence or expert opinion as to the possible consequences of this action on future access to the cave and the flood hazard involved. This was the more remarkable since prior to the inquest a statement making clear the rescue hazard which had been created by this closure had been circulated to the Coroner's Office, The West Riding Police, and The Home Office. The statement outlined the potential hazard, and recommended that the New Entrance to Mossdale should be opened, made safe, and gated with access to be closely controlled. This was arrived at after lengthy discussions with many of the rescue personnel, officials of the U.W.F.R.A., and had the formal support of both the B.S.A. and C.R.G. The existence of this expert opinion was ignored at the inquest, and subsequently a letter has been received from the Coroner's Office in which the views expressed are largely rejected and the authority of the writers questioned.

At the time of writing this seems to be where the matter rests, despite the fact that Mossdale Caverns are still accessible through the Old Entrance and hence presents a flood-trap danger far more severe than hitherto. Should such an emergency occur in the future, even if the New Entrance is re-opened, it is a sad reflection on all of us that there is no significantly greater chance of trapped cavers being rescued now than there was before the 24th June.

In 1953 a party of cavers became trapped in the Assembly Hall area of Mossdale as a result of the rise in level of Mossdale Beck, it did not rise to the levels which must have been reached on June 24th 1967, and the members of that party lived. Had the weather been otherwise it appears very likely that they would have been drowned. Following this incident the U.W.F.R.A. (in whose area Mossdale lies) approached the Fire Brigade for advice on the use of pumps in any future such emergency and they were told that the problem was far too great to be dealt with by this means; in the event this advice proved to be correct. Also, at that time, an approach was made to the presumed landowner of Mossdale, with a request to construct a diversion channel such as was done in June last. Permission was not given and it was pointed out that the diverted beck would flow onto other people's land. As a result of recent enquiries it has come to light that in fact Mossdale Scar and the cave entrance appear to lie on common land. In the event of the beck being diverted it would resume the course which, in recent geological times (Local information suggests that the beck has flowed past the Scar in recent historical times. The present cave entrances have arisen by stream capture, and this in turn has modified the existing passages.) it must have taken, traversing nothing

but rough boggy moorland, to sink some quarter of a mile around the scarp of the hill.

Mossdale Caverns are officially 'sealed', the caves have become a tomb, five and a half miles long, and yet it is still possible to enter the system. It appears unlikely that it will ever be otherwise, nor, in the opinion of the writer, should it be. The caves remain; one of Britain's most extensive and complex systems. A fascinating example of a vast solutional network modified by vadose action all developed in a relatively thin limestone bed. We have scarcely begun to understand its complexities. It offers remarkable opportunities for the explorer and cave morphologist alike. I do not believe that it will remain "sealed" and unvisited for all time, and if parties of cavers start to re-visit the system more deaths are likely to occur unless action is taken now to ensure that it cannot happen again. There is only one effective form which such action can take, and this should be clear to the reader from what has been presented to him in this report. A permanent dam and diversion channel should be constructed at Mossdale to make the cave 'safe' for future generations of cavers and speleologists. The writer accepts fully that all caves are intrinsically dangerous, but we do normally take measures to prevent hazards over which the caver has no control and the case of flooding at Mossdale Caverns is, in my opinion, one such situation.

In presenting this account of the disaster at Mossdale, I have tried to be accurate as to events, and I am grateful to Mr. Len Huff of the U.W.F.R.A. for the use of his official report of the operation. Such errors and omissions as I am sure exist are my own failing. There will be some who will find such an account distasteful, and feel that such tragic events are best left unrecorded except in the specialised records of the participant organisations. I cannot accept this view; and hope that we can learn from what has happened. All of us who were personally involved with this disaster are certainly much sadder, whether we are much wiser remains to be seen.

MENDIP RESCUE ORGANISATION

Report of the Hon. Secretary and Treasurer for the year ending 31st January, 1967

Cave Rescues and Incidents (There were 13 of these, which is a record)

1. Swildon's Hole, Saturday 12th February, 1966.

Robert Marchant, a Bristol man caving with a S.W.E.T.C.C.C. party became cold and tired, when exploring the N.W. Stream Passage. He had never before been past Sump I and was not properly clothed for working when wet through. The other members of his party were wearing wet suits. Becoming tired he sat down and rested, but the cold was getting the better of him, so he took the opportunity of returning with a party of Wessex men. He soon warmed up and progress was good as far as the 20'. At the forty they were joined by two from the Shepton. The subject had two attempts at climbing the ladder, the second on a tight line, but failed. The second time, he fell off the ladder when only 10' from the top and the party tried to pull him up, but he jammed under the ledge. Here he was held for several seconds with the water falling full in his face, and after being lowered to the bottom was half-conscious. M.R.O. was then called out.

Luke Devonish received the call at 7 p.m., whereupon he sent for the police and for such help as was necessary, sending down hot drinks. He tried to get telephones from John Chapman, but contact was not established. The pulley over the 40' was rigged but without the second pulley. After being given hot drinks and a change of clothes the subject was hauled up and was then able to make his way out of the cave.

Lessons

Clothing for sumping trips does have to be adequate.

Sitting still when cold is as tiring as caving.

Climbing on a tight life line is good, as long as the subject can climb. When he falls off the ladder, it is best to let him down to the bottom at once. It is only possible to haul him up by direct pull, if there is a second man on the ladder to stop the subject from jamming in the overhangs.

2. St. Cuthbert's Swallet, Sunday 27th February, 1966.

A short distance from the down stream entrance to Bypass Passage John Stafford a member of B.E.C., slipped and fell, injuring his head and ankle. Roger Stenner, who was in the cave, was contacted and came out for help at 2.p.m. M.R.O. was called out and Howard Kenney delivered to the Belfry the rescue equipment. A rescue party with medical kit reached the subject by 2.30 p.m. He was roped to the carrying sheet and lifted via Sentry Passage to Upper Traverse. By this time pitches were being rigged throughout the Lower Traverse - Pulpit rescue route and Dr. Cannicott had arrived at upper traverse. He bound up the ankle and recommended that the subject should help himself as much as possible, without being in the carrying sheet. He was put into an exposure suit, and a climbing harness consisting of a seat and shoulder sling linked with a karabiner was fitted. This was used for hauling him up Pulpit Pitch and the Entrance Pitch, where his harness was clipped to the ladder and the ladder pulled up. He was out of the cave by 8 p.m.

An hour before this Kenney had turned out a reserve party of Wessex members and also the telephones, when it began to look as though progress was slow. But this precaution proved unnecessary.

Lessons

The accident was a misfortune and nothing else.

A club which takes the trouble to practise rescue in a cave over which it has control is in a good position to carry out a rescue with the minimum of help. Members of the B.E.C. had worked at the route, put rawlbolts in the right places and learnt rescue technique.

3. Sidcot Swallet, Sunday 13th March, 1966.

Christopher Mead, aged 17, caving with the Y.M.C.A. Bridgwater Caving Club went down Sidcot Swallet at about 11.50 a.m., slid down a narrow slippery passage, hurt his ankle, lost his light and couldn't get out.

At 1.50 p.m., his companion telephoned the police, and Wells was contacted at 2.25 p.m. At 2.35 p.m. Luke Devonish was contacted and got Mike Thompson and Willie Stanton to go to the cave. Meanwhile Dr. Crook had contacted Dr. Tratman, who turned out a Party from the U.B.S.S. The subject was out by 4.40 p.m.

4. Swildon's Hole, Sunday 15th May, 1966.

Keith Gladman (B.E.C.) and Colin Graham (S.W.C.C.) went down Swildons in the morning to do the long round trip. By 7 p.m. they were 3 hours overdue and M.R.O. was alerted. Dave Irwin got a search party together (Paul Allen, Barry Lane and Bob Craig) and contacted Howard Kenney at 7.45 p.m. It was agreed not to call out M.R.O. until more was known of the magnitude of the task. The police arrived at 8.15 p.m. The search party went down at 8.30 p.m. and met the overdue party at the 20' pot, and gave them assistance on the way out.

Meanwhile, since it was thought the party might have been having trouble in the streamway sumps, Dr. Lloyd was alerted and collected some divers and the mark 2 sump rescue kit. Luke Devonish also had the mark 1 sump rescue kit handy. Brian Prewer's telephones were used down the cave and John Chapman's on the surface. This was a convenient arrangement.

The overdue party had lost their way in the shatter connection, and eventually their lights had begun to fail. Neither of them knew the route beforehand. They were out of the cave by 10.30pm.

Lesson

The long round trip in Swildon's is exceptionally difficult and arduous, and has given more than half the parties attempting it serious trouble, including two M.R.O. call outs.

5. Rod's Pot, Friday 3rd June, 1966.

Paul Lear, aged 15, of the Somerdale Youth Club, c/o J.S. Fry & Co., was on his first caving trip when he fell down the vertical and sustained a Pott's fracture of one ankle, at about 4.45 p.m. A member of his party was sent to call out M.R.O., went to the Burrington Cafe and asked the

procedure. While this was being looked up for him he lost patience, dialled 999 and asked for an ambulance, which promptly came. Ambulance control notified Weston police, who notified Wells, who called Luke Devenish at 5.30 p.m. The message passed by Wells was, "A man is trapped with a broken leg in Rod's Pot". A phone call to Burrington Cafe could not get any further details.

Mr. Devenish got Jim Hanwell to collect a party and Brian Prewer with telephones. Dr. Cannicott went down and used an inflatable splint to immobilize the fracture. This took away the pain and enabled the subject to progress on three limbs. He was out of the cave by 6.55pm.

Lessons

If the correct call out procedure had been followed it would have helped M.R.O. a lot and saved a quarter of an hour. The man sent to call out M.R.O. should ring the Wells police (Wells 3481). Dialling 999 is less good, because there is delay while the call is being passed on to Wells. Rescue is the business of the police not the ambulance. The man calling out M.R.O. should then remain by the telephone until the M.R.O. Warden has rung him back for further details. Inflatable splints work very well but will need protection against tearing. They are also very expensive. Contrary to what is said of them it is possible to over-inflate them and stop the circulation in the limb.

6. Swildon's Hole, Saturday 6th August, 1966.

Clive North of the Bridgwater Technical College Exploration Club was leading a party of 3 others, including Roger Bawden. He had telephoned Mr. Maine in the morning to find out if it would be alright to go down Swildon's, and Mr. Maine had replied that although it was drizzling he thought it would be alright. It was not. The party went down at 11 a.m. as far as Shatter Pot. On the return they had a long wait below the 40', as it was getting wet and slowing down the progress of other ascenders.

Also down the cave that afternoon went Dr. Oliver Lloyd with Allan Hawkes. The latter is a member of the Irish C.R.O., who wanted to know something of M.R.O. methods and technique, and this seemed likely to prove a suitable opportunity for him to learn.

Clive North was the first member of his party to go up the 40'. He lifelined Bawden next who, after about 20', found the water too heavy, blacked out and fell off the ladder. It is not certain if he was held, but when he came to he found himself lying in the pool at the bottom. He made a second attempt to climb, but was overcome by cramp, which started in his stomach and crept over his whole body. North then went and called out M.R.O. at about 6.p.m.

Howard Kenney contacted Mike Thompson and asked him and Jim Hanwell to organise the rescue, which they did. He also asked Dr. Cannicott to go, because it was believed that the subject had fallen.

Meanwhile, Dr. Lloyd on returning to the 40' found the party at the foot in trouble and began to organise the rescue from below. He got the subject moving and sent Allan Hawkes up the pitch with instructions to rig the pulley, block the drainpipe and run the ladder to the far side of the pitch. When the pulley had been rigged Lloyd prepared a bosun's chair knot, and at that moment Mike Thompson arrived, and moved the ladder over to the far side of the pitch. After a little misunderstanding, Lloyd climbed the ladder and found out what was going on. The M.R.O. party decided to do the hauling

from above and Lloyd redescended to accompany up the subject, who was then put in the bosun's chair.

Unfortunately, owing to a second misunderstanding, the second pulley for hauling had been put in the wrong place, and the subject could only be raised about 12 feet. He was held in the water rather a long time, so Lloyd climbed the 40' again and asked them to let the subject down, send down a hauling party and do the hauling from below. He remained astride the top of the 40' to steer the subject clear of overhangs, while Bob Lewis descended from Suicide's Leap, free-climbed the 40, and gave valuable help on the 15' ledge opposite the lip, from which he could hold the ladder out of the water., The pipe had to be blocked, of course.

After this everything went smoothly. Bawden and one other both needed to be hauled up, the rest climbed. By 8.45 p.m. the last man was up and all were out in time for the Hunters!

Lessons

It is impossible to prevent this kind of incident by any kind of control of the cave that is foreseeable. The little drainpipe at the head of the 40' is a menace. It has to be blocked, before any effective rescue can be done.

Subsequent rescue practices have shown that it is much easier and quicker for the hauling to be done from below the pitch. This eliminates friction and takes 4 men instead of 6. A fifth man should straddle the pot and prevent the subject from getting stuck under the overhangs. It also helps a lot if someone holds the ladder out of the way.

7. St. Cuthbert's Swallet, Saturday 20th August, 1966.

Barrie Parker, caving with the Pegasus on a party led by Phil Kingston, fell about 4ft. in Illusion Chamber, was struck by a falling boulder and dislocated his right shoulder. At 2.45 p.m. M.R.O. was called out. Keith Franklin directed the rescue underground, while Luke Devenish made the necessary contacts above. He got Dr. Crook to get a medick, but while Dr. Patrick Thomas was on his way Dr. Oliver Lloyd turned up by chance. He was therefore sent down the cave at 4.15 p.m. Telephone communication was working well.

Meanwhile the subject had been proceeding under his own steam, with some help and considerable pain. Dr. Lloyd met him at Upper Mud Hall. Attempted reduction of the dislocation was not immediately successful, but as soon as Parker began to walk again the joint clicked back into place to his great relief. After that he was able to get himself out alright and climbed the entrance rift with a little assistance. All out of cave by 5.40 p.m.

Patrick Thomas took Barrie by car to the Royal Infirmary at Bristol, but he was allowed to go back to Mendip the same evening.

The reasons why the rescue went so well were (a) because the B.E.C. have studied rescue from St. Cuthbert's and (b) because the subject is one of the finest cavers in Derbyshire.

8. Swildon's Hole, Saturday 22nd October, 1966.

A party from Millfield School, Street, got into trouble because of flooding on the 40' due to rain. The forecast had been fairly favourable with "perhaps rain later in the day" and the party had been

advised that it would probably be alright. Rain began at about 2.p.m. and grew steadily worse all the afternoon.

Peter MacNab was down the cave at about 8 p.m. and found the water rising. He also saw the schoolboys. At 9.30 p.m. he and a party reentered the cave taking the hauling tackle with them from Main's house, as two of the schoolboys were reported in difficulties at the 40'. At the over-and-under barrier the lower passage had sumped. Rescue was effected and all were out by 11 p.m. The Sandhurst bods did a good job at Fountain Cottage with hospitality.

Fred Davies was alerted at the Wessex Dinner by Mike Wooding and went down the cave just as the rescue party was emerging. He had asked Dave Causer to get fire pumps via the police, but countermanded it in time. M.R.O. was not officially called out.

Lesson

This kind of incident is not always foreseeable. We shall be getting a lot more like it. The cure is to train lots of cavers in the technique of rescue from the 40'. It is a pleasure to note that some cavers will go to the help of other parties, without having to be told.

9. Swildon's Hole, Saturday 26th November, 1966.

This was another "mini-rescue" from the forty. Mrs Bruce Bedford had difficulty climbing the ladder and fell off, hurting her shoulder. M.R.O. was called out at about 10.25 p.m. and a party of four led by Paul Allen went down at 11.05 p.m. Paul is one of the men who has taken the trouble to learn rescue technique. They recruited five other cavers who were in Upper Swildon's.

They went down the pitch, dressed the subject in a goon (dry) suit, rigged the pulley at the top and hauled her up without difficulty, using a triple bowline tied in the end of the hauling rope. The subject was out by 12.05 a.m.

Paul Allen's observations are as follows: -

- a) "The Main Ulstron is only just long enough for hauling purposes when the team is at the bottom of the pitch. Its length might cause difficulties in other circumstances.
- b) I believe it would be possible for a minimum of three to haul an average weight (13 stone) up the Forty Foot. When hauling from the bottom the rope runs beautifully, less manpower is required, and the haulers can see the hauled.
- c) The mini-pipe at the Forty is a bloody nuisance. It will not control anything like the normal stream and makes both ladder pitches wet. The person being hauled passes right through the stream. It was intentionally blocked up.
- d) Only one person present knew how to rig the pitch and tie a triple bowline (myself). The solution of this problem is obvious".

10. Swildon's Hole, Thursday 22nd December 1966.

At 2 p.m. Mr. John Barratt took a party of two Clifton schoolboys down the cave, in order to do the short round trip. They took a long time bailing the troubles and lost their way in Vicarage Passage, going on to the Pot instead of down to II. They therefore retraced their steps, but stopped exhausted,

when they reached Shatter Pot. After 9.p.m, they were overdue and at 11.30 p.m. the School rang the Police. Luke Devenish got Mr. Main to find out whether the party was still down the cave. The answer was "yes", so at about 12.30 a.m. Howard Kenney led a party of three down, the cave, followed by Brian Prewer and the telephones. Roy Staynings and a party of five were turned out to follow on behind. Divers were alerted in Bristol, prepared their kit and got ready the sumping apparatus.

Kenney's party went through Sump I to the Vicarage Bend, found no sign of the party, returned to Trat's Temple and telephoned progress at 2.30 a.m. At 2.35 a.m. Roy Stayning's party entered the cave. Kenney's party then went through Paradise Regained to Shatter Pot, where they fed the lost ones on Horlick's pack and Dexedrine. They were then able to travel under their own steam, gathering new nife cells In Trat's Temple. They met Stayning's party at the 20'. The lost ones were slow on the 40', but were made to climb it themselves. All were out by 5.23 a.m. and Bristol received the stand-down at 7.35 a.m.

11. Cuckoo Cleeves, Monday 26th December, 1966.

Heavy rain caused subsidence at the foot of the entrance shaft, while a party consisting of Tony Dingle and Tony Oldham were working at the terminal rift. Dingle writes as follows:-

"On the way out we were met by Garth Dell of the B.E.C., who had come to warn us that the entrance had become unstable and that M.R.O. had been called to the cave. We all returned to the surface and had no difficulty in reaching the entrance shaft. There was no obstruction as all the material that had fallen from behind the pipe had rolled down as far as the pot. The pipes were not slipping themselves but still resting on those three rock projections. We had entered the cave at 3 p.m. intending to be out by 6 p.m. John Cornwell and others had walked over to the entrance by about 4.30 and their arrival coincided with a subsidence of ground on the surface. There was a sound of falling stones below and they returned at once to Hillgrove where George Pointing decided to call out M.R.O. A large number of people then went to the cave with spades and pit props. Shortly after, at about 6 p.m. we returned to the surface. Later in the evening the police took brief details of the event from Tony Oldham and myself.

I have since received several offers of help to make the entrance to Cuckoo Cleeves more secure.....it is hoped to make a start within two or three weeks I am sure that the early call out of M.R.O. on Boxing Day was a very sensible precaution in view of the state of the cave entrance".

At Dingle's request Dr. Oliver Lloyd gave the necessary warning about the state of the shaft. He did this by word of mouth at the meeting of the Council of Southern Caving Clubs. Clubs are warned to treat the shaft as dangerous, unless they see that the repairs have been effected. This corner of the shaft has always been unstable. Falls of rock here have closed the cave about four times, on one occasion pinning a man who was crawling through.

12. Swildon's Hole, Friday 30th December, 1966.

Les Hamblade and John Norris of the Axbridge C.G. went down the cave at about 4 p.m. without letting Mr. Main know. They intended to pay him afterwards. Neither had they left word with anybody about what time they expected to be out. When they returned at about 6.30 p.m. they found

the grating locked, so after shouting for about half an hour they retired to the Old Grotto for the night, found it draughty and moved to Kenney's dig. At about 9 p.m. Mr. Main saw their car still on The Green, went over to the cave and unlocked it. Next morning the car was still on The Green, so he called out M.R.O. at about 10.30 a.m. It was a strong call out, in view of the lapse of time. Dr. Patrick Thomas was summoned as medick, Dr. Lloyd brought the sumping apparatus, but it was all over by the time they arrived from Bristol. Three parties went down at about 11.5 a.m. to search each of the three Upper Swildon's routes, and the lost ones were soon found. They had had a cold uncomfortable night but were none the worse for it.

13. Stoke Lane Slocker, Saturday 28th January, 1967-

This was a call out for breathing apparatus for a subject just inside the entrance.

After a night of heavy rain, the river was swollen and muddy. Dr. Oliver Lloyd, leading a U.B.S.S. party, saw a largish air space, notwithstanding, and entered the cave only to find that he couldn't get out again, as the water piled up in front of his face in the narrow part of the entrance. He prevented the rest of his party from following, and asked one to go to Bristol for his breathing apparatus (at about 3.30 p.m.). At about 4 p.m. considering it might be as well to have someone outside who knew how to assemble the apparatus he asked them to call out M.R.O. The added advantage would be that Luke would bring the mark one sump rescue apparatus, which might prove easier to manage. He then retired to a dry tube out of the streamway, from which he could hear what was going on outside, and went to sleep.

The call-out appears to have been somewhat irregular, but eventually both Luke Devenish and the police got it and brought the mark one sumping outfit, arriving at the same time as the tadpole from Bristol.

The tadpole might well have proved adequate, if the cylinder had been kept outside the case, and only the mouthpiece fed down to the subject. Instead, the whole apparatus was put into a fibreglass case and sent down on the end of a line. It proved impossible for the subject to push this out of the entrance in front of him against the force of the water. The mark one sump rescue apparatus was then assembled, with one instead of three face masks on the end. The joints were unduly stiff, because the apparatus needed servicing, two spanners and a mole grip. Another inconvenience is the pressure gauge on the far end, which is needed because of its two male joints. This kept jamming in the floor crack. Eventually the subject wriggled out at about 7.30 p.m. the apparatus working satisfactorily.

The effects of remaining still in the cold for 4 hours were not serious. It was essential to get out of the water, as that would have accelerated cooling. Full protection in a wet suit and hood conserves a lot of heat, but allows enough heat loss for shivering to start in about 1½ hrs. This is neither inconvenient nor uncomfortable and it serves to maintain the body's core temperature. But it takes it out of you as much as hard caving. The latter is undoubtedly preferable, if one is not tired.

This is the first time the mark one sump rescue apparatus has been used on a rescue.

Meeting of Committee of Wardens on 26.6.66.

The primary object of this meeting was to elucidate Rule 1. in the Constitution, so that it might be used to draw into the work of the Organisation those Clubs that have rescue teams. The rule reads:-

1. Committee - The Wardens with power to co-opt representatives of any Club or Society wishing to co-operate.

It was agreed that those clubs which had rescue teams and which carried out rescue practices, thereby showing that they were seriously interested in promoting cave rescue, should be invited to nominate their team leader for co-option to the Wardens' Committee. The Wardens would be free to exercise their powers of co-option at their discretion. Normally co-option would be for the period of one year. The Hon. Sec. was instructed to find out from the Club Secretaries who their team leaders were each year sufficiently far in advance of the Annual Meeting of Wardens for an invitation to be issued to the team leader to attend the Meeting. The team leader would be in addition to any Warden who might be a member of that club, since the team leader was the club's nominee and the Warden was not.

Regarding the "National Rescue Organisation", the formation of which was being suggested in some quarters, it was re-stated that, whereas a Committee to advise the Home Office, with advisory but no executive powers, might be a good thing, a National Rescue Organisation with executive powers was not to be contemplated. In either case a firm decision must wait until a future occasion, when definite proposals had been made and considered.

Open Meeting of M.R.O. held on 13.11.66.

This was M.R.O.'s first open meeting. Dr. B.A. Crook, who founded the Organisation in January 1938, took the Chair at 2.30 p.m. Howard Kenney described what happened during rescue operations. Inspector John Buttle of Wells gave us the Police angle, and Dr. Oliver Lloyd, the Hon. Secretary told us how the organisation was held together. He discussed the constitution of M.R.O., its finances, its contacts with the generality of cavers and the importance of regular practices held by club rescue teams. Under article 1 of the constitution the leaders of such teams might be co-opted onto the Wardens' Committee.

During the discussion which followed, this type of meeting was welcomed, as it helped to bring closer together the cavers and those who ran the organisation. The importance of many aspects of the rescue work was stressed, including speed of call out, and inventive initiative on the part of the cavers. The Hon. Sec. was asked to get out a leaflet on Flood Rescue, similar to the Mendip Caving Code, so that copies could reach individual cavers. First aid classes had at one time been run by M.R.O., but for genuine study a caver couldn't do better than take a St. John's Ambulance course and certificate.

The M.R.O. Exposure Bag.

As a result of our experience with sump rescue practices, and of cave rescue practices in very

wet conditions, when the subject can get sufficiently cold to start shivering, it was decided to design our own version of the Exposure Bag. The credit for this initiative goes to Paul Allen who has made designs and is making the prototype bag. We have received, now, drawings of Don Robinson's bag also, together with some specifications, which have proved useful, such as where to get waterproof zip fasteners.

Outside Organisations

The Hon. Secretary exchanges reports and information with the C.R.O., The Derbyshire C.R.O., the South Wales C.R.O., the Gloucester C.R.G., the Devon C.R.O. and more recently with the rescue group in Edinburgh.

M.R.O. gave cover to the S.W.C.R.O. in August 1966, when most of their leaders were in Yugoslavia. There were no call outs.

The Devon C.R.O. has been without an Hon. Sec. since July 1966, when Capt. John Bird left. Contact is maintained through the chief warden, Col. I. Fraser, Outward Bound School, Holme, Nr. Ashburton, Devon.

Finance

Expenditure on equipment, at £28 is much less than last year, the principal item being Nife cells, at £15. We have received in donations nearly twice as much as we did last year, and this has mainly been due to the generosity of those whom we have been able to help out of their difficulties while caving. Nevertheless it still remains true that it is the regular donations from the clubs that cave on Mendip, upon which we rely. One club has again donated as much as £10. Last year there was a deficit, but this year we have a surplus of nearly £40, more than half of which will go towards the exposure bag.

Cave Rescue Practices

The policy of M.R.O., which is to encourage clubs to carry out rescue practices under supervision, has been energetically and successfully pursued. There were 15 rescue practices in the year, which is also a record. The task of training cavers in rescue technique is a never ending one, because of the natural turnover of cavers. Clubs wishing to carry out a rescue practice should fix the date well ahead and notify the Hon. Sec. of the M.R.O. They should arrange the time, the cave, provide a team of 8 strong men and a small "victim" and the caving tackle. M.R.O. will provide a Warden to act as umpire and the special rescue equipment. The most useful practice at present is undoubtedly that on the 40' in Swildon's and out. Clubs which establish a rescue team in this way are entitled to have the leader of their team co-opted onto the Warden's Committee of M.R.O.

PROGRAMME OF EVENTS

Weekend 27/28th April.	<u>South Wales.</u> *	Leader: C.H. Kenney, Tudor Cottage, Beryl Lane, Wells.
Weekend 18/19th May	<u>Devon.</u>	Leader: D.M.M. Thomson, Pinkacre, Leigh-on-Mendip, Bath, Somerset.
Weekend 25/26th May (Please note change of date)	<u>Agen Allwedd.</u> *	Leader: P. Cousins, 3 Kinver Road, Sydenham, London S.E.26.
Weekend 1st/2nd June	<u>South Wales.</u> *	Leader: C.R. Hobbs, Warren Lodge, Long Ashton, Bristol.
Saturday 8th June 3pm.	<u>G.B.</u>	Leader: J.D. Hanwell, 50 Wells Rd. Wookey Hole, Wells, Somerset.
Weekend 16th June 10.30am	<u>The Caves of Western Mendip</u>	Leader: R. Woolley, 64 Devonshire Road, Bristol 6.
Weekend 30th June 10am.	<u>Swildon's Hole, Shatter Passage</u>	Leader: A.E. Dingle, 32 Lillian Road, Barnes, London S.W.13
Saturday 17th August 2pm.	<u>Smaller Caves of Central Mendip</u>	Leader: D. Warburton, 20 Beverley Court Rd., Quinton, Birmingham 32

NOTES: Please give the leaders prior notice of your intention to join any trip. Bring valid CCC Permits for the G.B. trip.

* Wet suits and nife cells essential.

Continued from page 73

In the preface the author claims that this is not a scientific book and your reviewer is inclined to agree; verbose and slightly inaccurate would probably be a better description. In numerous instances the colourful analogies could easily be omitted giving a considerable reduction in text and, one would hope, in price as well. Misleading statements like the fact that bats hibernate in ice caves, could also be left out. The author cheerfully admits that the title is misleading as anyone who has sensitive ears or has listened to a bat-detector can vouch that bats are far from silent, in fact they are shouting their proverbial heads off as they fly about, hunting for insects.

However, looking on the brighter side, there are many delightful thumbnail sketches in the margins, which really bring the book to life.

A.D.O.

Addendum to the Auditor's Report - year ended 30th Sept. 1967.

Published in W.C.C. Journal No. 115, Vol.10 p.7-

The Auditor and Hon. Treasurer wish to point out that the accounts for the year to the 30th September 1967 should have included the notes stated by the Auditor in his report to the Annual General Meeting of the Club on October 21st 1967- These notes read as follows:-

"Notes on the accounts for the year ended 30th September 1967.

1. The total of the figures of cash in hand and at bank appearing on the Balance Sheet is £412.7.3d. This is made up as follows:-

Midland Bank Ltd., Solihull - Current Account	214 0 10
Cash in hand	
- with Hon. Treasurer (since banked)	68 17 0
- at Hillgrove	1 11 0
- in Survey Scheme	25 1 8
- with H.Q. Development Officer	102 16 9
	<u>£412 7 3d</u>

2. Of the balance on the Survey Fund of £38 14 7d, approximately £20 is considered to be necessary for running the scheme, so leaving about £18 available for the purchase of new instruments etc.

3. The figure of Stock of Goods for resale is made up as follows:-

Blazer badges	9 10 0
Club Ties	23 18 6
Nife Lamp Spares	17 10 2
Carbide Lamp Spares	<u>3 18 0</u>
	<u>£54 16 8d</u>

As previously, the stocks of carbide, electrolyte, Journal back numbers, Volume 1 reprints, and Volume 8 supplements held by the Club have not been valued.

4. The value of the Club's huts at Hillgrove and Eastwater, the duplicator, and other Club equipment has not been included in these accounts.

5. The proceeds of the sales of the Volume 1 reprint and the Volume 8 supplement have now covered the production costs of these publications, and any further sale proceeds will be clear profit to the Club".

Found A gents wrist watch has been found in the Browne-Stewart extension of Read's Cavern by Howard Kenney, still in good working order. Claims of ownership please to him at Tudor Cottage, Beryl Lane, Wells, Som.

Radio Programme on Pot-Holing

The British Broadcasting Corporation have invited the Wessex Cave Club to contribute to a programme on "Pot-Holing" to be broadcast on Radio 3 at 7 p.m. on the 28th June 1968. This programme is one of several under the general title of "Out of Doors" and will be broadcast weekly from 31st May next. The other topics to be covered are fishing, camping and hiking, dinghy sailing, climbing and horse and pony riding.

The programme on pot-holing will take the form of recorded talks of about five minutes by speakers who have knowledge of a particular caving area, and, on behalf of the Club, Howard Kenney will speak on the Mendips. Inevitably his remarks are chosen for the general public and not for cavers, but the Club will have the satisfaction of knowing that "The Hut Fund" will benefit from the fee.

The programme will be repeated on the 7th September at 10.30. a.m. on Radio 4.

CUCKOO CLEEVES; THE REOPENING, 1964

by Paul Weston

In 1961 the members of the Westinghouse Apprentices Association Caving Club became increasingly active and began to investigate the possibility of a surface "dig". My brother and I had previously thought of the possibilities of reopening Cuckoo Cleaves. It was natural enough therefore for the idea to be investigated by the members of the West. App. Caving Club of which he was then secretary.

Permission was obtained from the landowners and the tenant farmer, with Mr. Wyndham Harris assisting with the legal points which arose. The main point concerned the indemnification of the farmers in the event of accident involving one of the diggers. This had become necessary mainly because all the people involved in the dig from the Westinghouse Club were under twenty one at the time of the commencement of enquiries.

During the autumn of 1962 the collapsed shaft was inspected and tackle collected for the dig to commence. The shaft was cleared of rubbish and as many loose stones as possible removed during the spring of 1963.

Initially an attempt was made by Jim Rhysley, Vic Whittaker, Alan Thorne and Garth Weston to gain entry by clearing the "run-in" at the bottom of the old wooden shaft. However more "run-ins" occurred as the shaft walls were unstable and a small stream entered from the N.W. corner, under loose debris.

An attempt was made to clear a large amount of debris from the outside of the shaft where the stream sank. During a period of particularly heavy rain the old wooden shaft tilted at an alarming angle, luckily without anyone inside it and any progress that had been made was lost. Although this seemed a considerable set-back at the time, it was to prove a boon later. The dig was abandoned for the winter of 1963/64.

A new attempt was tried in April 1964. Concrete piping was brought up from Wells and the timber shaft pushed as far out of the way as possible. With little trouble, four sections of pipe were sunk theoretically on the line of the timber shaft. The method of sinking the pipes was to climb inside the top or first section and to dig from within allowing the pipe to slowly slide down through the boulders. As soon as the first section was almost immersed another section was balanced on top of it. Digging was then recommenced until this in turn had slipped through the boulders. This was repeated until the shaft was complete. Luckily the bottom section rested

on fairly stable boulders on two sides,, By the end of the first week of May digging started in earnest, nearly all the spoil being raised with the aid of a winch in home-made buckets and deposited into the old shaft. By now the small stream had dried up making digging considerably easier. The diggers were accompanied by other members of the Club from time to time and Oliver Lloyd sent along one of his original surveys and visited the dig.

Solid rock was encountered beneath the shaft in early June and obvious indications of the old way in found. With the sweet smell of success digging continued furiously. On June 30th, Jim Rhysley tried to force a way into a steeply sloping passage, but was foiled because of his generous build. A leaner Vic Whittacker tried but failed; likewise Garth Weston and myself.

Further digging went on the next day, widening and clearing the passage. However, it was not until the following Saturday July 4th that access was finally gained into the old cave proper by Vic, followed by Jim and Garth. This involved kicking a lot of loose debris before them down a small vertical drop. Trouble was experienced a week later as the stream had started to flow again bringing the debris which filled up the steep entrance passage. Unfortunately this has recurred repeatedly, despite numerous attempts to stabilise the loose material, or to divert the stream.

From time to time the stream has been redirected on the surface using corrugated iron strips as channels to carry water away from the shaft to a sink amongst the boulders on the S.E. side of the depression. It might be worth while making some permanent channels, with a view to allowing the entrance passage to settle.

During late October of the same year the diggers, then concentrating on the possibilities below ground, found the entrance passage again blocked and more time was spent digging a way in. Garth had previously suggested concreting the base of the shaft to prevent further material running in but unfortunately this was never done. However, Cuckoo Cleeves had been reopened and still is, a task accomplished with some pride by a group of keen and at that time totally inexperienced diggers,

A New Survey of Cuckoo Cleeves

Denis Warburton and Phillip Davies have just completed a new survey of this system. A full report of their work will be published in W.C.C., Journal No. 117, Volume 10, June 1968, but for member's convenience a scaled-down photo copy is included in this issue of the Journal.

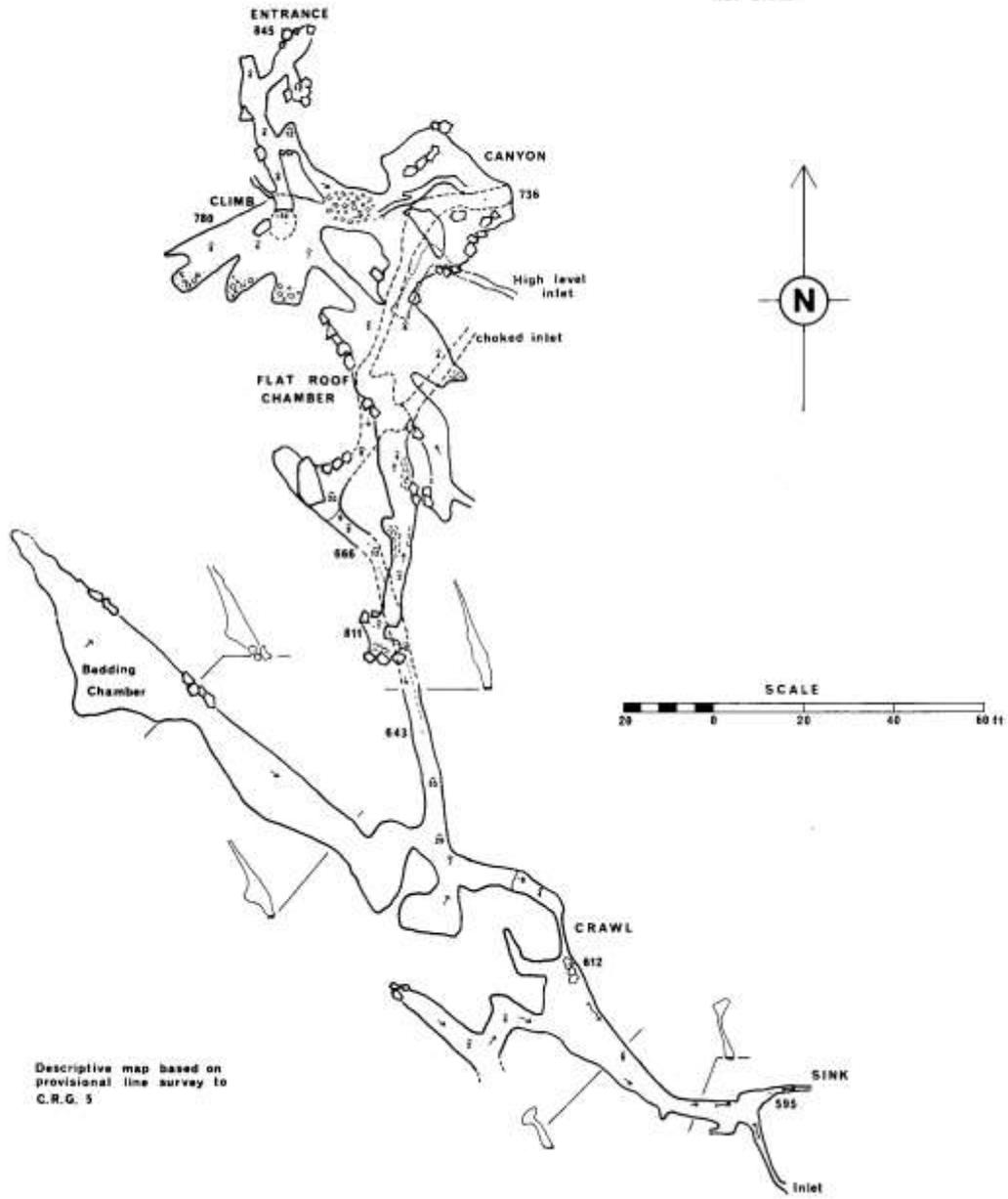
In due course it will be possible to purchase full sized sheets of this survey in the normal way through the Survey Scheme. Enquiries should be made to T.E. Reynolds, 23 Camden Road, Southville, Bristol 3.

CUCKOO CLEEVES

Priddy
Mendip

PLAN

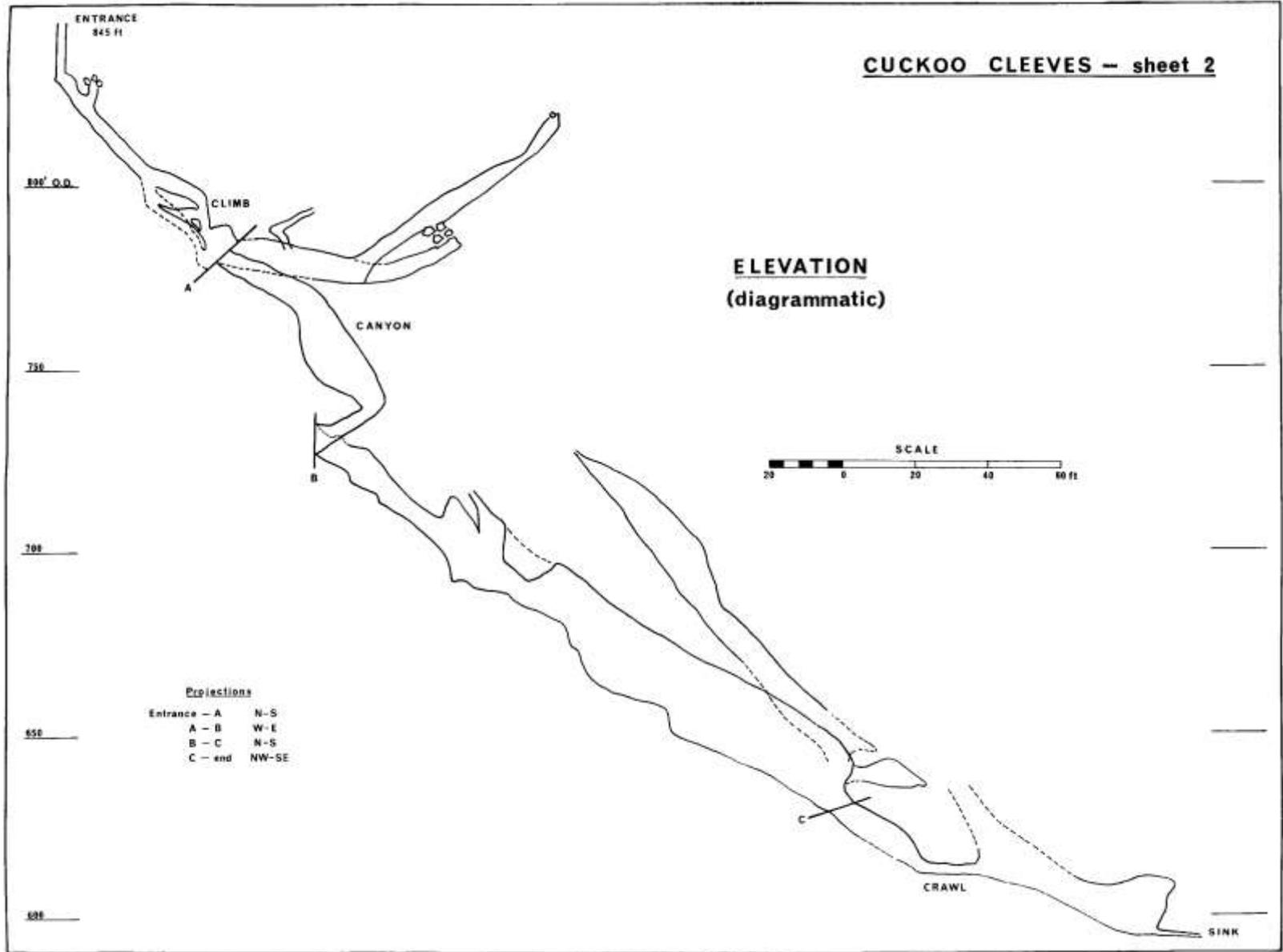
NGR 539.505
ALT 845 FT



Descriptive map based on
provisional line survey to
C.R.G. 5

surveyed 1968

CUCKOO CREEVES - sheet 2



CAVE HYDROLOGY AND WATER TRACING
REPORT OF A SYMPOSIUM HELD AT LEICESTER
ON SATURDAY 3RD FEBRUARY 1968
by P.R. Cousins

The one day symposium arranged by, and held at, the Department of Adult Education in Leicester University, was attended by over 150 Cavers, potholers, and. scientists. The new buildings of Vaughan College near the city centre were well suited to a gathering of this size. The available lecturing ancillaries were excellent; all speakers being provided with a microphone and projection facilities.

The day was divided into three 90 minute sessions, each with two 30 minute lectures followed by 15 minutes of general discussion. Every lecturer could, and would, have continued for much longer without exhausting his topic or the audience; hence, only a bare outline of their research work could be given.

In the first session-Mr. R. Stenner surprised the audience by telling of his success in tracing water in St. Cuthbert's Swallet, Mendip, using small quantities of hot water coupled with accurate temperature measurements. Mr. D. Richardson, who followed, showed, how streams could be traced using the increase in Calcium as they traversed Limestone strata. The Alum Pot area, West Yorkshire, was examined by this method. The lecture culminated with a discussion on the dolomitisation of limestone near mineralised zones; the ratio of Calcium to Magnesium being a very sensitive factor.

Following lunch Mr. J.D. Wilcock, after summarising Dr. Ashton's work on Flood Pulse techniques, showed how an Analogue computer could be programmed to represent models of any cave system. By this means a pulse wave travelling through the most complicated system could be analysed theoretically to show how many sinks fed it, and whether any oxbows would become active during a flood. Accurate measurements at the risings were needed for this work.

Before a short coffee break Mr. Tim Atkinson described the recent work on the underground drainage of Mendip and his own work in Jamaica during the summer of 1967. This lecture was the only one dealing with Lycopodium spore tracing which had shown unexpected crossings of drainage lines at different levels, and so new knowledge of preferred routes from sinks to risings.

The final lecture by Dr. D.P. Drew was on percolating water in limestones. He described his so far unpublished results with the fluorescence dye Pyranine conc. This new research may indicate how long percolating water remains in transit after rain before resurging, and seems particularly important in areas like Mendip where less than 10% of the resurging water comes from known swallets.

The closing address by Dr. Heys summarised the ways of tracing water courses and introduced his own work with an inexpensive conductivity meter. The use of paper 'dots' punched from computer input tapes, would appear to provide an excellent modern substitute for chaff, and could be collected in cheap nets at risings.

For many this symposium was marred by the one-sided and repeated 'plugging' for the C.R.G. who had co-operated in the organisation. This was not from the scheduled speakers, but by additional 'important announcements' such as; "subscriptions may be paid to", comments about groups-who did not send their publications free to members, how much better it would be if others did not publish their results independently so denying profit to the C.R.G., and so on. Whilst we may expect this at a group meeting, an "open" symposium, for which a fee of 10/- was rightly levied, should have been free of such "propaganda". Similarly, one personally objects to the publication of the lectures and discussions not independently but in a forthcoming Transaction of the Cave Research Group. Apparently the transactions will not be available free to all who paid to attend the Symposium, as is the custom with symposia in most branches of science.

BOOK REVIEWS

A Guadalupe Sketchbook. Edited by Dorothy E. Willis III pp. + 8 drawings by Gari Davis limited edition of 100 copies. Published June 1966 by Western Cave Publications, 300 Carlisle Boulevard, N.E., Albuquerque, New Mexico, 87106 U.S.A. at \$2.00.

The Guadalupe Sketchbook is a pictorial guided tour through some of the caves of the rugged Guadalupe Mountains in south eastern New Mexico. This is typical Western country of the type often described as "great for men and horses but hell for women and dogs". The weather is hot and dry in the summer, cold and windy in the winter, and the canyons themselves are deep and inhospitable with precipitous walls and an abundance of cacti and rattlesnakes.

But, beneath this inhospitable landscape there is a world of beauty as the pen and brush of Gari Davis so excellently portray. The drawings of enormous chambers, filled with formations, convey much more than mere photographs. Truly a magnificent collection, portraying caving in a new and unique light.

SPELOS Zeitschrift des Höhlenforschungs-Club Basel.

No. 1. July 1965 20 pp. No. 2 July 1966 24pp. Price 3 DM per copy from Peter Bar, Jungstrasse 46, 4000 Basel.

The two annual magazines of the Swiss Cave Exploring Club of Baal are a most impressive addition to cave literature. Printed, and with numerous photographs, they make most interesting reading.

One of the Club's special interests is an inland lake, the Eichener See near Schopfheim. This is similar to a polje of classical karst. Most years this depression fills with water to depths of up to 9ft., and in some winters the ice is so thick that it is possible to drive a car across it. When the water disappears the area reverts to its usual role, as the Eichener football pitch! A dye test by the local cavers has failed to find where the water drains.

Other articles include the exploration of Erdmannshöhle and Pfarrhaushöhle in the Black Forest and Teufelsloch in northern Swabia.

Also included are articles on Postojna in Yugoslavia, and description of Barenhohle in the Swabian Alb and an expedition on Holloch in Switzerland.

Le Monde Secret des Cavernes by Rene Bonnardel. 80 pp. 125 black and white photos, 25 colour photos and glossary. Published by Editions Fernand Nathan, Paris, France.

This book is a further example of the type of fine quality caving book which seems to have leapt into popularity in Europe over the past few years. With its wonderful black and white and colour pictures and clear explanatory text, including maps and sections, it must surely rate as one of the finest caving books of modern times. Indeed, the fact that Norbert Casteret has written the preface speaks for itself.

This is a book written by an experienced caver whose first love is obviously cave photography, and most of the photographs illustrating this book were taken by him.

He has also included a comprehensive chapter on the exploits of that famous French caver, Martel, the man who started it all, and included in this description are a number of fine engravings showing the methods used by Martel in his early explorations.

Although Bonnardel does not omit a mention on the cave work in Italy and Austria at the beginning of the 20th Century, he goes into more detail about the work of Robert de Joly and more particularly that of Norbert Casteret, every schoolboy's caving hero. There are some impressive pictures of the Grotte Casteret, named after its discoverer, the highest known ice cave in the world.

No description of Pierre St. Martin is complete without a mention of Loubens tragic death there, and Bonnardel does not forget this, neither does he omit to mention the various expeditions to the Gouffre Berger, the deepest cave in the world.

Apart from this there is a section called simply "Exploration" containing some excellent photographs of ladder climbs which make it all look very technical and very impressive.

How can one, in such a short space describe such a good book. The photographs are of such good quality and so varied, covering all aspects of speleology, the text is so concise and informative, that this would seem to be just the book to spend those unused Christmas Book Tokens on.

Im Banne der grossen Höhle by Alfred Bögli 155 pp- 22 photos, maps, diagrams, and glossary, published by Spectrum Verlag, Stuttgart at 4.95 DM.

This is the most exciting caving adventure story ever written, one which is impossible to put down until it has been read. The title "The Enchantment of the Great Cave" is especially apt, the cave being Hölloch, or Hell Hole in Switzerland, the longest cave in the world. Although mainly a children's book it will delight young and old alike. After a brief introduction reviewing the formation of caves and the history of exploration in Hölloch, the author narrates his experiences of being trapped in this cave for 10 days.

On 15th August 1952, he entered the cave with his three companions, to resurvey a portion of cave passage. They intended only to stay underground for about 24 hours, but an unpredicted thunderstorm flooded a section of the cave cutting off their retreat. The day by day account is given in such a way that the reader is forever wondering if they will ever get out alive. Detailed surveys add to the description, giving a very clear picture of their predicament. During their sojourn they collected all the food from adjacent bivouacs, no mean feat involving trips of up to 20 hours duration. Finally the waters descended for over 40 metres, until the entombed cavers were able to make a dash for the cave entrance. Even at the entrance their troubles were not yet over, as they found the gate locked. They had been given up for lost!

POTHOLING AND CAVING - Know the Game Series by Don Robinson 40 pp. 40 figs, 5¼ x 8". Published by Educational Productions Ltd., at 3/6d.

In the past many books have been written on the techniques of exploring caves and it may be wondered whether there is room for yet another. The answer is a most emphatic "Yes!" There is a great need for a good but inexpensive manual, and this handbook adequately covers both these points. At 3/6d. it is within the range of every novice's pocket. Packed with common sense, the beginner can hardly fail to go wrong if he follows its advice.

All points of technique and equipment are covered from the type of clothes to wear, which light to use, how to rig and climb ladders, to specialist technique for rigging difficult pitches. Certainly some cavers have a definite preference for one type of lighting or specific types of clothing, but the author weighs up the pros and cons in an unbiased manner and leaves the final choice to the reader.

Accident procedure, a caving code, how to join a club and which books to read all have been included.

Don Robinson, lecturer in Physical Education at the University of Leeds is without a doubt well qualified to write on this subject and as a member of the Upper Wharfedale Cave Rescue Team he is well aware of the importance of safe caving and throughout this book the emphasis is on prevention rather than cure.

Even the so-called experienced caver will benefit from its pages. Many "tigers" still go underground without spare lights and a karabiner and waist length. Just to browse through this book and remind themselves of the caving code would save quite a few rescue call-outs.

Profusely illustrated it is a must for every novice and would-be caver.

Silently by Night by Russell Peterson. 227 pp. Biblio and Index. Published by Longmans Green & Co. Ltd., London, 1966.

The Author, a mammologist at the American Museum of Natural History in New York is also widely travelled, having lead expeditions to New Guinea and north central Australia, mainly with the object of collecting bat specimens.

His book encompasses a wide field from vampire bats to bats as a gastronomic delicacy, a full circle in fact, with, in effect, man and bats eating each other!

Concluded on page 64.