

CLUB NEWS

Just over one hundred years ago Herbert Ernest Balch was born. He became the pioneer of Mendip caving as we now know it, and around him revolved most of the caving activities in the area for the first half of this century. We in the Wessex have a special regard for Mr. Balch since, apart from much advice and guidance to individual members, he became the Club's first President, remaining so until his death in 1958. Now the Club have paid tribute to him by producing a short biography describing in detail his life's work and contributions to our knowledge of Mendip's caves. It is deserving of his memory that this booklet is probably the most lavish of its kind that has been produced by a caving club in this country. Considerable effort and expense has gone into its content and presentation. We very much hope that every member and caver will feel that they must have their own copy of this booklet. An order form is enclosed with this Journal so please make use of it at your earliest convenience. Only a limited number of copies have been printed for the moment and so you are advised to place your order soon to avoid disappointment.

The time has now come again to gather in subscriptions. This always tends to be a time of the pruning hook. To make things less painful a form is included with this Journal, and this may be sent to Tony Dingle with a cheque for 30/- (Full members) or 35/- (Joint members). Affiliated clubs are also reminded that their annual subventions are due, and that full details of their membership should be forwarded to the Hon. Assistant Secretary. The subscriptions have not been raised this year like so many things, and with the new Headquarters and a great deal of material to publish the Club ought to be all set for a successful year. It does make running the Club a great deal less hazardous if subscriptions are paid early in the year. Please try to do this now before putting away your Journal.

It would also help the Club if everyone tried to attend at least one official meet a year, even if they felt they had more interesting things to do. In this way new people are introduced to members while the communication of ideas to your Committee is encouraged and improved. Support for some trips has been at a rather low ebb of late, but they are a very important feature of the Club's activities. If you can, an offer to run a trip a year does not seem a great deal to ask of any member. A list of Club meets and other activities follows in this issue.

This number of the Journal completes Volume 10, which commenced with No. 115 in February 1968. The next volume will start in February next, and members are reminded that articles will contain Metric S.I. units as well as their Imperial equivalents. For the first time we have produced the Index to appear in the last issue of the volume. We hope that members who like to have their Journals bound will find this convenient, and thanks are due to Peter Cousins for compiling it once again. Please note that the new Editor is Malcolm Newsom, Dept. of Geography, The University, Bristol.

Much still remains to be done at Upper Pitts, and we hope that Phil Davies will be carrying on to complete the job he has done so well during the building operations. Arrangements are being made to have an up-to-date list of jobs that need doing prominently displayed. Residents are requested to make a particular effort to keep the place tidy and clean so that a good tradition is established from the start in this direction.

A complete list of Officers and Committee and appointments for the Club year 1969-70 follows on the next page of this Journal, and a loose copy has been enclosed for members' convenience. It is suggested that this list should either replace or be added to Appendix No. 3. in the Club Handbook circulated to all members. The Survey Scheme and sales of surplus publications is now being handled by Tony Philpott, and revised details of the stocks available will be published as soon as possible. Appendix 5 in the Handbook gives a good idea of what we have.

We welcome the following new members to the Club. Elected 5-10-69:-

F.J. Davies, Camp v, Neighbourne, Oakhill, Nr. Bath, Somerset.
R. Drake, 3 Charnhill Ridge, Mangotsfield, Bristol.
J.P. Falkner, 35 Hatter's Lane, Chipping Sodbury, Glos.
I. Metcalfe, Mount Pleasant Farm, Oxenhope, Keighley, W. Yorks.
M. White, 1 College Fields, Clifton, Bristol BS8 3HW.
J. Wigmore, P.O. Stores, Brain End, Dunmow, Essex.
J. Venn, 7, Cook's Folly Road, Bristol.

Elected 2-11-69:-

K. Sanderson, 69 Chanday Road, Keynsham, Bristol.
D. Ingle Smith, 70 Birchall Road, Bristol BS6 7TU.
Dr. Peter Watts, 1 St. Francis Crescent, Salisbury, Wilts.
P. Wilburn, Kingswood School, Bath BA1 5RG.

A brief report of the 1969 Annual General Meeting and Dinner appears shortly in this Journal, to keep those who were unable to attend in touch with the business discussed. More detailed formal minutes of the A.G.M. will be circulated prior to next year's meeting. Members are asked to note provisionally that the 1970 A.G.M. will be held on Saturday 17th October, i.e. the third weekend in October which is the traditional date for our A.G.M. and Dinner. With regard to the Dinner, members are asked to note the unfavourable comments about our last one in the following report, and to let us have their ideas about what could be done next year.

One of the matters discussed at our A.G.M. was the Club attitude to the newly formed national bodies, and the role of the proposed National Caving Association. Since then the foundation meeting of the N.C.A. took place on 1st November, at Clearwell Castle. However, agreement could not be reached on the voting procedure, and so this part of the constitution was left in abeyance pending discussion within the clubs and Regional Councils. We would prefer to have unanimity on matters of national significance, as indeed most clubs in the South have indicated. Our view is stated in a short statement later in this Journal, p.448. What do you think? We would like to present a clear case to the annual meeting of the Council of Southern Caving Clubs on 10th January 1970.

OFFICERS AND COMMITTEE FOR 1969-1970

President:	F.W. Frost.
Vice Presidents:	M. Norbert Casteret, Rev. C.H.D. Cullingford, Mr. C.W. Harris, Com. P.B. Lawder, Mr. H. Murrell, Dr. E.K. Tratman, Dr. F.S. Wallis.
Chairman:	J.D. Hanwell.
Hon. Secretary:	D.M.M. Thomson.
Asst. Secretary:	R.J. Staynings.
Hon. Treasurer:	T.E. Reynolds.
Gear Curator:	C. Pickstone.
Committee:	P.R. Cousins, M.W. Dewdney-York, A.E. Dingle, I. Jepson, Miss J. Murrell, H. Pearson, R.A. Philpott, D. Toombs, Mrs. B.M. Willis.
Auditor:	C. H. Kenney.
Trustees:	F.W. Frost, C.H. Kenney, P. Davies, J.D. Hanwell.

APPOINTMENTS AND DUTIES FOR 1969-1970

Members are strongly urged to direct any specified queries to the appropriate person in the following list of appointments for the current Club year:-

- 1) Hon. Secretary: D.M.M. Thomson. Pinkacre, Leigh-on-Mendip, Bath, Somerset.
Internal Club Policy
Liaison with other clubs and outside organisations
- 2) Hon. Asst. Sec: R.J. Staynings. 8 Fanshawe Road, Hengrove, Bristol 4.
Phone: Whitchurch 3689.
Access to controlled Mendip caves; keys and C.C.C. Permits.
Applications for membership.
- 3) Hon. Treasurer: T.E. Reynolds. 23 Camden Road, Bristol BS3 1QA.
Overall finances of the Club.
- 4) Subscriptions
Treasurer: A. E. Dingle. 32 Lillian Road, London S.W. 13.
Payment of Annual Subscriptions

<u>Hut Warden:</u>	M.W. Dewdney-York. 19, Alfred Place, Cotham, Bristol 2. <u>Hut accommodation and bookings.</u>
<u>Journal Editor:</u>	M.D. Newsom. East Shrubbery, Redland, Bristol 6, or Dept. of Geography, The University, Bristol. <u>Articles for publication and matters concerning the Club Journal and Occasional Publications.</u>
<u>Journal Distribution:</u>	P.R. Cousins. 3 Kinver Road, Sydenham, London S.E. 26. <u>Distribution of Journals.</u>
<u>Librarian:</u>	C.J. Hawkes. 10 Christchurch Road, Clifton, Bristol. <u>Holder of Reference and Lending Libraries.</u>
<u>Technical Projects Organiser:</u>	H.A. Pearson. East Dundry Road, Bridge Farm Estate, Whitchurch, Bristol <u>Research projects, technical equipment, etc.</u>
<u>Sales Services:</u>	I. Jepson. 7 Shelly Road, Beechen Cliff, Bath, Somerset. <u>Sales of Club stocks of ties, badges, carbide, neoprene, cap lamp spares, etc.</u>
<u>Gear Curator:</u>	C. Pickstone. c/o Upper Pitts, Eastwater Lane, Priddy, Nr. Wells, Somerset. <u>Maintenance and construction of tackle.</u>
<u>Survey Schemes and Journal Sales:</u>	R.A. Philpott, 3 King's Drive, Bishopston, Bristol 7. <u>Sales of surveys and club publications</u>
<u>Club Meets:</u>	Jenny Murrell. 1 Clifton Hill, Bristol BS3 1QA. <u>Arrangements for official Club caving trips.</u>

CLUB MEETS

<u>Tuesday 2nd December</u>	<u>Library Night</u> 1930 hrs. Organiser: C.J. Hawkes, 10 Christchurch Road, Clifton, Bristol 8.
<u>Sunday 14th December</u>	<u>St. Cuthbert's Swallet</u> 1100 hrs. Leader: Brian Prewer, East View, West Horrington, Wells, Som.
<u>Tuesday 6th January</u>	<u>Library Night</u> (as above)
<u>Saturday 31st January</u>	<u>Umpteenth Night Party</u> 2100 hrs. Upper Pitts. A collection will be made at the party to cover the costs of drinks and refreshments.
<u>Saturday 10th February</u>	<u>Swildon's Hole, Troubles Round Trip</u> 1100 hrs. Leader: Ian Jepson, 7 Shelly Road, Beecham Cliff, Bath, Somerset. (Wet suits, etc.)
<u>Easter Weekend</u>	<u>Yorkshire</u> Organiser: Alan Surrall, 216 Evesham Road, Headless Cross, Redditch, Worcs. The nucleus of a large party exists already. Please book early if you wish to join this traditional Club meet, either through Alan or Jenny Murrell.

OTHER TRIPS

Several members run regular caving or digging trips on Mendip, and are willing to have others join them:

<u>"The Friday Club"</u>	Howard Kenney arranges short trips to various Mendip caves on alternate Friday evenings. If you wish to join one of his parties please contact him for details at Tudor Cottage, Beryl Lane, Wells, Somerset.
<u>Wednesday Digging</u>	If you are a <u>keen</u> digger you might like to join the North Hill Consortium on their evening digging sessions. They meet about 2000 hrs. at Upper Pitts and, depending upon numbers, work in North Hill Swallet or Twin Titty's.
<u>Thrupe Lane Dig</u>	This is an official Club dig run by Tony Dingle. Regular weekend digging takes place. Contact Tony for further details at 32 Lillian Road, Barnes, London S.W. 13

Members organising other trips and wanting support might like to post details of their proposed caving on a notice board which is being provided at Upper Pitts. Those wishing to join any posted trip should sign up in advance and/or contact the leader concerned. In addition, if you want to organise any Club trips, please contact Jenny Murrell giving good notice so that your meet can be included on the list published in future Journals.

PROVISIONAL MEETS

The following trips will be held if there is sufficient support:

<u>Weekend in May/June</u>	<u>Devon</u> Leader: Donald Thomson, Pinkacre, Leigh-on-Mendip, Bath, Somerset.
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Weekend on Steep Holm
Weekend on Portland

Leader: Roy Staynings, 8 Fanshawe Road, Hengrove, Bristol 4.
Leader: Mike Dewdney-York, 19 Alfred Place, Cotham, Bristol 2

NOTICES

University of Bristol Speleological Society The 1969-70 Sessional Lectures are free, and the U.B.S.S. extends an invitation to anyone interested. They take place in the Little Lecture Theatre in the Department of Geography, University of Bristol, starting at 8.15.p.m. The remaining lectures of the session are:-

December 1st.	Alan Coase "Aspects of the Geomorphology of the Dan-yr-Ogof System".
January 19th	Derek Appleing "Cave Rescue".
February 2nd	Peter Fowler "Some Dark Age Problems of the Severn Basin".
March 2nd	Annual General Meeting, with an address afterwards by the U.B.S.S. President Dr. E.K. Tratman. Visitors should not attend the business meeting of course.

Council of Southern Caving Clubs

The C.S.C.C. has recently published its revised Handbook which deals chiefly with access to caves in the South, and Mendip in particular. It can be purchased through the Assistant Secretary of the C.S.C.C. Eric Catherine, 4 Christine Close, Ash, Nr. Aldershot, Hampshire. The price is 2/6d. A copy is available for the use of members in the Library at Upper Pitts.

The Annual Meeting of the C.S.C.C. will be held on Saturday 10th January 1970 at the Department of Geography, University of Bristol, starting at 2.0.p.m. Tea and light refreshments are usually available about 4.0.p.m.

There will be many important things to discuss this year, particularly concerning the formation of the National Caving Association (see "A way of doing things: the Wessex view" in this Journal). If you are able do try to get along to the meeting.

Cambrian Caving Council

The C.C.C. has recently published its first Handbook dealing fully with access to caves and other useful information about caving in the Principality.

Copies of this most useful booklet are available through its Editor and compiler Noel Christopher, Oriel Lodge, Gentle Street, Frome, Somerset, price 2/6d. A complimentary copy will be found in the Library at Upper Pitts for the use of Club members.

Cave Diving Group

The Annual Meeting and Dinner of the C.D.G. is to be held in Wells once again, on Saturday 9th May 1970. Oliver Lloyd is arranging the dinner.

Report of the 19&9 Annual General Meeting and Dinner

by

D.M.M. Thomson

These took place on Saturday October 18th last. The A.G.M. was held, as usual, in Priddy Village Hall, and was attended by fifty seven varieties of Wessex members. It began at 3.10.p.m. with the President's introductory remarks, welcoming those present, and expressing hope that everyone would join in the discussion of many important points to be raised later in the afternoon. There were many items that the Committee felt should be aired by the general membership. He also introduced the proposition, to be adopted later, that Phillip Davies and Alan Surrall were to be elected Honorary Members in recognition of their services to the Club throughout the construction of the new Headquarters. He went on to thank the Editor and all the Committee for their work throughout the previous Club year. Finally, he had to mention a sad note in recording the deaths of Wilfred Sharpe, a member until his death in 1968, and Bill Tucknott, a well known former member.

A number of points arose out of the minutes of the 1968 A.G.M. The remaining funds of the Mossdale Memorial collection was discussed and a number of suggestions made as to what could best be done with the £14. 6. 0. available. The most useful idea came from Luke Devenish who proposed a storage cupboard for the M.R.O. equipment housed at Upper Pitts. Howard Kenney also referred to the project suggested at last year's meeting; namely, that of rewriting Peter Johnson's "History of Mendip Caving" and putting the record straight on certain matters. He ventured to suggest that this had now been done since a biography of H.E. Balch was about to be published by the Club. Such a biography inevitably amounted to an early history of caving in the area. Fortuitously he happened to have with him a piece of paper suitable for inscribing orders upon, and by an even happier chance had a waste paper basket which would do admirably for collecting advanced payments for the booklet. Over fifty copies were sold there and then which gave an excellent start to getting this biography widely known.

The Hon. Secretary's Report for 1968-69 (published in W.C.C. Journal No. 125 October 1969) was taken as read, and then several matters arising were discussed. First was that the Committee had been worried about Club trips; whether these were too few or too many. After some discussion on the role of Club meets the meeting concluded that these were about right as they were. However, it was felt useful if members were encouraged to join private trips such as Howard Kenney's "Friday Club", and a notice board announcing such events was thought to be a good thing to provide at Upper Pitts. More information needed disseminating. Further discussion followed on the right size for the Committee. Many opinions were aired, but again the consensus view was that this number was about right. It was up to each Committee to fix its own quorum and standing orders. The Tackle Officer, Peter Cousins, had suggested in his quoted report that the quantity of tackle going astray each year was a cause for concern. He suspected it was lying forgotten in a garage somewhere, and some twenty feet of expensive maypole was still in Swildon's IV lying idle. It was agreed that further appeals for the return of tackle should be made, and that an "amnesty" was declared in this respect. A more obvious signing-out book was requested at the tackle store, and others suggested the individual

ownership of tethers made up by the Club. However, it was thought that the latter proposal might pose difficulties with our insurance cover and should be thoroughly investigated first. The provisions of new tackle was discussed and it was stated that we had sufficient stock to make up 250 feet of ladder by Christmas 1969. Up to the present a detailed programme of ladder and rope testing had been undertaken. Luke Devenish raised the matter of the right type of rope for various activities and needs. It was felt that those wanting nylon for climbing would probably prefer to have their own.

The matter of Journal sizes was then discussed in view of metric conversions and Post Office preferred "Continental" paper sizes. If a change were necessary economically then this should be done with the February 1970 issue commencing Volume 11. In the last year Journal costs has accounted for about two thirds of each subscription. This proportion was felt to be about right, but that it should not get any higher. Since quarto paper would still be available at relatively little extra cost, and postage surcharges were unlikely to exceed £1 per issue it was felt desirable to stick to a quarto format for Volume 11. A discussion on the location of the library ensued, and it was generally accepted that irreplaceable books should not be kept at Upper Pitts. The Librarian promised to produce an up-to-date catalogue of out books and periodicals to be published and kept at Upper Pitts.

The Chairman, Jim Hanwell then outlined the developments taking place with the formation of the National Caving Association, and other bodies like the British Association of Caving Instructors. He summarised the reasons for many peoples' misgivings about the likely outcome of growing numbers of professional and certificated cavers. The matter was generally discussed, and Howard Kenney perhaps expressed the feelings of everyone in abhorring the possibility that it might lead to further access complications should owners prefer to have visitors holding a certificate of competence. The whole business of access was already bad enough.

A number of other items, such as the scale of hut fees, the feasibility of premises in South Wales, and our role on Mendip were briefly discussed but no firm recommendations made for the incoming Officers and Committee. The impression was gained that the membership seemed happy about the way the Club was being run.

The audited accounts (circulated in W.C.C. Journal No. 125 October 1969) were then reviewed, and followed by the Hon. Treasurer's Report and comments. The report was accepted unanimously. Richard Kenney suggested employing a professional auditor, hastening to add that this was no reflection on the efficiency of our present Auditor. However, Howard Kenney pointed out that the Club could just not afford it, and that we were extremely fortunate in having a professional Accountant as Treasurer. In concluding his remarks he felt it necessary to warn the Club that retaining a dollar account in the U.S.A. might not be advisable, and that while the finances were soundly based at present this would not be so if the membership decreased significantly.

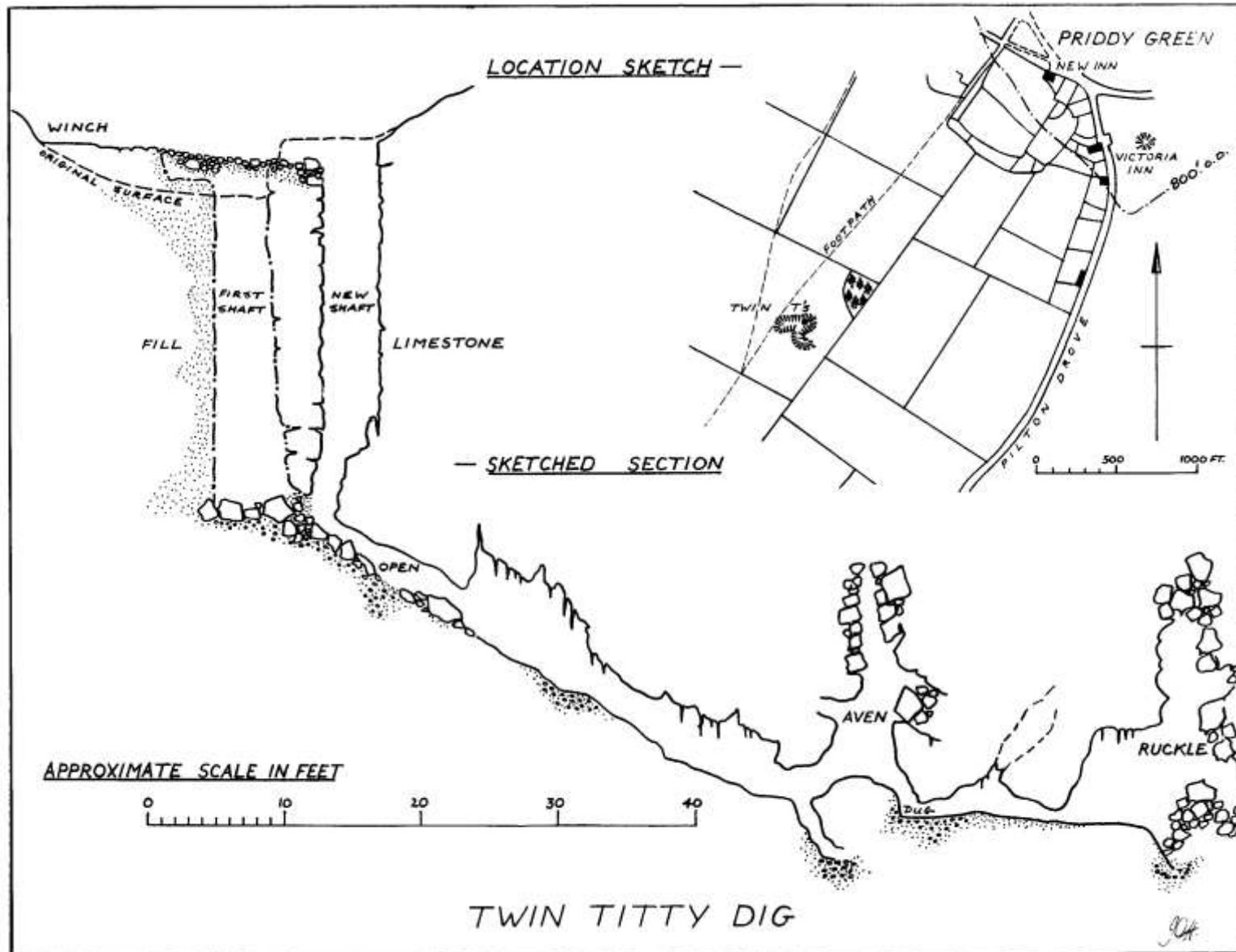
The proposition to elect Phillip Davies and Alan Surrall as Honorary Members was then put formally to the meeting without debate and accepted unanimously. Most members, particularly those who have stayed and worked at Upper Pitts, know how much both have done to get the Headquarters in a working condition.

For several years the A.G.M. has not produced an election for Officers and Committee. This year, due to there being three places vacant on the Committee, it had been felt that it was time that the general membership took a greater interest in the appointments. Thus no attempt had been made to approach members to fill these vacancies, and the meeting was asked to nominate candidates. These were readily forthcoming; Ian Jepson, Brenda Willis and David Toombs were duly proposed, seconded and elected to serve on the Committee for the coming year. (The full list of Officers and Committee for 1969-70 appears earlier in this Journal).

And, finally, with the appointment of C.H. Kenney as Hon. Auditor, a vote of thanks was given to the retiring Committee and the meeting closed at 5.40.p.m. Tea and refreshments kindly provided by Jenny Murrell and the ladies of the Club were taken.

It would give me the greatest pleasure to report that the Annual Dinner was a sumptuous feast enjoyed by the majority of the Club members and their guests, but unfortunately it proved to be an expensive disappointment. The oxtail soup tasted suspiciously of tomato, and was of that colour. The quantity of the second course, served with greasy potatoes and soggy sprouts was insufficient, and the wines, served in most cases with the sweet, bore no resemblance to those on the list, and many bottles were undrinkable. Even the revelation that in the next century Dingle Smith expected us to be paying over twenty pounds for our tickets did little to make us appreciate the meal at its present cost.

We shall have to try to make other arrangements in future. By tradition we have always held the Dinner in Cheddar or Wells areas, but we could go to Bristol. Also, it would be possible that we might do better by hiring a hall and employed a reputable firm of caterers. Perhaps members would like to write in with ideas for the 1970 Dinner.



The North Hill Consortium:
Extracts from the Report of the Directors and Statement by the Chairman

This has been a forward looking year. Since the foundation of the parent company in 1965 considerable groundwork has been achieved at the North Hill Swallet base. Details have appeared in various press reports resulting in a growing interest in the company's home assets and performance. Although there have been all sorts of unforeseeable restrictions placed on expansion, progress has been made by an increased use of technical aids. Several useful breakthroughs have been made in this direction, which reflects the greatest credit on management and research staff. However, occasional labour shortages and official stoppages have reduced production levels lately giving an opportunity to consolidate at a slightly diminished growth rate. While not unsatisfactory compared to our main competitor's stop-go output at Cheddar the Board felt it necessary to realise the company's full potential through interests in other areas.

Detailed exploratory surveys south of Priddy in 1968 led to negotiations with Frederick A. Smith holdings for the Twin Titty site. A strict contract was mutually agreed at a meeting with the Managing and Research directors; namely, that the Consortium should ensure complete security of the site and prohibit vehicular access except on justifiable business. Recently it has proved necessary to eject a foreign group behaving irresponsibly in respect of the latter. The Company have no wish to take positive action to restrict visitors, but go on record that they firmly intend to protect the interests of shareholders. Bone fide visits to the works have been welcomed and enquiries concerning activities dealt with fully as far as possible. Indeed, gratitude is expressed to all casual labourers for assistance during the early development phases. This has enabled the full productive capacity of the techniques, installations and investments, to be realised. Certainly the techniques employed seem likely to be regarded as historic for the Mendip region. Since expectations for the future may well depend on similar measures, appropriate extracts from the findings of the Technical Division follow:

"The Twin Titty shaft was sunk against a fine solid outcrop in the smaller of the depressions (see diagrams). About 25 feet of fill and boulders were removed, the unstable east and north walls being shored with palettes within a keyed framework strutted against the rock face. A magnificent old quarry winch from the redundant Nine Barrows works was acquired and renovated. Using its possible 56 to 1 gearing one man could lift substantial boulders easily via a standing derrick. After 25 feet significant gaps appeared under an arch at the foot of the rock face. Although clearly developed along the axis of a local anticline, a heady draught urged rapid downward progress. Alas, at just the wrong moment intensive rains came, a run-in occurred beneath the palettes, and framework twisted and ultimately collapsed in an unsalvageable tangle.

"However, hardened to disappointment, initial despondency soon gave way to firm resolve and different tactics. The collapsed shaft would be abandoned and a nearby parallel one blasted out the solid limestone to the west, with methods akin to those used in South Wales to sink the Tunnel Cave shaft. Luke Devenish kindly accepted the challenge and we were in business in August. The site was prepared.

"On the first weekend Luke installed his portable rig and 1 5/16-inch vertical holes were drilled as the trimmers; one in each corner and four others along the edges of the proposed 4'6" - square shaft. The first was drilled 29 feet deep in case there was a cavity at that depth. There was not, and so the others were sunk 22 feet, just short of the known arch. Each hole took anything up to two hours to drill, largely because the locally hired compressor was inefficient and the structures encountered so variable. Shattered zones and mud pockets were the main problems. Dislodged fragments frequently jammed the drill holes, pinching the steels and hindering their withdrawal, while the clay clogged the bit, blocking the flow of compressed air needed to keep the holes cleaned. One corner shot hole had to be abandoned for these reasons. Late on the Sunday the seven holes drilled were plugged with rags and the next phase planned for the following weekend.

"A pattern of four 4'6" deep inward inclined holes were drilled using hand-held compressed air tools. These holes were the easers. It was not felt necessary to sink a central sumper since the top beds at least were but 1'6" thick and comparatively "loose". 10 - 12 ozs charges were stemmed in each easer and trimmers and delay detonators were used to ensure that the centre of the shaft was lifted and broken first, so allowing the trimmers to punch the sides inwards. The circuit was wired in series (not with Cordex), being fired after livestock had been cleared from the field and everyone at a safe distance. A purpose made blast containing raft was used to minimise the spread of debris. An exploder indicating circuit continuity was used to fire the charges.

"It took about three hours hard labour to clean out the rubble and the fragments blown into the field. When that was done the whole business was repeated 4'6" lower. The greatest and most frustrating delays occurred in relocating the trimmers, cleaning them out with a compressed air "lance" and ensuring the floor was free of shattered rock likely to reblock the shot holes. Eventually this became so tedious that the original trimmers were abandoned in favour of hand drilled alternatives, and a heavy compressed air rock hammer used to square up the walls where necessary. In the event, therefore, the weekend spent drilling the long trimmers proved ineffective to a certain extent. In future this might be avoided by carefully stemming such holes with dry dune sand. Also, if it were brightly coloured this would help considerably in relocating the holes at each level.

"On the third (August Bank Holiday) weekend a more powerful two hose outlet compressor was hired from Fred Owen at Priddy. This enabled two drillers to operate simultaneously and greatly speeded up output. In addition more savage (Luke's term) charges totalling 13½ lbs were used to break the rock down to a more easily shovelable size range. This will vary a lot with the type of limestone and site being excavated. In our case it was found better to handle loose gravel rather than larger shattered boulders.

"By the end of the Tuesday following the holiday a 4'6" square shaft had been sunk 22 feet deep. In all something to the order of 250 effective man-hours were spent in achieving this; at least two people were constantly at work in the shaft, either drilling or cleaning out, with a minimum of three and later four helping and hauling at the surface. Apart from the stalwart



The Main Passage, Twin T's. Photo by Phil Romford



Typical broken pillar caused by the movement of fill on the floor. Twin T's.
Photo by Phil Romford

regulars who stuck to the task throughout a goodly number of "casuals" and visitors from several clubs provided welcome assistance. The work was noisy, dusty and backbreaking. Luke's ear protectors proved very necessary and improvised face masks were not out of place once low down. Fortunately, the weather could not have been better, but even so it is much easier to handle some 80 tons of wet rock than a similar amount of saturated mud and clay. All involved learnt a lot and left well satisfied with the effort despite aches and chattering teeth.

"Fred Owen's compressor was brought in once more to make the final push into the low arch, and then things reverted to time-honoured "rabbiting". On Sunday 12th October constrained excitement greeted the opening up of a fairly spacious inclined hole issuing forth a distinct draught. The inevitable obstinate boulder was removed to allow Mike Thompson and Jim Hanwell to slide through into a low wide sloping chamber floored with mud and boulders. A short passage was followed to a stalled-up grotto beneath an ascending aven. But, Mendip does not yield its caves easily, and no open way on presented itself. Everyone present dutifully poked around, made pronouncements and left after Phil Romford had taken the photographs which are reproduced here.

"A week later the elusive draught was relocated and followed by excavating the fill beneath the aven. Luke paid a visit, offering encouragement which paid off later since Tim Reynolds and Alan Butcher forced their way along a tight 12 foot long passage into a small chamber beneath a ruckle. The following Wednesday Fred Davies, Mike Thompson, Jim Hanwell and Ian Jepson probed around in the descending blocked rift leading off the new chamber. After struggling here and there with razor sharp fluted boulders armed with crinoid stems, they decided it prudent to leave this unstable area in favour of other likely digs at the passage approaches. So it is at the time of writing".

As shafts through solid rock are likely to become a more necessary feature of future digs on Mendip, and perhaps elsewhere, the Company have requested their Accountant's Department to prepare a cost effectiveness study of the Twin Titty and North Hill operations. A mid-term synopsis of their statement follows, subject to minor amendments:

North Hill Swallets a concrete pipe shaft through unstable ground

a) Temporary wooden shoring per 5ft. depth (largely unsalvageable)	1.	10.	0.
b) Reinforced concrete foundations, say	4.	0.	0.
c) Fuel and hire charges for mixture, say	2.	0.	0.
d) 27-inch diameter concrete sewer pipes 5ft.long	6.	0.	0.
e) Delivery of pipes to site from local suppliers	1.	10.	0.
f) Sundries, nails, small explosive charges, etc.	1.	0.	0.

Total per 5 feet of shored shaft

£16. 0. 0.

Twin Titty Dig: a 4'6" square shaft through solid limestone

a) Proportion of hire and delivery of compressor, hose and drills from local source per 5ft.	2.	0.	0.
b)... Fuel and grease		10.	0.
c) 13½lbs of explosives per 5 ft depth, say	1.	10.	0.
d) Delay detonators, say	1.	0.	0.
e) Firing cable lost per firing, say		5.	0.
f) Reinforced concrete to cap shaft, say	5.	0.	0.
g) Fuel and hire charges for mixer, say	2.	0.	0.
h) Sundries: stemming, timbers, etc	1.	15.	0.

Total per 5 feet of solid shaft £14. 0. 0.

In both cases it is assumed that labour is voluntary, similar hauling gear and tools are required, and fencing comparable. Also, for the latter, no provision has been made for the firing cable, exploder, and other necessary small items since it is likely that they will not be purchased especially for one excavation. Clearly, expenses for sinking each type of shaft deeper than 5 feet diminish proportionately. The costs of explosive in the latter are offset more than favourably by the extra timbers and pipes needed for the former; and, assuming the maximum use is made of hired plant then the solid shaft becomes relatively more economical with depth. Furthermore, solid shafts are quicker to excavate if only that the foundations for piped ones must be given chance to cure first. Finally, pipes give but 27 inch diameter access while the solid one gives a really permanent 4'6" square shaft. The economic and practical advantages of the solid shaft are unquestionably superior.

In view of these findings it seems reasonable to propose that digs are initially excavated just to reconnoitre a site. If the prospects prove encouraging then it would seem better to seek access through the nearest solid rock rather than using conventional and often doubtful shoring. In addition, the scope for using geophysical prospecting devices is considerably widened in the knowledge that solid shafts are so economical and practical.



The Exploration Party,
12th October, 1969.

Left to Right: Mike York, Mike Thompson, Jim Hanwell (seated), Tim Reynolds, Rich. West and Willie Stanton (hiding)

(G.T. Crummock's helmet is just seen emerging from the shaft)

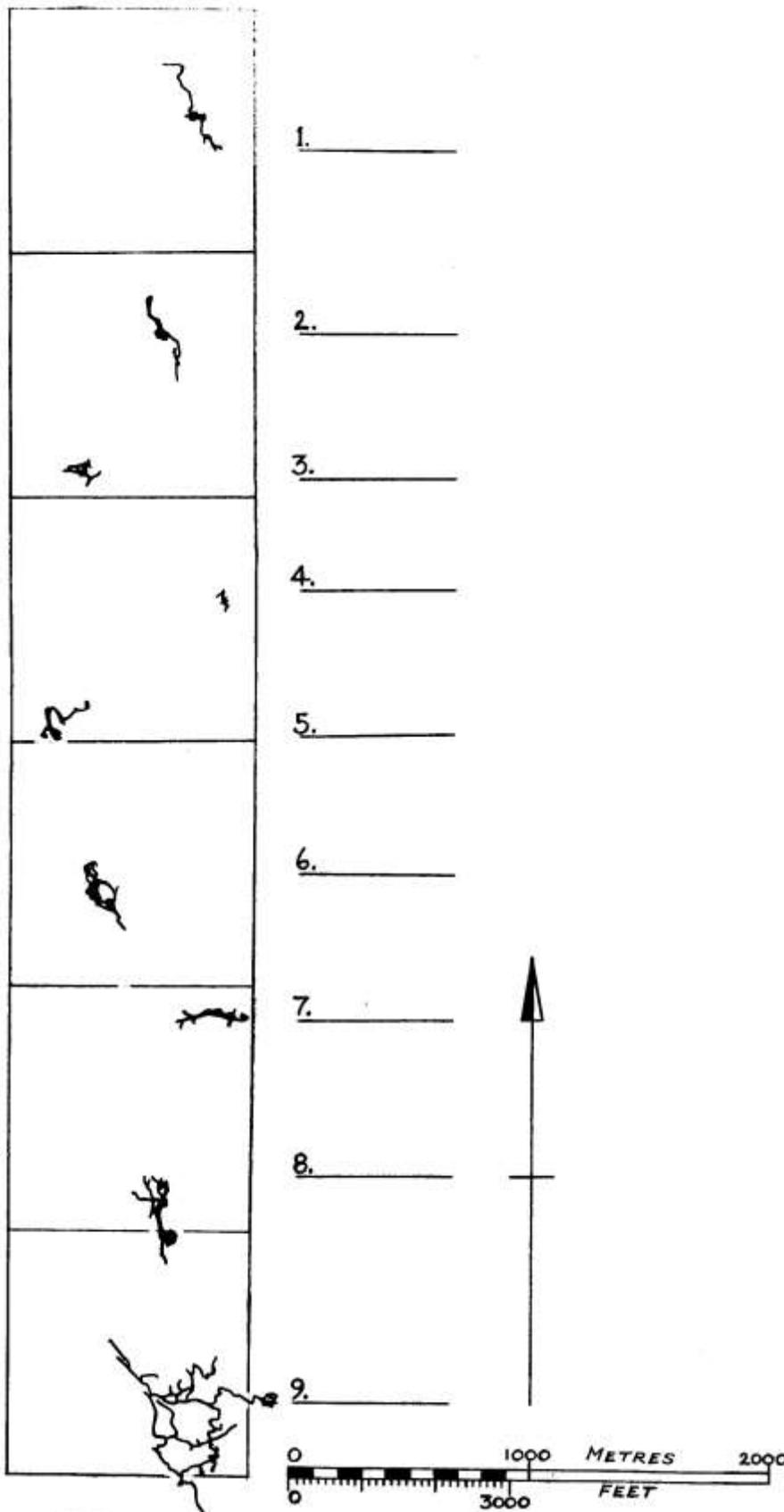
Photo by Phil Romford

Mendip's Major Caves in Miniature

The nine surveys here all at a scale of 1:25000 (about 2½" to 1 mile). Each frame depicts a Kilometre square of the Ordnance Survey Grid Reference System; all the cave plans shown appearing in their appropriate position within their respective grid squares. However, the nine systems are not arranged in any particular sequence relative to each other.

Apart from the interest of being able to compare the major systems at the same scale for once, these "miniature" surveys present identification problems. Can you name the nine caves shown?

William Stanton prepared the original drawings.



MENDIP NOTES

by Schizomycetes

All's well that ends well

It was with great shock that we all heard of the passing of the "Belfry" by fire on 15th September.

No doubt Battle of Britain Day 1969 will go down in the annals of the B.E.C. as the day many owe so much to so few. Appropriately enough the very next day Somerset's Fire Prevention Officer was due to inspect Upper Pitts. A full insurance claim would provide the right amount of cash to finance a bigger and better home for the B.E.C.

Westbury-sub-Mendip Quarry

As reported briefly in the last issue of the Journal this quarry attracted our attention for the discovery of Pleistocene remains. Recent workings along the east face of the quarry exposed an infilled rift rich in bones, particularly Bear. Press reports of rare Rhinoceras teeth aroused much interest. Operations on the face have been temporarily abandoned while Chris Hawkes, on behalf of Bristol Museum, and Trat. have worked to sort out the nature of the deposits and their significance.

It is understood that some indications of stratification have emerged, and so we hope to read their conclusions once the investigation has been completed. It appears that the rift is associated with a certain amount of localised cave development of a phreatic character.

Reservoir Hole

William Stanton returned from Portugal for a short holiday in October, and so his digging team were back in business once again. We understand that a fair amount of progress was made. At this rate Willie and his helpers should soon be licking at the underground river beneath the Gorge, and we eagerly await publication of the survey.

Rumour has it that William will be returning to Mendip permanently next year. However, we are told on good authority that Will Edwards et al will not be seeking "asylum" well away from the area. They must have resigned themselves to regular digging sessions in future.

And Derek Ford too!

It never rains but what it pours we are told. Derek Ford will also be spending a large proportion of 1970 with us. What on earth has happened to the Karst Police intelligence network in Canada? They didn't seem to know anything about this until Derek flew in on his way back from the International Speleological Congress in Stuttgart last October. One wonders what the outcome is likely to be when the K.P. are not in sole command in their manor. Still, a bit of healthy competition should prove a useful stimulus to everyone.

Home from Canada

Clutching his Jumar, Gary Pilkington returned in October after eighteen months of hectic

"spelunking" in the Americas. It was nice to see him once again on a flying visit to the Wessex Dinner, and now he is back on his ground in the Dales, no doubt preaching the gospel of prussicking.

Also on a flying visit to Swildons, before returning to Canada yet again, came Mike Boon; described by someone who bumped into him as looking "very much like a youthful George Brown" (The one in the Labour Party, not the Wessex).

Salmon Disease and Rhino Rift

The connection between the two might not seem at all obvious. However, it is understood that John Cornwell and his diggers have been asked to suspend their Rhino Rift temporarily since someone feels they could introduce this virulent disease into the river emerging at Cheddar.

Why it should be thought that caving needs to be restricted more than other activities in the area, including fishing, is a little puzzling. Surely, we are no more likely to pollute rivers than the crowds of tourists roaming the area, or through the intensive farming practises now evident on the hills. The surprisingly fast flow-through rates of percolation water on the limestone plateau generally, and its high component in resurgence discharges, are good evidence that the caver cannot be the only "rogue". Indeed, so far as our knowledge of Mendip's hydrology goes, everything points to caving as the least possible source of pollution.

It is a curious twist that cavers, who are providing most of the information about the region's water resources, are the first to be restricted when that knowledge is applied. There really seems a case for us presenting a thorough appraisal of the conservation of all resources in the area to the authorities concerned. Few are better qualified than those experts amongst the caving fraternity to give a balanced and knowledgeable view.

The future of quarrying on Mendip

Here is one aspect of the Mendip scene where Somerset County Planning Authority have consulted cavers as they realise that we have a special knowledge of the area, and positive proposals to make.

In May last Willie Stanton, Jim Hanwell and Oliver Lloyd represented cavers from the Council of Southern Caving Clubs at a meeting between Mendip quarry representatives, the planners, and other interested organisations. Briefly, the planners wisely want to formulate a policy to meet the growing economic demands for limestone and the conflicting claims of bodies anxious to preserve Mendip's natural amenities. At the meeting, and since, we have made strong recommendations to concentrate quarrying away from areas where caves would be threatened. No doubt the full details will be published one day.

It has been refreshing to have had the opportunity of stating one's case in this instance. One feels that we should make a more co-ordinated effort in other fields likely to influence caving. An example which comes to mind is the whole business of footpath revisions and access to caves. There are others.

David Willis goes caving.....

..... for the first time in seven years! Not an unusual event for a caver to come out of "retirement"

you might say, but at least some of the remarks are worth recording:

- | | |
|-------------------------------------|--|
| 1. While Changing: | "Do you mean we'll need lights?" |
| 2. On the Green: | "Excuse me, where is the cave please?" |
| 3. At the entrance: | "I can see where the water goes, now where do <u>we</u> go?" |
| 4. In Kenney's Dig: | "Howard didn't make much of a job of this?" |
| 5. Crawling in the Long Dry Way: | "Oops!" (falsetto) |
| 6. At the Forty remains: | "It's no good, we'll have to put it back". |
| 7. In the Double Pots: | "These'll have to be dug out too". |
| 8. By Sump I: | "Where's that Brecon County Council sign gone?" |
| 9. At the entrance 1½ hrs after 3): | "Thanks for coming. Is the chip shop in Wells still open?" |

Cavers don't change!

Three worthy clots

It would happen after a hectic evening at Steve Wynne Robert's "Swynnedyne"! We had even discussed the possibility of a rescue earlier on, and the reactions to rescuers appearing in such guises as Old Nick, the "Spirit of the Forty", somewhat doubtful looking "hippies", Tony Oldham strikingly adorned as a pillar of the W.I., and so on. Perhaps the beautiful full moon of 25th October would have provided a reasonable excuse. Well, it actually happened; though, fortuitously, long after most were capable of caring, or being able to do anything about it even if they had.

Doing a rapid change from his Wyatt Earp outfit, Jim Hanwell called out John Cornwell, Glyn Bolt, Stan Chappel and Bob Clouston. They met Luke Devenish and the Police about 5.0.a.m. on the Sunday in Bector Lane by Stoke Lane Slocker in order to search for three inexperienced cavers overdue by some 10 hours. They were soon found by John and Glyn, on the far side of the Muddy Oxbow at the beginning of the Pebbly Crawl, and summarily escorted out.

Perhaps the most incredible aspect of the whole saga was that the three brothers rescued had perfectly adequate lights, but had just given up trying to find their way out. One was left speechless! The only comment necessary is that they were at least aptly named - Clotworthy!

Swildon's Hole Rescue, Sunday 2nd November

David Lunan, Steve Jones, Alan Hardie and Peter Smart (all aged twenty and undergraduates at Bristol University, though not U.B.S.S. members) went down the cave about 10.a.m. to do a Double Troubles round trip. They were due out about 6.p.m., but when they had not returned to Bristol late in the evening a call-out was made. Howard Kenney contacted everyone at the Hunter's Lodge just after 10.30.p.m. Jim Hanwell organised things on the Green and a strong party of cavers were soon assembled.

Tim Reynolds and Ian Jepson made an express trip through Sump I followed by Fred Davies, Mike Thompson and Dave Causer, and shortly after Howard Kenney, who were to search Paradise Regained and the Troubles. Mike York, Rich West and Peter Franklin carried in kit and four Kingswood School cavers stood by. Fortunately, Tim thought to look along the Vicarage

Passage, and found the four stranded in Vicarage Pot. They had missed the way from The Landing into Swildon's II and abseiled into the pot before realising their mistake. Luckily their equipment and experience underground was better than their knowledge of the cave.

Tim returned for the Twenty Foot ladder and passed the details out to the surface via Howard. The two search parties met and thereafter a routine rescue followed, everyone being out by 2.40.a.m. Monday.

Perhaps the most startling facts about this rescue was the speeds of the two rescue parties in the cave:- Tim and Ian got to Vicarage Pot in about 30 minutes while Fred, Mike and Dave did the round trip in just over an hour!

And number three - almost !

On Tuesday 4th November just before eleven in the morning the Police contacted Jim Hanwell with news that a car containing caver's kit had been parked in Bector Lane Stoke St. Michael since 9a.m. the previous day. They were tracing the owner but felt a search of the cave was necessary.

Just after midday Fred Davies, Brian Prewer, Donald Thomson and Jim, followed by Jerry Lavis and Luke Devenish, were assembled outside Stoke Lane, only to find that the owner of the car was safely in residence in a caving hut just down the valley!

Now, how many of you knew that a West London caving club had a hut near Browne's Hole since the beginning of the summer? We didn't, obviously. One really feels that clubs setting up huts in the area should get in touch with M.R.O. to offer their services and facilities in the event of rescues. Clearly, a base outside Stoke Lane Slocker would be very welcome when the occasion arises.

Sponsored caving in Swildons

The somewhat controversial business of sponsored walks has now taken a new twist - camping in caves! Members of the Fourth High Wycombe Scout Troop set up camp in Tratman's Temple over a weekend in October. It is understood that each one was sponsored at three pence an hour while underground, the proceeds, appropriately enough, going to Shelter.

Now, the principle of raising money for charities is undeniably praiseworthy, but surely, in this case at least, the method is equally wrong. The end does not justify the means. This is not saying that the scouts involved were not genuinely motivated, well equipped, and suitably experienced, but that their initiative was sadly misdirected. Taking the proliferation of sponsored road walks as a base one cannot but feel apprehension should others, probably less able, attempt to emulate the High Wycombe scouts.

Yet, there is another even more fundamental aspect. With the obvious exception of show caves, those going underground do so simply as cavers. Indeed, many have camped too, but always with the specific aims of digging, exploration, and so on. Now we have had a break with

tradition, for in this case caving was not the sole or uppermost aim. It could well be argued that such ventures are not fostering the best interests of the game. Quite apart from the fact that there are not enough caves anyway, it seems a great pity to abuse those we have.

One doesn't wish to labour the point too much, but this event was monumentally ill-timed in view of the strong body of opinion which holds that cavers pollute rivers. And, why announce over the Radio what you are doing? If only the trouble had been taken to canvass caving opinion before these objections would not have proved necessary. Admittedly the owner gave his blessing, although, at the time of writing no one has yet thanked him or even informed him that those involved actually came out!

St. Cuthbert's one and a half?

All through the summer the B.E.C. have been continuing their preparations for a massive assault on the St. Cuthbert's Sump. Their plan was to build a series of dams down the main streamway, and on a dry weekend to impound the stream and bale the sump dry. Well, the sump beat them to it! Late in October it was noticed that the water level in the sump was much lower than normal. When it was examined it was found that it had drained itself somehow.

On hearing this news the joint B.E.C./S.M.C.C. Tuesday night digging teams grabbed the nearest buckets and spades and leapt into action. After a week of hard digging they had cut a channel through the gravel bed of the sump and entered a large passage beyond. Since then the sump has behaved most unusually. While generally dry, there have been occasions when it has filled up - much to the consternation of the diggers! It can be baled out fairly well from the upstream end, but on one occasion temporarily trapped an exploring party on the far side.

The new extension is a 70 feet high rift passage about 900 feet long, heading virtually due south. It does not take the normal stream since this mysteriously sinks in a small hole near the end of the sump (now really a 12 foot long duck). It is understood that this little sink also looks promising. Meanwhile the new passage is liberally coated with mud, and vast quantities of flood debris, including old buckets, etc., were found spread along it; clearly the result of the July 1968 floods. The present end is a static sump, and, although there is not too much room to make it a practicable diving proposition, just 30 minutes baling reduced its level about 9 inches.

So the B.E.C. are in an optimistic frame of mind. Spurred on by the water tracing results they are hoping for yet more big discoveries with the possible exception of Dave Irwin who sees the prospect of St. Cuthbert's expanding faster than he can survey it.

Sump rescue apparatus

On Saturday 7th November an assorted party of C.D.G, members assembled in Swildons II to test the M.R.O's long sump rescue kit and new exposure bag. Colin Priddle volunteered to be first victim. He was duly put in the exposure bag, laced up in the carrying sheet with sundry bottles and lead weights, a mask put over his face and then sunk in Duck II. He was then towed to and fro by Brian Woodward and Tim Reynolds. The demonstration passed off without incident and so there was a change of actors. Bob Lewis became the victim with Colin Priddle

and Maire Urwin as the towers. Again there were no hitches, so everyone returned to Sump I where, on the near side they found the very welcome sight of Keith Glossop, Derek White and John Wintle brewing up large quantities of soup with rolls. Thus warmed the last run through Sump I was started with Chris Hannam as victim and James Cobbett and Bob Lewis as the towers.

The whole apparatus worked particularly well, but one very important point emerged; namely, that despite their wet suits and being in the exposure bag the victims complained of feeling slightly cold. This is no criticism of the exposure bag, since without it they would have been more than slightly cold, but it raises the whole practicability of bringing an injured person (say from Swildons IV) through the sumps. Even a fit person would need to get out and run around between immersions on such a carry, and would still get very cold: it would probably kill an unconscious or badly shocked victim!

In view of the virtual impossibility of taking an injured subject through Blue Pencil, this leaves the streamway and sumps as the only route. Knowing this the M.R.O. and C.D.G. have developed the long sump rescue apparatus. We found that technically it works very well, but your scribe cannot help feeling that all this effort might be wasted if there is no way of keeping the patient warm whilst he is being moved out the cave. Protection like exposure bags and space blankets only retain what heat there is; what is really needed, however, are methods of introducing more heat. The M.R.O. must take this matter in hand seriously. On the Double Trouble rescue recently the stove taken into the cave could not be worked, and so no hot drinks were available underground. Simple and effective heating apparatus must be available, that will withstand rough usage and storage. Probably the best would be open tins with plenty of methylated spirits to burn.

Finally, a happy note

All cavers will welcome the news that "Alfie's" Spelaeodes have at last been published. These need no comment, except to say that you had better buy your copy soon from the B.E.C. to avoid disappointment.

CAVING IN THE PYRENEAN FOOTHILLS

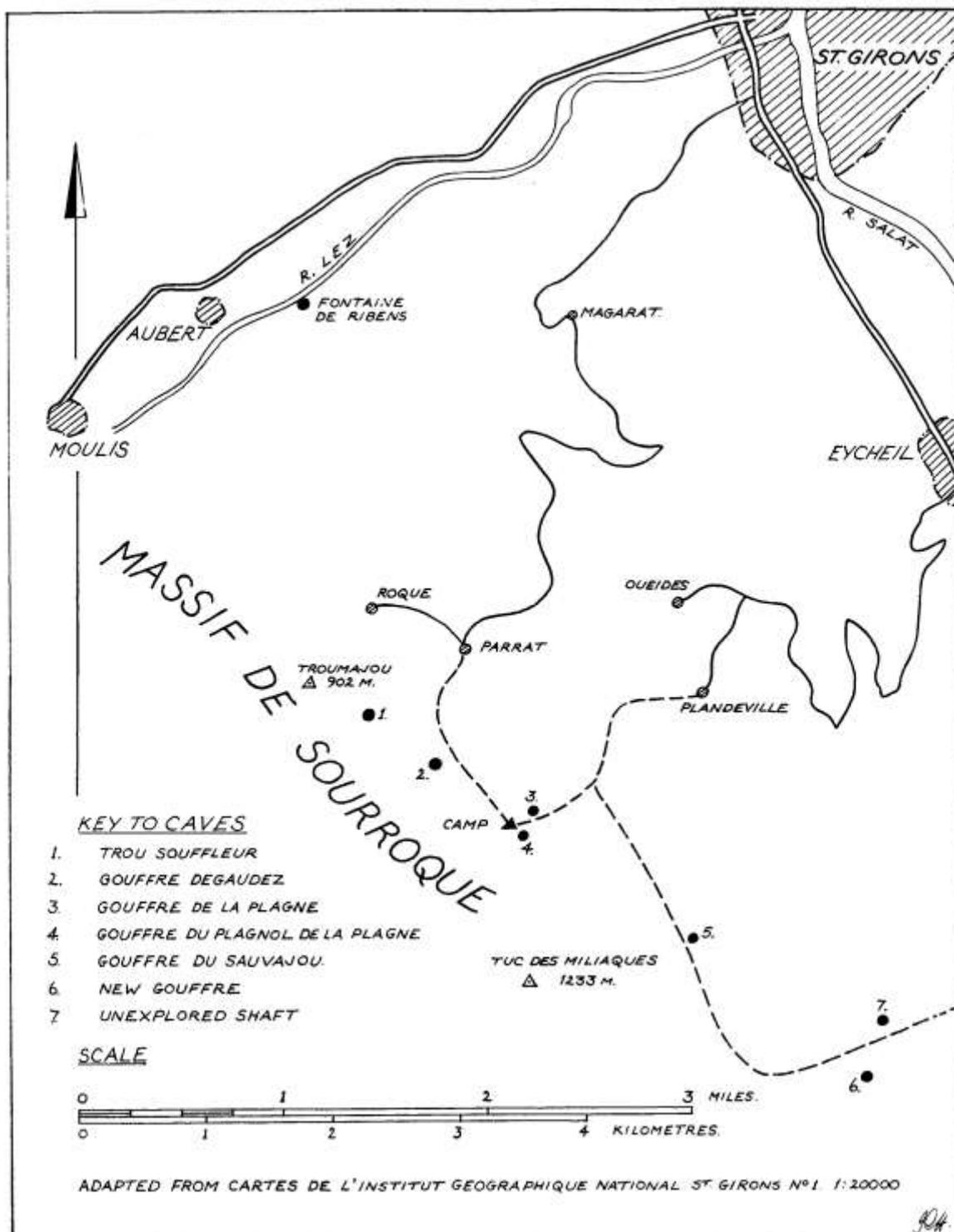
by R. Witcombe

Following our reconnaissance visit to the French Pyrenees in 1968, Dave Everett and I returned to the region this year to spend a fortnight working with the Speleo Club de la Seine and the Speleo Groupe du Couserans on the Massif de Sourroque near St. Girons, Ariège. The hill ranges of this area are characterised by a dense deciduous woodland cover, cloaking rounded summits of between 2500' and 3500' in height. Rock outcrops on hilltops and in the steep dry valleys which dissect the plateau, show the rock to be predominantly a massive Devonian limestone, with here and there shale exposures giving rise to seasonal surface streams draining to swallets. Although many of the most important cave systems on the Massif de Sourroque are entered at these sink points, there are also a good many shakeholes and larger closed depressions containing shafts and caves. Some of the largest depressions on Sourroque are found on the highest ridges, and extensive relict cave systems are known to exist just below several of the hill summits.

Serious exploration work on Sourroque started five years ago with the formation of a small club based in St. Girons in the Vallee du Couserans. Dye testing, with fluorescein, had shown that most of the plateau drainage reappeared at the Fontaine de Ribens (Alt. 1200'), an impenetrable rising close beside the River Lez, which flows through St. Girons, and it has been the ambition of the club to find and follow the master cave behind this (1). The first of the major swallets to be examined was the Gouffre du Sauvajou, an open pothole at an altitude of 2450'. Altogether 4000' of passage was explored between 1964 and 1967, descending in a series of pitches to a depth of 750'. The underground river was encountered at a depth of 660' but sumped both upstream and downstream. Neither of these sumps has yet been challenged on account of the cave's evil reputation for flooding, earned when a party of the original explorers were trapped for many hours below a wet 160' pitch in 1964.

The Gouffre Degaudez lies on the proved line of drainage between Sauvajou and the Fontaine de Ribens, and it was hoped when the cave was discovered in 1966 that it would lead down to a further section of the master cave - the "collecteur" as the French have it. This was not the case, however. It is another 750' deep system but is dry throughout and terminates in a narrow, stal. choked rift. This year the Speleo Club de la Seine who have had an annual camp in the area since 1963, spent much of their time surveying in the cave, and we were able to savour its dozen fine pitches. The usual method of descent was by Petzl descendeur using braided rope, and for the return the ladder climbers lifelined themselves by means of a Dressier brake, a device attached to the waist length which slides up a reasonably taut rope and jams in the event of a fall. These are methods which by virtue of their speed and efficiency ought to be studied more closely in Britain (2). If the French could be faulted at all it was on their ladders and belays. These seemed dangerously lightweight in some cases and were constructed in a hundred and one different ways. It was not uncommon to see ladders with slipped and even broken rungs still in service.

We were camped on the massif itself, close beside the Gouffre de la Plagne, the scene of last year's rescue operation when one of the local cavers had his left foot crushed by a rock fall 540'



underground. Later this year, explosive is to be used in an attempt to stabilise the dangerous boulder pile so that exploration work can continue. The pitches so far descended include a 90', 120' and 250' - the river lies beyond perhaps. A stone's throw from the camp kitchen and dining complex (constructed in timber at the expense of the French equivalent of the Forestry Commission) is another smaller system, the Gouffre du Plagnol de la Plagne. Here a 60' pitch leads down to a winding rift which silts up after 200'.

The French were not averse to a spot of digging now and then, which can be much less strenuous than searching for open holes in this difficult hill terrain. We helped them at a site known as a "trou Souffleur" - a hole with a draught and what a draught! The boulder obstructed entrance at the foot of a steep shakehole emitted that steady blast of cool air that all Mendip siege operators dream of. Alas, the French were not in the mood for a siege that day and after removing a few large rocks with the aid of some felled timber and an expensive looking commercial lifting device, they decided on an indefinite adjournment. Admittedly night was approaching and with it the traditional three or four hour evening meal. Around the Trou Souffleur several choked shafts and feeders were found which suggest that this will develop into another of the 700' deep systems.

Dave Everett and myself devoted much of our time to prospecting in the east of the massif, looking at the more important stream sinks. Near Sauvajou we hammered our way down a twisting rift passage and found a 50' pitch which unfortunately closed right down at the bottom. Other caves that we examined would have gone with a day or two's digging. The weather left everything to be desired, and never a day went by without at least one heavy rain storm which turned the forest paths into quagmires. Two days before we were due to leave the plateau, we came across an area of broken limestone pavements covered with a dying woodland growth. In one corner of a shallow depression a narrow tunnel led down to a small pitch, like many another in the area. Stones dropped down this one, however, rolled a little way after landing, and then continued falling for perhaps a hundred feet. We had ladder enough for the first pitch of 20' and at the bottom found ourselves in a decorated rift passage sloping away to an inviting black slit. The way on was barred by a solitary stal. curtain, easily mediocre enough to be sacrificed on the morrow in the name of speleology.

Keith Barber, pursuing an independent and more devious itinerary through France, chanced to be with us the next day for the "big push". With the curtain out of the way, 100' of ladder was lowered down the shaft and an easy descent made against a series of stal. flows. The pitch, in a rift some 15' wide by 30' long, turned out to be 90' deep. Leaving Keith at the top Dave and I followed a high, meandering continuation of the rift which after 60' brought us to a small drop of 15'. Using a ladder as a hand line, we scrambled eagerly down the slippery stal. covered rock only to find disappointment round the corner. Another short climb and then stal., rock and mud abruptly funnelled down to a hole the size of a saucer. There were similar holes in the floor further back in the passage the walls of which were thickly coated with damp mud and mud formations. As there was no hint of any water ever coming down the bone dry shaft or the earth floored upper passage, it seems likely that water from some neighbouring system rises up through the floor in times of flood. There are plenty of sinks in the vicinity associated with very large seasonal streams, but at the moment none can be penetrated for any distance on account of tons of compacted flood debris.

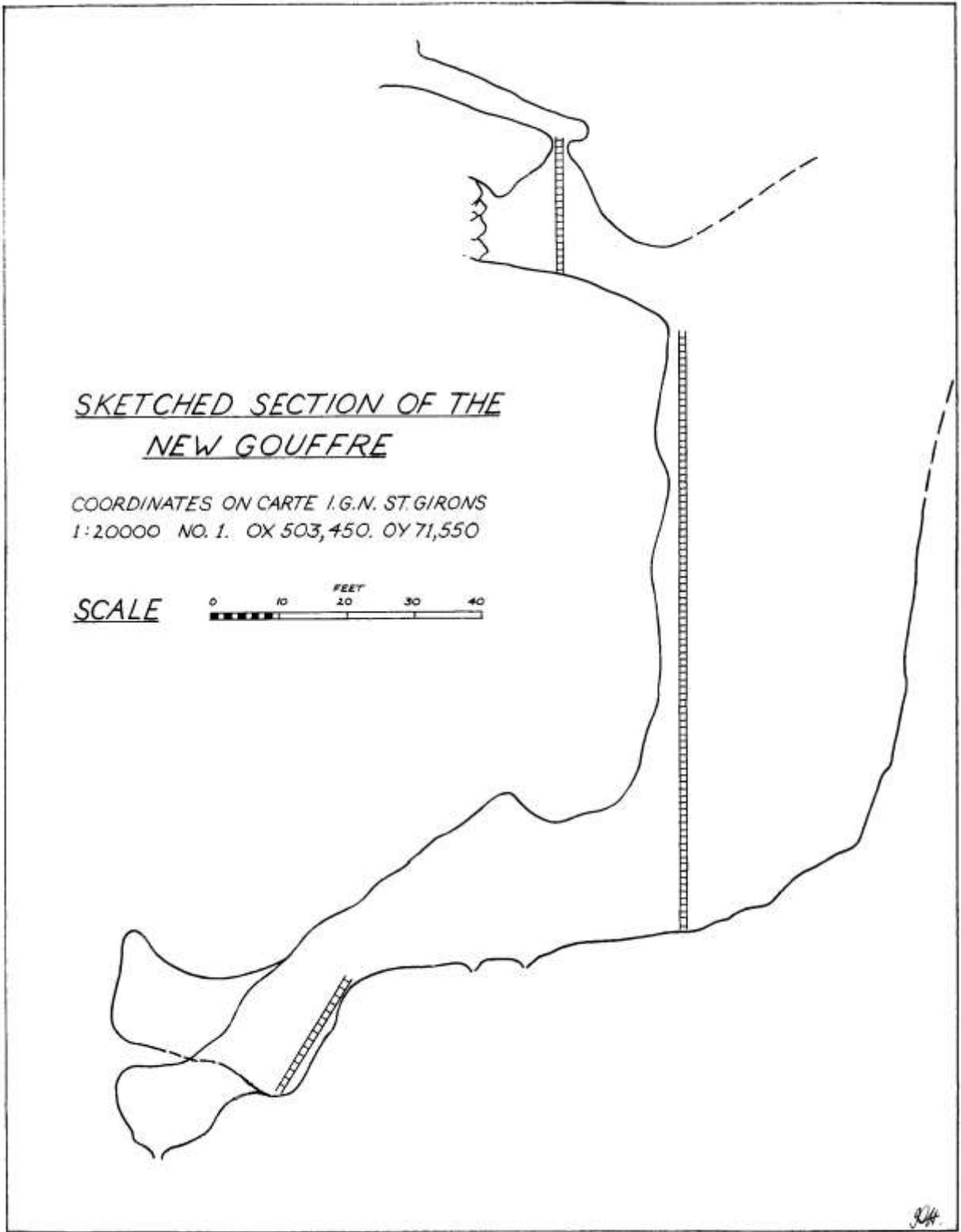
We re-emerged from the cave in pouring rain with little time or inclination left for a descent of another shaft which we had located nearby. This was a classic gulf some 40' by 20', and 30' deep, at the bottom of which a big passage could be seen leading off. Consoling ourselves with the thought that the French must have examined this one, we trudged the mile and a half back to the campsite. We mentioned the shaft when we came off the hills the next day and learnt, too late, that none of our French hosts had ever heard tell of it. No doubt the cave will still be unexplored when next summer comes round, for the absence of competition means that speleology can be taken at a very leisurely pace here. No depth records will ever be broken around St. Girons, but for those who are content with more modest exploration the region has much to commend it. Quite apart from the Massif de Sourroque there are plenty of other limestone ranges in the surrounding district, and Common Market or not the natives couldn't be more friendly. Anyone thinking of visiting the area would be well advised to contact the local club, the Speleo Groupe du Couserans, by writing to them c/o La Mairie, St. Girons, Dept. 09, France.

References

- (1) BOU C. & BOUILLON P. Sur quelques cavites du Massif de Sourroque - Annales de Speleologie 1965
- (2) EVERETT D.G. Some notes on French caving equipment - Westminster Speleological Group Bulletin Volume 6 No. 1 Jan-Feb. 1969

Short Glossary of French Topographical Terms

Clot:	A large closed depression.
Gouffre:	A cave system with pitches, or, on maps, a stream sink whether penetrable or not.
Grotte:	A horizontal cave system.
Fontaine:	A resurgence.
Poudac:	A pothole.
Source:	A spring.
Trou Souffleur:	A shakehole or choked cave entrance emitting a strong draught.
Tuc:	A peak.



LETTERS TO THE EDITOR

Bairro Nunes,
Grandola,
Portugal
September 10th 1969

Esteemed Sir,

Hosepipe Hysteria, and that nasty old Water Table

The gay and colourful phrase: "A red rag to a bull" seems likely to be superseded, any day now, by a new and grimmer one, emanating a subtle aura of oppression and implacable doom, viz.: "A Water Table to a Karst Policeman". I shall therefore exercise great caution in replying to the criticisms of the "hosepipe hypothesis" set down by those exemplary members of the Force, Dave Drew and Tim Atkinson, in No. 123 of this Journal.

Synopsis to date

I had suggested that the exceptionally fast flow rates of certain small streams (e.g. Ubley Hill Pot) might be due to their lack of power in flood time compared to the big streams (e.g. Swildon's, Stoke Lane), which show the slowest flow rates. Whereas floods in the latter scour out deep pools, leaving large volumes of semi-static water under normal flow conditions, maximum flow in the former is only enough to keep open, after the initial steep descent, a small hosepipe-like conduit, allowing rapid flow even under normal conditions.

Dave proposed two other possible explanations for apparent variations in flow rates. 1) Some streams take a direct course to the rising, others a meandering one. 2) Streams following the geological strike to the rising descend at a more regular gradient than streams following the dip, which drop steeply at first to level off and become sluggish later; flow being faster in the former case. He pointed out that some small streams flow slowly, added that a mini-channel should have its own mini-obstructions, and ended cautiously without ruling out hosepipes altogether.

Tim divided small streams into two (rather dubious) categories: fits and underfits to the caves they occupy. He supported Dave in emphasising the importance of regular gradient in both cases, and gave recent examples of small streams with fast and slow flow rates, ending in non-committal, if disapproving, vein.

Now read on

The hosepipe hypothesis was proposed as a possible explanation of the anomalously high flow rates of certain small streams, above all the one in Ubley Hill Pot, which seemed to me to be otherwise inexplicable (p. 287, last paragraph, first sentence). My accompanying digressions were inexact and woolly enough to persuade Dave and Tim that the hypothesis applied to all small streams, whatever their flow rates, a proposition which they cheerfully proceeded to demolish. Apologising for the woolliness, I can only agree with them. A small stream with a slow to medium flow rate has nothing abnormal to be explained.

A small swallet stream with a surface catchment on Old Red Sandstone or Lower Limestone Shales would not on my definition be a good hosepipe candidate if it was "simple", i.e. if it fed only one rising through a single channel. On the contrary, occasional heavy floods forcing their way along the underground route would scour out pools, etc., reducing the normal flow rate. If, however, the stream bifurcated underground, a channel with a volume-controlling constriction somewhere along its length could develop into a hosepipe. That was why I included the Ellick - Langford route. The hosepipe could even form an oxbow to the main passage through which some water could spurt ahead of the rest.

The Ubley Hill Pot stream, fastest of all, is unique in that it has no impermeable surface catchment, but consists of percolation water that collects on the wide mud floor of the Bone Chamber. You will recall, Sir, our visit to this cave in April, when you graciously opted to stay above ground to lifeline me and young Jennifer down through that horrid entrance squeeze. (When will M.C.G. put a proper entrance on this cave?) I examined the stream channel at the terminal dig and concluded that the flow is seldom if ever bigger than a domestic tap turned full on. That kind of stream, I submit, would be the most likely to develop a hosepipe.

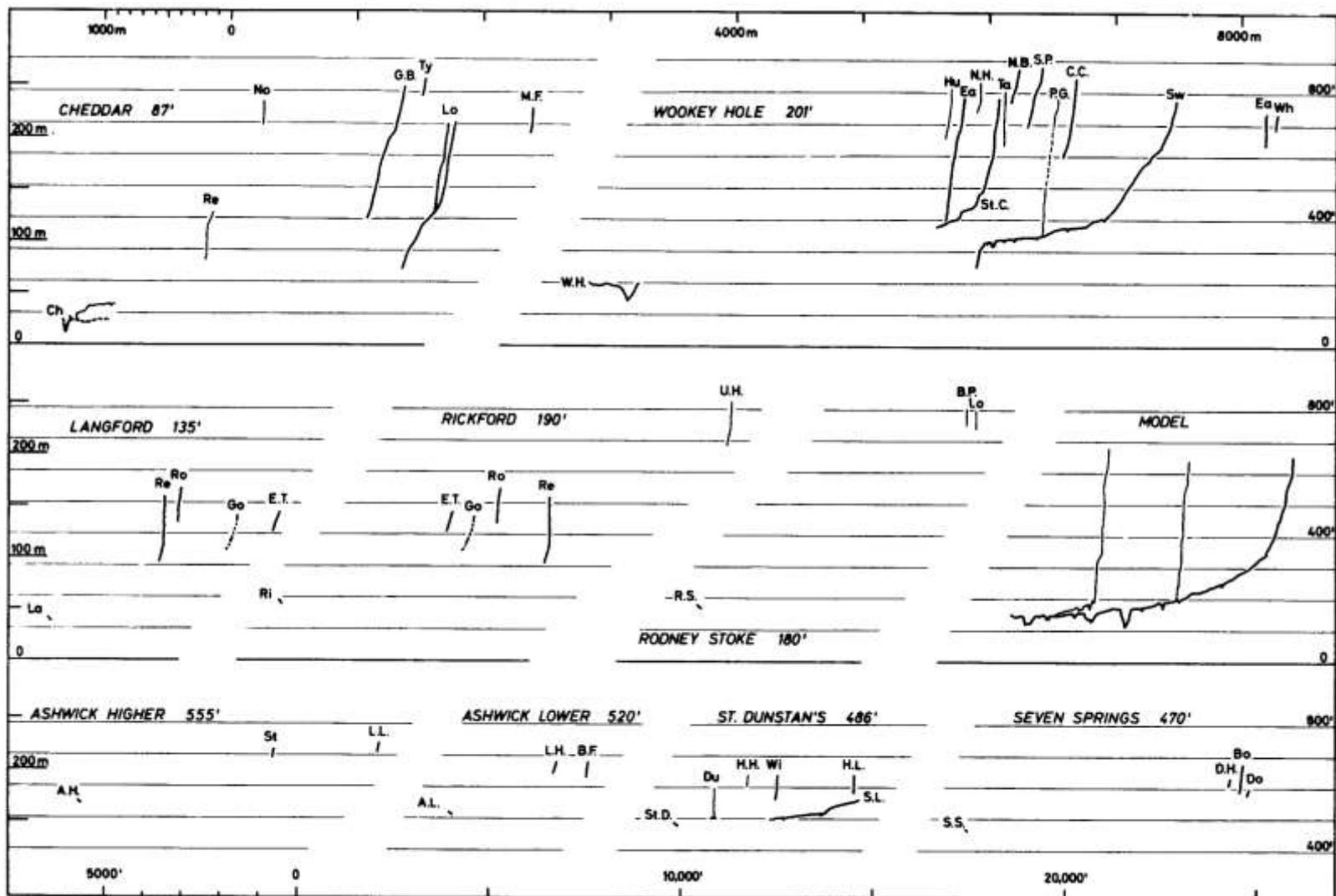
We must not forget that the full story of the "Burrington expresses" is not yet known. The fastest flow rates are all minima, as the spores were coming through before the first sample was taken.

Dave is obviously right in saying that the directness or otherwise of the swallet-to-rising route will affect the apparent flow rate, but it will not always be decisive. Stoke Lane to St. Dunstan's looks to be a relatively direct underground route, yet the flow is slow. Differences in stage must also be important, as flow will surely be quicker in flood time than in drought.

I am not convinced of the importance of the "strike-controlled regular gradient" theory, in spite of the possible statistical support for it, simply because there is little or no evidence that such waterways exist in Mendip. To search for them, spurred on by Dave's derisory reference to "the siren call" of the water table, I constructed the accompanying diagram. It shows streamway and trickle way gradients of known and supposed feeders to the main Mendip risings. To emphasise changes in gradient the vertical scale is exaggerated about 8 times. Caves are drawn true-length, but the distance between the downstream end of a swallet and the upstream end of a resurgence (e.g. Swildon's 12 to Wookey 18) is straight-line. In reality this distance must be greater than shown, and its gradient correspondingly less.

The diagram speaks for itself. Caves descending at a regular gradient from sink to rising are, with one exception, conspicuously absent. Swallet and percolation water alike drop steeply to a level of resurgence control (another desperate euphemism, Dave), where there is a more or less abrupt change to a very low gradient that persists, diminishing steadily, to the rising. One is reminded of the standard curve for surface rivers, with its mountain, valley, and plain tracts.

The abovementioned exception to this general rule is Stoke Lane Slocker. Here the underground streamway maintains a passably regular gradient from sink to rising. It is, however, merely a case of resurgence control extending the whole way to the sink, the upper steep part of the curve being absent, and this is borne out by the fact that the flow rate is not fast, but unusually slow.



THE GRADIENTS OF MENDIP CAVE STREAMWAYS

As Tim points out, conventional flow should be much slower in the low-gradient, resurgence-controlled part of the curve. Yet the figures he gives for conventional flow under optimum conditions (2000-3000 ft./hour) in Longwood's steep August Series are the same as those for Ubley Hill Pot over the whole of its course to Rickford. Clearly something unconventional must be acting at Ubley to squirt water at this speed along the extensive low-gradient tract. This unconventionality, I maintain, is likely to be a hosepipe.

In Praise of Water Tables

We now come, Sir, to the crunch, the sting in the scorpion's tail! It all depends on the accompanying diagram, with its hypothetical model of a complete system based, I think justifiably, on the evidence there display'd. Resurgence control of gradient is evident for 90% or more of the way from rising to swallet, or 99% of the way in such cases as Priddy Green Sink. Stated differently, the streamways are largely graded to the resurgences, which implies a high degree of maturity.

If this is true of the known main streamways, it is likely to be true of the unknown ones. If so, beneath the country surrounding Old Red Sandstone anticlines there must be a fair density of graded channels. And why should it not be true also of the myriad minor streams, concentrations or percolation water with no active surface swallet, that drain the limestone plateaux further away from the anticlines and, sooner or later, join one of the main routes to a rising? There is strong evidence for this supposition in the Mendip limestone quarries, which are invariably dry down to a level close above the nearest resurgence.

The picture that emerges is of a drainage system composed of many complicated channels, most of which are well graded to the resurgence. Their downstream, low-gradient, tracts will all lie in or near an imaginary somewhat irregular surface that rises very slowly in all directions upstream of the rising. It is in fact the surface, or level, of resurgence control. Above it, open-ended holes in the limestone are essentially dry; below it, they are invariably wet. Ever since Boyd Dawkins' day cavers have intuitively recognised the existence of this phenomenon, and, in their innocence, have called it the Water Table.

So far, I have merely re-stated the conventional or old-fashioned concept of a Mendip water table, provided some crumbs of new evidence to support it, and, doubtless, disfigured the handsome countenances of the Karst Police with monumental sneers. At the risk of becoming even more tiresome I would like to develop my theme a little further.

In his 1968 critique of limestone water table theories, Dave remarks (U.B.S.S. Proc. 12 (3) p.270): "The existence or non-existence of a water table in a limestone will obviously depend on the number of initially open fissures in the rock mass and their degree of integration. In the initial stages of karstification this secondary permeability is likely to be low...". As he well knows, much of Mendip was karstified in the Permo-Triassic, so the present cycle of cave development did not start entirely from scratch.

It is highly significant, in this respect, that so much of the typical Mendip cave streamway, 90% or more, is graded to the rising, because it did not develop like a surface stream by the tedious process of cutting back, but by the relatively slight modification of an initial up and down stepping phreatic conduit (the present-day sumps being slowly-shrinking remnants of the downsteps). This initial conduit was in effect graded to the young resurgence, a fact that speaks volumes. Enough interconnecting fissures must have been present for the stream to choose an economic route through them from the beginning; it suggests, in fact, that the water table was there before the cave! Having once chosen this optimum route the stream would tend to develop it into a discrete channel at the expense of all alternatives which would remain dormant and silting up - though ready to respond to any change in regional pressure gradients by leaking some of the water away from the main conduits to other destinations.

I think, Sir, that this letter is too long already, and that the fascinating potential for constructive or destructive argument inherent in the last paragraph had best be developed at some future date. I beg to remain, therefore, your humble apprehensive servant.

W.I. Stanton.

Dear Sir,

I was a little surprised recently to read in your Journal of the acute shortage of caves in the Mendip area, and also of the difficulty you have in discovering new ones. It is a little-known fact, indeed, a fact known only to myself, that certain breeds of dog are capable of locating hidden or even buried cave entrances (or exits); and, I have it on good authority that such an animal was used to discover the well-known source of hot bathwater on the north-eastern side of the Mendip Hills. (the unfortunate animal emerged from the rising at a somewhat higher temperature than that at which he went in, and the name given to it at the time by the Romans has remained with us to this day).

I discovered that some dogs possess this amazing ability when, a few years ago, in Burrington Combe such an animal lead me straight to the entrance of Goatchurch; the dog having no prior knowledge of the existence of the cave. It just stood in the Combe, seemed to lift its nose in the air, and head straight for the cave entrance. In warmer weather it did not even need to lift its nose. I have also seen dogs follow tourists into Goughs and other show caves without even realising where they are going - it really is quite uncanny.

All that is now necessary is to produce a specialised breed akin to a pointer that will align itself with the cave entrance (or exit) and remain there until its master arrives. This new species, or spelaeocanus, as I intend to call it, will be the first in a whole new underground breed able to perform many tasks which until now have been difficult if not impossible for the caver to perform, and before very long cave systems will be discovered the like of which have never been known before on Mendip. May I suggest that the new headquarters be equipped with kennels as soon as possible in order that advantage may be taken of these animals as soon as

they are trained? As well as discovering cave systems, the dogs will have many uses inside present caves, and because of their small size (not to mention the excellent training I am to give them) they will be able to pass through many hitherto impenetrable cracks and fissures. I intend to contact a well-known supplier of exposure suits, helmets and nife cells to see if I can get these animals properly equipped. Just visualise the ease with which a dog could leap a rift or other similar obstacle - I agree it would need a run-up the length of Sandford Levvy, but this could be overcome by running in circles with ever-increasing speed. Horses can of course jump further providing they get a long enough run beforehand, and I've been working on this also. I'm thinking of calling the first 'Spelaeoequinus'. It would of course have to be a sub-species.

If the dog idea does happen to fall through as a result of lack of funds I may still have something to interest you, as I am working on removal of boulder chokes using a fourteen-piece brass band, as I have found that the playing of certain notes in sequence causes vibrations to be set up in certain crinoidal limestones. I will let you know how my work progresses.

Yours etc.,
TECHNICUS.

c/o Ivor Spaniel,
The Kennels,
Barking.

* * * * *

3 Kinver Road,
Sydenham,
London, S. E.26.

Dear Sir,

With digging operations on Mendip being conducted on an ever more massive scale in search of caves I feel it is time to review some of the equipment now in use. What I have to say applies particularly to the widely used Sheerlegs and hand operated Winch systems.

For many years it has been customary to relegate worn caving or climbing ropes to digging use, and so long as only small loads were involved this appeared satisfactory. However, recent digs have tended to maximise the amounts of spoil removed per lift, and the loads involved - often over 1 cwt and sometimes nearer 5 cwt - have caused rapid failure of rope or other equipment.

Thus we should consider the requirements for raising a total load of 5 cwt vertically:

- 1) The Safe Working Load (S.W.L.) of the rope - allowing for any knots - must be at least 5 cwt.
- 2) The S.W.L. of the attachment between rope and bucket must be at least 5 cwt.
- 3) The S.W.L. of the Pulley, its attachment to the Sheerlegs, and the Sheerlegs themselves must be of the order of 10 cwt - since they are subject to the combined force of tension in both parts of the rope.

We will take these considerations in reverse order.

A pulley of Breaking Load (B.L.) 2.5 to 3 tons would be available from most Yacht Chandlers. A suitable Tufnol/Stainless Steel type would be a 'Gibb' Size 2, Ocean Yacht Block. B.L. 8,000 lb., e.g. No. 350 or No. 390. (price about £4.) Shackles to suit these blocks are available, but care should be taken where stainless steel shackles and common steel scaffold are in contact as corrosion will result.

The attachment to the bucket should ideally be by suitable shackle (B.L. 30 cwt.), but this order of load is within the capabilities of a good Carabiner quoted opening loads of 3-5,000 lbs being common.

Safe working loads of Synthetic Fibre Ropes are about 1/10 to 1/12 their breaking loads - in contrast to steel where a factor of 1/5 to 1/6 is commonly applied. But if a knot is to be included in the synthetic Rope a further factor of x 2 should be allowed. Thus, it is much better for the rope to terminate in an Eye-Splice with Thimble, since only a slight loss of strength will result. Suitable thimbles are available made from Nylon, but it must be remembered when splicing synthetic fibre ropes that at least Four full tucks should be made - and Five do not come amiss.

Ropes with a S.W.L. of 5 cwt would have a B.L. of 60 cwt. Comparative sizes and costs of ropes of this strength are:

Nylon:	1½" circ	1/2½ per ft.	B.L. 6,600 lb.
Polypropylene:	1¾" circ	7½ per ft5.	B.L. 6,200 lb.

The polypropylene mentioned is NOT 'Ulstron', which is not often produced above 1½" circ. but the Staple or Monofilament varieties. The Monofilament - sold as Marina Blue, or Marlow 'Hardy' is to be recommended on account of its good abrasion characteristics.

It must be realised that the above figures are only valid if the rope end is spliced; much larger sizes must be bought if a knot is to be used, and this would necessitate a pulley with larger sheave.

I trust that this summary will be of assistance to diggers in selecting future digging materials.

Yours sincerely,
P.R. Cousins.

Lavender Cottage,
Bishop Sutton.
25.8.69.

To the Editor, Wessex Journal

Dear Sir,

Having had Bob Lewis's recent letter (W.C.C. Jnl. No. 124 pp 350-351) pointed out to me, perhaps I may be allowed to reply on the subject of conventional route diagrams of caves.

I do not draw the same conclusions as are listed by your correspondent. Indeed, if I believed his first conclusion that 'such diagrams are not really a fitting subject for serious publications' then I would have to conclude logically that either (a) you didn't believe this statement to be true, or (b) that the Wessex Journal was not a serious publication.

I note that Bob's objections were 'silenced by a well-known caver of dubious ability'. This, of course, must be true - since the well-known caver demonstrably failed to silence him - thus proving his lack of ability. If, as I really imagine, Bob means caving ability, then the inference must be taken that a paper written by, say, a 'top of Swildons' man must be automatically ruled out of order if criticised by an 'august hole and bar' type.

On a more serious note (assuming, of course, that your Journal is a serious publication) in 1963, a group of Mendip cavers got together to pool their surveying experience and to examine the existing system for presenting cave survey data in the light of that experience. From this has grown the Mendip Survey Colloquium, and it is hoped shortly that its findings will be published as the 'Mendip Cave Survey Colloquium Handbook'.

This handbook contains a lot of drastic re-thinking on the subject in general, and one small aspect of this is the introduction of route diagrams on the lines of my recent paper to the Cave Research Group. This particular form of diagram has been put through a fair amount of practical testing and modification by a number of cave surveyors and - while it may well not 'catch on' for the reasons given in your correspondent's letter, it has, I suggest, been given much thought - more than, perhaps, has been given to the 'spelaeosigns'.

For example, the use of black (shaded) and white (unshaded) versions of the same sign in the route severity diagram is criticised - yet the second 'spelaeosign' we find to be dotted, while the 5th and 6th are shaded. More seriously, there is little development of basic signs used in a versatile manner. The sign language is analogue rather than digital.

Like any other form of cave portrayal, pioneer versions - like that of B.E.C. caving report No. 13 - will probably be improved upon as experience is gained. The system is not merely intended as a quick method of drawing the features of a cave in shorthand, but as one of the preferred methods of indicating the important features from the cavers point of view. It is not intended to supplant the sketch plan method - but a sketch plan of, say, the Rabbit Warren area of Cuthberts is not likely to show at a glance the alternative routes and their difficulties.

Might I conclude by asking for a suspension of judgement until the contents of the Handbook become generally available, and until some of the new methods suggested in it have had a fair trial?

Yours etc,

"Alfie"

A WAY OF DOING THINGS: THE WESSEX VIEW

Three years ago at the first really national meeting between the Regional Councils, the Council of Northern Caving Clubs requested everyone's support in freeing access to Alum Pot. The owner was asking for a sixpence access fee and this was disputed. Under the Regional Council's framework at the time, if the councils agreed unanimously to a course of action then it could be pursued as national policy. The C.N.C.C. felt that such powerful pressure would help them in the case of Alum Pot. We in the south did not feel this way, in fact rather the reverse. Our experience in negotiating access has led us to appreciate that in the long run the greater the pressure the greater the antagonism and the more futile the cause. Ultimately, whatever is done, one is in the hands of individual owners and so we would prefer to be friends. Since we live in a property-owning society this is the best and only way of doing things. Much as we would like to have helped the C.N.C.C. we could not lend our support. So they were left to deal with the matter locally. This is probably the best approach to access problems anyway, unless one is dealing with large corporate and government bodies.

What if our view had been overruled by a majority? Perhaps nothing. But the precedent has been established. Sooner or later, if not immediately, some owner would fight for his rights and make a fuss. Then where do we go when others restrict access, especially on Mendip? Probably we could dissociate our own view from that of the majority; although, surely this isn't what a national body is for, or wants. We envisage that the proposed National Caving Association will be fully representative with power to take united action on behalf of all cavers. It could do some very useful things so long as it does not interfere with regional practices, the action it takes coming upwards from the clubs, not downwards from the top.

Others challenge this as "naive and unworkable", or at least time-consuming, and even "out of sympathy with all democratic trends". The Wessex and Council of Southern Caving Clubs favours continuing with the unanimity principle in all constitutional and nationally important matters while, in varying degrees, everyone else insists on 75 per cent majority decisions. (We all accept the N.C.A. quorum should be "...not less than 50 per cent of the delegates [now 21] provided that each Regional Council is represented by at least one delegate"). Now, what do you think? Do let us know and attend the C.S.C.C. Meeting on Saturday 10th January 1970 at Bristol University Geography Department.

Are we being "naive" and promoting an "unworkable" view? In the last five years caving has gone a long way towards having a fully representative National Caving Association. The records show that the Northern and Southern Councils have done most to create the atmosphere from which such a body could evolve. That unanimity actually works is borne out by the "full house" at Clearwell Castle on Saturday 1st November last to try and put the finishing touches. Through majority rulings this could never have happened; we would certainly have had an unrepresentative national body not worthy of the name, or none at all.

Is it time-consuming? of course it is. Why hurry and chance not getting there? People in a hurry often find it difficult to stop, and are apt to miss useful alternative routes. Then is unanimity "out of sympathy with democratic trends"? It would be very nice to know what this really means; unless, of course, "trends" is much more significant than its adjective: it is certainly easier to

understand. Does the N.C.A. need to emulate other activities and their National bodies? One sincerely hopes not, and that it maintains a grass roots structure.

We want the body to have a head and teeth. But it must only bite when all of us want it to. Otherwise it could easily become a monster.

NORTHERN NOTES

by

A. Blick

Langcliffe Pot

Langcliffe Pot is situated on the 1600 ft. contour at the boundary of the grit cover, NGR S.D. 996-711. It was first descended in 1936 by the Craven Pothole Club. In 1954 the same club explored the 600 ft. low, wet Craven Crawl to a point where a flake reduces the air-space to a few inches. This was the known end of Langcliffe until August 1968 when the Davies Bros of the Yorkshire Underground Research Team extended the system to a length of 3,700 ft. without reaching an 'end'. This was the Y.U.R.T.'s only trip into the new section as they found it wet, gloomy and liable to severe flooding; subsequently they invited the University of Leeds Speleological Association to explore and survey the system. During the following three months the U.L.S.A. explored nearly 3 miles of new passage. Here is a description of the Caverns of Langcliffe Moor:-

The entrance shaft is 50 ft. to a large ledge after which the ladder can be hung down a dry channel for the remaining 40 ft. Two streams enter a few feet down the pitch. From the shaft a 200 ft. long traverse gives access to the stream at the start of Craven Crawl. This consists of crawling over shingle and through canals for 600 ft. Just beyond is No. One Junction where Fools Inlet enters on the right. Fools Inlet continues for 1200 ft. to a roof fall, it is all crawling.

From No. One Junction a larger passage, Stagger Passage, can be followed for 2000 ft. to Hammerdale Dub where a major inlet can be entered on the left. Downstream, the main passage continues for 700 ft. to a point where the stream deserts the passage at the Kilnsey Boulder Crawl. Two routes exist, the upper one leads to Selenite Aven which is one of the only two places where a party could sit out a severe flood.

After the 500 ft. long Kilnsey Boulder Crawl the stream re-enters from under some boulders. This is the start of the Langstrathdale Chase which continues for over 3,000 ft. to Boireau Falls Chamber and the 'end' of the system which is the only place where sandstone is seen in the cave.

A 'duck' in Stagger Passage is the start of the awkward 1,600 ft. long Strid Passage which terminates at a junction with a larger passage running from L. to R. The left hand passage leads to Slaughter Aven; this is the only other safe place when the system floods. The right hand passage continues for 800 ft. to a further junction. Downstream Skifare Inlet can be followed

back to Hammerdale Dub making a round trip of over 5,000 ft.

Langcliffe Pot is now over 3½ miles long and the trend is towards Mossdale Caverns. This takes it away from the rising at Black Keld which is 750 ft. below and 10 miles, in a direct line, from Boireau Falls Chamber. All the system is in the Yoredale Limestone and in order for the stream to reach the Great Scar Series of Carboniferous limestone it must cut through 18 ft. of sandstone, the top of which is seen at the end of the cave, through 48 ft. of Simonstone limestone, 9 ft. of Dirt Pot Grit, another 4 ft. of sandstone and 10 ft. of Blue Grit and sandstone.

Under Gragareth

A vast single cave complex, stretching from Yordas in Kingsdale to Aygill in Barbondale, exists under the fells of Gragareth, Leek and Casterton. A huge passage once carried the Kingsdale waters beyond its present resurgence at Keld Head to Leck Beck Head. Duke Street in Ireby Fell Cavern is the only accessible section of this mighty passage and for that reason any discovery in the lower reaches of Ireby is of particular importance.

During the late summer of 1968 the Northern Caving Club had no fewer than a dozen major trips beyond the sump in the Cavern; this sump is 90 ft. long with three air-bells but it is not considered to be free-diveable. Beyond the sump, Duke Street continues for the same distance again, as impressive as in Ireby One.

It was in this section of the system that an unstable boulder choke was 'pushed' and approximately half a mile of high level passage discovered including the large Juniper Cavern, 100 ft. by 60 ft. and 150 ft. high. Most of the new passage is of crawling size and one chokes only 100 yds away and in direct line with the long crawl near the 4th pitch in Ireby One. The N.C.C. have unsuccessfully dug at both ends and the prospect of a connection is reported to be small. This now brings the total length of Ireby Cavern to a little less than 2½ miles.

On August 25th 1969 two members of the U.L.S.A. discovered a new hole, as yet nameless, on Gragareth. It is 250 ft. deep containing pitches of 80 ft. and 90 ft. respectively. A boulder slope leads to a draughty choke. This, as yet, marks the end of the new pot.

Sleets Gill Gave

Since 1951 spasmodic attempts have been made by various clubs at extending Sleets Gill. After all the digging and sump-draining attempts it is ironical to think that the extension was open all the time. Near the final choke in the old cave a low crawl gives access to the Lower Stream Passage which can be followed upstream, flat out crawling, for 100 ft. to a fierce looking inlet which was not pushed until the summer of 1968 when Dave Brook of the U.L.S.A. came on to the scene. This inlet is a grim, flat out crawl, half full of rushing water for 150 ft. to the New Series. It has since been named Hydrophobia Passage.

The New Series are 2,000 ft. long and contain some unique mud formations and a large passage twenty feet wide and twenty feet high, the Ramp, which goes up at a 35 degree angle to a height of about 200 ft. Near the top of the Ramp are some very fine formations. This passage floods to

a height of over 100 ft.

Growling Hole, Kingsdale

Situated on the moor above Braida Garth, this was explored during September 1968 by Harry Long, Mike Clarke, Roger Sutcliffe and Charlie Dracup. An unstable shaft, 40 ft. deep, was opened and descended to a small boulder chamber. From here a tight 20 ft. pitch gave access to the stream passage which continued down a series of short cascades to the head of a very big pitch. This is 250 ft. deep with ledges at 130, 150 and 220 ft. The stream sinks through a boulder floor at the foot of the shaft.

In Brief

During 1968 two new pots were discovered on Newby Moss. The first, in April by the U.L.S.A., is 280 ft. deep and 900 ft. long. It is situated in the old P2 sink and has been named Newby Moss Pot. A 25 ft. ladder is required for the Entrance Pitch and this leads to a steep boulder slope after a tight bend. After a low section a chimney descent of 25 ft. gives access to an extremely tight bedding plane. Beyond the bedding plane a large passage leads to three short ladder pitches (8 ft, 20 ft, 20 ft.) and a high rift chamber. The final pitch of 40 ft. is just beyond here.

The other pot, Greys Wife Hole (NGR S.D.741-722) was discovered by the Kendal Caving Club in December. After a tight entrance section a stream passage leads to a 35 ft. pitch straight into a sump at a depth of 130ft. From here an upstream passage can be followed for over 1,000 ft. to a boulder choke near the surface.

Ayleburn Mine Cave (NGR N.Y.724-497) in the Aston area of the Northern Dales was extended by over 1 mile during the dry Easter spell by the Moldywarps Speleological Group. It is reputed to be tight at the start followed by a long section of 5 ft. high by 10 ft. wide stream passage.

During the same dry spell the B.S.A. drained the pool in Blind Beck Cave and discovered 600 ft. of passage. It is all low crawling and the last 200 ft. extremely arduous.

In June 1969 members of the U.L.S.A. discovered Hangmans Hole near Nick Pot. It is 300 ft. deep and it's 'joys' include a 50 ft. long mud duck followed by a series of very loose pitches.

A 70 ft. high aven has been climbed in Lyle Cavern (Lost Johns System) by the H.W.C.P.C. and a well decorated passage explored for several hundred feet.

Marble Pot, on the Allotment, is on the same fault as Meregill Hole and it is just possible that the water drains to Chapel-le-Dale. All water tests have been negative at both Beck Head and Austwick Beck Head. Things are not always what they seem underground.

MOROCCO 1969

by

James S. Cobbett

In the Province of Taza in the Middle Atlas Mountains, Morocco, lie two caves which have attracted speleologists since Casteret made the first explorations in the thirties. The Frioato pothole has a four hundred foot entrance shaft and the original exploration was halted after 2,100 feet by a sump. The exploration of the Chiker Cave, two miles away, also led the explorers to a sump. Both these caves have superb scenery and were fitted out with cat-walks and paths throughout most of their length for tourists soon after their initial exploration. It was realized that the two systems lay on the same fault and were heading towards each other. This, and the enthusiasm of M. Paille, the eminent Moroccan speleologist, who accompanied Casteret on the original explorations, brought a British expedition to Morocco in 1965, led by Colin Graham, hoping to connect the two systems. The expedition's divers, Wooding and Jeanmaire, passed the Frioato sump to find about two thousand feet of new passage, ending in a boulder choke. The Chiker Sump was found to be only twenty feet long, but after only 750 feet the way was blocked by a boulder choke. Another British expedition, in 1966, found a further 1,500 ft. of passage in Frioato II, ending in boulders again, but could find no way through the boulders in Chiker II. Since then various expeditions have visited the two systems, but without divers, no further progress has been made.

Last winter an Exeter University Speleological Society expedition to Morocco was mooted, and we finally arranged to take eleven people, including two divers. At the same time, Bob Campbell was organising a British Expedition and Salford Technical College Cavers were also arranging a trip to Morocco. The terminal chokes in the two caves had been surveyed as only 1400 ft. apart, so the E.U.S.S. trip, the first of the three, planned to free-dive or remove the sumps and push the chokes. We were to leave the work to the expedition's divers, should the sumps seem immovable. The other two expeditions, being diverless, planned to pass the sumps if we removed them, otherwise to survey before the sumps and look for sump bypasses.

We left on Saturday 2nd August in an adapted 1956 Commer 25 cwt van, with the expedition's name painted on the sides in four different languages. After a 'sub judice driving without due care and attention' at Ramsgate, we crossed to Calais by hovercraft and drove through France and Spain to Algeceiras, across the bay from Gibraltar. We eventually got tickets to cross to Morocco, five days later. Stopping to explore Tangiers and Fez on the way, we arrived in Taza ten days after leaving England. M. Paille greeted us and sent 'his man' with us to show us the way to the camp site at the Frioato, fifteen miles away up in the mountains. Watched by Arabs in long robes we made camp and made ready to start caving the next morning - early to avoid temperatures of a hundred in the shade at midday.

Frioato main shaft in four hundred feet deep and shaped like an inverted funnel maybe two hundred feet across at the bottom and fifty at the top. The fixed cat-walks and steps were gratefully used to descend the main shaft and from here the way leads on through a 'squeeze' - only four feet high - to a further gentle descent of two hundred feet down the floor of a vast

chamber. We followed the cat-walks and paths over deep pools, by magnificent speleothems, for over a thousand feet, to the sump. This sixty-five foot sump was passed and syphon tubes put in place to empty the sump into Frioato II. The divers, Phil Collett and I, also did some pick and shovel work, digging a trench, which should permanently reduce sump level by two feet. However, all our digging and syphoning failed to break the sump, and though we reduced its length enough for Dennis Summerbell to free-dive it the exploration of Frioato II fell to the divers. A second sump, previously recorded as 'muddy crawls', was encountered forty feet after Sump I. This was passed and a third, ten foot sump, which had previously been a duck, was met after a further five hundred feet. This led to a junction, the left hand series was followed, leading by a tortuous route eventually to survey point one of the 1966 expedition - the previous limit of exploration - in a boulder choke. Though this choke had largish holes and looked 'pushable' the divers had a quick poke around and started out, being doubtful of finding the route. We were lost for ninety minutes at one point on the return journey - our caution was warranted. This was the only trip to the far reaches of Frioato.

In the Chiker however we had more luck. A series of short pitches leads to Canal passages, static in summer, yielding noisesome stench from rotting vegetable matter carried in by the winter rains, which flood the Chiker Basin to eighty feet above the cave entrance. The entrance series leads to a junction with the main passage. This is, in places, two hundred feet high and is superbly decorated with deep gours and vast stal 'beehives' and was said by Casteret to be as fine as anything in France. To the left, after several thousand feet, the sump is reached. This was static and had a diving type Courelene line through it. This sump goes straight down seven feet, along six feet, and straight up seven feet and had previously been free-dived but once, in 1965, by Rod Stewart. We put in a rawlbolt and a thicker guide line, so six of us were able to free-dive the sump. The impenetrable boulder choke, 750 feet further on, filled a large chamber and was loose, but with fairly large spaces in it. Three hours of poking around got us to a large chamber needing a rope for descent into it, after about three hundred feet of choke. This chamber was entered and explored to an active streamway, which got too tight at both ends, though there are holes in the floor still to be examined. The survey showed one thousand five hundred feet of new passage, but at right angles to the hoped-for connection with the Frioato!

We certainly seem to have got no further on. However, we have got further in and have found a way through the Chiker boulder choke, considered impenetrable hitherto. Where one way through has been found another will be sought. We have also established that free-diving the Chiker sumps is practical for ordinary cavers so Chiker II is no longer the exclusive property of divers. To push the Frioato further, where the way on is more obvious, will need a large party of divers as the cave is too formidable for only two. Route finding in and out was the main problem encountered, but probably more trips by more divers would sort this one out.

I feel sure that the caves do connect, but doubt whether with so much untouched and promising limestone nearby, the necessary time ever will, or should, be given to this project.

TESTING CHAIN LINKS

by

P.R. Cousins

The sawn links of chain which we use to connect electron ladder lengths have rarely been known to fail, though a few unexplained instances have been reported. Whilst there is a large variation in the size chosen by clubs, this is not due to different standards of safety, but more often to demands of convenience - a criterion which the writer himself was guilty of invoking some years ago! Unfortunately, there is little published data on opening (or, more pertinently, Safe Working) loads for open as distinct from welded chain. The problem being complicated by at least three varieties of steel being available as chain from the manufacturers (See Carl Pickstone, W.C.C. Jnl. Vol.9_f No. 109, p. 135).

Recently, I was able to test samples of six different specimens of chain. Although only two sizes of chain were represented in these samples their opening loads cover a wide range, which cannot yet be completely explained.

Test Results:

on 3/8 inch dia 'C' links			on 5/16 inch dia 'C' links		
Chain	Opening Load	Mean	Chain	Opening Load	Mean
C	8.2 cwt 7.2	7.7 cwt	A	6.6 cwt 6.0	6.3 cwt
D	10.0 10.2	10.1	B	6.0 6.4	6.2
E	9.0 9.2	9.1			
F	12.2 12.6	12.4			

The tests were performed on a Hounsfield Tensometer, the 'opening load' being approximately that required to create a 1/4" opening in the link - at which point it was opening rapidly. Whilst each sample of chain is seen to be consistent the wide variation of results between different samples of chain require some explanation:-

Sample C

These links were visually of uneven size - some cross-sections being as large as 7/16". Probably second-hand chain.

Sample D

A good even galvanised chain, in use with W.C.C. at present.

Sample E

Chain bought from manufacturers in unwelded condition and later Zinc plated. Possibly residual stress remained from link forming which would be removed in normal post-welding annealing.

Sample F

This chain had been galvanised after cutting; and it is possible that it had been tempered. Although strengthening the links this tempering might also embrittle them, and is not to be recommended.

In his report Carl Pickstone quoted an opening load of 1830 lbs (16.5 cwt) for links of Grade 60 chain (B.S. 3113). On this evidence it can be said that all the above chains were of Grade 40 (B.S. 1663), which sample E is known to be in any case. Thus, the variations seen must be due to the histories of the samples C to F as suggested above.

Costs

Quotations obtained from chain manufacturers (now a year old) were as follows:-

Grade 40 links (B.S. 1663) $\frac{3}{8}$ " dia.

Ungalvanised, in welded or unwelded condition (e.g. Sample E)	4/- per ft. (or 5d each).
In Galvanised condition (e.g. Sample D)	5/- per ft. (or 6d each).

Grade 60 links (B.S. 3113) $\frac{3}{8}$ " dia

Welded but ungalvanised	6/6 per ft. (or 8d each).
Zinc plating of ungalvanised cut links - c. £1 per 100 links	(2½d each).

Conclusions

Logically the links should be as strong as the wire they connect - over 10 cwt and often nearer 13 cwt. I think that the Grade 40 links, as per sample D, have adequate strength, just: but, their use must be restricted to ladders. Loadings in single strand belays can be much higher, and belays for double lifelining pulleys must be many times stronger (shock loads up to two tons must be allowed for). In view of the simplicity of manufacture there is probably no advantage to be gained in buying other than galvanised chain, provided it comes direct from a certified proving house. Certainly, links of Grade 40 steel less than $\frac{3}{8}$ " dia. should never be used.

Acknowledgements

To Mr. Mahler of Forest Hill School for testing samples and the Westminster Spelaeo. Group who supplied two of the chain specimens.

BOOK REVIEWS

Manual of Caving Techniques by the Cave Research Group. Edited by Cecil Cullingford (Routledge and Kegan Paul) 1969. Price 84/-

In view of the problems which beset the preparation of this book, and delayed its publication by over a year, the result is after all worthwhile. Some I know were very shocked at the price, but where can you buy such a book today at just over two pence a page? In fact, is there two pence worth of information per page? The answer must be an emphatic yes, for the manual is fact-packed. If it fails at all it is in some of the opinions expressed, which are a little woolly here and there, and in some instances unsubstantiated or unexplained.

The variety of approach by the twenty-one authors is considerable. Some have been clearly written to instruct the beginner, others to explain advanced ideas to the experienced caver, and a few have effectively recorded personal findings without seeking to be directly instructive. Short of the editor rewriting all copy this was to be expected of course. Unfortunately, it lends weight to comparing one chapter against another. Perhaps one of the most marked tendencies has been for a technique or piece of equipment to be fully described and then summarily dismissed as inadequate or outdated by something better. The intention to present a complete picture is laudable, and pointing out drawbacks is essential if explained, but it can make tedious reading for both beginner and expert. In this context, a comparison between the extremes of the chapters on ladders and diving is inevitable, even if the former is more generally applicable and of greater significance while much of the latter is already well documented in other manuals. A balance between the two approaches should have been found.

One feels that the imbalance in some of the chapters might have been overcome if some had been amalgamated; for example, Chapters II (Route Finding) and VII (Moving in a Cave) could have been combined and made more concise, even embodying substantial portions of Chapter VIII (Scrambling and Rock Climbing) and the early parts of Chapter XIV (Exploring New Caves...). This would have left Chapter VIII to concentrate on more sophisticated climbing techniques, particularly artificial methods which are probably more important underground. Indeed, this topic is somewhat oddly dismissed by condemning the use of pitons in caves. This seems a little rash especially since the reader is not really told why. In much the same way Chapter XVI (Medical Aspects) might well have been linked more closely with Chapter XIX (Cave Rescue). Such rationalising might have allowed room for additional chapters on surveying and photography; two very important aspects of caving. Perhaps it was felt that both are adequately covered in "British Caving", but this is certainly not so, especially with the former these days. Another sad omission in many peoples' opinion was the lack of serious comment on weather forecasting and local services in this connection. This really should have formed an important part of Chapter IX (Water in Caves). However, it is only mentioned in the briefest terms and no references are given.

Other disappointments are fairly minor, but niggling nevertheless. Each author uses different methods of quoting references, something which could easily have been standardised, and it would have helped visually to have had more plates to replace some line drawings. No doubt expense was the chief drawback here. However, some of the diagrams included are really un-necessary. Why have the secular variation diagram (p.125) and all those circuit diagrams in Chapter XIII?

In reviewing such a book there is a tendency to overstress the shortcomings and not to give sufficient credit. In fact the overall impression and general arrangement of the chapters is very commendable. The final one on Conservation and Access is most welcome. As a comprehensive reference book on caving it is more than satisfactory, although one doubts whether it will ever be used in the strict sense of a manual. The efforts of those responsible for its publication have certainly proved worthwhile. It should sell well in this country and overseas, and in many ways is superior in approach to its more academic predecessor, "British Caving".

T.E.R.

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Exploration 1968. University of Nottingham Union (J. Hall and Sons) May 1969.

The major part of this annual report of the Expedition's Co-ordinating Committee of Nottingham University is devoted to the Speleological Expedition to the Picos de Europa, North Spain. Some 40 pages of this well printed booklet describes the activities of the N.U.C.C. on several expeditions since 1961, and last year in particular, to the less formidable regions on the coastal flanks of the Western Massif. Here they have located and explored several active cave systems; many being well over 1,000 feet. Of particular interest is the possible through trip between Cueva Los Canes and its resurgence over 4,000 feet away, the connection having been proved by a Mars Bar wrapper! It is understood that this system will be the chief subject of the 1970 N.U.C.C. Expedition to the area.

The exploration accounts are straightforward and enthusiastic with a minimum of technical terms. Even the "View of the Local Terrain....." and "Geology....." accounts are written for a wide and general readership. However, it would have helped enormously to have had a location map and perhaps a few of the cave surveys. Perhaps these are awaiting a more definitive publication - we hope so.

J.D.H.

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SHORTER NOTICES

Shepton Mallet Caving Club Journal. Series Four No. 7 June 1969.

This publication appeared late in October last. Of particular interest is the report on the Suunto Compass and Clinometer to complement Tom Wigely's article published in W.C.C. Jnl. No. 125 (October 1969), and the details of the build-up to pushing the Sump in St. Cuthbert's Swallet. Yet another collapse feature caused by the Flood in July 1968 is described.

J.D.H.

Cave Diving Group Newsletter. New Series No. 12. July 1969.

Amongst the interesting news recorded in this issue is the possibility of a new Sump Index for Mendip, and that the C.D.G. Annual Meeting and Dinner will be held in Wells on 9th May 1970. The Porth-yr-Ogof saga is reported in the usual way from the divers' logs.

J.D.H.

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Optima. Vol. 19. No. 2. June 1969. pp. 94-99. Quarterly Review of Anglo American Corporation, De Beers and Charter Consolidated Groups of Companies.

A.R. Wiilcox, a leading authority on Bushmen art in southern Africa, traces tentative links between cave paintings from Europe to the Cape. A movement from Iberia across the Sahara and southwards through East Africa is proposed.

J.D.H.