

The previous Journal was incorrectly numbered No. 139, Vol. 11.  
It should be read as No. 138, Vol. 11.

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## EDITORIAL

Flip-flop go the pages and here we are at the start of another volume. The Hon. Secretary in the 'Club News' talks about future Club policy, so perhaps I may be forgiven if I also do the same from my point of view. The first change to be noticed is of course the change in paper size. May I remind you that the demon 'Decimal' has made quarto an uneconomic size and we are forced to change to the nearest new paper size which is 'A4'. The size of this new metric paper is 11¾" x 8¼", or, for the purist, 297 mm. x 210 mm.

Those of you who wish to bind Volume 11 are asked to contact Phil Davies. The cost of this binding will depend on the number of copies to be processed. If you can't face the cost an alternative method, that I use, is to use two ring binders per volume. For example an 'East-light' Colourbel binder for A4 costs about 30p.

Now to the contents of the Journal: I hope that in future I can give you more Mendip news, for my spies are already working for me. Secondly some of our older members are at or near retiring age, and what better new occupation can there be than browsing through your diaries and memories and doing some articles on your own activities? To maintain a balanced Journal we should have some contributions from you! The next type of material is a bit more difficult to define; caving techniques and trips change over the years, and sometimes these changes occur almost unnoticed by the armchair caver or even the caver like myself who is content to travel along in the same old way. I personally didn't realise how much free diving of Sumps was going on. Any book sold to the general public, such as the 'Complete Caves of Mendip', must stress the dangers of sumping, but the Club Journal should publish details showing how these dangers are now interpreted and how often the 'new generation' of cavers regard these trips as being routine. I warn all concerned that if they won't write these articles I will have to adopt an 'interview' technique!

Lastly, all of us have now learnt the word "pollution". Caving is no longer a discrete activity, and to satisfy those of you who are interested I will attempt to keep you in touch with impinging affairs, both local and national.

### C A V E   K E Y S

As from NOW please apply for keys from:-

Mr. J. Jones 33a Dinaw Street, Nantymoel, Glamorgan.

## CLUB NEWS

Since taking over as Hon. Secretary, one of the questions which has often been put to me has been, 'What policy do you intend to follow?'. This question rather suggests that previous Secretary's have had communist, capitalist or some other political affiliations; which idea, as anyone who has read the thoughts of Choumin Hanwell will know, is totally untrue! But, to return to the original question, in my opinion the basic policy of the Club should be to try and provide the maximum caving facilities for the maximum number of members. Having spelt out this basic objective, the first problem is to put it into practice, which raises the question of - what do members regard as caving facilities? In an attempt to discover the answer to this problem I have decided to embark (in true governmental fashion) on a survey to discover how members view the Club. So, enclosed with this issue of the Journal you will (or should) find a questionnaire which if filled in will provide some basic data to assist the Committee and myself in planning Club activities and overall Club policy. It would be very much appreciated if members could fill in this questionnaire and return it to me at:

2 Beaconsfield Road, Clifton, Bristol, BS8 2TS.

For the benefit of any members who might have religious or other conscientious objections to filling in a questionnaire of this nature, I can assure them that the information revealed in this questionnaire will not be passed onto the Karst Police. I would also ask those members who immediately throw the copy of the questionnaire into the wastepaper basket with muttered curses to remember that if as a result of this questionnaire the Committee embarks on policies which appear undesirable to them, they will only have themselves to blame.

The other point which I would like to make is that a club 'gets the committee it deserves'. This is not to suggest that the Committee of the Wessex is a rabid bunch of lunatics, but is a fact of club affairs which should be borne in mind by any members who are cursing the Committee for some reason or other (not that I am aware of any!). If any member feels that there is something wrong with the way the Club is being run, then please let me, or the Chairman, or any Committee member know about it. Don't moan about your complaints to your beer mug or a passing stalactite - they can't do very much to help you. As Secretary I would far rather that members voiced their complaints so that something can be done, rather than they leave the Club in silent disgust. The structure of the Club has changed considerably over the past few years, and most members do their caving in small groups. This is, in my opinion, a trend to be encouraged since most major caving discoveries are made by small groups of cavers. But, I would like to think that all the members regarded themselves as members of the same Club, and not that members felt that the Club consisted of a Committee clique and the rest. If anyone has this feeling, can he please get in touch with me and I will co-opt him into the clique! More seriously, I would like to think that the members of the Club can attend a social function like the Club Dinner, and that there is sufficient contact between members for the majority of people members to know the person sitting across the table.

Finally, I would like to emphasise that the ideas set out above have not been caused by any major political catastrophe. I have decided to air them because, having settled myself in the 'hot seat' of the Club I find myself confronted by a lack of 'feed-back' and so decided to: a) find out what members want and b) to put over the spirit in which I intend to try and carry out the job of Hon. Secretary.

### Publication sales

There has been a reshuffle of duties in this field since the list published in the last Journal. Tony Philpott is now dealing with sales of cave surveys only. Phil Davies is dealing with both Journal back number sales and sales of Wessex Occasional Publications.

## New Members

We welcome the following new members elected to the Club:-

Elected on November 7th:-

David Eynon, West Lodge, Old Wells Road, Shepton Mallet, Somerset.

Owen Tucknott, Middle Way, East Horrington, Nr. Wells, Somerset.

Elected on December 19th:-

Miss Marion Priestley, 1 Rous Road, Buckhurst Hill, Essex.

Jonathan Savage, 20 New Road, Newtown, Montgomeryshire.

Brian Jones, 8 Meadway Court, Whalebone Lane, Becontree Heath, Dagenham, Essex.

## National Politics

Developments in the national caving political scene are hotting up with the news that the working party formed to explore the possibilities of a merger between the British Speleological Society and the Cave Research Group have reported favourably on the idea and have suggested sometime in 1973 as the target date for this merger.

The main events in the national body 'calendar' are:-

National Caving Association - Annual Meeting on Saturday November 11th, 1972 in Derbyshire.

Council of Southern Caving Clubs - Committee meeting on Sunday, September 24th, probably somewhere on Mendip.

Cave Research Group -

Symposium on Safety in Caving and Technical Aids in Caving on Saturday/ Sunday March 4/5th. This meeting is organised in conjunction with the N.C.A.

Northern Meeting - Saturday, April 22nd at Whernside Manor.

Southern Meeting - Saturday, June 17th at Clearwell Castle, Forest of Dean.

A.G.M. Probably Saturday, November 4th at Nottingham.

British Speleological Association - annual conference. Sometime in September at Bristol.

## Boxes at Upper Pitts

Rent for boxes for storing food etc at Upper Pitts is 50p per annum and was due on 1st October 1971 for the current Club year. Any boxes, the rent of which has not been paid by March 31st, 1972 will be opened, the contents raffled and the boxes reallocated to other members.

## Committee abstracts

Committee meeting held at Upper Pitts on Sunday, November 7th.

All of the 100 Nife cells purchased from Glamorgan County Fire Service had now been sold to members. Committee members were to keep a look out for any further Nife cells which might become available.

Upper Pitts. The Committee felt that since the H.Q. was basically a place of work, some degree of chaos was to be expected. In spite of this, however, it was felt that things had been allowed to slide too far in the previous year. The Committee then discussed the various jobs outstanding at the H.Q., the main ones being:-

Library - as soon as the pipework for the radiators had been removed from the walls, it would be possible to fix the panelling into position. Floors - Richard Kenney was to look into various types of floor covering for the downstairs of the H.Q.

Fencing - it was intended to plant shrubs in the present fence to start a hedge round the boundary of the H.Q. site.

Central heating - Aubrey Newport was working on a revised system of controls for the boiler.

New H.Q. extension - it was decided that the new extension was necessary since it would provide storage space for a lot of items at present lying about the H.Q. and would mean that the changing area could be enlarged.

Club Library. Discussion of this topic was to be carried forward to the next meeting when it was hoped that both Keith Barber and the Club Librarian would be present.

Subscriptions. There was a general discussion and it was generally agreed that the Journal should not cost more than between 1/3rd and 1/2 of the subscriptions received. If this was to be the case, the subscription rate for the future would be between £2.00 and £2.50.

Hut Fees. Hut fees were to be increased to 15p for members and 30p for guests as from November 12th. A 'conscience box' was to be put in the changing area, together with a notice suggesting that people not using some of the H.Q. facilities only should contribute 5p. Exhibition at Bristol Museum. Mike Palmer (B.E.C.) was acting as liaison between the Museum and cavers. If anyone had anything that they wanted to contribute, they should get in touch with Mike Palmer.

The Wessex had been invited to send a representative to the C.R.G. Committee. Pete Cousins was appointed the Wessex representative.

1972 B.S.A. Conference. Jim Hanwell agreed to supervise the preparation of a Club stand for the British Speleological Conference which was to be held in Bristol in September 1972.

\* \* \* \* \*

Committee meeting held at Upper Pitts on Sunday, December 19th. Owing to a Club Dinner the previous night, this meeting was somewhat delayed until sufficient Committee members could be carted down from their bunks (sleeping bags and all) to raise a quorum!

Club Handbook - the Hon. Secretary was to look into the current stock position of these, and organise a reprint if necessary.

Club Library. In the absence of both Keith Barber and Chris Hawkes, this item was carried forward until the next meeting.

Ogof Ffynnon Ddu and Dan yr Ogof leaders. The Hon. Secretary had been in touch with the South Wales C.C. and it was hoped to be possible to issue a revised list of Club leaders for these two caves.

Upper Pitts. The main points discussed were:-

Flooring - Richard Kenney had looked into various types of floor coverings and reported that asbestos tiles at 17p a sq.ft. was the only reasonably priced covering which would stand up to the wear involved. It was decided to lay these tiles in the hall area at a cost of £12 and see how they lasted before covering the whole of the downstairs. Wally Wilcocks was to be in charge of laying the tiles.

New H.Q. Extension - The forms to make an application for planning permission had been obtained. Malcolm Padfield was to be asked to draw up some plans.

Central Heating - Aubrey Newport reported that the system would work more economically if a second motorised valve were fitted in the central heating system. It was decided to go ahead with obtaining this second valve.

General - it was agreed that, as far as possible, the materials required for any jobs advertised in the Journal as outstanding at the H.Q. would be readily available at the H.Q.

Club Administration. The report produced by the Hon. Secretary was discussed and was approved. It was felt that the Club could obtain considerable benefits by owning an Addressograph, and Committee members were asked to look out for an Addressograph using stencils which was going cheap.

Club Activities. The Hon. Secretary expressed the opinion that one of the troubles with Club Activities was that no one really seemed to know what type of activities members wanted. In an attempt to remedy this he proposed to send out a circular with the February Journal. This was agreed to in principal by the Committee. The difficulties caused by the Journal deadlines were then discussed. At present there is at least a month between the deadline date

and the appearance of the Journal. This delay makes Club News very stale and also makes it difficult to programme Club Trips. The Hon. Secretary suggested that a news sheet should be circulated in the month between the Journal appearing. After a little discussion it was agreed that this was not practical because of the cost involved. Richard Kenney agreed to see what could be done to reduce the deadline for Club News.

1972 Annual Dinner. Richard Kenney was making enquiries about possible venues for this event.

### Club Activities

Sunday, February 6th. Lamb Leer. Meet 8.00 a.m. at the roadside by the cave. Leader: Brian L. Milton, 'Hazeldene', Clutton Hill, Clutton, Nr. Bristol, BS18 4QF.

Saturday, February 26th. Dan yr Ogof. Meet 10.00 a.m. at the S.W.C.C. Hut at Penwylt. This trip will be an attempt to push in 'The Far North', some five miles from the entrance. Leader: Tim Reynolds, 2 Beaconsfield Road, Clifton, Bristol, BS8 2TS.

Sunday, March 5th. Swildons 4 (via Blue Pencil). Meet 7.30 a.m. Priddy Green. Wet suits and Nife cells advisable. Leader: Brian Milton, address as above.

Saturday/Sunday, March 18/19th. Yorkshire - MereGill Names to: Ian Jepson, 7 Shelley Road, Beechen Cliff, Bath, Somerset.

Easter, Co. Clare, Ireland. An area with all the ingredients of a successful caving holiday - easy walk-in caves, superb beaches, pubs that stay open all day, Guinness. Names to: Aubrey Newport, 87 Bonnington Walk, Lockleaze, Bristol BS7 9XH.

Sunday, April 2nd. Longwood/August. Meet 7.30 a.m. at the 'triangle' road junction. Wet suits advisable. C.C.C. permits essential. Leader: Brian Milton, address as above.

Sunday; May 7th, Stoke Lane 1 & 2. Meet 7.30 a.m. at road lay-by. Wet suits and Nife cells advisable. It is planned to do some photography in Stoke 2. Leader: Brian Milton, address as above.

Saturday/Sunday May 20/21st. Portland weekend. A weekends lazy caving on Portland Bill. Names to: Mike York, 'Oddset', 19 Alfred Place, Cotham, Bristol 2.

Sunday, June 4th. Eastwater. Meet 8.30 a.m. at Upper Pitts (try not to wake the inmates). Leader: Brian Milton, address as above.

Sunday, July 2nd. Swildons - Troubles Round Trip (return via Sump 1). Meet 7.30 a.m. on Priddy Green. Wet suits and Nife cells advisable.

August. Picos de Europa, Northern Spain. Mike York intends to return to the area visited by the Wessex last year. During last year's trip two new caves were discovered and there is a very good chance of finding a lot more. So, anyone interested in doing some original cave exploration in superbly mountainous area, get in touch with Mike York, address as above.

Saturday, October 21st, A.G.M. and Dinner.

The following slide shows will, it is hoped, take place sometime during the coming year:-

- |              |  |
|--------------|--|
| Will Edwards | - the Himalayas and Annurpurna. Saturday April 15th. |
| Alan Fincham | - some recent caving developments in Jamaica.        |
| Phil Davies  | - Stromboli.   |

The 'Friday Night Club' meets fortnightly. For more details write to the Editor. Diggers are wanted by Big Willie on Wednesday evenings - Dr. W.I. Stanton, Kites Croft, Westbury-sub-Mendip, Wells, Somerset, and by NASA on the same evening at Rock Swallet.

'Friday Night' meets

Friday February 11th Priddy 7.30. Swildons North West Stream Passage.

Friday February 25th 7.45. Giggle trip to Goatchurch and Sidcot.

Saturday March 11th South Wales. Names to the Editor.

Friday March 24th 7.30 meet lower down from Horseshoe Bend Long Hole and Great Oones Hole.

Friday April 7th Saltford Stone Mines. Names to Editor.

Friday April 21st 7.45 Coral Cave. Meet on Cross to Compton Bishop Road at turning to Bourton Farm 410549.

Richard Kenney

### GROTTIFFI

Can 139 be 138?  
Big Willie's plan, on 340,  
Says all we need to know,  
Will be revealed, at later date,  
In 138,  
But printed 'tis, for all to see,  
In the journal numbered subsequently, (ouch!)  
138,  
Is, in the index of the tome,  
Given a December date,  
Which date appears to have a home,  
On 139,  
Which, by all concepts of time,  
Should be the first in line,  
Of Volume 12,  
So delve.  
And, to make records plain,  
Explain.

Geoff Roberts.

Cavers, thus Wessex Editors, are notoriously numerically illiterate.

In Swildons  $40 = 32$  and  $20 = 15$ .

In Eastwater  $90$  twice =  $60$  twice

and you quibble about 1!

## NATIONAL CAVING ASSOCIATION

These notes have been compiled from the Minutes which were sent to me by Oliver Lloyd.

The Annual Meeting was held on 30th October 1971 at Whernside Manor, Dent, Yorkshire, the hosts being the Council of Northern Caving Clubs. Delegates were present from:-

Cambrian Caving Council  
Council of Southern Caving Clubs  
Council of Northern Caving Clubs  
Derbyshire Caving Association  
Cave Research Group  
British Speleological Association  
William Pengelly Cave Studies Trust  
British Association of Caving Instructors  
Cave Diving Group  
Apologies from Grampian Speleological Group

The results of the meeting can be summarised as follows:-

1. The NCA will look into the possibility of producing a national caving code.
2. The Conservation and Access Group of the NCA will meet in Jan 72 to discuss the results of previously circulated questionnaires.
3. Further feasibility studies are being done concerning the next International Congress of Speleology. Sheffield has been suggested as a suitable site.
4. Amendments were made to the Constitution. The revised one follows these notes.
5. The following Officers were elected:-  
Chairman R.R. Glover  
Hon. Sec. Mrs. J.E. Potts  
Hon. Treas. J.R. Sutcliffe  
Members J. Wilmut and F. Murphy
6. The next A.G.M. will be held on Saturday Nov. 11th 1972 and Derbyshire Caving Association are the host region.
7. The annual subscription is £4 per constituent body.
8. The NCA will formally apply to the Sports Council for official recognition (An enabling act so that financial aid can be applied for).
9. The Secretary suggested that NCA should provide information sheets which deal with all aspects of caving and include details of equipment, materials, tackle and their sources, and instructional films which would be of use and interest to a wide group of people.

### Duties of the Executive Committee, 1971-72

CHAIRMAN  
Mr. R.R. Glover  
West Penwith  
Over Kellet  
Carnforth  
Lancs.

The Chairman will Chair meetings of the Executive and of the Association. He will also act as the Association's representative and spokesman when necessary.

HONORARY SECRETARY  
Mrs. J.E. Potts  
3 Greenway  
Hulland Ward  
Derby DE6 3FE

The Honorary Secretary will deal with the general correspondence of the Association and will maintain its records and convene meetings of the Executive Committee and of the Association. She will also act as the Association's representative and spokesman when necessary.

HONORARY TREASURER

Mr. J.R. Sutcliffe  
16 Rylands Grove  
Bingley Road  
Bedford BD9 6HJ

The Honorary Treasurer will deal with the monies of the Association and keep the accounts. He will deal with requests for grants concerning the Association and will act as the Association's representative and spokesman on financial matters.

2 ORDINARY MEMBERS

Mr. F. Murphy,  
'Sandlehills',  
149, Station Road  
Fordingbridge,  
Hants.

Mr. J. Wilmut  
38 Grosvenor Road  
Bath BA1 6BA

In addition to their normal activities as members of the Executive, for the year 1971-72 the Ordinary Members will be carrying out the following specific work on behalf of the Executive and the Association:-

Mr. Murphy will be compiling facts sheets on suppliers of caving tackle and wetsuit materials for the information of enquirers to the Association.

Mr. Wilmut will be acting as convenor for meetings of the Association's Conservation and Access Group and will be editing the report which the Group is compiling.

Have you bought your copy of the 2nd Edition of the Complete Caves of Mendip? You can get it through local booksellers, at Hunters Lodge or by post from:-

Cheddar Valley Press,  
Cliff Street,  
Cheddar, Somerset.

Price:- £1.20

£1.29 by post.

# NATIONAL CAVING ASSOCIATION

## CONSTITUTION

1. Name. The body shall be called the National Caving Association.
2. Definition. The Association is a federation of representative caving groups each of which is autonomous in its own area. The Association shall have the power to deal with matters of national importance.
3. Aims
  - 3.1 To foster the sport of caving and the scientific study of caves.
  - 3.2 To support the constituent bodies in ensuring and maintaining access in accordance with regional practice.
  - 3.3 To support cave conservation through the constituent bodies.
  - 3.4 To promote the exchange of information between cavers.
  - 3.5 To make contact with other national bodies.
  - 3.6 To provide information on behalf of its constituent bodies.
4. Membership
  - 4.1 Membership shall be open to any constitutionally established body which is representative of a caving region, to caving scientific bodies and to any other constitutionally established body which is nationally representative of a particular aspect of caving.
  - 4.2 Representation at the Association's meetings shall be four delegates from each of the regional councils and one delegate from each of the other constituent bodies.
  - 4.3 Applications for membership shall be put before the Annual Meeting. Anybody accepted by the Association as satisfying the conditions stated above (4.1) shall become a member.
5. Officers and Executive
  - 5.1 The Association shall have an Executive Committee composed of a Chairman, an Honorary Secretary, an Honorary Treasurer and not more than two Ordinary Members.
  - 5.2 All correspondence of the Association shall be carried out with the knowledge and consent of the Honorary Secretary, who may enlist assistants as he thinks fit.
  - 5.3 The Executive Committee shall be elected by ballot at a Meeting of the Association, to serve for one year. Retiring Committee Members are eligible for re-election. Members of the Committee shall be elected regardless of the constituent body to which they belong. Nomination may be made at the meeting but the consent of the nominee must be obtained.
  - 5.4 The Executive Committee shall have the power to deal with matters concerning the national interests of the Association, within the terms of reference given it by the Association. It shall be bound by the aims and Constitution of the Association.
  - 5.5 The Executive Committee shall meet at least once a year.
  - 5.6 A member of the Executive Committee may be removed by a meeting of the Association.
6. Meetings
  - 6.1 The Association shall meet not less than once a year, the Annual Meeting normally to be arranged by each of the regional councils in turn.
  - 6.2 A quorum at all meetings shall consist of not less than 50% of the delegates provided that each regional council is represented by at least one delegate.
  - 6.3 The regional council acting as hosts shall provide an independent chairman and recorder for the meeting in addition to their four delegates. Neither chairman nor recorder shall be entitled to vote.

- 6.4 A special meeting shall be called if this is requested in writing by not less than three of the constituent bodies. In this case not less than 12 weeks notice shall be given to all members.
  - 6.5 At least 9 weeks notice shall be given to the Honorary Secretary of any matters to be raised at a meeting of the Association.
  - 6.6 An emergency meeting may be called by the Honorary Secretary with only two weeks notice. Only the subject giving rise to the emergency may be discussed.
7. Procedure
    - 7.1 An agenda shall be circulated to the constituent bodies by the Honorary Secretary, not less than 7 weeks before any meeting of the Association, to give notice of the date and place of the meeting and the subjects to be discussed.
    - 7.2 Minutes shall be kept of all meetings of the Association and these shall be circulated to all the constituent bodies.
    - 7.3 When a vote is taken each delegate present shall have one vote.
    - 7.4 A motion on constitutional matters shall be passed if not less than 90% of those present and voting are in favour.
    - 7.5 A motion of any other matter shall be passed if not less than 75% of those present and voting are in favour.
  8. Finance
    - 8.1 The expenses of the Annual Meeting shall be borne by the regional council acting as hosts.
    - 8.2 An agreed subscription shall be levied at the Annual Meeting, the sum to be sufficient to maintain the work of the Association.
    - 8.3 The Association shall have the power to raise funds from other sources.
  9. Amendments to the Constitution
    - 9.1 The Constitution may only be amended at an Annual Meeting or at a Special Meeting called for the purpose.
    - 9.2 Full details of any amendments to be considered shall be circulated to the constituent bodies at least 7 weeks before the meeting.

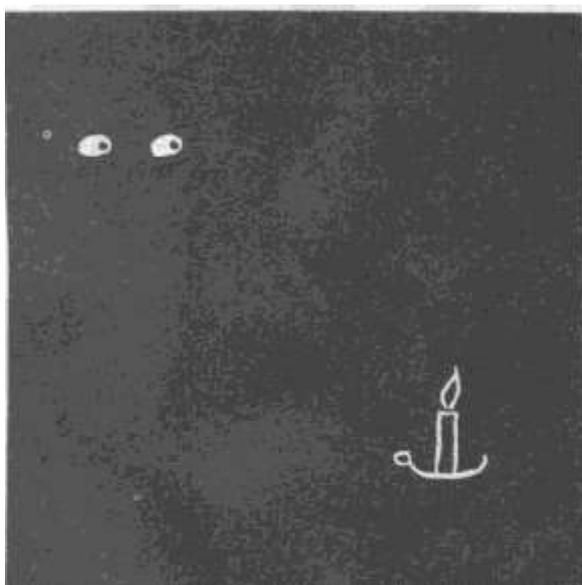
Originally accepted at the Annual Meeting of 1st. Nov. 1969. Subsequent amendments of 31st. Oct. 1970 and 30th. Oct. 1971 incorporated.

## A SHORT HISTORY OF CAVE PHOTOGRAPHY

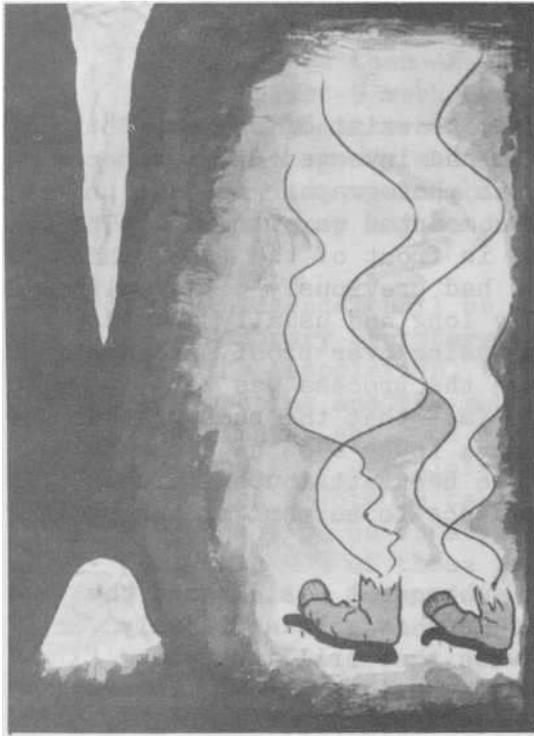
by Spelaeophot

No bromide prints of caving activities seem to exist of the pre-18th Cent. Era, possibly due to the fact that no one had invented Bromide paper. The first cameras were too large for the serious photographer to take underground and the early systems used a simple lens mounted on a tripod. The photographer made animal shapes with his hands in front of the lens, which projected this image on the cave wall which he had previously coated with a sensitive emulsion. Exposures were unavoidably long and usually caused digital cramp. The images were then developed using over proof mead applied with a large ox-tail used as a brush. Although the process was very inferior it survived for many years due to the fact that the photographer became so inebriated that he could not see what a lousy mess he had made of things. For many generations such pictures have been attributed to cave painters but in spite of a growing lack of evidence to support my theory it would be a pity to discount it altogether.

Size and weight was still a problem with subsequent designs and the heavy glass plates that these cameras required were fragile and easily smashed underground. It was not until 1925, when that brilliant young German invented the 35mm saucer, that there was a serious attempt to break away from the bulky plate systems.

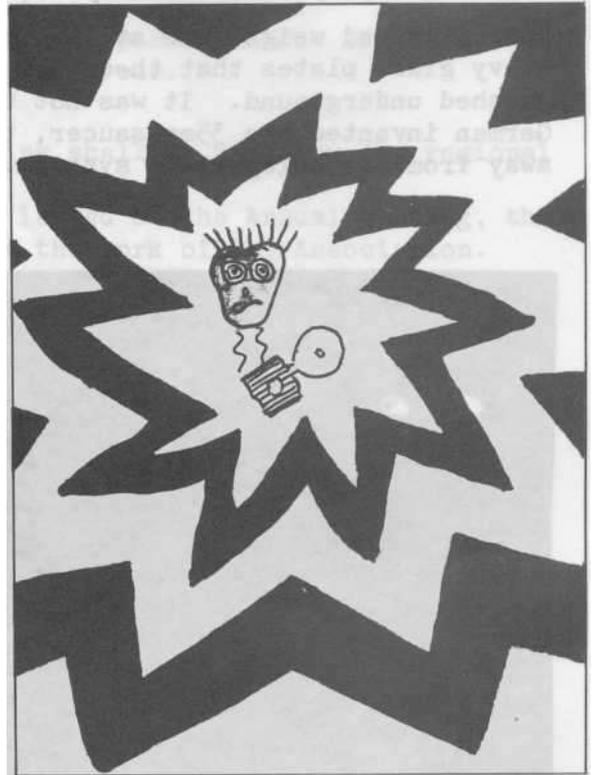


There was yet another problem to solve before cave photography could really get underway and this was lighting. Up to this time B.D.I.s were not only the standard illuminant underground but the only one. These may have been suitable for general use but photographers models were not completely happy about posing for up to three hours at a time without moving.



Soon a bright young chap produced a tin of grey substance which he had invented in his kitchen – he called it flash powder. A plaque was erected in his memory.

After this tragedy it did not take very long before someone invented the safety flash bulb. Every photographer knows that these are completely safe, since they generally fail to go off, at least until the shutter has been closed and he is in the process of looking straight into the apparatus in an attempt to find the fault I



Nowadays it is such a simple matter to take a picture underground that few people ever bother to think about the early pioneers without whom our sport could not be recorded so safely and easily.

The 1851 photographer had to use a plate camera and had to coat his own plates with a collodion based emulsion which had to be used and processed immediately after coating. His camera was part of a large portable dark-room on a tripod which may have weighed at least 50 pounds. Nowadays a modern 35mm camera with a range of assorted lenses, tripod, meter, filters etc probably weighs only 5 pounds or so.

So next time you take your camera underground, spare a thought for those pioneers who helped to make your task possible - but don't bear a grudge, they meant well.

## **REGIONAL AUTHORITIES TO SAFEGUARD WATER SUPPLY**

by the Environment Correspondent of the Daily Telegraph December 3rd. 1971

Ten regional water authorities, including one for Wales, are to be created as part of a "radical and far-reaching" plan to safeguard the nation's supplies, Mr. Walker, Environment Secretary, announced in the Commons yesterday. He said they would replace the present joint water boards and joint sewerage boards, and would deal with water services as a whole "literally from the source to the tap". Their functions would cover the prevention and control of polluting discharges into rivers and estuaries, augmentation of river flows by storage schemes, treatment of water for public use, and dealing with sewerage.

Mr. Walker said in the Commons that there was cause for serious concern over the long-term prospects for water supply in Britain, and for maintaining and improving the quality of rivers.

"The time has come when we must stop taking our water resources for granted. Water is too scarce. It costs too much to collect, transport and distribute, to be wasted, polluted or fenced off from recreational use, (Ed) any longer".

His proposals were designed to safeguard the nation's water supplies for the remainder of the century.

Mr. Walker said the massive increase in demand, coupled with increases in the quantity and range of pollutants, presented a most exacting task. The way in which responsibilities for managing water were distributed imposed a handicap which could no longer be accepted, and a comprehensive reshaping of the machinery was called for.

Responsibility in this field was fragmented between more than 1,400 different bodies. They had discharged their duties well for many years, but too often their interests conflicted and many of them were far too small.

"We are proposing to retain statutory water companies, which can continue to play a valuable part within the new system. I expect suitable arrangements to be made for them to supply water as agents of the regional water authorities". Mr. Walker said.

### Editorial note:

An announcement on December 29th states that over the next five years the sum of £1,300,000,000 will be spent on cleaning up the badly polluted rivers of Britain. Presumably the majority of this money will be spent on new disposal works so that the water can be recycled again and again from a rivers source to its mouth.

Now - what does all this mean to us? Well, at the moment Mendip is divided between the Bristol Avon River Authority and the Somerset River Authority. It may be that these two authorities will be merged, and will be joined by the Avon and Dorset River Authority. This would give us a consistent 'polluter policy' for the whole area. Of course the key to the whole thing lies in the legislation that sets up these Authorities. There have been too many occasions when parliamentary drafting has been vague or has ignored hard won experience, sometimes because of pressure on the political calendar, and at other times because the people concerned have not had a "feel" for their subject. One can speculate indefinitely on the possible outcome of all this - but I will leave you with two thoughts:-

1. Cavers are an un-necessary pollutant, and all caves may be closed.
2. If you dump something, say oil, the law may require you to prove that you are NOT causing pollution.

Some recent examples of pollution on Mendip are the oil dumping at Sludge Pit, oil dumping in the Priddy area, tyre burning near Green Ore and near Westbury Quarry. There has been a recent proposal to establish a factory pig farm near Burnt Wood crossroads. I am told that in terms of pollution 3 pigs are equivalent to 1 human, and the proposals would give a disposal problem similar to that of a village of 2,000 people, all draining into soak ways etc..

\* \* \* \* \*

## **130 YEARS OF CAVING**

by The Editor

From time to time we have articles in the Journal offering us glimpses of caving 10, 25 or 50 years ago -- but after a few goes the writer dries up as he finds lengthy gaps when nothing happened. At the start of a new volume, a new year and a new Editorship I wondered what I could do to remind us of the past and to point out what we ought to be doing in the future. Browsing through the usual books and reports I was struck by the number of times that the year '2' occurred. Here then are the results of this casual reading, and I hope that you get as much pleasure from this article as I have. It is a personal choice and I offer my apologies if I have left out your own top story.

1852 Was this the year that the Industrial Revolution came to Wookey Hole? At any event Messrs. Hodgkinson & Co. chose this year to improve the supply of water to their paper mill. They decided to run a canal from the resurgence of the Axe along the east side of the valley to a convenient point near the mill.

The workmen broke into a cavern which was found to be practically full to the roof with debris. They said that there were no signs of its existence before they disturbed the area. A considerable number of Roman coins were found nearby but their distribution to other hands remains a mystery. In later years this cavern became known as Hyaena Den.

1862 Professor Boyd Dawkins has now been working intermittently at Hyaena Den for three years. His task is to find evidence that Man was contemporaneous with the now extinct mammalia. There are many authorities who still insist that the remains of extinct mammalia are the sure and certain evidence of The Great Deluge.

1872 The work at Hyaena Den is drawing to a close, and Professor Boyd Dawkins has found evidence of Mousterien and Aurignacien occupation.

1882 H.E. Balch was familiarizing himself with the known caves of Goatchurch, Lamb Leer and Wookey Hole.

August. A correspondent of the Times was enticed down Lamb Leer. The 'Cave of Falling Water' (the final chamber) was illuminated with benzoline, by pouring it down the slope and igniting the resulting stream. The party sat down to luncheon in the Main Chamber and were waited on by two miners. A verse of the National Anthem was sung and a Bengal Light was fired. You know, some of the dignity seems to have gone out of caving since those days.

(Bengal light. A kind of firework producing a steady and vivid blue-coloured light, used for signals. O.E.D.)

1892 H.E. Balch was familiarizing himself with the known caves of Wookey Hole, Lamb Leer and Goatchurch.

Some wretched village boys from Wookey Hole have poked about in a fissure above Hyaena Den, and have caused the crown of the gravel arch to collapse. Since then this has been the usual way of entering the Den.

1902 Spring. Eastwater, 10 days to dig and support a 20ft deep shaft. In the course of two or three visits H.E. Balch reached a position 500ft below the point of absorption and distant about 2000ft in horizontal measurement.

1912 Christmas. The great work of excavation in Wookey Hole cave has come to an end. Its object was to discover the history of the cave-dwellers who for many centuries made this place their home, and it is no exaggeration to say that a perfect picture of life at Wookey Hole is conveyed to us by the extensive finds that have been made.

How did H.E. Balch entice 5 subscribers to his book from the U.S.A., 2 from Austria, 2 from Germany and one each from Australia, Canada, France, Holland, Hungary, Ireland, Siam and South Africa?

What were his thoughts that Christmas? Unlike most of us he never had a 'swan-song'. He could have boasted about any one of his achievements, but he never had the time - there was always so much to be done - and so many people to teach.

1922 'Tratty' was busy initiating acolytes in his Temple. The UBSS were doing archaeological work in Aveline's Hole, Keltic Cavern and Rowberrow Cavern, and they were also digging at Tynings Farm Swallet.

Another of their digs in Burrington Combe up the road from Aveline's Hole reached a depth of 25ft and was later abandoned and sealed. This is the one referred to on page 215 of the Wessex Journal No. 134 of April 71, when unauthorised diggers in that year created a problem with the landowner.

Dr. Cooper and the Sidcot School Caving Club were doing the survey of Goatchurch.  
(Many thanks to 'Tratty' for providing me with this information).

1932 There are seditious rumours on Mendip that one of the existing caving clubs is in danger of breaking up. Any experienced observer of the scene will confirm that there is no room for a 'Third Force'. The UBSS and the MNRC must retain their territorial integrity.

Balch, in 'The Mendip Caves', writes that 'Digger' Harris was the first person to attempt Sump 1 in Swildons Hole in 1932. When I wrote to 'Digger' he could not remember the actual year, but his letter is so interesting that I am publishing it separately so that it can be properly indexed.

Also about this time; "Mummy, who's dat funny man wit dat funny ladder?" 'Diggers' parents lived in the Tower House in St. Andrews Street, Wells, this house having been built, by an early Cathedral architect. It has a fine tower which could have been used for an elevated view of the building of the Choir or the Chapter House. 'Digger' could be seen from my attic window peering over the edge and then going down and up his rope ladder. My neighbours in 1942 were bad enough but I wonder what they thought of him then?

1942 Midsummer. At last Mr. Balch has kept his promise, made to Howard and I last year at Badger Hole. He has asked Mr. Duck to take us down Swildons Hole, that cave somewhere near Priddy that is supposed to lead down to Cheddar. Every time that I have been to a Museum lecture I have tried to find out exactly where the cave is situated. He just wont say - and I have looked several times in that rough ground on the north side of the road about halfway between Hillgrove and the Old Bristol Road crossroads at Hunters Lodge.

We have to meet Mr. Duck at Priddy Green so I suppose that we should cycle from home at least half-an-hour beforehand. I have six candles with me, following Mr. Balch's instructions, and as this is a more difficult trip than one to Badger Hole I have decided to wear my football boots.

We changed in Mr. Maine's barn and walked over to the cave - about half a dozen of us. There is quite a large stream going down - I wonder if we shall get wet? (No pumps then) In those Zedy-bendy passages beyond the large waterfall Mr. Duck wisely decided to demonstrate how to jam a boot in a crack, turn a double somersault, unlace his boot and thump it free with a stone; A sound demonstration of advanced caving techniques. We then reached Jacob's Ladder where one slip and all would have been lost. However, Mr. Duck showed us how to climb down.

In the Short Dry Way there are many deep pools, and care is required to avoid a severe ducking. The Old Grotto is fine - it is amazing to see so many stalactites and curtains - and none of them are damaged in any way. Just below the Old Grotto and around the corner is the Wedding Cake and Icing the latter a mass of pure white stalagmite (once as fine as those in the early days of Shatter Cave). The sound of running water can now be heard, and around the next corner one has to do a tricky climb to avoid the knee-deep pool at the

entrance to the Water Chamber. The clean passage floor has been thoroughly spoiled by someone digging in a high passage in the right hand wall and chucking all the mud down.

We have now reached the Water Rift and cannot help but get wet. The squeezes that Mr. Duck warned us about are really quite large - why all the fuss? I wondered why he brought a heavy rope down the cave. He is fixing it around a large stalagmite barrier and actually wants us to hang over the 40ft drop to have a view. I'm not doing anything so daft as that so I will wait and hope that the others will be safe.

We are all getting cold so we ought to start back to the surface. The entrance to the Wet Way looks thrilling but only experienced cavers should try that route. We are now in the Pretty Way - and it really is - especially the area near the Sugarloaf. A pause in a large chamber where Mr. Duck selects the best route and we are now back at Jacob's Ladder. What a funny cave to have several passages. That entrance waterfall is very dangerous - anyone could easily slip down.

(Thanks Jack -- the trip is still clear in my memory).

E.E. Barnes of Loop fame is Hon Sec and Treas of the MNRC.

Lieutenant E. Hensler on an official visit to Wells (was he also here at other times a.w.o.l.?) single-handed made the first effort to open a long recognised passage in the Water Chamber, Swildons Hole. By digging it out he succeeded in demonstrating the direction it takes.

He is the only man with two Passages: his more famous one being, of course, in Gaping Ghyll.

1952 Caves are formed by Seepage and Jeepage. "I was driving through this small plantation when a tree got caught in my towbar - made a damn fine derrick tho' " (with apologies).

Jan. We have been turned out of our Headquarters at Beechbarrow owing to a change in ownership of the land.

The Wells Journal Feb 22nd. An unusual group of visitors are often seen arriving at Wells Station late on Saturday afternoons. They frequently wear fawn rain-coats and sewn-down caps, and sometimes carry kitbags or a bundle of rope ladders. They are members of the Royal Military Academy Sandhurst Mountaineering and Exploration Club. The officer cadets show great keenness for this sport. After duty (12.30 p.m.) on Saturday, they rush off from Sandhurst to catch the earliest train from Reading. The express has been known to wait as much as eight minutes overtime for the party ... In Swildons Hole they have discovered new passages leading from the Wet Way, but these are difficult and are still being opened up. These they have christened the 'Academic Series'.

April. A map was published in the Wessex Journal showing the location of the new Headquarters at Hillgrove Farm.

The Wells Journal April 4th. At a lecture to the MNRC Mr. W.I. Stanton, B.Sc. (geology) A.R.C.S., gave a description of the recently completed survey of Goughs Cave. He mentioned the difficulty of reaching the top of 60 foot ovens (sic) in the roof.

The Singapore Free Press April 30th. A large and beautiful cave, with prehistoric wall paintings, has been discovered in the Monte Del Castillo of Puente Viesgo. A.P.. Does anyone know this part of the Spanish Empire?

G.B. cave has been sealed up as a result of the accident on March 26th 1951, when a party of five were trapped there for 19 hours without lights.

Marcel Loubens fell 130 feet to his death in the Gouffre Lepineux, Pyrenees.

June. Frank Frost (Sec) and the late George Williams (Treas) have borne the brunt of the work in organising the erection and the equipping of the new Headquarters. A member of the Wessex contributed £160 towards the cost, as a loan.

An electric light plant has been installed at Badger Hole. The noise upset Balch and he viewed the whole thing with disfavour.

The MNRC report that Reservoir Hole has been fully explored and all practical excavation has been completed. Willie please note.

The Bristol Evening World Oct 1st. 'He wants to put a house in middle of the Mendips'. "If I care to have drunken parties at night I don't want neighbours complaining," he said. "We sometimes have caving parties, and the neighbours are pretty tolerant, but I don't know how long they will remain so".

1962 'Tis as yesterday to us old 'uns! So I will mention three items only.

In January the main road subsided near the Priddy Stores. The collapse was about 10ft in diameter and broke an adjacent water main. It was several hours before the water was turned off and the resulting hole investigated. Drain rods went down 27ft before striking anything solid. The hole was eventually capped with reinforced concrete. Wessex Journal No. 83 Feb 62. The problem is:- is this part of the Swildons system, or is it part of the 'Harris Master Cave' described in Wessex Journal No. 120 Dec 68? I hear all sorts of rumours about a new generation of cavers wanting to use drilling rigs, portable power stations etc.. Will we soon have to drive around this patch of concrete with care? Will it be the new Mendip Mohole?

The second memory is of the late Professor L.S. Palmer who died in March. Sometime friend of many a caver.

July. T.E. Reynolds joins the Wessex. The Committee members responsible are listed in Wessex Journal No. 83.

1972 There should be a moral in every story, and now is the time for mine. Are you ready?.... are you feeling suitably serious?.... Well then, here goes.

This is the year of EMPTY SPACE  
There is empty space in the Journal.... fill it.  
There may be empty spaces in next years Committee.... fill them.  
There are empty spaces underground.... find them.  
There are full bottles in Hunters.... empty them.

1982 'Friday Night Caving Club'. Swildons Hole upper levels. Names and reservations to your area real-time on-line computer.

Dial CALLGPO..SOMTGROT..SWIOL..MODO1

Don't forget that you also need a reservation with:-

Dial CALLGPO.. SOMTGROT.. APRESCAV..HUNTLOL.

\* \* \* \* \*

### Exposure

Every now and then we need to remind ourselves of the dangers that can arise from exposure to the elements. A few weeks ago a caver, wearing a wet suit, decided to walk back from the cave that he had visited to his changing site. The distance was a few miles, the weather was very wet and windy and it was after dark. He was found to be suffering from mild exposure upon arrival. His name, the cave, etc., are all irrelevant to this story - I just want to stress the danger of attempting something that may lead to trouble.

# RECOLLECTIONS OF SUMP 1, SWILDONS HOLE

by 'Digger' Harris

The first attack on the sump consisted of a charge of gelignite set off by an electric detonator controlled by a kitchen alarm clock. This charge was laid in the mud bank which was on the right as one faced the sump. There was a cairn of stones there too. The reason for laying the charge in the mud bank was because Balch had said that in their initial digging the mud had exuded marsh gas and we hopefully anticipated that the explosion would set off the marsh gas also. All that happened in fact was to dissipate most of the mud bank.

This was followed by an attempt by Balcombe sucking his air through a garden hose. He got to a point where he could reach his hand to the ascending roof but each time he reached this point his breathing stopped due to some pressure effect. Next followed a series of blasts by Balcombe, one in particular when he stayed down there alone from Sunday afternoon to the early hours of the following Wednesday morning making a hole in the rock roof just above the water level to take a charge of gelignite. Other charges were later floated under the arch.

Finally Balcombe's "mate" Jack Sheppard made a diving suit out of a pair of fishing waders and a latex rubber "pullover" with a rolled joint at the waist. The air supply was a professional football inflator pump. So equipped he passed the sump and got as far as the "duck" some hundred feet beyond. The pump was being worked at floor level and the gasses from the large number of acetylene lamps of those present in the terminal chamber fouled his air supply and made him quite ill.

The next weekend Balcombe got Sheppard to skin dive the sump carrying a rope through, along which Balcombe pulled himself hand over hand.

Ed. There are three articles also covering this adventure in the Wessex Journal No. 120 Vol. 10 December 1968:

1. 'Work in Swildons Hole 1934 to 1953' by W.I. Stanton and C.H. Kenney.
2. 'Further Notes on Swildons Hole - Somerset 1934' with photograph by F.G. Balcombe.
3. 'The Effects of the Early Use of Explosives at Sump 1 in Swildons Hole' by J.D. Hanwell

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## 'Periodicals News'

This monthly News Sheet lists Journals etc from all over the world which are likely to be of value to those engaged in scientific and technical development. It is published by the British Museum and comes from:-

The Editor,  
Periodical News,  
\*NRLSI (Holborn Division),  
25, Southampton Buildings,  
London W.C.2.

The issue of 1971 No. 13 lists 'Wessex Cave Club, Occasional Publication. Series 1, No. 1, Pangbourne, 1969. Photocopies of 30,000 titles are obtainable by post.

\* National Reference Library of Science and Invention.

## MENDIP NOTES

by Cheramodytes

### Cuckooland

Alan Mills, Aubrey Newport and others have been working at the bottom of Cuckoo Cleeves. They hope to ensure success by using applied chemistry.

### Sidcot School Speleological Society

Their latest site is at or close to Reads Grotto in the Charterhouse area. I hope to have a fuller report of their work in the next Journal.

### Avon

The boundary of this area is still in dispute, and I do not know its location with reference to western Mendip. It may well include the Burrington area.

### G.B. Cave

There is no longer an easy way into the cave. The passage formally given this name was the Mud Passage Route leading down to the left from the First Grotto. The squeeze at its start now sumps and requires baling and digging to clear it on each trip.

### Fairy Cave Quarry

On November 3rd quarrying broke into a southern extension of New Year Hole. It was a tight vertical rift 20' long or deep. Bristol Avon Authority were quick on the scene and decided that there may be more to be found soon.

### St. Dunstons Well

Tim Atkinson is still experimenting with alternative methods of water tracing including the use of powdered PVC, I hope that he will let us have all the LYCODATA sometime.

### St. Dunstons Well Cave

This has been extended by 200'. See the latest issue of 'Descent' and of course the 'Complete Caves of Mendip'. The terminal sump has just been dived by Brian Woodward, who reports that it goes down for 16ft.

### Holwell

Mendip's first sub water table quarrying started in September at Coleman's quarry, now owned by English China Clays. I understand that the volume of water pumped away daily is 1000,000g. For comparison the Holwell Rising is given as 400,00g in the 'Complete Caves of Mendip' but this may well be reduced soon.

### Stock Hill Reservoir approx 641502

The Irish would say "If I lived in that area I wouldn't". This site, about half a mile south of Chilcompton, at Downside, has a bad reputation. See Balch. Mendip, its Swallet Caves. 1948. pp 123-124. A reservoir was built in 1905 and promptly lost its bottom allowing 600,000g. to wash away. A new one was built in 1908 and this also collapsed but was later made safe. There were three more collapses in the same area between 1955 and 65 quite close to some housing. The latest hole appeared in the road on November 20th. bursting a main and allowing about 250,000g. to soak away. This new hole was 90' long, 60' wide and 10' deep. All of these holes were within a circle of approx 100 yards. Balch mentions subterranean erosion, slipping of the mass of Dolomitic Conglomerate towards deep valleys etc as possible causes, and our tame 'rock-bod' mumbles about leaching of the limestone in the Conglomerate leaving fissures of mud and chert and sandstone pebbles.

### Pounding Pot

Willie's dig at this site, near Fairman's Folly, closed down for the winter on October 6th. It is now

35' deep and any further work would be a major task. His new winter dig is being worked on Wednesdays at 7.30. He won't tell me where it is unless I volunteer to carry buckets - no one told me that I would have to go caving to write these notes!

### Nasa

In order to prove their tougher natures NASA are working a winter sub-surface dig at Rock Swallet in the Hillgrove area. A recent fall buried most of their buckets, but undaunted they have now retrieved the situation and are pressing on. This hole was last worked by Len Dors in the 50's. Now to the Grotty bit - why do NASA and Willie dig on the same night? Are they concerned with their ratings rather like the BBC and ITV? Personally I would like to work at both holes but alas I can only dig when there is a 'Z' in the month.

### Cavedar

Brian Prewer has been experimenting with radio location over St. Cuthberts. His equipment works on the magnetic induction principle, and is based on Dr. H. Lord's inductorphone. The transmitter is taken underground and it emits a 1KHz tone. A hand-held search coil receiver is used on the surface. Attempts to locate Gour Hall, some 400' below the entrance, were highly successful. Further details should appear shortly in the 'Belfry Bulletin'.

### August Hole

The MCG are still working near the Oxbow but I don't have accurate details.

### Vallis Quarry Cave

The 'Complete Caves of Mendip' is out of date! This very small cave was the scene of a police investigation during the summer. Two local boys went missing for a short spell, and the police wondered if they were in the cave, as a result of wrong information from another small boy. (It turned out that they had gone camping). Upon hearing the story the owner blew up the entrance.

### Swildons Hole

Two parties have found, much to their relief, that the first 'U' bend in Shatter Passage has nearly sumped during this winter. Will it drain away by next summer? If so, where to? We shall never know because a Moody fellow has just baled it. He tells me that the water can be poured away down the small passage on the far side of the 'U' and on the right hand side.

The Muddy Sump in the St. Pauls Series has been pushed by Martin Mills of the SMCC, and it leads into 300' of muddy passage followed by a sump. Like the Mud Sump this probably needs baling on every trip.

I hear that it is possible to free-dive as far as Swildons IX, and I hope that anyone who attempts the trip, and survives, will write an article, possibly entitled 'Proposed Methods of Drowning'.

Sump XII is still being pushed by the CDG and the SMCC, and the news is that an upward trend has been found. Full details of this can be found in the Shepton Mallet Caving Club Journal, Series 5, No. 2 for Autumn 1971, Price 18p plus postage from R.D. Mehew, Glebe Cottage, Claverton Down, Bath.

The Department of the Environment have recently announced that the 1" to 1 mile or 1:63,360 maps, of G.B. will definitely be replaced by a new series at a scale of 1:50,000. The Daily Telegraph reports that the first series will be completed by 1976, and the re-drawing will be done over 20 years. This means either that the existing 7th Series will be blown up in scale and issued as 'poof' 8th Edition, or that the first redrawn sheet will come off the press in 1976. Take care what you are buying! Obviously there will be more gaps on the maps to fill - so please find your new caves in good time.

The price of the 1" folded map went up on Jan 1st to 44p - an increase of 4p.

## CLUB TRIP TO PENYGENT POT

by 'El Puke'

Something wrong somewhere. The Wessex in Yorkshire, and the sun blazed unseasonably from the October sky onto four black sweaty cursing things, as they struggled up from Brackenbottom. Twenty-two ladders - 400 feet and 300 foot of rope, rubbing, clinking and dragging on the shoulders as we grind on up. Face down in the wet grass at the entrance, and the unhappy hairy faces of Ian and Carl muttering siren words about a good day for walking. Penygent dark above us against an indigo sky.

Down the shaft, and that first encounter with sharp rock. Flat out in water, ladders snagging, neoprene teasing, and the cold mineral feeling of the air \*\*\*\*\* all the way up the M6 for this. Just a few more feet in, then I can damage the old war-wound and get out - too old for this now. Drop into the Canal and the water supports me, the load lightens, the nerve endings die for the next ten hours, the pupils dilate, and the transition period is over. Happiness is relative, I suppose.

The Crawl lowers to a flat-out thrutch for a few hundred feet, and the foam on the roof hurries us on to Twin-Falls pitch, where the stream curves down a 25-footer in two jets, split by a big flake, before turning along Easy Passage. Easy for three-armed dwarfs maybe, but not for a long thin thing, dragging a tail of ladder-rolls, like a Chinese Dragon. A 15ft splashy pitch, a crawl, and the stream is gone over the Big Pitch, 140 feet in a fine shining fluted shaft, wide and handsome, with the cathedral feeling of so many Yorkshire pitches. This can be done in one with a bit of traversing, but we choose the weejee way, doing a 55 footer down a side-rift, and then a fine free dry 80 in the main shaft. When a Shepton party were caught here by a flash-flood, the water in the shaft generated such violent air currents that the stream descended in vortices, and the walls were swept by water flying almost horizontally. Today the water hisses down one wall, and we follow it into The Rift. The stream descends this part of the cave in a series of water slides and finely fluted pitches, and one traverses, and ladders down from flakes and jammed boulders. This is the only part of the cave with much speleothem formation. The rock is light-coloured and there is that friendly feeling one gets in Swildons streamway. The gradient is steep until, with a sudden turn left, the cave abruptly changes.

A waist-deep pool, jet-black chert-noduled limestone, and into Boulder Chamber. There is relative silence here, and it is the only place in the cave beyond the Long Crawls where one feels like removing the wet-suit hood. Elsewhere the roar of water is incessant and numbing. On down to Spout and Ladder, a cascade into a big pot, and a fine 30-footer beyond it, the water jetting out over our shoulders as we nip down the ladder.

Carl's light dies on him, leaving him stumbling unhappily in the big black canal beyond where transverse flakes of rock, invisible under the peat-stained water, make the going a splashy profane affair. The water from the big Hunt Pot inlet slides quietly from a bedding-plane on our right, and one is hardly aware of its presence until the canal tips headlong down the Cascades.

And here is the "Feeling of Depth" that David Heap described in his book. Most pots seem to end here, but now the river, a real O.F.D.-class torrent goes thundering down the cascades and over a 25-footer onto a bridge of large boulders. The noise here is massive, and everything seems to be flying chunks of white water and jagged black rock, as the river falls a last 40 foot down Niagara Falls Pitch into Sump Passage. We bypass this by a scramble and 10-foot ladder down a crack, and run the gauntlet of the water. Halfway to the sump there is a high chamber, with foam 50 feet up on the walls. The entire cave below Hunt Pot inlet fills to the roof in flood; a quarter mile of passage and 150 foot in depth.

The sump is deep, uncompromising and full of foam, to the delight of Tim, and to the unbounded disgust of all others. The leader's popularity-coefficient hits an all-time low as we reckon we have about 80 feet too much ladder, 20 extra tethers, two bars of wet chocolate and a candle.

The ladder is definitely breeding, we conclude, as we grind up the crawls again, towing 6-foot sausages of the stuff, and knowing that the Boozer is closed. A tattered lampless feeble object is emitting unsecretary-like noises, and blocking the canal. We crawl over it.

Ian drank five pints of black coffee, the rest of us three, and we made up the rest in The Crown on Sunday morning.

Surprisingly, the last official club trip to this very fine classic pot was in March 1964 when a party of 7 descended. With the use of Jumars on the Big Pitch, a party of four would be ideal. As it was, we were too heavily loaded for comfort, but nevertheless had a fine sporting trip.

### **La Cocalière : "première de France"**

by J.D. Hanwell

I first became aware of this cave through the advertisement in "The Complete Caves of Mendip". It announces that La Cocalière is "the longest and most beautiful underground system in France....". Being somewhat cynical about the claims of show caves, I enquired further of Nick Barrington whether this was so. In fact, he and Nick Pratchett had been to the cave on a photographic trip shortly after it had been opened to the public. I was shown some pretty impressive photographs (I believe that the cover plate on Alfie's "Reflections" is one) and assured that the whole system totalled 28 Kilometres.

Since we were travelling through France to the Picos de Europa in Northern Spain, at the end of July 1971, Fred Davies, Don Thomson and our respective families agreed to rendezvous near La Cocalière for a week's "limbering-up". With further help from Nick Barrington, I wrote to Monsieur Andre Marti announcing our intentions. We received a warm reply from him welcoming us to camp near his cave since, "Il ne manque pas d'endroits agreables au bord de l'eau et proche de la grotte".

After the inevitable two-day slog across France, endeavouring to avoid the mass migration to the Mediterranean beaches, I arrived at La Cocalière a week before Fred and Don. Having enticed an increasingly mutinous family with the prospect of grassy glades and swimming in the mighty stream that issued from the cave, I was taken aback to find a waterless karst plateau scarcely concealed by thorny scrub rendered brittle by the scorching sun of le Midi. It was of little use arguing that I had forgotten Harant and Jarry's cryptic introduction to the region: "With the habitual exaggeration of the people of the Midi, where a hill of 600m is a 'mountain' or a 'peak', a 'forest' is often no more than a thicket or the remnants of a wood!"

Growing suspicions that Andre Marti was indeed very typical of the people of the Midi were confirmed as, with a 360-degree sweep of his arm, he put a vast area of "terrain agreable" at our disposal. Finding a clint surface large enough to pitch our fly sheet, we spent a night generously feeding the entire insect population who had uncannily passed word around the grikes that dinner was served. Since the Davies-Thomson-Hanwell entourage of eleven kids would soon have disappeared down the said grikes, we moved site early the next morning by the simple expedient of finding the nearest impermeable rock on the local 1:50000 topographical map.

Fortunately, geological reasoning triumphed once again! The Cevennes region is full of pleasant surprises, not the least being that its location barely 100 Km north of the Mediterranean is ideal for escaping from the worst excesses of tourist "blight". Indeed, we discovered a riverside site only 12

Km to the west of La Cocalière in the secluded Ganière Valley. Across the stream and granite boulders scoured by early spring floods was a fine rural auberge called La Blacherette. Isolation, poultry in search of crumbs beneath an ancient fig tree, and a minute restaurant sign overhung with vines from the veranda tracery were reasons enough to explain "madame" announcing us to all locals as her first English customers. After a week of strenuous commuting between river and veranda I was joined by Don and Fred in rapid succession; both sodden and highly sceptical about the weather despite my erudite discourse on how "occasional" thundery depressions over the South of France eventually produce weeks of even more atrocious weather on Mendip. Appropriate references to Hanwell and Newson (WCC. Occ. Pub. Series 1. No. 2) were countered with appropriate scorn! "Rain is where you find it! Let's get on with the caving".

Predictably, the cloud cleared and we were confronted with a sweltering 2 Km walk in caving kit down the dry bed of the "ruisseau" which passes the show cave entrance towards Aven de la Cocalière near the abandoned resurgence. This is a 30-metre shaft, apparently an unroofed chamber, well hidden by the tangle of degenerate maquis and garrigue which take root in the piles of stones removed over the centuries from fragmented clints. It is surprisingly easy to lose one's bearings in the maze of abandoned "pastures" misleadingly indicated as "bois" and "broussailles" on the map. A scramble down the precipitous but well-broken south wall of the shaft takes one into welcome shade and a cool draught from the main passage at floor level.

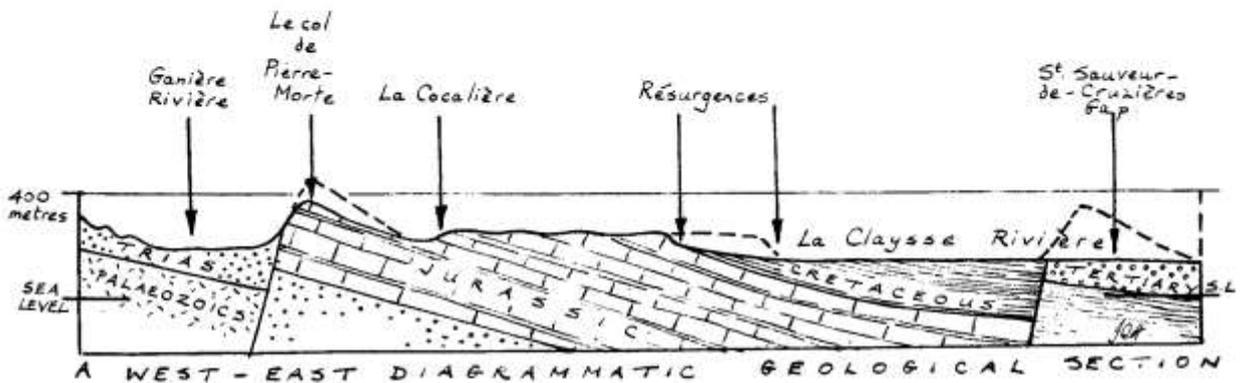
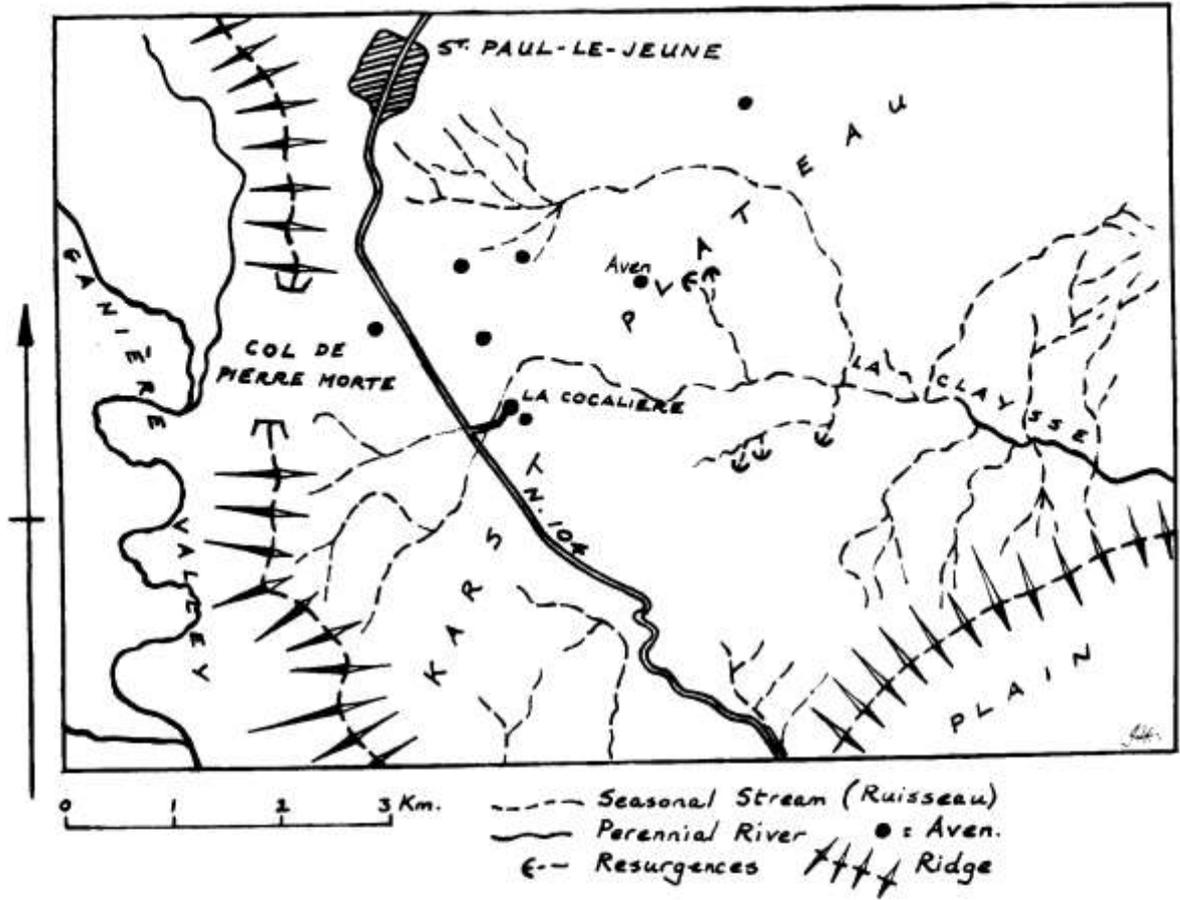
The passage returns in the general direction of the show cave as a meandering tunnel averaging 10m high and wide. The first 2 Kilometres is a fast walk up and down vast slopes of stream debris because the passage has the typical "switch-back" profile of a phreatic streamway. By-passing an obvious tributary which we looked at on returning, the main passage gradually ascends after a surprisingly narrow section and boulder strewn hall. After about 3 Km the first lakes are encountered, being muddy pools during the summer. However, fresh mud and stream debris indicated that a substantial river flows through the passage regularly, perhaps most winters. An enlarged cross rift gives access to a steep climb via fixed pitons over a curious arête-like rib of rock some 3m high. One can only assume that the water tops this feature during floods. Somewhere hereabouts we missed another important inlet passage which links with drainage from the Goule de Sauvas system near the village of St. Paul-1e-Jeune.

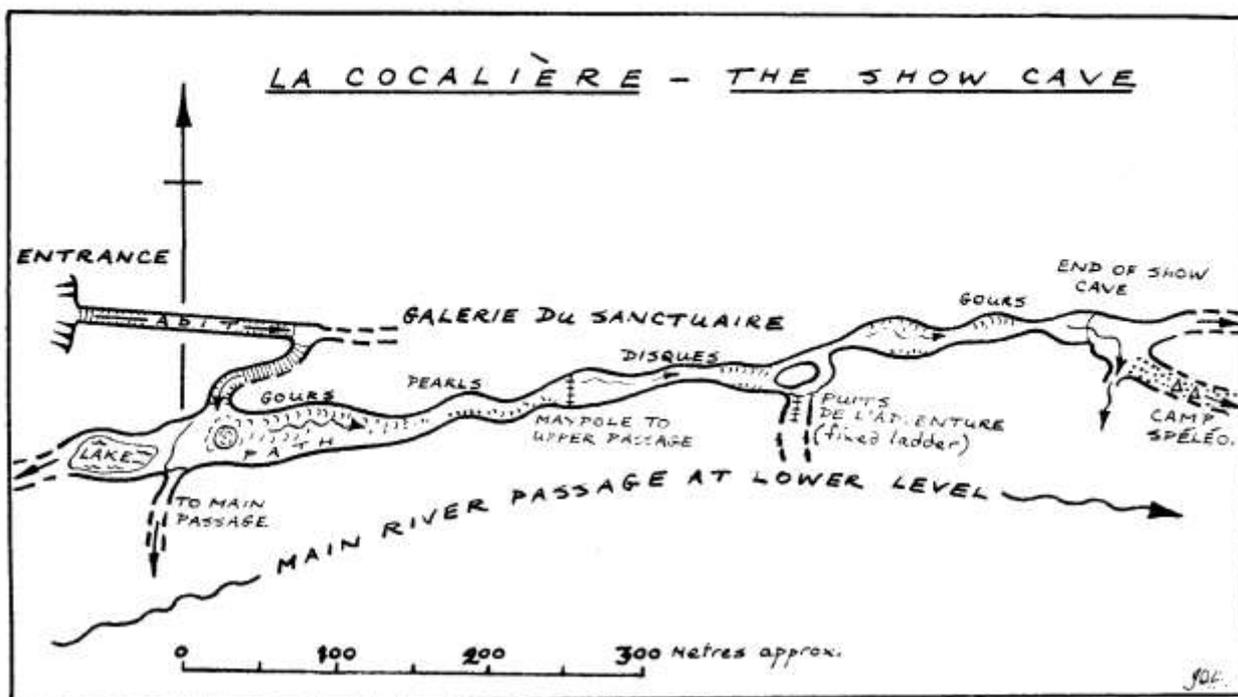
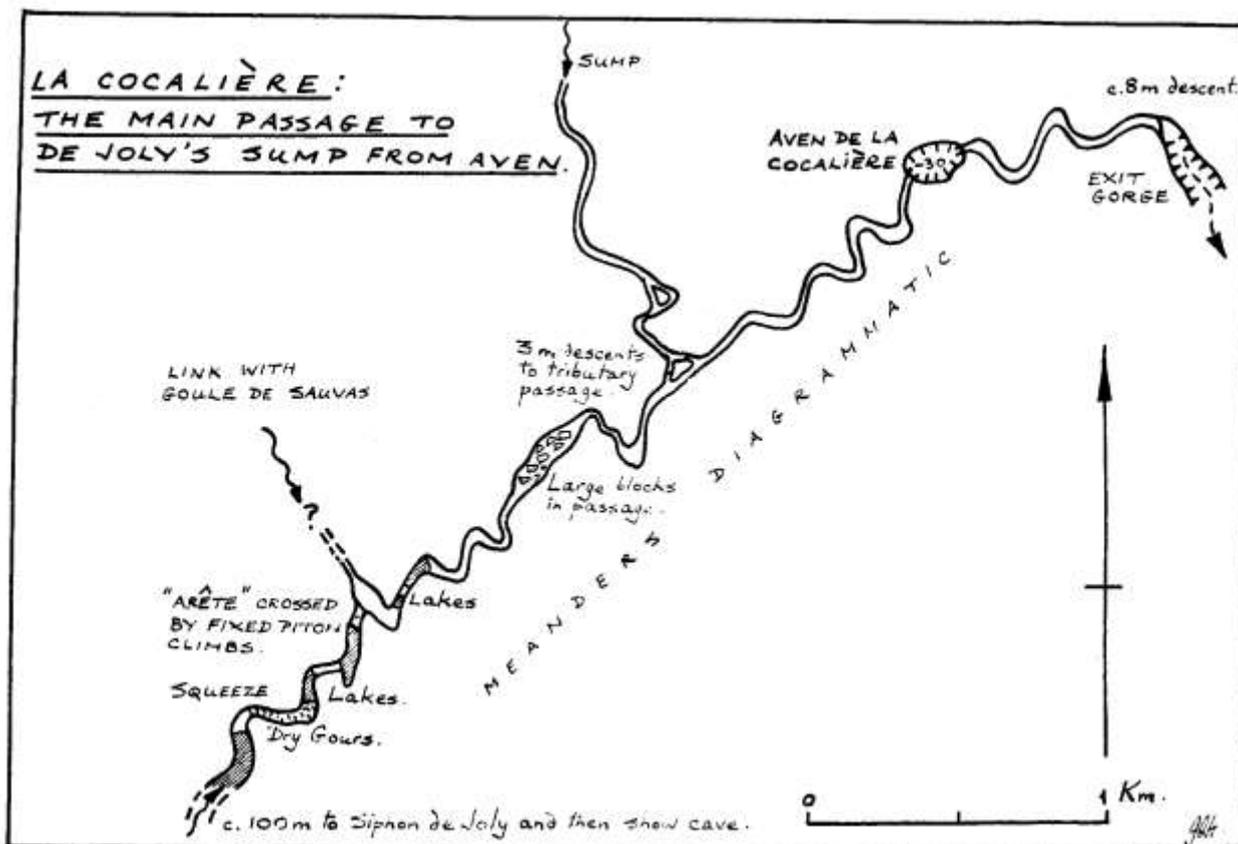
The obvious route continued as a succession of muddy lakes dammed with stal barriers and an intervening area of very deep abandoned gours. After about 5 Km we came to Robert de Joly's lake. To have negotiated this would have meant a long swim to a sump which could be heard "slapping" about 100m away. Since we were too lightly clad for such heroics we returned taking photographs and exploring the tributary to an incredibly clear but constricted sump. One of the impressive things about this passage was that it obviously ran full bore each winter, yet the summer level of the sump was a good 30m down a long "scree" slope of unstable cobbles.

We left the system via an entertaining descent into the exit gorge having done over 10 Km of caving in 4 hours! The passages we saw proved interesting collectors' pieces but lacked variety and any real challenge, unless you like long- walks underground!

Later, we paid a visit to the show cave. This costs 6 Francs for adults and takes a leisurely 60 minutes. The main gallery which runs west- east is reached via an artificial shaft and stairway reminiscent of that in Piccadilly tube station, though about 4m in diameter. It was blasted open by Andre Marti and two colleagues in only one month! I paced the tourist path through the main gallery as being about 520m long. The passage varies between 10 and 18m high for the most part and some 5 to 15m wide. The main attractions are the remarkably varied and profuse formations, all very much "alive" because of the heavy drips and active stream which flows alongside the path. It must be about 60m or more beneath the plateau surface.

THE COUNTRY AROUND LA COCALIÈRE





In common with other show caves that I have visited in France, I was most impressed by the care taken over the illuminations, I can best describe them as having been set up with great sympathy for the sort of scenes that would be revealed by powerful Nife lamps on an ordinary caving trip. Yet, many formations are discreetly back-lit to give added depth and sparkle. This pleasing "caving atmosphere" is heightened by a fixed maypole and ladders to higher and lower passages and, since they are clearly used, one does not see them as superfluous props. On this score, the illuminated "speleo camp" seen from the end of the tourist route seems a little out of place; but, as it prompts lengthy explanations as to how the cave was explored by guides who actually caved themselves and encourage questions, one can forgive this one "stage set". In all it is a refreshing change from the pixie grottoes and patronising patter which are the hallmarks of most show caves in this country. Also very evident was that Andre Marti welcomed local cavers at any time, allowing them to camp and change outside as well as mingle with the tourists on the way in. As a caver himself, Andre Marti is obviously not one to push caving and cavers aside, and his cave is the better for this.

Apart from a quick tour around the surface, this was the extent of our caving in France. However, the following information may be of help to anyone wishing to visit the area for a more detailed look at its caves than we achieved during our short stay.

The Cevennes lies along the south-east margins of the elevated Massif Central of France, forming the western edge of the Rhone Valley between Montelimar (of nougat fame) and the Camargue (the delta region). The caving district around La Cocalière is to be found on Carte de France 1:50000 Sheet XXVII11-39, Bessèges - a provincial town on the Cèze river. Mesozoic sedimentaries deposited on the flanks of the ancient Massif Central were folded and faulted during the mid-Tertiary alpine uplift. Near Bessèges, between the communes of St-Saveur-de-Cruzières and St. Paul-ie-Jeune, lies a tilted block of Jurassic and Cretaceous limestones. Caves occur in the massive well-jointed beds of the Jurassics which are contemporary with our Kimmeridge and Portland deposits. Both contain thin beds of argillaceous sandstone. Denudation of the uplifted surface began in Miocene times with drainage into a lake basin further to the east. The position of the basin and alignment of rivers were controlled by strong west-east folds. The show cave is developed along the axis of an anticline which can be traced westwards across the Col de Pierre Morte into the upper reaches of the Ganière Valley. Immediately to the north lies a parallel syncline which helps determine the extent of the La Claysse surface catchment and the underground drainage lines.

With the fall of sea level during the Pliocene, the Ganière was captured by a major tributary of the Cèze. The Col de Pierre Morte indicates its former point of entry onto the karst plateau. A pocket of Pliocene deposits, containing stream debris from sources in the mountains further west, still survives to the north of La Cocalière as a distinctive fertile patch upon which olives, figs, and mulberries are cultivated. The diminution of water and lowering base level led to the first underground drainage.

Events during the Pleistocene saw the integration of flow lines with several nearby systems. Four different cave levels possibly correspond with the well-known Sicillian (c.100m), Milazzian (c.60m), Tyrrhenian (c.35m) and Monastirian (c.15m) cycles in the lower Rhone. However, the sandstone beds support their own streams independent of former erosion levels, the show cave being a good example of this. Along with marked seasonal rainfall, this explains why several levels in the system are permanently or temporarily active, including surface drainage. Deep phreatie flow appears to go to the Resurgence de Piechegul well to the east. The existence of streams and lakes at different levels is quite confusing when exploring the system. Many inter-connections have yet to be pushed and there would appear to be much scope for diving.

Apart from a few visitors to the Aven in the last century, the main exploration was by one of this Club's vice-presidents, Robert de Joly, in 1937. Post-war discoveries have been the result of work by la Société de Spéléologie et Préhistoire Gard-Ardèche. The show cave gallery was initially entered by upstream exploration from the resurgence. The adit now affords easier access and further

discoveries have been made recently. Those requiring more information than we were able to come by are advised to contact Andre Marti and the S.S.P.G.A. Both the region and the caves are well worth visiting, but our objectives this time lay in Spain. Still, that's another story!

\* \* \* \* \*

## LETTERS AND REPLIES

"Troubled"

5th November 1971.

Dear Aveline Home,

For many more years than I care to remember I have been going steady with one dig. Two years ago the dig yielded to my persistent demands, although I refuse to announce details as do the more permissive diggers I know. However, I must now admit that I am no longer satisfied with furtive weekly meetings, and have developed an insatiable desire to taste the delights of other digs. It is really a question of finding that, "it is better to travel hopefully than to arrive"!

Recently I violated a dig that was already engaged. I am now very desperate and cannot even confide in my friends any more. Whilst I believe that I am legally in the clear, I seek your advice on the morals of my behaviour. Must I be denied "the forbidden fruits"?

Yours etc.

"Troubled" (name and age supplied)

Dear "Troubled",

9th November 1971.

I am afraid that you have got yourself well into the mire. You say that you are "legally in the clear" but are you sure? If you question your inner motives more sincerely I believe you will realise that you have been unconsciously attempting to keep up with your so-called permissive friends. At your age it is probable that you imagine them as your rivals. Their conquests may be titillating to someone like yourself who has gone steady for so long, but it is clear that you are a reluctant philanderer.

My advice is to confide in your friends before it is too late. You obviously underestimate their willingness to forgive and forget. Why not make a big stand of this? Take the situation in both hands and announce details of your relationship with your first dig. For goodness sake don't bottle things up.

Ever yours,  
Aveline Home

The Editor

Honourable Sir,

Its funny how one thing can lead to another - as Frank said when he slipped off the 'forty'. Well it happened to me too. I had just finished a trip to the Bath Stone Mines and commented that "I wouldn't be here in a fortnight's time, but in Nepal". "Funny", said Philip Collett (SMCC) "I was there last year. If you are near Pokhara, have a look at the Harpan River Cave, I'll lend you our Report".

Well to cut a long story short, our party climbed to the Annapurna Sanctuary and returned via - you'll never guess - yes, Pokhara, which is a medium sized town 93 miles N.W. of Katmandu. With Philip's exhortation in mind, three of us set off from our camp and eventually found the cave.

A description and survey of the system is given in the Report referred to above, viz the British Karst Research Expedition to the Himalayas, but since I was probably the first Wessex member to visit it a brief word is not out of place.

The Harpan River drains the Phewa Tal Lake over a small dam, and has a flow rate from about 13 cfs in the dry season to 1000 cfs under monsoon conditions. Even under the dry conditions of our visit, the entrance shaft was a spectacular sight with the whole flow plunging down a narrow rift for 150 ft. This was not climbable, by us at least, but according to the Report it leads to a 30 ft wide rift with a lake and sump. Other passages lead off to different entrances, but one continues via a long "canal" to a large chamber - Bat Chamber - and an entrance which can only be reached by swimming. We reached this entrance from the gorge above and could hear the bat noises from within. Various risings occur amongst the piles of boulders outside, and a large stream soon appears which continues to join the Seti river in another mile or so. The whole area has many signs of collapses and would be worth a closer examination. My advice to any Wessex member who happens to be in the area is to read the Report (ibid) first.

Yours etc

W.I. Edwards.

Ed. For a review of this Report see Wessex Journal No. 137, page 316.

\* \* \* \* \*

Dear Richard,

As a new member of the club, who has however been using the hut for two years, I'd like to add some comments on the great "State of the Club Hut" debate.

The group of Dorset cavers, with whom I go on trips, can only manage to get up to Mendip on average about once every three weeks, this usually on a Sunday in the afternoon. In view of the limited time therefore available to us, obviously our main concern is caving, however we are nevertheless concerned with work on the hut. We try to do what we can while we are at Upper Pitts, I have done some painting, had a burst of Ajax cleaning in the male washroom and other assorted odd jobs.

It seems to me that the Committee and officers are not aware that there is plenty of goodwill and readiness to do something even if it is only small. However the ordinary run of the mill caver like myself who has very little communication with the elite regulars, is not aware of the jobs that need to be done and therefore can hardly turn up at the club hut, ready to get on with something especially if its a big job. I would suggest therefore that a list of jobs needing to be done etc., be put

in the Journal and also at Upper Pitts.

Although as I have explained I and the group of us who come up from Dorset, do not have much time to spare, we can usually manage a half an hour or so if anything needs doing. So why don't the Committee make use of members like us, there must be plenty of others. Frankly I get a bit fed up with the continual moans about nobody doing anything, some of us are aware that only a few have been doing a lot of the jobs, nonetheless not all the club members live within about 15 or 20 miles of the club hut, but we'd still like to help if we only knew what to do.

One other thing, this lack of communication as to requirements also applies to things needed for the club hut, surely there would be more gifts from club members if they knew what is needed.

Yours in caving,

Mike R. O'Conner.

Ed. This letter arrived shortly before the closing date for this Journal, so it has not been seen by the Committee. However, as I am also the Hut Administration Officer it is clearly my job to answer it.

All work at Upper Pitts can be divided into 4 categories

1. Routine but essential jobs such as clearing up the site in general (for example if the wind blows over a dustbin) or doing the occasional scrub out.
2. Jobs requiring tools that the Club may not possess but which a member may be willing to bring on odd occasions.
3. Jobs that use special or expensive materials that should be dealt with as soon as these materials arrive. Examples are glass, timber or floor tiles.
4. Jobs needing specialist skills such as alterations to the central heating system.

The list of outstanding jobs that I prepared some months ago is still on show in 'Upper Pitts', but the fact that you missed it does once again show the need for a proper LARGE notice board!

There is a problem of communication, for it would be impossible to list every conceivable job detailing when and how they should be done. Much of the work done by the regulars consists of improvements that they feel necessary by the light of experience of staying there. I used the shower myself the other day and could find nowhere to hang my towel or place my soap. I requested donations of hooks, shelves etc last October, and this request is still on show in the hut. I had a door mat that I thought might be useful so I asked two people who are regulars what they thought. They told me the disadvantages so back it went into my loft at home. Do this yourselves, you know what you have, - see if anyone else thinks it could be used.

Finally - as the weather improves I hope that all outside timber and windows can be, no, must be painted, and the Committee will see that the paint and brushes are available. The timber could be rubbed down now, for this is on the October list. Have a good look around the store, and in the shed (where there is a hoe for maintaining the drive and car park) and you will usually find a tool to do the job. Badger the Hut Warden - and he in turn will get on to me to get anything necessary.

\* \* \* \* \*

Do you know your BARANASA code? Have you come across UBSSLUCC?

See the last page of the 'Complete Caves of Mendip' and all will be revealed.

## THE COUNCIL OF SOUTHERN CAVING CLUBS

The eighth Annual General Meeting of the CSCC took place at Bristol University on the 8th January, 1972. It marked the end of an era on two counts: First, that the National Caving Association had formed during the year, and, second that Oliver Lloyd retired from the office of Honorary Secretary and Treasurer.

Since details of the former appear elsewhere, it seems reasonable to reflect upon the latter. Both are related in any case. Oliver has been more than the Hon. Sec. of the CSCC over the past eight years or so for, without his insistence that all caving interests should receive a fair crack of the whip, we could well have had a National Caving Association not worthy of the name. Even those who have not seen eye-to-eye with his distinctive way of doing things must appreciate that he has very successfully championed the interests of the club caver. We are very grateful for his efforts.

Tim Reynolds has taken over from Oliver, and we enter a new and no doubt very different era. With less claims for time on N.C.A. matters it looks as if the CSCC will concern itself more with conservation and access problems locally. Richard Witcombe presented the meeting with the report of the conservation and access working party and it was agreed that its broad principles should be examined in greater detail during the coming year. With Wessex members taking a major part in these discussions, members can expect to have their interests well supported in the CSCC when needs be. The full report will be published in the next Journal, including the addendum containing proposals to extend the present S.S.S.I.'s on Mendip to give better protection against future commercial exploitation.

Sadly, we must acknowledge that cavers are no longer the sole interested parties in Mendip and its caves. Conflicting interests necessitate that we become much more aware of the pressures on our sport. However, difficulties must not be invented and it would be nice to think that the number of organisations one has to deal with will get less, and definitely not more!

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### More about Exposure

From 'The Sunday Times' January 9th.

This article, headed 'Spectrum - Medicine - Hot air saves life on a mortuary slab' is the usual winter "Filler" on hypothermia. It gives various methods of treatment including "abdominal pumping" (often tried when Hunters shuts), but the item that caught my eye was this:-

'The normal recommendation in mountaineering handbooks is that the exposure victims should be taken into a warm room so that they can slowly revive'. The article points out that the normal room has far too low a temperature and that this is still not the total answer.

'Dr. Evan Lloyd of the Royal Infirmary Edinburgh has developed a portable apparatus to provide exposure victims with preheated oxygen on the mountainside or in the home wherever they are found. It uses a chemical reaction between carbon dioxide and soda lime to warm the oxygen... One victim had a body temperature below 27 deg. Centigrade 'and would not normally have been expected to live'.

Dr. Lloyd hopes to test his apparatus, which weighs less than 20 lbs, with Scottish mountain rescue teams this winter.

## REVIEWS

'The Mysterious World of Caves' by Ernst Bauer. Published by Collins £1.50, size 10" x 7", 127 pp.

In the reviewer's opinion this is the best bargain ever offered to the public on caves. The text is comprehensive, generally accurate and up to date, and the book is illustrated in colour so profusely that on average there is more than one inset picture per page. Liberal use has been made of both colour drawings and real photographs throughout.

The book is essentially divided into eight chapters starting with an account of the many techniques used in underground exploration. Whilst continental preferences may seem a little strange to the English reader there is little that can be faulted. Chapters two and three deal respectively with relics of earlier cave inhabitants and with cave animals and plants. It is noticeable in this part of the text that the author has an international outlook - his photographs and comments cover every portion of the globe including China! The approach is also unusual - modern human underground endurance records introduce prehistoric cave dwellers, and mythical monsters introduce cave bears.

The unexpected approach is again used in chapter four - cave formation - which commences with lava caves and then discusses tufa, and sea-caves. In contrast the actual description of limestone caves is a little weak, and confined to horizontal strata. Chapter five on spelaeotherms is of course well illustrated, and contains a useful section on radiocarbon dating, but is not otherwise exceptional.

It was probably the sixth and seventh chapters that really caught your reviewer's fancy. The subjects of underground rivers and submarine caves certainly have scope, but the treatment given is exceptional. Karst drainage inevitably centres on examples from Yugoslavia with surveys and block diagrams, but some work on the Danube - Aach drainage system in Germany is also included. The search for subterranean fresh water springs in the Ionian Sea shows how useful 'applied' spelaeology can be to a water conscious population, and once again examples of hidden drainage patterns are quoted from a wide area.

In his final chapter on world caving regions the author has been brief, but accurate, again covering most of the accessible world. In summary this book successfully presents caving to the general public at a fair price, and in a very readable and interesting form.

P.R.C.

### Is your system diffuse or conduit?

'Seasonal fluctuations in the chemistry of limestone springs', by Evan T. Shuster and William B. White (Journal of Hydrology 14 (1971), 93-128.) and 'A model of subterranean limestone in the British Isles based on hydrology', by Malcolm D. Newson (Transactions of the Institute of British Geographers, 54 (1971), 55-70).

\* \* \* \* \*

Following early attempts to link the regional variations in the rate and location of limestone solution to world climates, vegetation and lithologies, there has been a recent preference for hydraulic and hydrological interpretations. These two papers, appearing simultaneously and reporting work from both sides of the Atlantic, describe the relationship between the fluctuation of dissolved limestone in rising water over a period of time and the nature of the flow pattern upstream of the rising; that is to say, the variety of flow routes and consequent flow-through times which are available to water falling as rain on the surface.

Shuster and White conceptually divide limestone aquifers into two end-members, one called diffuse (or 'percolation' by Newson) and the other conduit (or 'swallet' by Newson), which transmit water from surface to rising by, respectively, slow flow, along joints or bedding planes, and larger, faster flows along solutionally-enlarged streamways underground. Shuster and White's field area is the Nittany Valley of Central Pennsylvania and Newson's the Mendip Hills. The Americans sampled their springs once every two or three weeks for 15 months, intensifying to two hourly sampling in an attempt to detect diurnal variations. They concluded that such variations were beyond the resolution of the laboratory titrations, or did not exist. Newson's sampling was linked to flow conditions, measured by weirs at Rickford and Langford and a rated section at Cheddar. For a series of moderate floods four-and six-hourly sampling intervals were chosen.

Over the total period Shuster and White concluded that those risings showing the greatest variability in hardness are fed by conduit systems. These also show undersaturation with calcite 'all the year round'. The diffuse systems, by contrast, show little variation in hardness (under 5% is arbitrarily selected as a demarcating value for the coefficient of variation of hardness). Their saturation with respect to calcite does vary. It is found that undersaturation commonly occurs from May to August and supersaturation in November and December. This is not unlike the delay in flow-through of a 'Spring burst' of solutional activity suggested by Pitty.

Newson uses the Burrington water-trace results to attempt measurement of the actual proportions of rising water accountable to conduit (swallet) flow.

The figure varies between zero, when the swallet streams dry up, and 154. The variations of the figure are linked graphically to variation in the hardness at Rickford and Langford. The greater variations at Langford suggest a greater volumetric contribution by conduit flow there and questions some of the findings from Lycopodium tracing. Instead of calculation of aggressiveness/saturation by formula he has used the 'two-sample' method of Stenner. His conclusions are that both risings may become aggressive to limestone at the peak of swallet contribution, i.e. during floods. At this time every part of the conduit system is experiencing solutional erosion. He also concludes, from other work that at such times there is increased liability to abrasive erosion too.

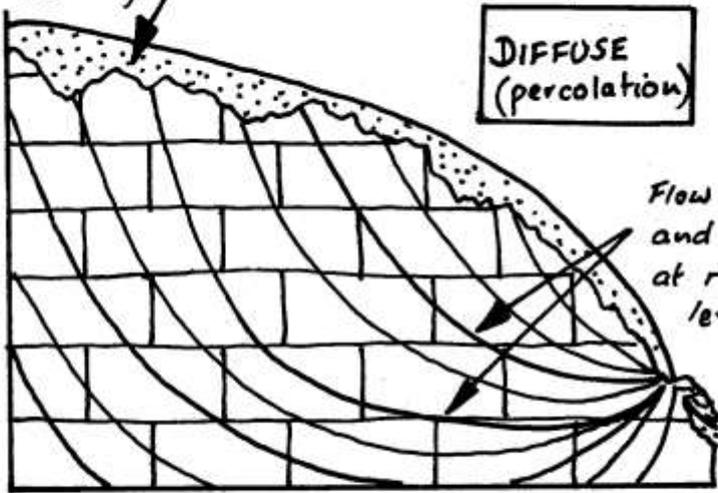
A further attempt, to link the average swallet contribution to the coefficient of variation of hardness at risings in County Clare, South Wales and Sutherland is unsuccessful due to systems in which water not entering the system in swallet streams nevertheless follows a conduit path. Consequently it has a similar chemical behaviour to swallet-derived water.

If the reader is now bewildered, so too is the writer. For other terms exist: Pitty uses allogenic karst water to mean roughly (diffuse) flows. Basically conduit and diffuse are best, being conceptually easy, free of regional tags and brilliantly defined by Shuster and White for ever more on pages 94 and 95. Since the definition touches on that magic topic, the water table, two diagrams based on those in Shuster and White are shown opposite.

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Will one volunteer buy one copy of the 'Complete Caves of Mendip' and review it for the rest of us?

Thick soil cover as result of solutional erosion concentrated at surface.

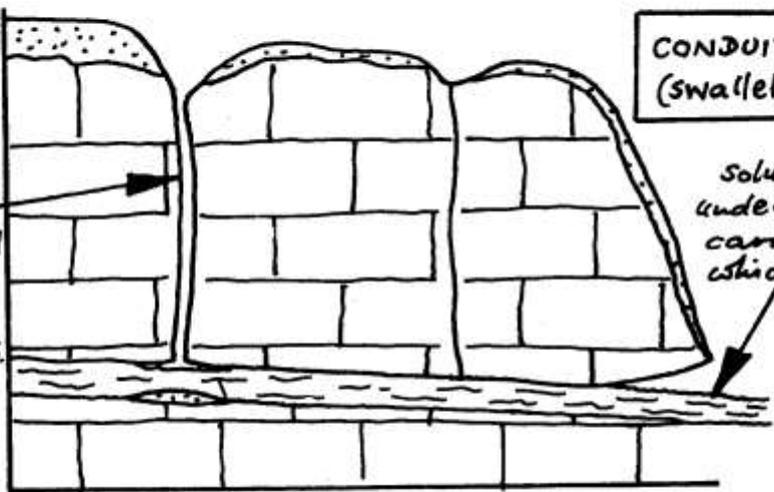


DIFFUSE (percolation)

Flow not concentrated and water found in interstices at regional piezometric levels, (water tables).

True Spring.

Flow from surface concentrated in large fissures or swallets. Erosion possible at depth.



CONDUIT (swallet)

Solutionally-enlarged underground channel carries large stream which appears to form the local water table. Emerges at resurgence. Carries sediment.

Is Chalk, therefore, ultra diffuse?

'Some considerations concerning percolation waters in the Chalk of North Berkshire', by K. Paterson (Transactions of the Cave Research Group, 13(4), 1971, 277-282).

\* \* \* \* \*

Of course the Chalk has few caves. It has few conduits. It has no swallets. It is 100% percolation. Paterson has been investigating hardness variability on the Chalk, at 10 springs. His samples were taken once a month for 13 months. Calcium hardness varied between 215ppm. and 357ppm. (mean values) at the 10 sites. At each of the coefficient of variation was between 1 and 4.7%, well within the diffuse definition of Shuster and White. Temperature variations were also minimal and bore little relationship to the climate on the surface. The Tritium content of the springs was very low.

This means that the water rising now almost certainly fell before the Tritium content of the atmosphere rose steeply with the start of nuclear tests in 1952. Thus flow-through times are in the order of 15 years! The reasons for this could be the flow of the water against the dip of the Chalk or the small diameter of fissures in the area. In fact other work has shown that water moves through the Chalk by intergranular seepage, at a rate of 0.88 m/year, rather than through fissures. This may be a local peculiarity, since fissure flow has been widely accepted in other parts of the English downland, flinty zones being stated as the cause. Other assumptions, taking faster fissure flow for granted, have been made by those declaring 'karstification' to be a reason behind the formation of dry valleys. The slow intergranular seepage is not good news for those who would seek caves in Chalk - these are usually restricted to fissure (or conduit) situations because of the faster flows and their conveyance of aggressive conditions to all parts of the underground network.

H.T.O.

France's underground laboratories

'Les Etres de la Nuit Souterraine', by Fernand Lot, (La Revue des deux Mondes, 8, 199-207).

\* \* \* \* \*

This synthesis of cultural and scientific news (it could only happen in France) has a section on 'La Vie Scientifique'. Describing speleology adroitly as 'alpinisme a l'envers' the author describes attempts by the French to set up subterranean laboratories. The first was by a friend of Martel called Armand Vire, who set one up under le Jardin des Plantes in Paris. Built in 1897, it was destroyed by floods in 1910. In 1930 the Yugoslavs set up Postojna as a working laboratory for the study of biospeleology and speleothems. In 1948 the French set up the Laboratoire Souterrain du CNRS. They chose la grotte de Moulis, near the Hennemorte in the region of Arbas. The stream was controlled, pumped and aerated round a series of lab-like chambers. The main investigation has been on the metabolism and reproduction of underground creatures. The typical adaptations to underground life have been studied: blindness, whiteness and a larval stage in insects which is virtually over in the egg. The difficulty seems to be to assign the speleological animals to their original lineage and to determine at what stage they left it to evolve in adaptation to underground life. The metabolic activity seems to revolve round a high concentration of bacteria underground. Many of them are autotrophic, capable of converting pure minerals to organic matter, which explains their independence of photosynthetic life.

The French also have laboratory facilities in the Grotte de Hautecourt and the Zoological department at Lyons.

H.T.O.