



## WESSEX CAVE CLUB

Journal No. 102, Vol. 8.

July 1965

### CLUB NEWS.

#### Site for New Headquarters

During the year the Committee have made considerable efforts to acquire suitable land on Mendip on which to build a new Headquarters. Recently we were pleased to receive Outline Planning Permission to develop a site off Eastwater Lane, and so at the moment negotiations for purchase are under way.

The plot lies to the north of Eastwater Farm, and is part of an irregular shaped field about 100 yards from the rear of the farm buildings. The entrance will be adjacent to the stand-pipe normally used by members staying at Eastwater Hut, and will lead along an 80 yd. fenced drive to the actual site. There are many advantages to this site apart from its central position relative to the major caves; these include mains water and electricity immediately to hand, a flat building surface, privacy, and very pleasant surroundings.

Naturally this is a very worthwhile and important Club project in which every member can play a vital and useful part, and one which quite obviously we must not be in too much of a hurry to see finished at the expense of careful forethought and planning. Therefore, once the legal formalities have been completed and the final purchase made, further details will be circulated to all members. In the meantime it is certain that our present Headquarters at Hillgrove will be in use for some time to come, and so thanks are due to all members who helped on the "Hut Working Weekend" a short while ago.

#### Donations

We would like to express our grateful thanks to Mrs. Rita Ash for so kindly answering the appeal for new curtains at the Hillgrove Hut. Those who have visited the hut recently must have noticed what a considerable improvement these new curtains make.

We similarly thank Paul Weston for his recent donation of cutlery. Now that we seem to have more and more mouths to feed at Hillgrove such gifts are very acceptable indeed.

#### Annual General Meeting & Dinner, Saturday 23rd October

The A.G.M. will be held at Priddy Village Hall this year, starting promptly at 2.30 p.m. Nominations for Officers and Committee, and motions for discussion at the A.G.M. must reach the Secretary before 2nd October. These will be circulated to all members shortly afterwards with the Minutes of the 1964 A.G.M., the Secretary's Report and ballot papers if an election proves necessary. There will be many important topics to discuss this year and so we will be pleased to see as many members as possible taking an active part in transacting the business of the Club. The Treasurer will be pleased to receive your subscriptions for the year 1965-66 after the meeting - remember that at last year's A.G.M. subscriptions were increased to:-

Full Membership: £1.0.0.

Joint Memberships £1.2.6.

Affiliated Memberships 5/-

The Dinner once again will be held at the Caveman Restaurant, Cheddar, 7.30 for 8.0 p.m. We are pleased to have Dr. F.S. Wallis as Guest of Honour. Tickets will be on sale as last year from early September at a cost of 15/- each, and are available from Paul Duck, 13 Goodymoor Ave., Wells, Somerset. Please make cheques and postal orders payable to "Wessex Cave Club" and do apply early to avoid disappointment as seating is limited to 150.

### Hut Bookings as from 1st September this year

Unfortunately Peter Riches has found it necessary to give up his office as Hut Bookings correspondent. Peter is talking over a new farm shortly and will not have the time to deal with the job. We thank him sincerely for his efforts over the past few years, for he has done the job excellently at a period when more and more members are using Club accommodation on Mendip.

Paul Duck has kindly offered to take over as Hut Bookings Officer from 1st September, and so members writing for bookings after that date should address their letters to: -

P.W. Duck,  
13 Goodymoor Avenue,  
Wells, Somerset.  
Phone: Wells 2501

The same procedure for bookings will continue, and this seems a good opportunity to remind members that arrangements are greatly facilitated if advance bookings are made in the diary at Hillgrove: whenever possible.

### New Members

We welcome the following new members to the Club (addresses are included in the Address List at the end of this Journal):-

Elected 23.5.65:

Mr. & Mrs. P.R. Kinslow, G.J. Brown, A.L. Merry, R.M. West.

Elected 18.7.65:

G.F. Reynolds, Miss A. Crago, D.S.H. Westlake, A.K. Brain, M.R. Harrison.

### Boiler Suits

The Club has recently purchased a stock of boiler suits which, although second-hand, are in very good condition. These will be on sale to members at 8/- each from Carl Pickstone, Rush Common House, Abingdon, Berks. Please quote chest size when you order and enclose postage, or, better still, contact Carl at Hillgrove at a weekend and save him the bother of parcelling them.

### Club Album

Alan Surrall would be pleased to receive prints of any member's caving photographs for inclusion in the Club Album - Alan's address is 216 Evesham Road, Headless Cross, Redditch, Worcs.

### Club Dig at Thrupe Swallet

Digging has now been terminated, due to depth and difficulty of removing spoil. The two years spent on this project have been very well attended by Club members and friends and many happy hours enjoyed.

An article with descriptions and survey will appear shortly in these pages just to keep things tidy. Our thanks go to Mr. Keen of "Thrupe" Farm for tolerating us in his fields.

### Central Collection of Caving Publications

Arising from the work of the Mendip Cave Registry over the past few years the need for a central collection of caving publications in the area has become apparent. For those people who consult the bibliographies which appear for each cave listed in the Registers it has until now been difficult to acquire copies of the publications referred to. The Registers are always available at Wells County Library and the Bristol Central Reference Library, but not the numerous publications to back them up. Fortunately this situation has now been resolved to some extent.

Largely through the energies of Mr. Ray Mansfield the Bristol Central Reference Library has recently built up what is perhaps the most comprehensive collection of caving literature in the country, which is readily accessible to the general public. A great deal of photocopying of rare originals has been necessary, but obviously there is a limit to this. Most Mendip clubs and many elsewhere now donate copies of all their publications to the Central Reference Library yet, while many sets are complete, there are still many gaps to be filled.

As a great number of our members live in the Bristol area this collection is of considerable interest to us. Go and see it for yourselves, and perhaps you may feel able to help in some ways if so, please contact Mr. R.W. Mansfield, 158 Coronation Road, Bristol 3.

### The Rescues

No doubt most members will have heard of the cave rescues from Swildons Hole on two successive weekends in mid-July. Fortunately as a Club we were not the culprits in either case. The first was due to thoughtlessness in not carrying adequate lights on the long and arduous trip from Swildons VI through the new Damp Link back to Shatter Chamber, and the second as a result of severe flooding in the main streamway. If the first was quite unnecessary, then certainly the second was sheer stupidity for, despite past experience and adequate warning notices, to have entered the cave under the prevailing weather conditions was to court disaster. It was indeed fortunate for at least one of the rescued that some casual visitors to the entrance during the afternoon appreciated the threatening conditions and raised the alarm when they did.

Most of us like a sporting wet trip, but surely to ignore the advice of Mr. Main, whose knowledge of Mendip weather and the cave far exceeds that of our own, is not only bigoted, but also to stretch his incredible hospitality to breaking point. The fineness of Swildons itself is nothing when compared with the generosity of its owner, and certainly nothing at all without his goodwill. Therefore at the risk of preaching to the converted it is worthwhile underlining the events which have led to the justifiable criticism of a few thoughtless cavers, not only from outside authorities but also from the majority of cavers themselves.

Younger members who do not yet know how to diagnose the condition of Swildons streamway during inclement weather would do well to note the following. After prolonged rain the water begins to lap up to the top of the entrance grating, which is the danger signal. In this state the Water Rift, Forty Foot Drop, and constricted passages below the Twenty Foot are virtually impassable. It then requires only a short, heavy fall of rain to cause the entrance to submerge and many parts of the streamway to sump. It becomes impossible to fight upstream against the flood currents, and each waterfall is charged with fast moving stones.

If you see the entrance stream at danger level therefore, please postpone your trip, regardless of the miles you may have travelled. Remember Swildons will always be there another day, but if you get trapped and require rescuing we may all have lost the finest cave in southern England, for ever!

### Council of Southern Caving Clubs

The Southern Council has now met a number of times and are finding the exchange of views and information with other Councils of considerable interest. The following caving news has been received from the Secretary, Dr. Oliver C. Lloyd:-

Eldon Hole, Derbyshire - On 15.5.65 a heavy rock fall occurred in the cave, as a result of which the entrance pitch and its approaches were made dangerous and the hole into the main chamber blocked. One man was hurt and two had a narrow escape. On 20.6.65 the main chamber was reopened by members of the Eldon Pothole Club, but if anybody wishes now to visit Eldon Hole he would be well advised to consult the local experts before doing so. We would suggest contacting Mr. John Needham, Hon. Sec. Derbyshire C.R.O., 67 Nunsfield Road, Buxton, Derbyshire.

Banwell Bone Cave - After a fair amount of chronic irritation by cavers trying to short circuit the approved method of gaining entry, the owner of this cave has now decided to put a ban upon all Sunday caving to the Banwell Caves. Would members please note that access to these caves on weekdays is by the Axbridge Caving Group, whose Caving Secretary is Mr .E. John Chapman, 1 The Square, Winscombe, Som.

### British Speleological Association National Conference 1965

The third post-war Annual Conference of the B.S.A. will be held this year at Leeds University, Bodington Hall, from 10th to 13th September. An interesting programme of lectures has been arranged and Conference Papers will again be reprinted in the B.S.A. Proceedings. In addition to lectures on specialist subjects there will be more general introductions to the average caver, including one on Geology by F. Atkinson, B.Sc., F.M.A., and on Cave Hydrology by K. Ashton, Ph.D. There will be an Exhibition of Photographs and works by various caving clubs.

There are full facilities at Bodington Hall for meals, board, refreshments, bar extension, etc. Full details are available from the Conference Secretary: Mr. M. Hollingworth, A.F. Inst. Pet., Services Section, University Union, Leeds University, Leeds 2. The fees are:-

Attendance and Proceedings	15/-
Attendance only	7/6
Proceedings only	12/6
Junior fee tender 18 years for Attendance & Proceedings	11/6

### Cave Study Course

We have recently received information concerning a course on "Cave Study" from Dr. H.A.P. Ingram, Staff Tutor in Natural Science at the Department of Extra-Mural Studies, University of Bristol. The communication reads:-

### Cave Study

"10 meetings, weekly on Wednesdays, 7.0-8.30 p.m. in the Department of Geography, University Road, starting 6th October. Fee 15/-.

The increasing popularity of the sport of caving has opened up more than a somewhat unusual sports ground. This course will be concerned with the scientific aspects of caves and potholes. It should appeal both to field scientists interested in caves and to cavers interested in field science.

Caves in the British Isles are most frequently developed in limestones and it is with this form of cave that the course will be most concerned. A consideration of the geological background to caves will be followed by details of the solutional processes that are predominantly responsible for their formation. The geomorphological aspects of caves and limestone scenery will also be outlined. It is hoped, wherever possible, to discuss techniques of cave study and with this in mind a lecture will be devoted to cave surveying. Once formed, caves present a specialised habitat for both plants and animals, which will be considered from the biological point of view. Cave archaeology with its specialised methods and problems often presents a remarkably complete record of the former human and animal occupants.

The lectures will be illustrated by slides and, although examples will be drawn from many regions, special emphasis will be given to the Mendip Caves. A comprehensive Introduction to the course can be found in "British Caving" (ed. Cullingford, 2nd edn. 1962, Routledge & Kegan Paul).

The detailed programme of lectures is:-

6th October	Geology of Caves & Mineralisation in Caves	Trevor D. Ford, B.Sc., Ph.D. Dept. of Geology, Leicester
13th & 20th October	Cave Formation & Theories of Development	D. Ingle Smith, B.Sc., M.Sc. Dept. of Geography, Bristol.
27th October	Deposits in Caves	D. Ingle Smith, Bristol.
3rd November	Caves & Limestone Scenery	Gordon T. Warwick, B.Sc., PhD. Dept. of Geography, Birmingham
10th November	Cave Surveying & Cave Surveys	Lewis Railton, A.M.I.E.E., M. Inst. W., Sutton Coldfield
17th November	The Fauna & Flora of Caves	Brig. E.A. Glennie, D.S.O., F.Z.S., Berkhamstead
24th November	Caves Illustrated	D. Ingle Smith, Bristol.
1st & 8th December	Cave Archaeology, with special reference to Mendip	Prof. E.K. Tratman, O.B.E., M.D., F.S.A. Burrington"

These lectures should certainly arouse considerable interest, particularly amongst members living in the Bristol area. If you wish to enrol on the course please contact Dr. Ingram at 20a Berkeley Square, Bristol 8.

## CLUB MEETS

### Weekend September 11th/12th Steep Holm.

Leader: Roy Staynings, 8 Fanshawe Road, Hengrove, Bristol 4.

### Weekend September 18th/19th South Wales. Visits to Ogof Ffynnon Ddu and Dan Yr Ogof.

Names to Leader: Paul Duck, 13 Goodymoor Ave., Wells, Somerset.

### Saturday September 25th Bath Stone Mines. Meet Bath Bus Station 2.30 p.m.

Leader: Will Edwards, 91 Rookery Road, Knowle, Bristol 4.

### Saturday October 9th Lamb Leer. Meet at Cave Entrance 3 pm.

Leader: Carl Pickstone, Rush Common House, Abingdon, Berks.

### Saturday October 23rd A.G.M. & Annual Dinner Priddy Village Hall and Caveman Restaurant, Cheddar.

For details see Club News.

### Saturday October 30th G.B. Meet at the cave 2.0 p.m.

Leader: Roy Staynings, address above.

Evening Film Show (venue to be announced) A Cave Rescue Film will be shown, together with slides of the Club Trip to France.

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Hon. Secretary: J.D. Hanwell, "Chaumbey", 50 Wells Road, Wookey Hole, Wells, Somerset.

(General Club Policy)

Hon. Asst. Secretary: T.E. Reynolds, Yew Court, Pangbourne, Berks.

(Membership applications, cave keys, C.C.C. permits, Survey Scheme)

Hon. Treasurer: Mrs. B.M. Willis, 3 Derwent Lodge, St. Philip's Avenue, Worcester Park, Surrey.

(Subscriptions, Accounts)

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

(Journal Material)

Librarian: Dr. D.M.M. Thompson, "Pinkacre", Leigh-on-Mendip, Nr. Bath, Som.

(Lending Library & Hillgrove Reference Library)

Hut Bookings: P.W. Duck, 13 Goodymoor Ave., Wells, Som. Tel: Wells 2501

(Hillgrove & Eastwater Bookings, Mendip tackle bookings)

Activities Secretary: C.R. Hobbis, Warren Lodge, Long Ashton, Bristol.

(Offers to lead trips, Requests for trips) Phone: Long Ashton 2127

Publication & Badge Sales: R.J. Staynings, 8 Fanshawe Rd, Hengrove, Bristol 4.

(Club Publications, badges, ties, lamp sets)

## EDISON SAFETY LAMPS

R.J. Staynings

As mentioned in the last journal, the club has obtained a quantity of Edison safety cap lamps from the National Coal Board and these are available for disposal at 25/- each from 8 Fanshawe Road, Hengrove, Bristol 4. There are usually a small number also available at Hillgrove. These lamp sets cannot be sent through the post but may be reserved for subsequent collection from Bristol by prior arrangement provided that each request is accompanied by the necessary remittance.

The lamp sets are available in the same condition as received from the National Coal Board and the majority are not fitted with switches.

The normal method of opening the cell case is to apply electro magnets to either side of the clasp, thus releasing the spring catches inside. An alternative method is to drill a hole through the face of the clasp at a point just above the top rivet, it is then a simple matter to release the catch on either side by applying slight pressure with a nail or similar instrument. A second alternative is to remove the pin from the hinge either on the lid or on the clasp, replacing same with a split pin of similar dimensions.

As the cells will probably contain some coal deposits, it is suggested that they be shaken up prior to draining out. To drain out cell, remove valve from the top of each cell (bayonet fittings) and tip upside down into container allowing to drain for about 20 minutes. Refill with sufficient electrolyte to just cover plates. DO NOT OVERFILL as this produces 'gassing' and bubbling over when charging, and leakage during use. The recommended formula for the electrolyte is 25% potassium hydroxide and 1.5% lithium hydroxide. Subsequent 'toppings up' should be with pure distilled water unless replacement is required through loss by spillage. Clean off all contacts and lightly cover with petroleum jelly. The lamp should then be charged.

Two lamps were checked as above and then charged for 18 hours on 6 volts after which one produced approximately 12 hours light and the other 13. In each of the two lamps mentioned, faulty fuses were found, these are triangular in shape and fitted inside the lid, the fuses were removed and the loose wire thus obtained connected to the vacant terminal. The bulb in each lamp worked satisfactorily.

Where no switches are fitted, a light is obtained on securing the lid to the case. Should the user not wish to fit a switch, a rubber or plastic cap fitted over the positive or negative terminal will prevent the circuit from becoming complete thus enabling the lamp to be transported when no light is required.

The lamp sets generally appear to be in quite good condition and are slightly smaller in size and lighter in weight than the Nife lamp. All the tests so far carried out have indicated that they will stand up to a reasonable amount of misuse, (overcharging, dropping etc.) but it is recommended that they be stored in a charged condition after each use.

The club has also obtained some second hand Nife headpieces complete with cable and as they contain a space for a pilot bulb and are all fitted with a switch and can be adapted to fit the Edison lamp, it is recommended as this month's 'Bargain of the month' at 5/6d. For fitting to the Edison, proceed as follows:-

Remove the bezel, glass, bulb and reflector from the Edison headpiece, taking great care not to damage the rubber washer surrounding the reflector. Now remove the two wires from the terminals in the base of the headpiece and pull the cable into the headpiece thus exposing a metal clip which prevents the cable from being pulled out of the lamp, remove this and the headpiece can then be discarded. Take the Nife headpiece and undo the nut nearest the cable, remove the bezel, glass, bulb, reflector and wires and pull the cable from the headpiece taking care not to lose the rubber sleeve from the cable. Taking up the cable from the Edison, thread first the nut, then the rubber sleeve and finally the Nife headpiece onto the cable and secure the two wires to their respective terminals, push the rubber sleeve home and tighten up nut. Fit new pilot bulb (4 volt. 3 amp.), the Edison reflector washer to the Nife reflector and fit to base, insert Edison bulb to main bulb socket and finally the Nife bezel and glass.

A small stock of spares is now maintained by the club and can be obtained from the gear curator or from the Hut Warden. Range of spares available and prices on application.

## RESCUES IN SWILDON'S HOLE

C.K.Kenney

Within a week there have been two major rescues from Swildon's Hole. A little after midnight on the 19th July 1965 anxious parents at Weston and Bristol reported their sons missing and soon after a caver at Priddy reported a party of four overdue in Swildons. And so the wheels of the Mendip Rescue Organisation sprang into action. It is a comforting thought for all cavers that the M.R.O. is ever striving to increase its efficiency and this enthusiasm for its task is due in no small measure to the driving force of its Secretary - Dr. Oliver Lloyd. The lessons of the major rescue in Swildons the previous year had been learned; no longer were cavers allowed to enter the cave unchecked and communication between the cave and surface was much improved. The lost party of four had entered the cave about midday intending to make the round trip Swildons 4, 5, 6, North-east tributary, Causer's Calamity and Shatter Passage. Their lights consisted of 2 hand torches, 2 acetylene lamps and one Nife-cell. The two acetylene lamps could not be re-lit after Sump 4, one hand torch was lost in the first "damp" and the other gave out. The party were then left with one Nife-cell (which itself was failing) in a part of the cave with which they were not familiar. The route in the region of Shatter Chamber is not easy to find and it would seem desirable to acquaint oneself with this part of the cave before attempting a round trip. This route should not in any case be lightly undertaken. Its major hazards are bad air and the sumps which have to be bailed. There is a real risk of parties being trapped between the sumps by water rising faster than is expected.

It is clear that a major trip of this kind should not be undertaken without adequate reserves of lighting. Even on the simplest trip it is desirable for each caver to have a second source of light. To fix an emergency electric light on one's helmet need not be bulky or costly and can prevent a trip being spoilt by a failing light. Users of acetylene lamps should learn the technique of re-lighting their lamps after a Sump- if they are to rely on them as their main illumination. It is only too easy to criticise those who caused the rescue, and often the criticism comes from those who have themselves cause to blush when thinking of their past exploits but at least let us all learn from the incident - and check the adequacy of our lights.

The second rescue was a much more serious affair, for it involved not only danger to life, but unfavourable public reaction towards the activities of cavers. As most readers will know it has been a very wet July and a week of storms was followed by a succession of heavy showers at the weekend 24th/25th July, These are conditions under which flooding can be predicted, and in fact some of the Rescue Organisation got their kit ready before the call-out. The notice concerning flooding at the entrance does not just mean that the cave will be wetter and more sporting than usual, but real danger to life is involved. The Water Rift will sump and also the Shrine area and most parts of the stream-way will be dangerous owing to the likelihood of being swept off one's feet. Also stones are carried along by the water and are a danger on any vertical.

Despite advice from the Farmer, several cavers, entered the cave on the Sunday and inevitably seven were trapped in the cave by rising water. It was then that they made their second mistake - trying to climb the 40 ft. against the rising flood. Two of the party made the top only to find that the Water Rift was a sump. A third caver climbed the ladder only to find that he could not climb over the lip of the drop owing to the pressure of the water. Stepping off into the little grotto below the top his light failed and there he had to remain until rescued. It was his good fortune that the M.R.O. called itself out at an early stage of the flood, for he might well have suffered the fate of others who have died of exposure under these conditions, since he wore no "goon suit" or "wet suit". A fourth member of the party tried to climb the ladder but when about 10 feet up was swept off by the flood. Fortunately he wore a life-line and his fall was controlled. The remaining three could now see the wisdom of waiting for the flood to subside or for rescue to come.

Meanwhile, the Bristol Waterworks had turned on their pumps at the springhead, removing 50,000 gallons per hour to a reservoir at the top of Easton Hill which overflowed into Brimble Pit Swallet. Fire pumps arrived from Wells and pumped into the adjacent field 40,000 gallons per hour, but this still left the stream dangerously high. Eventually further pumps arrived from Cheddar, Shepton Mallet, Glastonbury and Street and a total of 150,000 gallons per hour was taken from the stream. Even so, the 40 ft. drop was a noisy, frightening place, but just possible to climb. Confidence was given to the rescued by using a hauling line on the 40 ft. as well as the life-line and the laying of a telephone on the drop helped a great deal.

On the surface the Police "walkie-talkies" were useless owing to interference from the pumps, so a telephone line was laid between the Green and the cave entrance.

The most serious aspect of this incident was unfavourable public reaction. Headlines were "stop these idiot cavers" - "potholers ignored warning" and "police criticise cavers". An Editorial commented on "this monstrous waste of public money" and "the time has come when entrances of all such caves should be better controlled". The practical causes of the public concern were the cost to ratepayers and the fact that flooded houses in Wookey Hole were denied the help of pumps because they were all at Swildons. It is this kind of public pressure that could cause a cave owner to shut his cave to all, but fortunately in Mr. Main we have a wonderful friend. Let us help him by seeing that any system of control he may wish to introduce is allowed to work.

## CAVE GRADING

Mike Wooding

I have felt for some time that there is a need for an improved system of grading the difficulties encountered in caves. At present the following standards are used in several areas in this country: -

Easy Cave	E.C.	Easy Pot	E.P.
Moderate Cave	M.C.	Moderate Pot	M.P.
Difficult Cave	D.C.	Difficult Pot	D.P.
Very Difficult Cave	V.D.C.	Very Difficult Pot	V.D.P.
Severe Cave	S.C.	Severe Pot	S. P.
Super Severe Cave	S.S.C.	Super Severe Pot	S.S.P.

Departures from this system include "Underground in Furness" which does not use the severe or super severe grade and employs the abbreviation "DIF" for "difficult", reserving "D" for "dangerous". The guide book "Caves in Wales and the Marches" takes the purist view and does not use gradings at all. David Heap in his book "Potholing beneath the Northern Pennines" suggests the use of a new grade "Excessively Severe" (X.S.) being harder still than "Super Severe", and he very bravely gives a graded list of Craven's most severe potholes and caves.

The whole problem of adequate grading is complicated by the dynamic state of caving. Progress in the fields of discovery and endurance naturally causes "bunching up" in the top grades. The same trouble afflicted the climbing world about ten years ago when a similar range of difficulty was covered by the grades "Easy" to "Severe" as was included in the "Very Severe" bracket. The solution adopted was to add the grades "Hard Very Severe" and "Extremely Severe" (and for a short time "Exceptionally Severe"). A system of grading technical difficulties in climbing by numbers was first popularised by the continental Vallot guide, and has spread over most of Europe. This system, which was used in the guide to Limestone Climbs in South West England in 1955, consists of numbers from one to six followed by the letter "a" or "b".

There are those who say that cave gradings should not be given, and those who say that detailed descriptions should not be published either. The easy answer to these purists is that the information is there for those who require it - there is no compulsion to use a guide book. If gradings are to be given however, they should be both accurate and adequate. The question of the 'best way to describe a cave' (or trip in a cave) is too big to tackle here, and I suspect I have made enough enemies already, so will conclude with the suggested grading system.

<u>Grade</u>	<u>Equivalent</u>	<u>Example</u>
1	Easy	-----
2	Moderate	Goatchurch
3	Difficult	Bar Pot
4	Very Difficult - Severe	P8 (Jack Pot)
5	Super Severe	Dowber Gill Passage
6	Excessively Severe	Mossdale, Far Marathon

Just to stick my neck out a bit further, here is a graded list of trips in Swildons.

- 2 Upper series (dryways)
- 3 Priddy Green sink  
Upper series (wet way)
- 4A Stream way to sump 1  
To Mud Sump  
To top of Shatter Pot  
To top of Blue Pencil passage
- 4B Streamway to sump 2  
Vicarage Passage  
IV by Blue Pencil passage  
Shatter Chamber
- 5A End of Black Hole  
Double Trouble round trip  
VI by Blue Pencil passage  
Round trip in Cowsh Aven series
- 5B VI to Shatter Passage round trip  
IV by way of streamway  
VI by way of streamway  
VI to Shatter Passage by streamway

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# THE DIGGING AT THE END OF GOUGH'S CAVE, AND ITS BEARING ON THE CHANCES AT CHEDDAR

W.I. Stanton

## Introduction

The legend of Cheddar hole must have thrilled every Mendip caver at some point in his career from Goatchurch or Swildon's to the armchair, and until recently, when this Journal (no.'s 89 and 95) saw attempts by certain sages to debunk it, there seemed to be much in its favour. The presence at Cheddar of the biggest Mendip resurgence, with extensive and roomy dry upper levels, seemed to guarantee vast discoveries to anyone who would follow old Richard Cox Gough and dig for them. The only snag was that the Cheddar Caves management was wary of cavers, and digging was not allowed.

In 1950 the present writer, who in spite of his honest face possesses a modicum of cunning, obtained permission to survey the Gough's group of caves. The work done, he drew up a beautiful, illuminated, full-colour, altogether breath taking plan and section which he presented to the management, softening thereby its heart of stone. While surveying he had discreetly observed the cave hydrology, and had deduced that the water that formed all the upper passages - i.e. Great Oones Hole, Long Hole and Gough's Cave - had its source in the Boulder Chamber at the end of Gough's (Stanton 1953). The Boulder Chamber, it seemed obvious, was the place to dig. Permission to start work was nevertheless refused in 1953 and 1957.

## The Digging

In 1960, perhaps becoming bored with my persistence, the Caves' manager allowed me to start a dig. He imposed conditions to prevent interference with tourist parties by gangs of supposedly unruly cavers: I was to work alone and keep the project absolutely secret. There was no alternative, so this was agreed.

At the southeast end of the Boulder Chamber, the furthest point from the cave entrance, a little stream rises in wet weather from a mud choke below the Forty Foot Drop and trickles into and along the tourist cave until it sinks into the floor near the Fonts. Its size is augmented along the way by other trickles, and my original guess was that it originated as the wet-weather drainage of a further, as yet un-entered, section of dry upper passage. Certainly it appeared to traverse passages once occupied by the underground river as it threw up sand and polished quartz granules.

## The First and Second Digs

I started digging the mud choke (area 1 on the plan, Fig.1), and soon was dismayed to find that the little stream gushes up out of a sloping crack only 2" wide in the solid rock. The crack extends downwards, and I dug a pit in the heavy red boulder-packed clay beside it hoping that it would widen with depth. There was however no widening 5' below the original floor, so I looked around

the Boulder Chamber for an easier way to the east (I assumed that the cave would continue the eastward trend of nearly all its major passages). About 15' away on the south side of the Chamber (area 2 on the plan) was a low wide tunnel choked with dry silty clay to within an inch of the roof. I sank a trench 10' long into it, in the process discovering a 20' side passage, but desisted on meeting solid rock only 3' below the roof. Returning to the first pit I deepened it to 7', but then decided that the whole business was too much for one man and gave it up. The clay walls of the pit collapsed when the little stream flowed and flooded it in the autumn. That was the disappointing end of the 1960 season.

In May 1963 the management allowed the work to resume with digging parties up to 4 strong. The situation had been changed since 1960 by a Journal article (Ford 1963), in which Derek Ford concluded from his study of the Cheddar caves that formative water had entered Gough's down the dip from three high-level passages on the north between King Solomon's Temple and the Boulder Chamber, as well as from low-level passages on the north side of the Boulder Chamber. He regarded the first high-level inlet, behind the "Black Cat" shadow, as the most promising.

### The High-level Inlets

On our first trips of the new season we therefore investigated the high-level inlets. The Black Cat inlet was choked by a stal flow more than a foot thick (as determined by drilling 2 holes). Since blasting was forbidden we ruled out this passage as impossible to dig. The second inlet, off Mushroom Chamber, closed down most unpromisingly in solid rock. The third, north of Sand Chamber, ended in a massive boulder choke, without blasting another impracticable dig. So we returned to the Boulder Chamber.

### The Second and Third Digs

During the next 4 months a great deal of hard work was done by a varied team consisting mainly of Wessex members but including contingents from Shepton and B.E.C., and the Bristol Cathedral and Sidcot School clubs. First the southern trench (area 2) was extended to where a solid rock wall met the solid floor, on which were pockets of coarse sand. Then the north wall of the Boulder Chamber was explored (area 3). Digging down about 3' through boulders and then laminated sandy clay we met solid rock, either floor or a ledge in the wall, coated with a layer of sand. The angle between wall and "floor" developed into an overhang, and we dug a trench for 6' along it towards the northwest to enter a low rising bedding plane that closed down completely after 15'. There was an interesting slot in the floor down which small stones could be dropped & after rattling a few feet they fell free onto a hard mud slope down which they rolled a short way. We estimated the total depth as about 10'. However, without banging there was no hope in it.

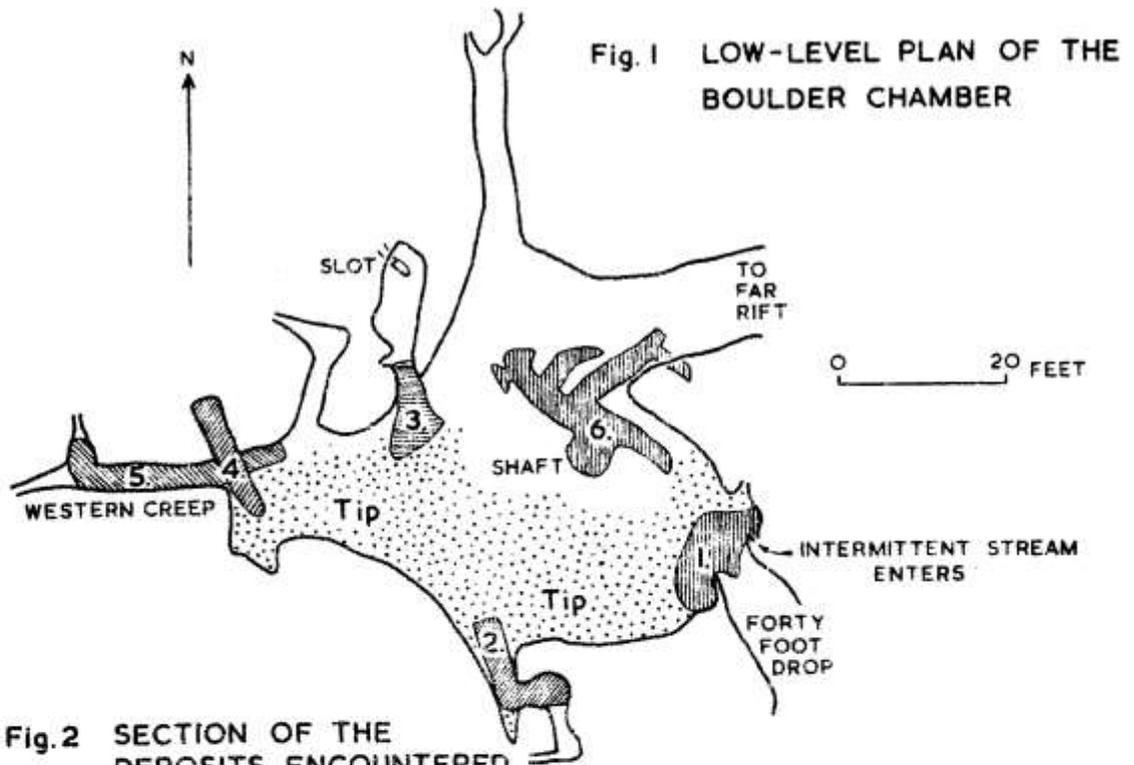


Fig. 2 SECTION OF THE DEPOSITS ENCOUNTERED IN THE SHAFT

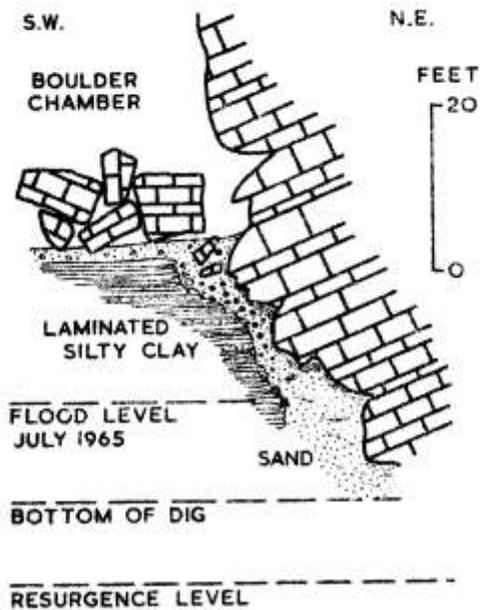
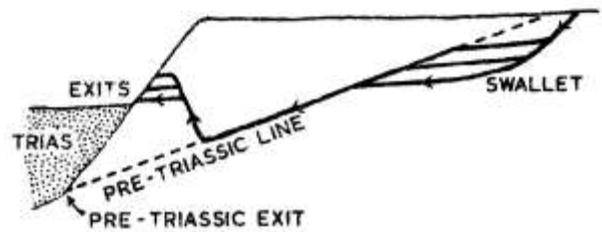


Fig. 3 DIAGRAM SHOWING POSSIBLE EFFECT OF PRE-TRIASSIC DRAINAGE LINES ON THE CAVE SYSTEM



### The First Dig again

We now returned to the pit where the intermittent stream appears (area 1, see survey at the end of the journal), deepened it to 8' below the stream bed, and extended it about 10' to the southeast following the solid rock wall and roof. The material removed was sub horizontally laminated hard dry silty clay with occasional thin layers of silt and fine sand. Large boulders were embedded in the upper part of the deposit, and broken pieces of stal floor and a few complete stalagmites occurred at all levels in the deposit below the Forty Foot Drop, suggesting that this was normally air-filled and that the laminated clay was laid down by infrequent floods. Also common were irregular lenses of clay breccia, apparently formed by the drying, cracking and collapsing of mud layers deposited on sloping parts of the cave walls. Since the clay laminae were little disturbed it was clear that the floods had entered the chamber elsewhere and that this dig was probably in a backwater, so we abandoned it a second time.

### The Fourth Dig

Still enamoured of the north wall we drove a trench into a very low tunnel near the west end of the Boulder Chamber (area 4). There was up to a foot of coarse sand bearing mud chips and small pebbles on the surface, overlying about a foot of silt that in turn rested on often more than 2' of part brecciated, part sub horizontally laminated, clay and silt, with a broken stal floor at the sand/silt contact. At the end of the trench the top sandy layer thickened to more than 2' and rested on a ledge or floor of stal-coated solid rock. Depressions in the floor contained mud packed with air bubbles up to one tenth of an inch in diameter, looking like Aero chocolate and apparently a sort of foam produced by flooding. This trench was 15' long and closed down in solid rock. It appeared to provide a cross- section of the roof of the main east-west passage.

### The Fifth Dig

We had now explored all the possible routes leading off the Boulder Chamber at floor level except the "Western Creep" (area 5) which takes the intermittent stream down to the show cave. This was a sandy flat-out wriggle leading west and choking after 20'; just before the choke was a branch, also choked, to the north. There was indefinite scalloping on the roof of the Creep. As a last resort we decided to dig the northern branch, in the somewhat forlorn hope that it was an inlet making a hairpin bend to enter the Boulder Chamber.

Two factors gave some encouragements the previous dig had shown that the Creep was in the apex of the roof of a much bigger passage, and I had once detected, or imagined, a draught blowing down into it. In its existing condition the Creep was virtually impossible to dig, so we drove a man-sized (5' deep) trench into it. The work went fast in soft clay and sand, especially on an afternoon when, due to the presence of the incredible Alan Surrall, we moved 250 bucket loads and made 6' forward progress in just over 4 hours! But the trench was only 12' long when I had to return to Angola and work ceased for the season.

In digs on this scale it is essential to choose the right place to tip the spoil, avoiding (a) restricting access to the dig, (b) interfering with natural drainage, and (c) blocking up future digging sites. We were lucky to have plenty of tipping space in the low-level western part of the Boulder Chamber, but had to build a dry-stone culvert more than 30' long to take the intermittent stream under the tip from area 2 to area 3. An attempt to divert it down the slot beyond area 3 failed when it opened a bypass somewhere under the north wall of the Boulder Chamber and returned to the Western Creep.

The next season began in July 1964, when thanks to their record of good behaviour the diggers were granted virtual *carte blanche* by the Caves' management. Working parties up to 15 strong, again mainly composed of Wessex and B.E.C. members, were enabled to dig long after the cave had closed for the night, and as a result the bucket record was gradually upped to 360 in a visit. Anything less than 200 buckets a day was considered to be rather shameful.

The Western Creep trench was soon extended into the northern branch, which was revealed, like area 4, as no more than a narrow north-south aven crossing the roof of the main passage, which must run westwards to join the show cave at Pixie Forest. The trench walls exhibited strong crossbedding in the surface sand layer, showing that it was laid down by a stream flowing west. Scalping in the roof also indicated westward flow, i.e. away from the Boulder Chamber. So one more dig was abandoned. Along the whole 23' length of the trench up to 1' of coarse sand overlay up to 4' of laminated silt and Clay containing some pockets of fairly coarse sand. The laminae were generally sub horizontal but were locally broken and quite steeply dipping, perhaps due to differential compaction. We were very surprised to find the limb bone of a fox-sized animal in the surface sand, it was porous and evidently very old, though but little worn, and we were quite unable to explain its presence.

Picture the situation at this stages Five passages, 3 open, 2 choked, were known connecting the Boulder Chamber to the rest of the cave, and all appeared to have channelled water from the former to the latter. We had dug all the obvious choked passages without finding our goal, the major inlet that must exist, and had to conclude that it was completely buried somewhere in the floor. However our diggings had provided a clue as to where to look for it by typically exposing a great thickness of laminated clay below a surface layer of coarse sand. We thought that the clay probably represented a long period of intermittent backwater flooding, followed by deposition of sand during a short lived rejuvenation of the main underground river. Therefore we should search for a point where the clay was pierced by a core of coarse sand filling the channel through which the river broke out.

### The Sixth Dig "Down to the Water Table"

The part of the Boulder Chamber floor that we had not yet investigated was the region covered by the great boulder pile that gave the chamber its name. Only at one place, in the northeast corner (area 6), was it possible to squirm down between boulders and solid for 10' to the floor level. A

trial pit showed that there was a lot of sand present here, so we improved the access, bolted a pulley to the wall above, and sank a shaft down the wall. This proved to go down almost vertically after an initial outward slope that pushed the shaft sideways under an enormous rock with no obvious means of support except sand, but which has not shifted to date.

The top 4' of the shaft (Fig.2 See survey at the end of the journal) was mainly in boulders with the intervening spaces filled with sand and gravel carrying lumps and chips of clay. Below this boulders became scarce, and the shaft entered sub horizontally laminated silty clay with pockets of white silt. However, the clay and the rock wall were separated by a stony seam about one foot thick consisting of stones up to cobble size set in more or less muddy sand. Many of the smaller stones, made of limestone, stal floor, stalactites, marl, and occasional quartz or sandstone, were smoothly rounded, and the larger cobbles were not infrequently rounded off at the corners. As we uncovered the rock wall behind this "sand/pebble" we found that it was locally draped with broken stal curtains to a depth of about 17' below the original floor level, showing that it had been open and air-filled for a long time. After a good deal of study of the sand/pebble seam, both of specimens and of its contacts with adjoining deposits (the laminated clay was cracked and broken, with lumps peeling away and the cracks filled with sand, at the contact), we concluded that the pebbles were rounded by rolling in water gushing up an open channel without enough force to carry them up all the way into the Boulder Chamber. On this reasoning the sand/pebble seam occupied the major inlet for which we were searching, and we followed it down with growing excitement.

When the shaft was 6' deep the rock wall on the north became undercut, and at 12' down we were able to deflect the pit northwards so as to work under a rock roof. The sand/pebble seam continued hugging the rock, and at 15' down we recovered from it some blackened bits of large bone and a much-rolled ruminant tooth! (Any offers to date them will be welcome). They must have come all the way from a swallet. At this level the sand/pebble seam passed into a thick and extensive deposit of coarse clean sand with occasional pebbly patches, showing roughly horizontal but strongly lenticular bedding. Low air spaces appeared leading northwest under the roof, and we drove a man-sized gallery 12' long following them, all in sand, before concluding that we were bearing too far west, and were going downstream rather than upstream. Our reasoning was mainly based on the cross-bedding, which, though ambiguous, seemed to have a tendency to mainly southwestward dips.

At this point the wet weather caused the intermittent stream to flow in the Boulder Chamber. To our surprise the shaft remained dry and we concluded that the stream is only local drainage, unconnected with the main cave system.

We drove two exploratory trenches northeast from the gallery, and eventually concentrated on the eastern one. The roof soon sloped down steeply (still draped with stal curtains in places), forcing the trench to develop into another pit. The walls were still massive sand, but there was a 2'-thick zone of layered sand and clay at the top, the layers roughly following the contours of the rock roof.

As the pit deepened to 28' below the original floor level we became anxious about the stability of the sand walls, which were inclined to crumble.

For this and other reasons which seemed sensible at the time we drove an exploratory gallery east-southeast, starting 20' below the original floor level. It reached a length of 10' before passing out of the sand through a zone of brecciated clay into undisturbed laminated clay. Clearly this was the wrong direction.

We returned to the lowest depth, the bottom of the unstable pit, and drove east-southeast following a vertical seam of loose silt and fine sand which seemed to be the latest deposit of all, as it cut through all the others. There was pronounced vertical fluting in the clay at a silt/clay contact, suggesting that the silt-bearing currents had welled straight up from below. When this gallery was 10' long the rock roof came down suddenly, the rock wall sloped gently outwards, and we were forced back to the perilous pit.

Gingerly we deepened it, and were relieved to find the north wall undercut, affording us some protection when we tunnelled under it. The shaft was now 32' deep, and according to the survey the bottom was at 95' O.D., or only 10' above normal water level at the Cheddar resurgence. This was as deep as the dig went, for on January 23rd 1965 we found a foot of clear water at the bottom and a water mark 2' higher. Bailing was no use, for the water kept seeping in through the sand on the west side. What had happened presumably, was that prolonged but not especially heavy rain earlier in the week had raised the water table to 93' O.D. The flood conditions outside the cave were quite normal for winter, and we therefore decided to give up the whole dig, at least until the summer. A visit on March 9th found it dry again after the unusually dry weather, but the heavy rainfall in late July left a watermark at 106.6' O.D. (7' higher than the flood level at the cave entrance). The whole lower part of the dig collapsed, revealing that the rock roof had the form of a wide archway, and the clay walls of the upper shaft were somewhat undercut, rendering them dangerous.

### THE CHANCES NOW

The main outcome of the diggings has been the discovery of the major inlet below the floor of the Boulder Chamber. I am still inclined to believe that this was the only important source of formative water for the Gough's group of caverns, since the three "high-level inlets" mentioned above are very like the blind up-dip extensions that are common in the rest of the system. The end of the first inlet is a stal blockage at the same level as and only 25' from the great bedding chamber in the roof of St. Pauls (only recently surveyed), and probably connects with it. The second closes down in solid rock, and the boulder choke in the third was forced upwards to an apparent dead end in solid rock by Roy Bennett in December 1964.

If in fact all the water came from the Boulder Chamber inlet, the chances are very poor indeed. The Gough's system will have "done a Wookey", the river having welled up from far below the

water table to form first the Great Oones Hole level and then successively lower levels, as the water table fell in step with down cutting of the Gorge by its periglacial river. From Great Oones Hole to the deepest point of the Boulder Chamber dig the passage descends steeply for 240'; it is therefore extremely optimistic to hope that it levels off and starts to rise again in the mere 10' or less between the bottom of the dig and the summer water table. This was the basic argument for abandoning the dig, and if it is valid there seems to be little prospect of finding major dry extensions to the Cheddar Caves, we can only hope that there is a loophole somewhere, in Cooper's Hole, for example.

The similar vertical layout of the Wookey and Cheddar resurgence systems is probably significant. Recently Dave Drew reminded me of the idea advanced by H.E. Balch (c.f. Balch 1914, pp. 17, 250) that the Wookey Axe wells up from deep below the water table because its underground course is partly determined by pre-Triassic (or early Triassic) drainage lines. On this theory, swallet water may encounter a pre-Triassic cave (which may be of extremely small bore) and follow it towards pre-Triassic resurgences that are now far below sea level and buried beneath hundreds of feet of Triassic impermeable rocks. Then, to find an outlet, the water must force its way up from this deep level. This is certainly one way of explaining the upwelling from depth of the Cheddar and Wookey rivers, as well as the remarkable hairpin bend down and back to the south exhibited by Wookey. If it is the correct way, there will be a gigantic U-tube between swallets and resurgence (Fig. 3.) forever impenetrable to man, and, incidentally, the dry upper levels in the swallets will also end as they join the pre-Triassic drainage line.

#### ACKNOWLEDGMENT

The diggers owe a profound debt of gratitude to the Caves' manager, Mr. Gerald Robertson, who has taken a keen interest in the work and has afforded every facility to help it along.

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ON HAVING BEEN THROUGH SUMP 4  
AN UNEVEN NUMBER OF TIMES

Mike Wooding

When Willie Stanton's new Swildons survey came out I was intrigued, in company with many other people, by the possibility of a passable connection between the Shatter Passage extension and the modern streamway. The survey showed that the shortest distance involved was 160 feet between Causer's Calamity in the Shatter Series and N.E. Tributary Passage in Swildons VI. The other places worth considering for a connection seemed to be Enema Passage in VI and the boulder choke in Shatter Chamber, as well as a number of side passages further down the streamway. Whilst water sampling in Swildons VI in June with Maire Urwin of Imperial College Caving Club, I took the opportunity of visiting the N.E. Tributary Passage. This was about 130 feet long and sportingly tight, and led to a 15 foot aven with the active stream entering at the top, and a short passage leading on to a static sump. This was a complete surprise to me, and we both set to with a will alternately trying to dive and bail the sump. The way on underwater was heavily silted, and when I later read Derek Ford's original verdict of "impossibly tight" I was forced to agree.

A week later I trudged down the streamway in VI bearing gifts of polythene bags, scaffold tube and a yellow plastic bucket. A solid dam was constructed at the mouth of the sump and bailing commenced. I had been working there for some considerable time and was beginning to feel rather tired when the sump emitted some promising gloops and glugs. Understandably this spurred on bailing and digging, until a passable air space was formed. I timorously entered this feet first and soon found myself in dry passage - a tight tube with mud and gravel floor. However, as I had started off feet first I had to continue in this frustrating manner until I reached a small chamber where I could turn around. The remainder of the new passage (about 120 feet in all) was similar and ended in a squeeze below a 5 foot climb and the inevitable sump. My first reaction was to reach for the bucket and start bailing it, but fortunately it filtered through to my waterlogged brain that if I did so I would flood the first sump and trap myself. As an alternative I probed the sump with my feet and using the last half inch of airspace got my toes into fresh air on the far side. The underwater passage was again badly silted and had to be dug extensively. I then tried diving the sump but realised quite soon that it was not a wise thing to do. So, honour satisfied I retreated.

The next day Tim Atkinson, Dave Drew and I set off through St. Pauls bearing yet another plastic bucket, red this time. We optimistically laddered the Shatter Pot pitch and continued to Blue Pencil Passage and the streamway. Tim's turn through sump 4 was his first, but he treated it like a veteran and we were soon ensconced at the first sump, bailing happily. The pool had partly refilled since the previous day and several minutes were spent lowering the water level to 2 feet 6 inches below normal, when the sump became passable. I scurried on to the second sump leaving the other two to keep the first one dry. The position for bailing was uncomfortable and after a while I

became tired of working and decided to dive through using a face mask, although the sump water was like thick brown paint. After a moment's hesitation I took the plunge, both hands in front of me, and straight away knew that I was in trouble. The sump took a sharp right hand turn and was tight into the bargain, and my battery case jammed solidly. Fortunately by twisting my head right round and pursing my lips I could just reach the surface and breathe. A quick glance told me immediately that the passage I had just entered was in fact the end of Causer's Calamity in the Shatter Passage extension. I retired, chastened, and bailed some more before calling Tim and Dave to join me. We all got through safely into Causer's Calamity and began the journey home. The whole trip took 5½ hours and our arrival at the surface coincided, as usual, with closing time.

The time of 5½ hours is reasonable for a small party moving quickly but there is no reason why a fit and experienced party should take more than 4 hours. The route via Blue Pencil involves over 6,000 feet of cave and like the alternative route probably justifies a grading of 5B. The Great Round Trip involving going down the streamway and out through Shatter Passage is one of the finest routes in the cave. Provision must of course be made for the Shatter Pot pitch to be laddered. An exchange of parties in opposite directions would facilitate this, and simplify the problem of transfer of lead weights at sump 4. There is no extreme technical difficulty in the new link as long as two points are borne in mind. When bailing the second sump always have a party at the first one to re-empty that. Always bail to give an adequate airspace. Problems of exposure are always present but the activity of strenuous bailing tends to keep one warm and happy. The section of the cave between the VI streamway and Shatter Passage consists of 350 feet of awkward crawling broken only by the two sumps. The total rise from the streamway to the connection with Shatter Passage is 105 feet.

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If you were born to walk the ground,  
Remain there, do not fool around.

'D' - Hillair Belloc.

## MENDIP NOTES

### Cheramodytes

#### The Aftermath.

Following the cave rescue at Swildon's Hole on 25th July a considerable amount of unavoidable mess was left around the cave. In particular the firemen had found it necessary to pull down six and a half yards of dry-stone wall to construct a dam upstream of the entrance. Unfortunately all this was left, presumably for Mr. Main to get cleared up, which was rather rubbing salt into the wound. It is nice to hear that two Wessex and two Cerberus members spent an afternoon of their holidays removing the dam, making the wall good again, and cleaning up the site.

#### St. Andrew's Well in flood

During the seven days ending July 26th the Bristol Waterworks recorded 4.21 inches of rainfall at their Rookham station. On the previous evening, July 25th, the main swallets on Mendip had flooded to a maximum, causing the Swildon's rescue. Flood waters reached a peak level at the lake in St. Andrew's Well by the Cathedral at Wells some 12 hours later, and by taking flow measurements at the two main sluice outlets soon afterwards it was calculated that well over 1,500,000 gallons of water per hour was being discharged here at an estimated flow rate of 22 feet per second. The two sluices measure 3' 0" wide each and the water was 1' 10" deep above the openings. Added to this was a further yield from another pond lying to the west of the lake, which flows independently westwards under the graveyards; but under the prevailing conditions it was impossible to calculate the amounts of this flow, and so was not taken into consideration.

Mr. W.A. Wheeler, Clerk of Works at the Cathedral informed us that this flood ranks with others recorded over many years here.

#### Balch Cave

Rumour had it a while ago that another large chamber was about to be opened up in Fairy Cave Quarry. On Tuesday evening, 13th July, a small party including Jack Hill of the Cerberus, Brian Prewer and Ken Dawe paid a visit to the "new hole". Descending a quarry debris scree into the hole they immediately recognised that they were on the lip of what had been the pitch into Cascade Chamber in Balch Cave. They followed an unstable Erratic Passage back to the now infilled Entrance Chamber, and then in the other direction found it possible to squeeze through a boulder pile into Pool Passage. This passage remains much as it was before except that most of the pools have gone. Progress into the further reaches of the cave however, came to an abrupt halt at the constricted entrance to Maypole Chamber. It would appear that, in extending the quarry southwards, the working face has sliced through Cascade Chamber and has caused the western end of Maypole Chamber to collapse.

Undoubtedly, if the quarry pursues its southward course, all of the well decorated chambers beyond Maypole Pitch will also be destroyed. Only the relatively uninspiring Aven Chamber area seems likely to escape. Perhaps after all, Denis Warburton & Co. can feel smug in the knowledge that their very detailed survey will maintain an excellent record of what once was an extremely interesting cave system.

### On gating Swildon's

Public reaction to the last rescue in Swildon's has been overwhelmingly in favour of gating the cave, but some cavers do not seem to understand whose job this is. A letter to the Evening Post in Bristol suggested that the cave might be controlled by the M.R.O., which is out of the question, or by the C.S.C.C., which is most undesirable. Let it be said again clearly, that the only person who has the right to lock the cave is the owner. In the case of Swildon's, Mr. Maine has decided to do this, and the control will be exercised by members of his family. This is as it should be, and I believe that it will continue to be exercised for the benefit of cavers. An arrangement will be made to prevent access altogether when flooding is likely.

### A new cave on our doorstep

The doorstep has not yet been laid on our new site at Eastwater Farm, but the cave has already been prepared for us by the foresight and muscle power of our Hon. Sec. and of Mike Thompson. Its name is North Hill and it is the second swallet from the house. They have entered a rift about 40 ft. down, and this has already opened into a cave passage partly blocked by boulders and travelling in the direction of Eastwater Swallet. Let us hope we do not get saddled with a "leader system" such as that which the Other Club has to operate.

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### OBITUARY - NOEL MACSHARRY

Oliver C. Lloyd.

It was a great shock to read of Noel's death. To all appearances he was a tough, healthy individual, and yet we knew, even last year, that he was under doctors' orders for some trouble that was baffling them. His attitude to doctors was characteristic; he did what they told him, but preferred not to know what was the matter with him. This was just one facet of his typical, good humoured optimism. My liveliest recollection is of being shown round some new bits of St. Cuthbert's by him in March of last year. He had taken a keen interest in them and showed them off with pride and affection. Originally a professional soldier, he later joined the R.A.F. and was one of the main promoters of the Compton Basset Caving Club. He joined the Wessex Cave Club in April 1963. Earlier this year he went to Borneo with the R.A.F., and is reported to have died there in July of a coronary thrombosis.

## SWILDONS VIII, IX, XI & XII

Mike Wooding & Dave Drew

As noted briefly in Journal No. 100 there have been recently some developments in the Swildons streamway. Swildons Eight, first entered by Mike Boon in 1962 consists of about 150 feet of high rift passage. Several unclimbed avens lead off and there are two ducks before sump 8 is reached. Close by sump 7 an inconspicuous passage leads back in the direction of Seven and ends in a sump. It is possible to speak through the fissured rock to someone in Seven and it is apparent that this passage forms part of the sump 7 complex and takes water under flood condition. Despite Boon's description of bright yellow pebbles in Swildon's Eight - "the prettiest streamway on Mendip" - it is disappointing to find that in reality it consists of ordinary grey limestone with liberal deposits of mud.

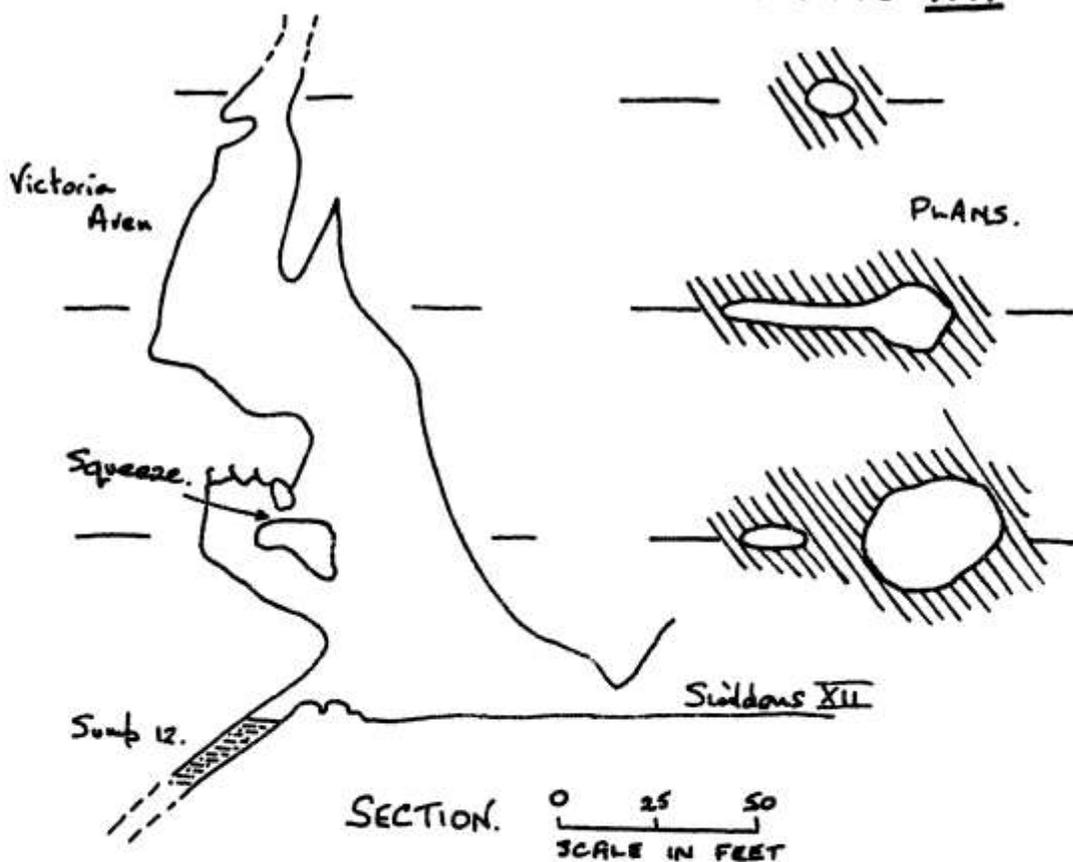
The second duck, which is unpleasant while wearing kit, and the sump are seldom used nowadays. Instead the high level bypass is taken which emerges right by sump 9. A tight passage, Thrutch Tube, leads off Nine into the unknown. This is an upward pointing Blue Pencil and has not been pushed to its end - for obvious reasons.

Sump 9 is the most impressive in Swildons to date, being 130 feet long, 15-20 feet deep and containing big underwater chambers. On the first trip through, without a guide line to follow of course, it was quite unnerving to emerge from the comparative constriction of the first portion into a chamber; fins would have been very welcome. Halfway through the sump it is possible to ascend to an air bell. Here it is difficult to get out of the water or even to avoid slipping back in. The guide line is belayed to a natural thread belay in Ten which is only about 20 ft. long. Sump 10 is the easiest on Mendip being 2 feet long and has no guide line fixed. The itinerant diver now emerges in a big active streamway, Swildons Eleven.

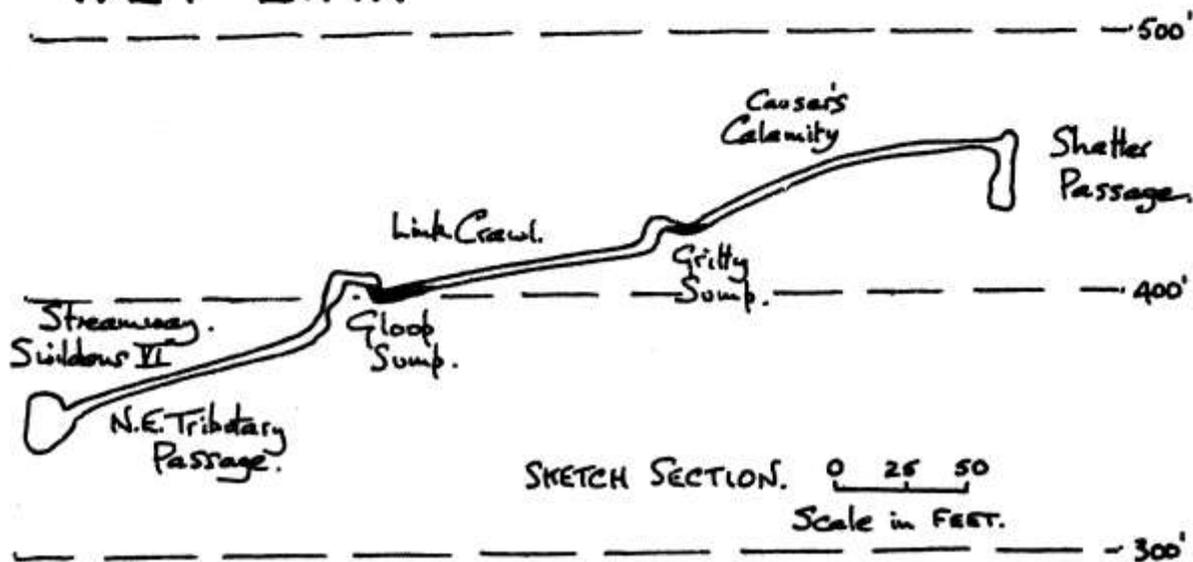
The water soon disappears on the right into what Dave Savage assured me was a duck, but which is in fact a tight 25 foot sump at least 4 feet deep. The more normal route is via the First By-pass, an easy climb following an abandoned phreatic tube, which re-joins the stream below the "duck". 50 feet further on the Second By-pass soars up 30 feet while the stream turns sharp left and vanishes into sump 11 as yet undived. The muddy climb up the Second By-pass is quite difficult without the fixed rope now in place,

Swildons Twelve is an impressive place. The stream emerges from sump 11 on the left and crashes down a small waterfall. The passage is high and exotically sculpted and towards sump 12 the roof soars up out of sight into Victoria Aven. This aven, which has a strong draught, is 25' in diameter at its base. It is possible to climb for some way up a chimney in the south side when a very tight squeeze leads back into the aven which may be climbed with difficulty to a height of about 150' above the stream. Above this point the aven opens out again and becomes unjustifiably exposed. Back at stream level several dry passages open off the streamway, the most promising

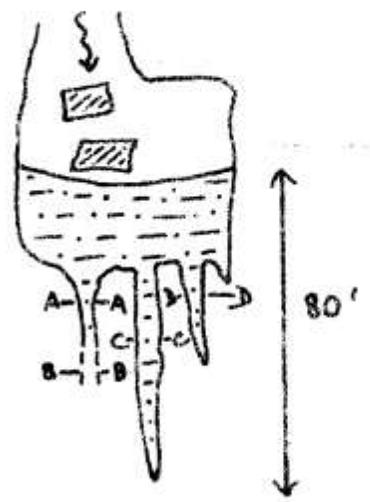
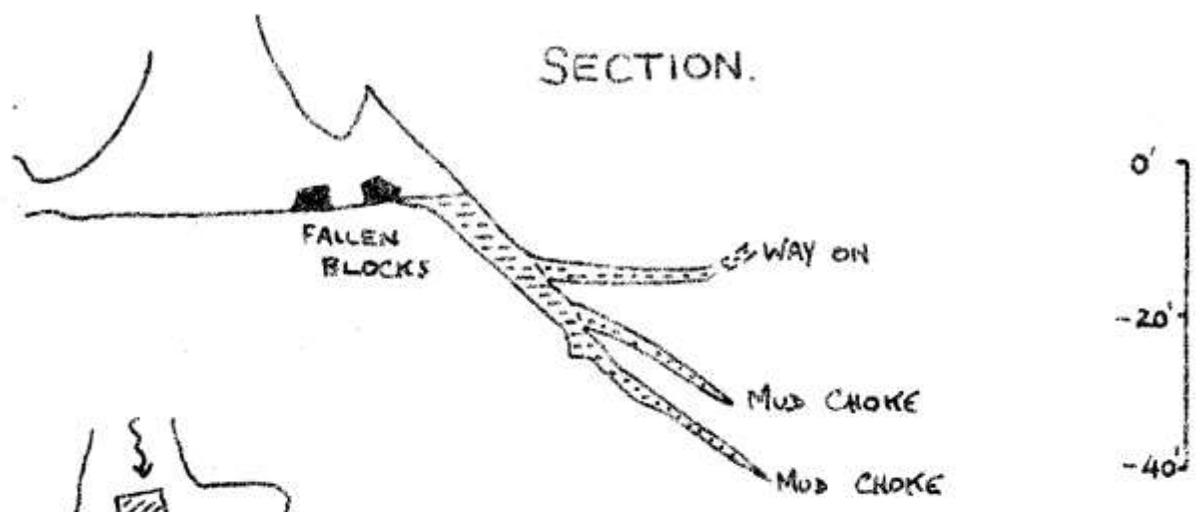
# SWILDONS XII



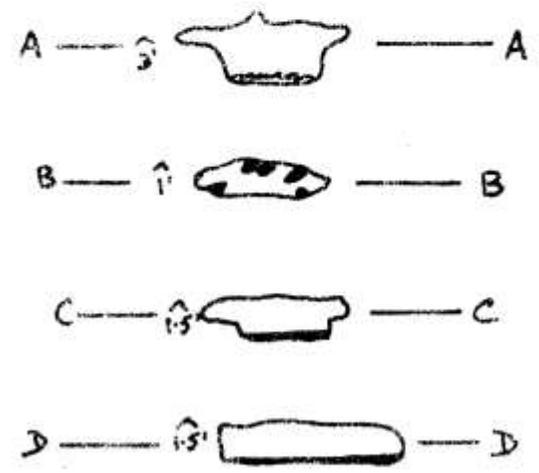
## WET LINK



SKETCH of SUMP 12  
SWILDONS HOLE



PLAN.



CROSS-SECTIONS.

being one parallel to sump 12, which is obviously an alternative route for the stream in times of flood. This passage needs digging at the end and progress was made that far only by dint of hammering off chert flakes on the walls. A dig for a dedicated person. Sump 12 has been the scene of two determined dives, neither of them successful. Here the problem is to find the correct route on.

### Future progress

There are several promising places:-

1. The unclimbed avens in Eight.
2. Thrutch Tube.
3. The aven above Second By-pass,
4. The top of Victoria Aven.
5. Sump 12.
6. Flood passage.

On July 17th Mick Wooding and I paid a further visit to Swildons XII in an attempt to find out once and for all whether there was a way through sump 12. Ten previous dives at this site without success had convinced us that there was no obvious route - divers had acquired the habit of diving at one side of the sump pool and emerging at the other side several minutes later convinced they had passed the sump!

On this trip the opportunity was taken to dive sump 11 for the first time and a line laid through to provide an alternative route to the awkward by-pass climb. The sump was found to be 30' long at a depth of 6-8' and reasonably straightforward with the exception of an inclined squeeze over gravel near the downstream end.

On arrival at sump 12 the water level at the sump pool was found to be 18"; 2' higher than on previous occasions - water was high in the cave - indicating that the water-route through the sump is immature or very heavily silted.

Mick dived first following the left hand wall and emerged after a short dive complaining bitterly of the cold. He had followed the wall until it formed a discrete passage descending steeply until it choked completely with mud. Lifelined by a shivering Wooding I dived, following the left hand wall. Visibility was zero. I groped down the steeply sloping passage gradually being forced to the left as the sump assumed a funnel shape until I reached a constriction involving a wriggle around a boulder and dropped into a shallow trench some 3' square with a floor of gravel and muddy sides. The gradient eased abruptly and after 10' or so began to rise very gradually, however no further progress was possible as chert projections made the passage rather less than man-sized. Elated by this find I returned to the surface to collect a lump-hammer and dived again to begin attacking the chert nodules. I managed to make a further 5' or so of progress in this manner before the passage became too constricted to wield the hammer. A few minutes spent scraping the gravel on the floor

gained a further few feet but had to stop when I discovered I was blocking my retreat with the debris. The way on could be felt to extend still sloping gently upwards but showing no signs of widening out. Feeling highly frustrated I returned to base, shared a sodden 'Senior Service' with Mick and retired at speed to the 'Hunters'.

The sump would appear to split into at least three separate passages, the two deepest being completely blocked. The third passage at 15 - 20' depth would appear to be the only way on, but is at present completely impassable and will require excavation of the floor-gravel and removal of the chert projections, probably for a considerable distance - a long job calling for a team of divers and much air. Swildons XIII is putting up a fierce struggle!

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LETTER TO EDITOR

Dear Sir,

Having just awoken from my winter sleep, and finding two W.C.C. Journals awaiting, I was delighted at the many points for comment contained therein.

Having wintered in the roof of Hillgrove I find Chermodytes comments on "Throwing Stones" are surprising to say the least (W.C.C. Jl. 100 p. 223). Having never seen any (metaphorical) stones being thrown I can only wonder if Chermodytes was short of material and fabricated some. Also his (or her) comments on secrecy in the caving world show that he did not read Tony Oldham's latest Mendip Caver where all the recent caving discoveries were written up.

In the same journal on p. 217 is an excellent example of inter-club co-operation - A Severn Valley Caving Club trip, lead by 2 members of the Portland Caving Group, written up by a St. Pauls Speleological Society Member in the Wessex Journal.

Adverting to the last Journal (No.101) Chermodytes (p. 247) has slipped up again. He alludes to the gestation period of an elephant as 2½ years, instead of 22 months, a rather important point for those who take elephants caving.

It was a pleasure to read a letter from my old friend prof. Finkman, (p.261) re: Carbide Mines, and it brought back many old memories. One in particular, was when we visited a Cadmium mine in Alaska. This particular mine was unique as it was situated above a bed of ore rich in nickel. For a number of years miners had obtained illumination for their work by driving a little metal stake into the ceiling, and a similar one into the floor, and wiring a bulb between them. Unfortunately, Finkman, being a tall chap bumped his head on the ceiling and was very nearly electrocuted.

Always trusting to be of service,  
You are my humble servants.  
DER FLEDERMAUSFÄNGER

## NOTES ON THE 1965 EDITION OF THE SWILDON'S HOLE SURVEY

W.I. Stanton

### Introduction

The following notes are prepared in accordance with the recommendations of the Mendip Cave Survey Colloquium, 31st August 1963. A report on the Colloquium has been distributed to most Mendip cave clubs.

Swildon's Hole was first surveyed, all 3000 feet of it, by H.E. Balch and his M.N.R.C. party in 1921. The survey was published in the M.N.R.C. report for that year, and was later reproduced at a small scale in Balch's well-known book "Mendip, its Swallet Caves and Rock Shelters". Here it was accompanied by a sketch section of Swildon's 2.

Balch's survey was not superseded until 1953, when the first edition of the present survey appeared. It included the Black Hole and St. Paul's Series, and the Oxbows. Paradise Regained and Swildon's 3 were added in a second edition published in 1957 and the third (1960) edition saw the addition of Swildon's 4, 5 and part of 6.

The present fourth edition was made necessary by the discovery of another 7000 feet of passage, bringing the total passage length of the cave to 4 miles and the depth to 548 feet. It is a compilation of work by several surveyors, as is explained on the survey sheet itself.

The survey is drawn from a very large number of stations. 634 were set up by the writer alone, and the total is probably about 900.

### The instruments used

This and the following sections refer only to that part of the survey done by the writer. The instruments were:-

Ex-W.D. oil-filled prismatic compass graduated in degrees.

Steel tape 100 ft. long (until 1960).

Metal-reinforced plastic tape 100 ft. long (1960-1965).

Home-made clinometer reading to 30 minutes (until 1963).

Abney Level (1963-1965).

The compass and clinometers fitted onto a home-made device involving two short swivelling sections of aluminium angle. This was mounted on a brass tripod by means of an all-duralumin photographer's ball-and-socket tripod head. The compass platform carried a levelling bubble, and the Abney Level was arranged to swivel vertically parallel to the sighting plane of the compass, for which it acted as a telescope on steep sights. A small, presumed negligible, position error was built into this device.

## Using the instruments

### (a) Calibration

The compass was calibrated against 3 wall intersections shown on the 6-inch map near Priddy Hill Farm before or after each survey trip.

The steel tape was assumed to be practically perfect, but the metal reinforced tape was found to be six inches short when tested under reasonable tension against a steel tape. A rough and ready correction was applied to each distance measurement in the cave.

The clinometers were checked, about once a year, by taking foresights and back sights across 2 points at various vertical angles. The errors found were negligible.

### (b) Reading the instruments

The compass readings were estimated to the nearest 10 minutes of arc. This is not difficult with practise, though the value of such apparent precision may be small.

The tapes were read to the nearest tenth of a foot.

The Abney Level was estimated, using the vernier, to the nearest 5 minutes of arc.

### (c) Surveying procedure and its bearing on the survey grade

Wherever possible the "leapfrogging" technique was used for the centre line or skeleton of the survey, with the instruments mounted on the tripod, and Grade 6 is claimed for the result. Where (at a relatively small number of places) the size or shape of the passage made this impracticable the instruments were used without the tripod and read to the nearest degree, and Grade 5 is claimed. For this reason the skeleton survey is graded 5-6.

Passage dimensions were recorded at every survey point, and often between survey points on long legs. The detail is therefore classified as Grade B.

## Errors

### (a) Closures

Five underground closures were obtained, 4 complete and 1 partial, and 1 surface closure.

<u>Traverse</u>	<u>Legs</u>	<u>Length in feet</u>	<u>Horizontal Misclosure</u>	<u>% Error</u>	<u>Vertical Misclosure</u>	<u>% Error</u>
1	33	575'	2.6'	0.4	Nil	0.0
2	21	298'	1.2'	0.4	0.7'	0.2
3	40	670'	4.2'	0.6	0.1'	0.0
4	168	3610'	25.1'	0.7	7.9'	0.2
5	35	850'	-	-	1.9'	0.2
6	20	3050'	8.6'	0.3	12.8'	0.4

Traverse 1: Jacob's Ladder - Short Dry Way - Pretty Way - Jacob's Ladder.  
Traverse 2: Entrance - Jacob's Ladder - Kenney's Dig - Wet Way - Entrance.  
Traverse 3: Wet Way - Kenney's Dig - Short Dry Way - Old Grotto - Wet Way.  
Traverse 4: Sump 1 - Mud Sump - Troubles - Vicarage Passage - Sump 1.  
Traverse 5: P.P. Sump - Sump 1 - Black Hole - P.P. Sump.  
Traverse 6: Swildon's Entrance - Priddy Green Sink - Swildon's Entrance.

In calculating the misclosure of Traverse 3 the survey lines through Kenney's Dig and the Short Dry Way were treated as already compensated. In Traverse 4 Vicarage Passage was surveyed at Grade 4, the rest at Grade 5-6. In Traverse 5 the closure is on the water levels at either end of the P.P. Sump. In Traverse 6, the surface tie-up, foresights and back sights were taken.

In addition, in a traverse of about 3500', the water levels on either side of Sump 3 corresponded to within 0.3'; the horizontal misclosure also appears to be small. The complete data for this traverse are not available.

(b) Distribution of errors

Where possible the error in a closed traverse was distributed around the whole traverse in the usual way. However, in Traverse 2, most of the error was allotted to the Grade 4 section (Vicarage Passage) and the remainder was distributed through the Grade 5-6 section (Trouble Series) as far back as the head of Blue Pencil Passage. To have carried the distribution further would have been of doubtful value and would have necessitated the redrawing of a large part of the survey,

(c) Probable error of the survey

In view of the known errors detailed above, and assuming no undetected gross errors, it seems reasonable to suppose that the position error of any point on the Grade 5-6 survey relative to any other point on it is rather less than 1% horizontally and 0.5% vertically of the traverse distance between them. Presumably the lower-grade parts of the survey are less accurate.

(d) Correlation of surface and underground surveys

Traverses were run from the cave entrance to three wall intersections marked on the 25-inch map. The assumed altitude of the cave entrance is based on the nearby point where a wall crosses the 800' contour, and may be about a foot in error.

Calculation and Plotting

Reduction of measurements to horizontal and vertical components, and calculation of co-ordinates, was done by slide rule. The method allows determinations to the nearest tenth of a foot, which is compatible with the accuracy of the instrument readings.

For convenience the data were plotted on good quality graph paper, from which the plan was transferred in large squares on to a properly drawn grid on tracing paper. The section was similarly transferred on to pre-drawn altitude lines.

On the survey all grid and altitude lines are parallel or at right angles to each other.

### Permanent Survey Stations

A number of these are marked in the cave, mostly by a hole about one-third of an inch deep made by a three-eighths-inch Stadrdill. Some, in the Southeast Inlets and Shatter Passage, have already been recorded (Wessex Cave Club Journal No. 94 p. 38). On the plan they are shown by a solid triangle. Those as yet unrecorded are:-

<u>Eastings</u>	<u>Northings</u>	<u>Altitude</u>	<u>Description</u>
10,707.0	9,355.9	448.5	Shatter Series. Drill mark below aven, in wall facing east, 3' above floor, over roof of passage leading west.
10,788.8	9,332.7	468.8	Drill mark in wall facing north, 4' above floor, 5' west of entrance to squeeze.
10,598.4	9,201.6	416.2	Drill mark in wall of Shatter Chamber, facing north, 3' above floor, marked TBM in smoke.
11,613.7	10,113.1	778.8	Cave entrance. The obtuse (southeast) corner of the iron frame for the grating.
10,236.7	9,486.1	736.2	Priddy Green Sink. Drill mark in wall of aven, facing east, 4' above floor.

The positions of survey points in many other parts of the cave, though not permanently marked, are recorded in the survey notes and can be obtained from the writer.

### Availability of the survey

The survey may be purchased in the usual way from Tim Reynolds, Yew Court, Pangbourne, Berks, price 4s 3d.

WESSEX CAVE CLUB

MEMBERSHIP LIST 1964/65

ACLAND, E.F.D., Hundhow, Burneside, Kendal, Westmorland.  
APPLEYARD, I.A., 19 "Milestones" Park Lane, Bath.  
ARNOLD, R., 163 Higham Lane, Nuneaton, Warwickshire.  
ASH, Mr. & Mrs. A.G., 86 Fernbank Road, Ascot, Berks.  
ASHWORTH, H.W.W., 9 Lucas Close, West Town Lane, Bristol 4.  
ATKINSON, T., The Old Rectory, Wenvoe, Nr. Cardiff.  
ATTWOOD, H.C., 155 Goddard Avenue, Swindon, Wilts.

BAILY, J.S., Corpus Christi College, Oxford,  
BAKER, Mr. & Mrs. K.F., 8 Milton Close, Sutton, Surrey.  
BALCOMBE, F.G., 143 Newgate Street Rd, Goffs Oak, Waltham Cross, Herts.  
BANKS, R.L., Officers Mess, R.A.F. Abingdon, Berks.  
BARBER, K.E., 4 Catsash, Shepton Mallet, Somerset.  
BARRINGTON, N.R., "The Oak House", The Square, Axbridge, Somerset.  
BARRON, H.D., 92 Wilton Road, Shirley, Southampton.  
BARTLEY, E., 20 Hollywood Road, Brislington, Bristol 4.  
BARWICK, A.D., 8 Kings Road, Haslemere, Surrey.  
BATEMAN, C.M., 102 Sydney Place, Bath.  
BEAUCHAMP, C.A.J., 65 Coombe Lane, Raynes Park, London S.W.20.  
BENHAM, J.A., 90 Elsdon Road, Wellingborough, Northants.  
BENNETT, V.L., 6 Wellington Lane, Heath End, Farnham, Surrey.  
BERRILL, Mr. & Mrs. R.W., Hillside, Hadspen, Castle Cary, Somerset.  
BERRY, D.J., 1 York Place, St. Augustines, Bristol 1,  
BIRD, Miss C.M., 5 Darlaston Road, Worples Road, Wimbledon, London S.W.19.  
BIRD, M.B., 159 Grove Hall Court, Hall Road, London N.W.8.  
BLACKWELL-JONES, A.B., Leicester House, 9 Logan Road, Bristol 7.  
BOLT, G., The Stores, Shepton Montague, Wincanton, Somerset.  
BOOTH, P.M., 35 Cairns Road, Crosspool, Sheffield.  
BRAIN, A.K., 49 Bushey Road, Sutton, Surrey.  
BRIDGES, Mr. & Mrs. L.C., 62 Wentworth Road, Barnet, Herts.  
BRIDLE, R., 79 Wolsey Drive, Walton-on-Thames, Surrey.  
BROOKER, W.F.R., 2 Cradle Lane, Frith End, Bordon, Hants.  
BROWN, G.J., 20 Quarry Rock Gardens, Claverton Down, Bath.  
BRYANT, D.C., Glyncoed, Victoria Road, Maesywmmmer, Hengoed, Glamorgan.  
BRYANT, Mr. & Mrs. T.C., Glyncoed, Victoria Road, Maesywmmmer, Hengoed, Glam.  
BULGIN, R.H.C., 12 Cleveland Street, Taunton, Somerset.  
BURLETON, A.S., 27 Doncaster Road, Southmead, Bristol.  
BURNETT, J.M., The Bungalow, 1 New Ridley, Stocksfield, Northumberland.  
BURT, P.E., 3 Manor House, Rothamstead, Harpenden, Herts.

CALVERT, J.M., City of Worcester Training College, Henwick Grove, Worcester.  
CANDY, G.J., Apt. 1B, 9820-104 St., Edmonton, Alberta, Canada.  
CARLTON, J.K., Sanderson's, 18 Rothsay Place, Bedford.  
CASTERET, N., Castel Moulon, St. Gaudens, Garrone, France.  
CAUSER, Mr. & Mrs. D.J., 19 Kenmore Crescent, Filton Park, Bristol 7.  
CAUSER, S., 19 Kenmore Crescent, Filton Park, Bristol 7.

CHARLES, P.H., 14 St. Augustine's Road, Edgbaston, Birmingham 16.  
 CHATTERLEY, J.E., 40 Maidenhead Road, Hartcliffe, Bristol 3.  
 CHURCH, J.R., 35 Rayens Cross Road, Long Ashton, Bristol.  
 CLARK, Miss B.J., Santa Rosa, Sevenoaks Rd., Pratts Botten, Orpington, Kent.  
 CLARKE, A.G., 221 Grosvenor Crescent, Hillingdon, Middlesex.  
 CLEAVE, F/O & Mrs., N.H.L.W., 2 Aspen Close, Nth. Colerne, Chippenham, Wilts.  
 CLEAVER, R., 58 Malvern Road, St. George, Bristol 5.  
 COLL, J.A., 16 Leaside Avenue, London N.10.  
 COOK, D.J., "Fairway", School Lane, Woolavington, Bridgwater, Somerset.  
 COOPER, Dr. N.C., Strathmore, Winscombe, Somerset.  
 COPPINS, R.H., 125 Richmond Road, Montpelier, Bristol 6.  
 CORNWELL, J., 419 Whitehall Road, Bristol 5.  
 COUSINS, P.R., 3 Kinver Road, Sydenham, London S.E.26.  
 CRAGO, Miss A., 53 Fairfield Road, Taunton, Somerset.  
 CROOK, Dr. B.A., The Laurels, Timsbury, Somerset.  
 CULLINGPORD, Rev. C.H.D., "Lilburn", Hickman's Road, Godstone, Surrey.

DARBON, F.G., 43 Arthur Henderson House, Fulham Road, London S.W.6.  
 DAVIES, P., "Morley", Silver Street, Nailsea, Bristol.  
 DAVIES, Mrs. P. "Morley", Silver Street, Nailsea, Bristol.  
 DAVIES, Prof. R.E., Dept. of Biochemistry, School of Medicine, University of Pennsylvania, Philadelphia PA, U.S.A.  
 DAVIS, Miss P.M., 410 Wells Road, Knowle, Bristol 4.  
 DESBOROUGH, M.R., 15 West Ave., Burton Latimer, Kettering, Northants.  
 DEVENISH, Mr. & Mrs. L.W.E., Washingpool, Chilcote, E. Horrington, Wells, Som.  
 DINGLE, A.E., 107 Waverley Road, Stoneleigh, Epsom, Surrey.  
 DOBSON-HINTON, Mrs. D.P., c/o Mrs. J.M.G. Scott, 3 Richmond Road, Cambridge.  
 DOLPHIN, P.B., c/o T.H. Stanbury, 31 Belvoir Rd, St. Andrews, Bristol 6.  
 DREW, D.P., 25 Cromwell Road, Bristol 6.  
 DUBOIS, D.A., "Holly Cottage", Edwin Road, West Horsley, Surrey.  
 DUCK, A., c/o Mrs. Preece, 111 Hucclecote Road, Gloucester.  
 DUCK, J.W., 70 Queens Road, Bristol 3.  
 DUCK, P.W., 13 Goodymoor Avenue, Wells, Somerset.

EDWARDS, W., 91 Rookery Road, Knowle, Bristol 4.  
 ELKINS, J.A., 25 Idstone Road, Fishponds, Bristol.  
 EVANS, D.G., 44 Knollys Road, Streatham, London S.W.16.

FARR, Lt. D.N., R.N., 8 Churchward Avenue, Preston, Weymouth, Dorset.  
 FERRIS, G.M., 13 Haverstock Road, Knowle, Bristol 4.  
 FINCHAM, A., Dept. of Biophysics, The University, Leeds 2.  
 FORD, Dr. & Mrs. D.C., Dept. of Geography, McMaster University, Hamilton, Ontario, Canada.  
 FORTE, P.D., 37 Mallory Rd., Hove, Sussex.  
 FOX, J.W., 22 Vernon Road, Edgbaston, Birmingham 16.  
 FRAME, Mr. & Mrs. J.W., Two Chimneys, Bushcombe Lane, Woodmancote, Cheltenham, Glos.  
 FROST, Mr. & Mrs. F.W., 71 Hazelbury Rd., Knowle, Bristol 4.  
 FULLER, A.C., 203 Collingwood Road, Sutton, Surrey.  
 FUSSELL, W.J., 67 Swiss Drive, Ashton Vale, Bristol 3.

GALVIN, M.B., 2 Water Lane, Watford, Herts.

GANNICOTT, R.A., 52 West Town Lane, Bristol 4.  
 GIBBS, P.D., 40 Hollywood Road, Brislington, Bristol 4.  
 GILES, REA<sup>1</sup> P.M., C.P.O's Mess, H.M.S. Ark Royal, B.F.P.O. Ships.  
 GLENNIE, Brig. E.A., Seaton House, Shrublands Road, Berkhamsted, Herts.  
 GOSLING, J.G., 63 Northville Road, Northville, Bristol.  
 GOVERD, K.A., 101 Westleigh Park, Hengrove, Bristol 4.  
 GRAHAM, A.C., 4 Lymington Close, Norbury, London S.W.16.  
 GRANT, D.E., Castlebar Court, Queens Walk, London W.5.  
 GREGORY, J., 25 Temple Road, Epsom, Surrey.  
 GULLY, A.M., 29 Eastfield, Westbury-on-Trym, Bristol.  
 GUMBLETON, D.P.W., Vernigore Cottage, Welham, Castle Cary, Somerset.  
 GURNETT, C.H., 1 Rosecroft, High St., Southgate, London N.14.  
 GUTTRIDGE, B., 7 Meadway Gate, London N.W.11.

HAINES-NUTT, R.F., 32 Langley Crescent, Ashton Vale, Bristol 3.  
 HALL, T., 32 East Avenue, Heath End, Farnham, Surrey.  
 HAND, G.R., 21 Arne Crescent, Parkstone, Poole, Dorset.  
 HANWELL, Mr. & Mrs. E.R., 8 Hooper Avenue, Wells, Somerset.  
 HANWELL, Mr. & Mrs. J.D., "Chaumbey", 50 Wells Rd, Wookey Hole, Wells, Som.  
 HARDCASTLE, M.E., 44 Canynge Road, Clifton, Bristol 8.  
 HARDING, R., 36 Dibdin Road, Sutton, Surrey.  
 HARRIS, G.W., Harris & Harris, Market Place, Wells, Somerset.  
 HARRIS, P.K., Dene House, Dene Road, Whitchurch, Bristol 4.  
 HARRISON, M.J., 13 Maerdown Road, Evercreech, Shepton Mallet, Somerset.  
 HARRISON, W.G., 9 Carlin Craig, Kinghorn, Fife.  
 HART, N.J., 80 Ridgeway Road, Long Ashton, Bristol.  
 HAWKES, Mr. & Mrs. C.J., 147 Evington Lane, Leicester.  
 HEMMINGS, A.S., Trysgol, Abergwesyn, Llanwrtyd Wells, Breconshire.  
 HENSLER, E, "Gilead Balm", 12 Knighton Close, Woodford Green, Essex.  
 HERBERT, J.H., 16 Dowling Road, Hartcliffe, Bristol 3.  
 HEWINS, M.A.H., 51 Roman Way, Farnham, Surrey.  
 HOBBS, C.R., Warren Lodge, Long Ashton, Bristol.  
 HOBBS, D.P.S., Rookery Cottage, Sutton Veny, Warminster, Wilts.  
 HOBDAY, F.J., 28 Haywards Road, Haywards Heath, Sussex.  
 HOLLAND, L., c/o Reactor Physics Dept., The University, Birmingham 15.  
 HOLLAND, M.J., 23 East London Street, Edinburgh 1.  
 HOOPER, Mr. & Mrs. J.H.D., 34 Richmond Road, Staines, Middlesex.  
 HOOPER, M.L., 6 Marbeck Road, Westbury-on-Trym, Bristol.  
 HOUSTON, B.C., 4 Donald Road, Uplands, Bristol 3.  
 HUCKER, F.G., Penniless Porch, Wells, Somerset.  
 HUGHES, R.F.F., 51 Sandown Road, Bristol 4.  
 HURWORTH, A., 74 Manor Haigh Road, Lupset, Wakefield, Yorkshire.

ILES, Mr. & Mrs. C.J., Corner Cottage, Bussex, Westonzoyland, Bridgwater, Som.  
 ISAAC, M.K., 21 Redhill Drive, Fishponds, Bristol.

JOHNSON, J.R., 1 Churchill Close, Wells, Somerset.  
 JONES, C., 4 The Grove, Wraxall, Bristol.  
 JONES, G.W., 3 Upjohn Crescent, Hartcliffe, Bristol 3.  
 JONES, U., Marsh Farm, Asham-in-Furness, Lancs.

KEMP, D., 5 Church Lane, Southwick, Brighton, Sussex.  
KENNEY, Mr & Mrs. C.H., Tudor Cottage, Beryl Lane, Wells, Somerset.  
KENNEY, R.R., "Yennek", St.Mary's Rd, Meare, Glastonbury, Somerset.  
KENT, Mr. & Mrs. L.J., Fisherman's Hut, Yarlinton, Wincanton, Somerset.  
KINSLOW, Mr. & Mrs. P.R., 18 Eagle Road, Batheaston, Bath, Somerset.  
KINSMAN, D.J., 24 Linden Lane, Princeton, New Jersey, U.S.A.

LAKIN, G.R., 163 Falcon Lodge Crescent, Sutton Coldfield, Warwicks.  
LAMB, Rev. P.F.C., The Vicarage, Winkleigh, N. Devon.  
LANDEG, D.J., 39 Tonbridge Crescent, Kenton, Middlesex.  
LANE, Mr. & Mrs. M. J., 49 Langdale Road, Market Weighton, Yorkshire.  
LASCELLES, R., Rush Common House, Abingdon, Berks.  
LAWDER, Com. & Mrs. P.B., Brook House, Wrington, Bristol.  
LAWDER, Major & Mrs. R.E., Rectory Cottage, Halstead, Sevenoaks, Kent.  
LAWN, D.G., 143 Croft Road, Swindon, Wilts.  
LEIGH, D.L., 97 Hassocks Road, Streatham, London S.W.16.  
LLOYD, E.G., 31 Boston Road, Hanwell, London W.7.  
LLOYD, Dr. O.C., Withey House, Withey Close West, Bristol 9.

MACGREGOR, R.A., The Railway Arms, Station Road, Theale, Berks.  
MACSHARRY, 4267236 J/T P.N., R.S.F., R.A.F. Valley, Anglesey, N. Wales.  
MANKTELOW, Mr. & Mrs. J.T., 14 Lakefield Avenue, Toddington, Beds.  
MARKHAM, R.H.C., "Wetherby", Locking, Nr. Weston-Super-Mare, Somerset.  
MASTERS, C., 10 Wilbury Road, Woking, Surrey.  
MAXWELL, W.G.R., 12 Heybridge Drive, Barkingside, Ilford, Essex.  
MCDOWALL, J.S., 11 Middleton Road, London N.W.11.  
MCMILLAN, A.J.S., 5 Oakfield Road, Bristol 8.  
MERRY, A.L., 19 Long Handstones, Cadbury Heath, Nr. Warmley, Bristol.  
MOODY, I., 20 Falcon Close, Westbury-on-Trym, Bristol.  
MOORE, B.H., 1 Brendon View, Queens College, Taunton, Somerset.  
MOORE, G., 34 Daniel Street, Bathwick, Bath, Somerset.  
MORLAND, F., St. Giles, Chesterton Lane, Cambridge.  
MORRIS, A.E., 6 Aubrey Road, Chessels, Bristol 3.  
MORRIS, R.M.21314(D) A.J., M.T. Troop, 40 Commando, B.F.P.O. 628, Sarawak.  
MORRIS, Mr. & Mrs. W.A., 4 Maple Court, Drayton Road, Borehamwood, Herts.  
MULVEY, C.J., 6 Cedar Park, Stoke Bishop, Bristol 9.  
MURRELL, Mr & Mrs. H., Gelli Ber, Castleton, Cardiff.  
MURRELL, Miss J.J., Gelli Ber, Castleton, Cardiff.

OLDHAM, A.D., 17 Freemantle Road, Eastville, Bristol 5.  
OLDHAM, Mrs. A., 17 Freemantle Road, Eastville, Bristol 5.  
O'MAHONEY, K.J., The Orchard, 206 Farnborough Rd., Farnborough, Hants.

PADDOCK, N.L., Enville Mount, Enville Rd., Bowdon, Altrincham, Cheshire.  
PADFIELD, M., 4 Ryde Road, Knowle, Bristol 4.  
PARFITT, A.G., School House, Bagley Close, Wedmore, Somerset.  
PARK, M.H., 30 Waldenshaw Road, London S.E.23.  
PARKES, J.G., Woodcote, Wood Lane, Parkgate, Wirral, Cheshire.  
PEACH, M., c/o Miss J.Peach, 22 Brechin Place, London S.W.7.  
PEARCE, Dr. R.A.J., No.3 Rodwell Hall, St. Thomas Rd., Trowbridge, Wilts.

PEARSON, H.A., c/o Hillside, Bayford Hill, Wincanton, Somerset.  
 PEASE, R.F.W., 1 High Street, Girton, Cambridgeshire.  
 PECKHAM, G.E., 7 Marlborough Avenue, Reading, Berks.  
 PECKHAM, P.H., 40 Hazelbury Road, Knowle, Bristol 4.  
 PERRY, G.J.S., 34 Chesterton Road, Cambridge.  
 PERRY, J.D., Connaught Hall, Tavistock Square, London W.C.1.  
 PHILLIPS, J., 142 British Road, Bedminster, Bristol 3.  
 PHILLIPS, T., High Point, Stowe Rise, Buckingham.  
 PHILLPOTT, J., Rush Common House, Abingdon, Berks.  
 PHILPOTT, R.A., 3 Kings Drive, Bishopston, Bristol 7.  
 PICK, S.J., 80 Letchworth Road, Leicester.  
 PICKNETT, Dr. R.G., "Suilven", Potters Way, Laverstock, Salisbury, Wilts.  
 PICKSTONE, C., Rush Common House, Abingdon, Berks.  
 POINTING, G.H., 10 Green Lane, Avonmouth, Bristol.  
 PREWER, Mr. & Mrs. B.E., East View, West Horrington, Wells, Somerset.  
 PIKE, R., 88 Redland Road, Bristol 6.

REYNOLDS, G.F., 16 Sheep Street, Wellingborough, Northants.  
 REYNOLDS, T.E., Yew Court, Pangbourne, Berks.  
 RICHES, P.N., Priory Cottage, Chewton Mendip, Bath, Somerset.  
 RIGG, Mr. & Mrs. A.J., 26 Wynford Road, Frome, Somerset.  
 ROACH, Mr. & Mrs. B.S., 21 Yew Tree Close, Yeovil, Somerset.  
 ROBERTS, G.A., 10 Gay Street, Bath, Somerset.  
 ROGERS, Dr. A., Dept. of Physiology, The University, Bristol.  
 ROSSER, A.J., 133 St. Peter's Rise, Headley Park, Bristol 3.  
 ROYFFE, R.V.W., 21 Ledmore Road, Charlton Kings, Cheltenham, Glos.

SAVAGE, D., 17 Bellevue Crescent, Clifton, Bristol 8.  
 SEALY, Mr. & Mrs. A.E., Hillgrove Farm, Hillgrove, Wells, Somerset.  
 SHARPE, E.W., Tralee, Orchard Road, Arnside, Westmorland.  
 SHAW, Com. T.R., The Retreat, Brentor, Tavistock, Devon.  
 SIMMONS, M.G., 10A Berwick Road, Shrewsbury, Shropshire.  
 SKINNER, Mr. & Mrs. J., 24 Harrowdene Road, Bristol 4.  
 SMITH, P.H., 127 Sommerville Road, Bristol 6.  
 STANBURY, T.H., 31 Belvoir Road, St. Andrews, Bristol 6.  
 STANTON, Dr. & Mrs. W.I., Iona, High Green, Easton, Wells, Somerset.  
 STAYNINGS, Mr. & Mrs. R.J., 8 Fanshawe Road, Hengrove, Bristol 4.  
 STEELE-PERKINS, H., Sunnyfield, Ashburton, Devon.  
 STEVENS, G., 23 Faringdon Avenue, South Shore, Blackpool, Lancs.  
 SURRALL, Mr. & Mrs. A., 216 Evesham Road, Headless Cross, Redditch, Worcs.  
 SUTCLIFFE, D.M., 73 Watford Road, Kings Langley, Herts.

TANNER, D.B., 2174 Bartlett Avenue, Victoria, B.C., Canada.  
 TEASDALE, Mr. & Mrs. L.M., 32 Tonfield Road, Sutton, Surrey.  
 THOMAS, J.A., 13 Hale Reeds, Heath End, Farnham, Surrey.  
 THOMPSON, M., 7 New Street, Wells, Somerset.  
 THOMSON, Dr. & Mrs. D.M.M., "Pinkacre", Leigh-on-Mendip, Nr. Bath, Som.  
 TOMKINSON, G., 19 Beech Road, Birmingham 30.  
 TOVEY, S.N., 54 Cowling Drive, Stockwood, Bristol 4.  
 TRATMAN, Dr. E.K., Penrose Cottage, Burrington, Bristol.

TREBESS, P.R., 44 Rockliffe Road, Bathwick, Bath, Somerset.  
TRICKEY, A.J., "Stanleaze", Brockley Way, Brockley, Backwell, Bristol.  
TUCK, Mr. & Mrs. N.W., 48 Wiston Path, Fairwater, Cwmbran, Monmouthshire.  
TUDGAY, Mr. & Mrs. G., Top Flat, 1 St. Edwards Rd, Clifton Wood, Bristol 8.

WADDINGTON, D.A., 30 Clyde Road, Redland, Bristol 6.  
WAINWRIGHT, M., c/o Bureau of Mineral Resources, Box 2831 AA, G.P.O., Melbourne, Victoria, Australia.  
WALKER, R.I., 203 Redland Road, Redland, Bristol 6.  
WALKINSHAW, D., 123 Stanley Road, Teddington, Middlesex.  
WALL, Mr. & Mrs. M., Mount Pleasant, 10 The Dell, Kingsclere, Newbury, Berks.  
WALLIS, Dr. F.S., The Museum, Wells, Somerset.  
WARBURTON, D., 20 Beverley Court Road, Quinton, Birmingham 32.  
WARWICK, Dr. G.T., 47 Weoley Park Road, Selly Oak, Birmingham 29.  
WATTS, M.L., Berrymead, Winscombe, Somerset.  
WEATHERLEY, I., 48 Weysprings, Haslemere, Surrey.  
WEDGWOOD, Sir John, Barlaston, Stoke-on-Trent, Staffs.  
WELLARD, C.R., 1 Elm Close, Yatton, Bristol.  
WELLS, Dr. & Mrs. O.C., 140 Hartswood Road, Stamford, Connecticut, U.S.A.  
WEST, R.M., 9 Springfield Place, Lansdown, Bath.  
WESTLAKE, D.S.H., Wayside, Rectory Road, Staplegrove, Taunton, Somerset.  
WESTON, P.L., 79 Oaklands, Chippenham, Wilts.  
WHITE, B.F.C., c/o Pacific Lumber Co, Box 216, Nandi Airport, Fiji.  
WHITE, R., 22 Bayham Road, Knowle, Bristol 4.  
WHITTLE, R.A., 8 Cote House Lane, Westbury-on-Trym, Bristol 9.  
WICKHAM, H.T., Top o' the Hill, Church Rd., Hartley, Nr. Dartford, Kent.  
WICKS, A.L., 193 Redland Road, Bristol 6.  
WILLIS, Mrs. B.M., 3 Derwent Lodge, St. Philips Ave., Worcester Park, Surrey.  
WILLIS, D.A., 3 Derwent Lodge, St. Philips Ave., Worcester Park, Surrey.  
WILSON, D., 73 Fenshurst Gardens, Long Ashton, Bristol.  
WITCOMBE, R.G., L.H.A. Hostel, 18 Highbury Terrace, Highbury, London N.5.  
WITHEY, Mr. & Mrs. M., The School House, West Horrington, Wells, Somerset.  
WOODCROFT, M.K., 86 Park Hill, Moseley, Birmingham 13.  
WOODING, M.J., 25 Cromwell Road, Bristol 6.  
WOODS, Mr. & Mrs. M. "Litton Cheney", Sedgeberrow, Evesham, Worcs.  
WOOLLEY, R., 12 Churchleaze, Shirehampton, Bristol.  
WOOLMER, Shell-B.P. Seismic Party I, P.O. Box 263, Port Harcourt, Nigeria.  
WYNNE ROBERTS, W.G., "Edenhurst", 131 Lawn Road, Fishponds, Bristol.

YEO, Mr. & Mrs. I.N., 5 Broadway Road, Bishopsworth, Bristol 3.

YOUNG, D., 2 Conbar Avenue, Rustington, Sussex.

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