

CONTENTS

	Page
Club News	215
Do we get a fair deal from the Press?	218
Journal Printing by Ron Foord	221
Mangle Hole, Sandford Hill by C.W. Davies	225
The Origin and Development of Caves	230
Letter to the Editor	232
Levelling on Mendip by John Church	234
The History of the Present Dig at Rhino Rift by A. Audsley	236
Reviews	241

Hon. Secretary: Carl Pickstone, 156 The Philog, Whitchurch, Cardiff.
Asst. Secretary: K. Barber, 4 Catsash, Shepton Mallet, Somerset, BA4 5EH.
Hon. Treasurer: Mrs. P. Green, 12 Keyford Terrace, Frome, Somerset.
Subs. Treasurer: A.E. Dingle, 32 Lillian Road, LONDON S.W. 13.
Hut Bookings: A. Macormack, 19 Alfred Place, Cotham, Bristol.
Journal Distribution: M. Hewins, 47 Legge Crescent, ALDERSHOT, Hants.
Club Meets: Club Secretary or direct to Editor
Editor: M.D. Newson, "Setterfields", Christmas Common, Watlington, Oxfordshire.

CLUB NEWS

A potentially serious problem came to light a few weeks ago, concerning the indiscriminate digging by some club members in Burrington Combe. The Landowner Sir John Wills was quite rightly annoyed about the dig, as it represented a safety hazard to the thousands of people who use the Combe for their leisure. He was led to believe that it was a Wessex Dig because the cavers involved admitted being Wessex members. The Landowner has now been informed that the Club was unaware of the dig, and as such had not given its official approval to those concerned. Any dig not approved by the Club Committee as an Official Wessex Cave Club Dig, is the responsibility of the members involved in the dig. Consequently the Club would disclaim any liability should any casual visitor have the misfortune to injure themselves at such a site. The only dig bearing the title of a Wessex Cave Club Dig at the present time is Thrupe Swallet.

Any member wishing to have his dig approved by the Club, must submit details to the Committee who will then negotiate on the member's behalf, with the Landowner as to the access arrangements and safeguarding of the site. Any Dig not conducted in a right and proper manner may have the title of Wessex Cave Club Dig withdrawn, after which the dig becomes the responsibility of the members concerned. Members who want further guidance on this point should consult their copy of the Club Handbook, page 13.

Further to the note in the last Journal concerning Club Anorak badges, it seems that there are two types available. Embroidered badges will cost 70p and an alternative type which is printed in plastic on cloth at 20p. Samples of these badges will be available at the H.Q. from Ian Jepson. If you could indicate your preference, the Club will purchase the more popular type in bulk.

It is time once again to remind members who have yet to pay their annual subscription. The list of members who have not paid their subscription at the beginning of the year is inserted in the Journal in accordance with Club rule 8. The list is somewhat larger than usual as the postal strike has hindered communications.

During the postal strike many of the Journals were distributed by Wally Wilcocks, to those who visited the H.Q. and by members acting as postmen.

With the increase in postal charges after the resumption of postal services, the Club is faced with a larger postal bill than ever. To ease the burden on the Club's finances it has been suggested that we may continue the scheme. If there is anyone willing to distribute Journals by hand to other members living close could they contact Maurice Hewins who will send the Journals in bulk.

Upper Pitts is the Headquarters of the Wessex Cave Club. As such it fulfills numerous functions, residential social and very importantly, a base from which to organise caving trips. It was designed as a working building to cope with such activities, but a moment's thought is sufficient to appreciate that there is a fine line between using and abusing the facilities provided. A considerable amount of money and effort was expended by individual members and the Club to establish Upper Pitts in the first place. They and the Trustees in whose name Upper Pitts is

vested, have the right and duty to expect the result of their labours to be cared for. In recent months it has become evident that fair wear and tear are not taking place, and the building is deteriorating. There are considerably more people using the facilities of the H.Q., than ever used Hillgrove, so it is only fair to expect more wear and tear than before, but some of it results from abuse.

In an effort to place the administration of the Headquarters on a firm foundation, the H.Q. Regulations are being revised and the Trustees are considering appointing an H.Q. Officer to look after the Club's interests on a long term basis. There are two very good practical reasons why we need to look ahead and have more control on the present usage of the H.Q. First, we are in process of spending a considerable amount of money on good quality decoration for the library at Upper Pitts. Ultimately there will be very expensive maps and, perhaps the bulk of Clubs books and periodicals on display. It is intended that the library will be a rather special room to be used with care. This will inevitably require regulations whether we like them or not. Secondly, and for the future, it is becoming clear that the changing and tackle areas as planned are proving congested most weekends. If the present demands continue, as indeed we hope they will, then it will be necessary to consider erecting an alternative building to house the considerable amount of tackle and hardware we now own. This is a major planning project which the Committee intend to bring to the Annual General Meeting in October. We cannot assume that the present or in particular the future will take care of themselves.

Persistence pays it seems. Mendip caving received a tremendous morale booster recently as John Cornwell's digging team have broken through at Rhino Rift. The cave or should we say pot has an estimated depth of 400ft, and contains 100ft, 50ft and 75ft pitches in one huge rift. The prospects at the bottom are extremely good, but entry to Rhino is strictly controlled as before, as the pitches have very loose boulder slopes at the top and the dig is continuing. An exploratory account is included in this Journal.

Committee Abstracts

The 263rd Committee meeting of the Wessex Cave Club was held at Upper Pitts on the 28th of February 1971, at 10.00hrs.

Apologies for absence being received from Malcolm Newson, Don Thomson, Tim Reynolds.

The cost of replacing the Lamb Leer Timbers had been £15.15, the cost of which was to be borne between the MNRCS, UBSS, and WCC.

Wally Wilcocks reported that he thought that the Workshop and Changing areas at the H.Q., could be extended, and he outlined his proposals for a separate building which would be used to house the heavy digging equipment, which both he and Tim Reynolds had recommended for the Club to tackle a serious digging project. He was asked to prepare plans which could be submitted to the Planning Authorities, and to publish details in the Journal.

There was a long discussion on the work to be done on the Library, and it was decided that the South External wall would be covered with tongue and groove boarding, and the West and

Corridor walls with Soft board for the attachment of maps etc. The Hall wall was to be shelved. Dennis Manuel was invited to prepare estimates, and the Club would provide the materials.

The Tackle Warden reported that he had purchased 720ft of rope, and the materials to make 500ft of ladder.

Tony Philpott was to see if the Bristol M.R.O. Wessex team still existed.

After a long discussion on the state of the Headquarters, the Chairman and Secretary were authorised to revise the H.Q. Regulations.

There were quite a few items on the agenda which had to be carried over to the next meeting as the Postal Strike was hindering communications.

The meeting closed at 12.45 hrs. and the Committee gathered at Hillgrove and partially filled in Gash Swallet. The date of the next meeting was to be 25th April.

New Members

T. Carr 7 Woodstock Road, Redland Road, Bristol 6,
S.G. Crabtree Spiceland, Uffculme, Nr. Cullonpton, Devon. *
S. Ferguson 9 Melrose Place, Bristol 8. *
R.G. Knott Cedar Farm, Wet Lane, Draycott, Cheddar, Somerset
B. L. Milton Hazeldene, Clutton Hill, Clutton, Somerset.
T.A. Pullin Campari, Court Road, Oldland Common, Bristol.
* Subject to payment of fees.

Club Events

Same as before plus

5th June W/e Agen Allwedd. Leader Mike York, 19 Alfred Place, Cotham, Bristol.
Would members wishing to go on this trip please contact Mike before the date, as permits have to be obtained.

Acknowledgements

We would like to thank Mrs. D. Alder and Mrs. E. Jones for making some new curtains for the H.Q. Living and Library rooms.

Changes of Address

D.P.W. Gumbleton 31 Cedar Grove, Yeovil, Somerset.
L. Teasdale Farend, Old Avenue, West Byfleet, Weybridge, Surrey.
D. Tringham Silver-dale, Staunton-on-Wye, Herefordshire.

COLD CAN KILL

We are pleased to enclose with this Journal an offprint of an article first carried by the Royal Yachting Association Magazine. It has a lot of relevance to cavers and the Editor is grateful to Luke Devenish for suggesting it and to the R.Y.A. for arranging a generous bulk purchase.



In the last issue of this Journal I made a mistake. I got an important fact wrong in a report of the rescue of Dudley Soffe from Swildon's Hole. Compressed air hammers were not in fact used. The fact that this error annoyed many of the readers who were on the rescue is illustrative of one of the basic facts of journalism - the report is always wrong to those who were involved, be it football game, car accident or session of Parliament! When the Press say, 'We just want the facts', they mean, of course, 'Give us a skeleton of the story and we'll add the flesh'. The amount of embellishment which this 'flesh' represents depends largely on the experience of the reporter in the activity concerned, his attitude towards the people involved (which usually depends on how well they co-operated!) and the policy of the organ he represents. In the field of politics we can control the slant on the truth by buying only the paper we trust - i.e. that which we trust to make the embellishment fit our prejudices! The exclusion of certain facts and subtle overwriting of opinions is part of the game, very British, and (if the paper sells) all good stuff.

But when, because of ignorant reporting, an exhilarating and scientifically stimulating sport is consistently misrepresented, however unintentionally, something must be changed. At the moment caving is not in this position - but it has been and, if one looks carefully, the embellishment a cave rescue gets is still designed to horrify the reader with the recklessness of the unfortunate victim and the stirring activities of Police, Fire, Ambulance, G.P.'s. Still fairly low down the list in many reports there is the fact that some of the cavers themselves helped at the rescue and that the victim was either very inexperienced, with no connection with established caving, or caught by unpredictable circumstances on a trip which was well within his capabilities.

Having moved away from a caving area, where most local people have some acquaintance with at least the entrances of caves and the type of people who go down below for sport, one realises that most of the populace really does believe caving to be needlessly dangerous and where else did they derive this impression but from the Press? Nearly every Sunday, they say, it's on The News. What a stroke of luck that Monday is not such a slack day and most national dailies can only find space for 'Search Called Off' and a few lines. Usually the previous day's mountain rescue does get a mention - especially if it has been successful. Is it coincidental that the two sports are viewed slightly differently by the Press and hence the Public?

Of course, 'UP' is always better than 'DOWN' - there's Heaven and Hell for example, and thumbs. Many of the residents of rural Yugoslavia seriously believe that devils inhabit the holes from which the rather sinister hooded, one-eyed speleologists emerge. The peasants of County Clare will laugh gaily about the same topic over a pint, but try getting one near the edge of Fisherstreet Pot after dark and watch the reassertion of all prejudices about the depths. Mountaineers are heroes - think of the coverage gained by even modest expeditions. They are closer to God, breathe clean air whilst treading pure white snow and plant flags when they get to the top. Whilst not begrudging the climbers their acclaim - their business is usually far more strenuous than ours - the bias shown by the Press is sometimes, I'm sure, the result of the superstition and taboo about the Depths!

One of the most genuine attempts to portray caving as it is - and the dangers of accidents underground - was the B.B.C. documentary film, produced by Don Haworth, entitled "Sunday at Sunset Pot". The Corporation showed this film without giving away the fact that the rescue was a tragic failure, 19 - year-old Eric Luckhurst dying on the stretcher whilst still underground. The 'Guardian' described the film as 'a sensitive and truly moving documentary, showing ordinary people casually displaying courage and fortitude'. And isn't that what it's all about? Even so, Virginia Ironside in the Mail was forced to conclude that 'it was probably the best anti-potholing advertisement any sane person could wish for'. Another piece of television work which did a lot of good for our sort of activity was, strangely enough, one on climbing. Few of those who saw Joe

Brown and fellows hanging above the sea, while describing their next move and dragging on a Woodbine, could have denied that it was far from foolish. The attempt to link G.G. and Ingleborough, shown last Autumn, also presented the calculated risks of cave diving.

The features side of the Press and Television is fairly kind to us. All that needs tidying up is the News reporting. To some extent we can never expect to be asked pertinent questions about rescues at the scene unless the reporter has been underground. We must just try to avoid the leading questions. "Is it really bad and very dangerous down there?" is in the same league as "Have you stopped beating your wife?" (I was asked the former question on emergence from Rod's Pot!). It was noticeable that when told a trapped caver was some 400 feet inside a cave the Press neatly said he was that distance **BELOW** the Mendip Hills of Somerset etc. etc. To beat the reporter at his own game one has to be very cool and give the matter full attention - never likely conditions at a rescue scene. There are two alternatives, one sensible, that a national body like the N.C.A. should strive to get articles in the Press and advise on reporting, and one silly - that the whole of Fleet Street be taken down one Sunday afternoon and let us see what rave notices we get that Monday!

* * * * *

PLEA FOR PICS ...

THE WUNDERLAND OF MENDIP

Nicholas Barrington hopes, if a sufficient number of really good photographs can be obtained, to produce an art book (A4 size) depicting pictorially scenes under Mendip.

It will probably include several sections - early caving, cave diving, formations, pitches etc - and if any Wessex Members have any really top class photos which would be capable of being included on their own merits (they would just have captions rather than accompanying editorial matter) would they please contact Nick at The Oak House, Axbridge, Somerset, as soon as possible. It is envisaged that a reproduction fee will be paid per print used, and that some return might also accrue to Wessex.

There is one category of print where less than top quality prints will be accepted, and that is of any photos showing 'news-type' shots e.g. the first successful passing of Sump 1 in Swildon's or Maypoling up to Oakhill series in Lobster Swallet.

Also, if any member has good prints of any outstanding formations in Mendip caves that have been destroyed or damaged, could they please contact Nick so that they may be included in a future edition of a revised 'Complete CAVES OF MENDIP' to further punch home the high rate of despoilation of our limited number of caves.

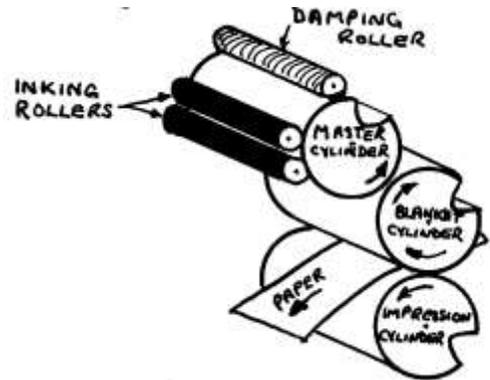
The final prints will be reduced to 4" across (with a maximum height of 6"), but larger sized prints for reduction would be appreciated. Postage and costs will be refunded.
PLEASE ACT NOW, AND CONTACT NICK STRAIGHT AWAY!

JOURNAL PRINTING

by Ron Foord

Whilst enjoying myself at the Wessex Annual Dinner last October I made a rash promise to your Editor that I would write a few notes on the preparation of copy for the Journal - so here goes.

The Journal is printed on an offset litho press and it is a requirement of this process that an ink-receptive image be formed on a water receptive "master". This master when mounted on the master cylinder of the press offsets its image onto a rubber 'blanket' which in turn offsets the image onto the paper as shown in the diagram.



The way this ink-receptive image is formed depends on the type of master being used which in turn depends on the complexity of the copy. Three types of masters are used for production of the Journal.

- (1) Direct image paper master
- (2) Chemical Transfer metal plate
- (3) Presensitised metal plate in conjunction with a litho negative.

Most of the Journal is produced from Direct image plates known as "Duplimats". These are paper masters suitable for runs of up to about 1,000 copies and are the cheapest medium. The image is produced on this type of master by the 'direct' methods

- (a) typing - using a special litho ribbon
- (b) Pencil - of a special type with a greasy content in its lead
- (c) Drawing pen - using a drawing ink also having a greasy content

With the direct methods of production only same size images are possible and the method is most suited to typing text matter using a pen to box in tables etc. Simple diagrams can also be drawn direct but, as it is difficult to erase mistakes, it is better to first draw the diagram to the right size on plain paper and then trace onto the duplimat using a 'light box' to project the image through the master. (As the paper master is fairly dense only fairly open, bold lined diagrams can be treated this way).

Chemical Transfer plates are metal masters upon which the image is formed chemically whilst in contact with the appropriate 'negative' material. The image on this negative can be achieved by contact for same size reproduction, or using camera speed negative material the copy may be enlarged or reduced. A limitation of this type of plate is that all enlargement or reduction of the copy must be the same over the whole plate. Reasonable commercial quality can be obtained from these plates with runs of up to several thousands.

The third type of master used is the conventional 'litho plate'. This again is a metal master which has a light sensitive coating which is hardened in the image area when exposed to ultra violet light through a lithographic negative. The advantages of this type of plate over the chemical transfer plate are:-

- (a) longer life - runs of up to 50,000.
- (b) Negatives of varying reductions can be stripped together to make up the final negative.
- (c) Halftone negatives (for the reproduction of photographs) can be used.
- (d) Finer lines can be reproduced.

Order of costs

The cost of a machine ready plate for each of the three types are approximately:-

Duplimat (Paper Master up to 1,000 run) (typed)	25p
C. T. Plate (Metal Master up to 10,000 run)	50p
Presensitised Plate	50p plus negative(s).

The negative costs range between 50p and £3 according to how many negatives are required to make up the master negative.

Presentation of copy

a) For duplimats - As these are mainly typed all that is required is a good clear draft, preferably typed, that has been carefully checked for accuracy as whilst alterations to typed duplimats are possible they are not easy and lessen the life of the master.

Drawings should be presented on a fairly light paper in Indian ink and of the size that is required for reproduction.

b) C.T. Plates - Text matter as (a) above with sketches etc drawn to the reproduction size in black ink. Light blue pencil can be used for construction lines (or light blue graph paper for surveys) as these can be "burnt out" during exposure of the negative providing the image required is in a dense black.

c) Presensitised plates with lithographic negative(s) - Again a clear draft for text matter. For sketches and surveys the remarks in (b) above apply although more latitude is possible as alterations can be made by painting out on the negative before exposing the plate. Enlargements or reductions of up to 2:1 either way should be carefully calculated in both directions to make sure they will fit the reproduction copy area.

Photographs for reproduction should for preference have good contrast as the screening process necessary for the printing of photographs tends to flatten them.

These notes are very general and no doubt leave many questions unanswered. If there are any particular questions you wish to raise I will be pleased to answer them via the Editor.

Writing for the Journal (a tailpiece from the Editor)

Ron Foord's description of the production of the Journal in the previous article is invaluable in that it shows why the Journal looks so good. The offset litho process produces a far clearer page than duplication - so long the method used by other caving journals. This also helps explain why the Wessex Journal takes longer to get to its readers than less presentable rivals. One way in which this time can be cut is in the presentation of typed papers with clear, black ink, diagrams. The Editor's job is then only to go through with the blue pencil and plan out the layout. While he is willing to type articles and draw diagrams, articles for which this must be done ought to reach him earlier than those in which it has been done by the author. To help the author with a late letter or article for inclusion in the Journal the following notes may be helpful.

- 1) If you type with double spacing on quarto sized paper (the Journal page size) two of your pages will make one Journal page - as long as you do it in 'elite' type (the same as the Journal). Other type faces are permissible since we have a conversion chart to help with layout.
- 2) If you draw your diagrams with the Journal page in mind (or half it, or double it etc.) the planning of illustrations is easier. Ron has mentioned that black ink is required to get the necessary contrast - this should be borne in mind with photos too.
- 3) Though Britain has not yet gone decimal on measurements, most publications are attempting to introduce metres instead of feet. Certainly the scales on maps and surveys should include both and the text ought to do this, or go wholly metric. In cases where the source information is still in feet - e.g. ladder lengths, Ordnance Datum, it seems best to keep in feet until the general conversion is made, rather than describing a 6.096m ladder etc. To remind you of the conversion figures we are including the tables published two years ago.
- 4) It takes about a month to get the Journal out from the material you have submitted. Since we try to deliver the Journal in the middle of the month whose date it bears, copy is required near the beginning of the preceding month, certainly not later than the 10th, except in the case of news items and the Secretary's Club News. If you've a handwritten article which needs diagrams try to send it off as you receive the preceding issue. Really urgent stuff can be included - with Ann Foord's goodwill - up to about the first day of the month of publication. It can then be slipped in the back of the Journal (like the Swildon's rescue last time), or included as a loose sheet.

As you can see, with all of us being part-timers (and think of Maurice Hewins faced with 350 envelopes to address!), there is bound to be delay. In our view this is more than balanced by the presentation and the fact that a more lasting and accurate record of speleological and Club activities is produced.

* * * * *

Overleaf we publish again a handy metric conversion chart. Please note that one mile equals 1.6093 Km (not m).

METRIC DATA CONVERSION TABLE

Quantity	<i>Imperial units to Metric (SI) units</i>		
	Imperial unit	SI equivalent	
		Accurate	Rough approximation
Length	inch	0.0254 m	4 in = 10 cm
	foot	0.3048 m	10 ft = 3 m
	yard	0.9144 m	10 yds = 9 m
	mile	1.6093 m	10 miles = 16 km
Area	sq. inch	645.16 mm ² (sq. millimetres)	1 sq.in = 650 mm ²
	sq. foot	0.0929 m ²	100 sq.ft = 9.3 m ²
	sq. yard	0.836 m ²	100 sq.yd = 84 m ²
	sq. mile	2.58999 km ²	10 sq.miles = 26 km ²
	acre	0.405 ha (hectare) 4050 m ²	10 acres = 4 ha 1 acre = 4000 m ²
Volume	cu. inch	1.6387 × 10 ⁻⁵ m ³	1 cu.in = 16 cm ³
	cu. foot	0.0283 m ³	1 cu.ft = 28 litres
	UK gallon	0.004546 m ³	1000 cu.ft = 28 m ³ 1 UK gal = 4.5 litres 1000 UK gal = 4.5 m ³
Mass	ounce	0.0284 kg	1 oz = 28 gm
Pressure	pound	0.4536 kg	10 lb = 4.5 kg
	pound per sq. inch	6894.8 N/m ² (newtons per sq. metre)	1 lb/sq.in = 7000 N/m ² 10 lb/sq.in = 7 N/cm ²
Density	pound per cu. foot	16.019 kg/m ³	1 lb/cu.ft = 16 kg/m ³
Temperature	degree Fahrenheit (°F)		
Temperature scale	t°F	$= 5/9(t - 32)^{\circ}\text{C}$ (e.g. 70°F = 21.1°C 80°F = 26.7°C 90°F = 32.2°C)	

Quantity	<i>SI units to Imperial units</i>		
	SI unit	Imperial equivalent	
		Accurate	Rough approximation
Length	centimetre (cm)	0.394 in	10 cm = 4 in
	metre (m)	3.281 ft	10 m = 33 ft
		1.094 yds	
Area	kilometre (km)	0.621 miles	100 km = 62 miles
	square metre (m ²)	10.764 sq. ft	10 m ² = 12 sq. yds
	hectare (10,000 m ²)	2.471 acres	1 ha = 2.5 acres
	square kilometre (km ²)		= 1200 sq.yds
Volume	square kilometre (km ²)	0.386 sq.miles	100 km ² = 40 sq.miles
	cu. metre (m ³)	33.315 cu.ft	1 m ³ = 35 cu.ft
Mass	litre (l)	0.22 UK gal	1 m ³ = 1.3 cu.yds
	(1000 litres = 1 m ³)		100 litres = 3.5 cu.ft
	kilogramme (kg)	2.205 lb	= 22 UK gal
Pressure	gramme (g)	0.035 oz	10 kg = 22 lb
	newtons per sq.metre (N/m ²)	1.4504 × 10 ⁴ lb/sq.in	100 g = 3.5 oz
Density			1 N/m ² = 1.5 × 10 ⁴ lb/in ² or
	kilogramme per cu.metre (kg/m ³)	0.062 lb/cu.ft	1 N/cm ² = 1.5 lb/sq.in
Temperature	gramme per cu.cm (g/cm ³)	0.036 lb/cu.in	100 kg/m ³ = 6 lb/cu.ft
	degree Celsius (°C)	1.4 ⁵ Fahrenheit (°F)	30 g/cm ³ = 1 lb/cu.in
Temperature scale	t°C	$= 9/5t + 32^{\circ}\text{F}$ (e.g. 20°C = 68°F 30°C = 86°F 40°C = 104°F)	

MANGLE HOLE - SANDFORD HILL

by C.W. Davies

Altitude:	210 feet above sea level
NGR:	ST 4271 5968
Total length of surveyed passage:	190m
Estimated length of unsurveyed passage:	23m
Total length of passage:	213m
Vertical Range:	42m
Tackle:	85' and 20' ladders; 20' and 10' tethers; 200' and 20' rope lifelines.

Discovery

On 29th September 1970 two London cavers, Ken Nash and George Whale discovered Mangle Hole while exploring mine shafts on Sandford Hill. They confirmed that it was a new cave when they checked with members of the Sidcot School Spelaeological Society.

Exploration was further carried out by the S.S.S.S. led by Stephen Crabtree and the cave was surveyed by Christopher Davies and Richard Law.

Description

The cave entrance is in the wood 200m West of Sandford Levvy and about 20m south of the boundary fence. It can be reached most conveniently by following the public footpath from the iron gate opposite Sandford School to the first field stile. Cross this field to a point halfway along the wood and a short path is seen to lead to the entrance. The entrance appears as a North-South trench about 2.5m long and 0.6m wide near a clump of nut trees which are used for belaying the ladders. Against the trees rests the iron mangle which was found in the entrance and gave the cave its name.

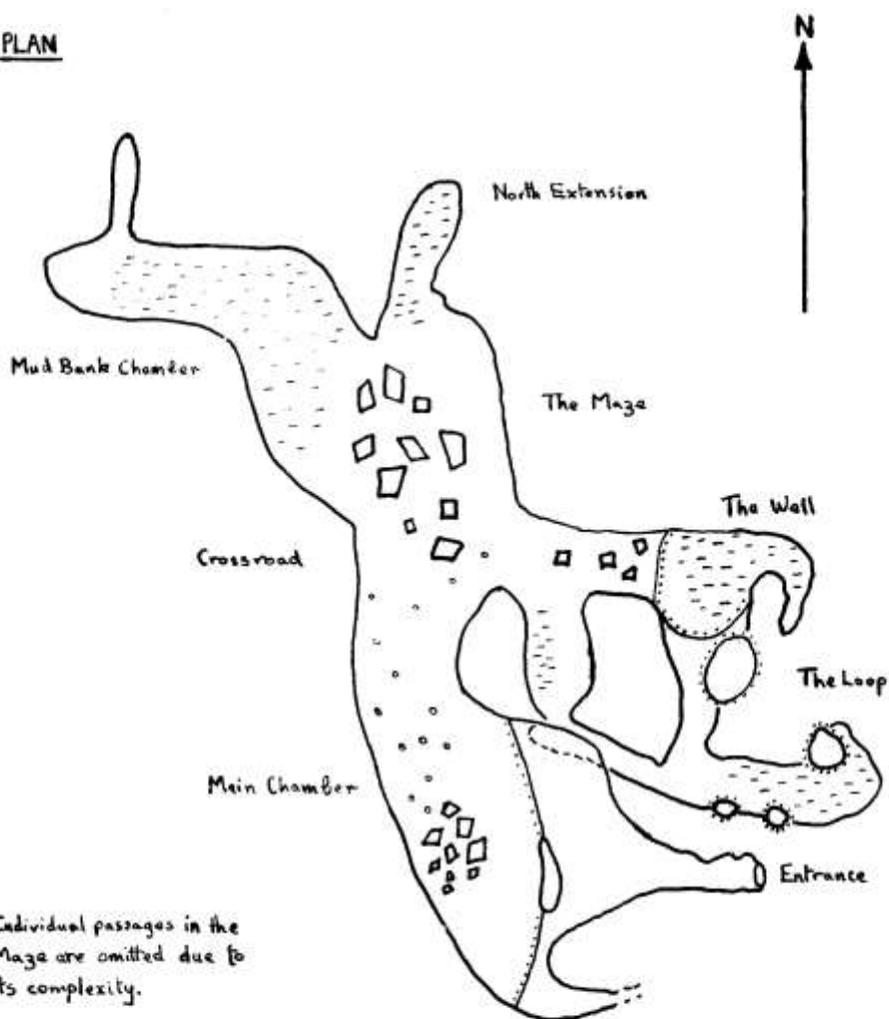
The shaft falls obliquely at about 70° for about 30m. It is in the form of a rift only 1 foot broad at the top but this increases after. This constricted part of the shaft originally contained many loosely wedged boulders which became dislodged from time to time when climbing the ladders. These rocks have now been removed. At about 12.5m the entrance rift ends at the Ledge where it is possible to stand free of the ladder. (To reach here a 40' ladder and a 20' tether is required). From the Ledge the passage still falls steeply and after 7.5m arrives at the top of several very large boulders in the Main Chamber. (This requires a 25' ladder attached to the end of the 40' entrance length. A further 20' of ladder is needed to descend the boulders belaying either to rocks or to the end of the other ladders). The floor of the Main Chamber consists of a steep scree slope which terminates at a cross roads. The right hand (East) passage leads to the Well - a 6m pot (20' ladder plus 3' tether required). At the bottom of this a small passage leads to a small rift chamber which contains some unique mud formations. A low passage to the right of the "Well" approach route is the start of the Loop which circles round to exit overlooking the Well. In this series there are three blind avens and excellent specimens of fossilised coral.

MANGLE HOLE

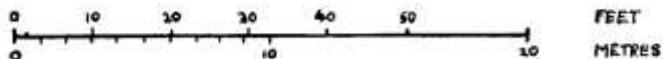
Sandford Hill, Western Mendip.

NGR 42715968

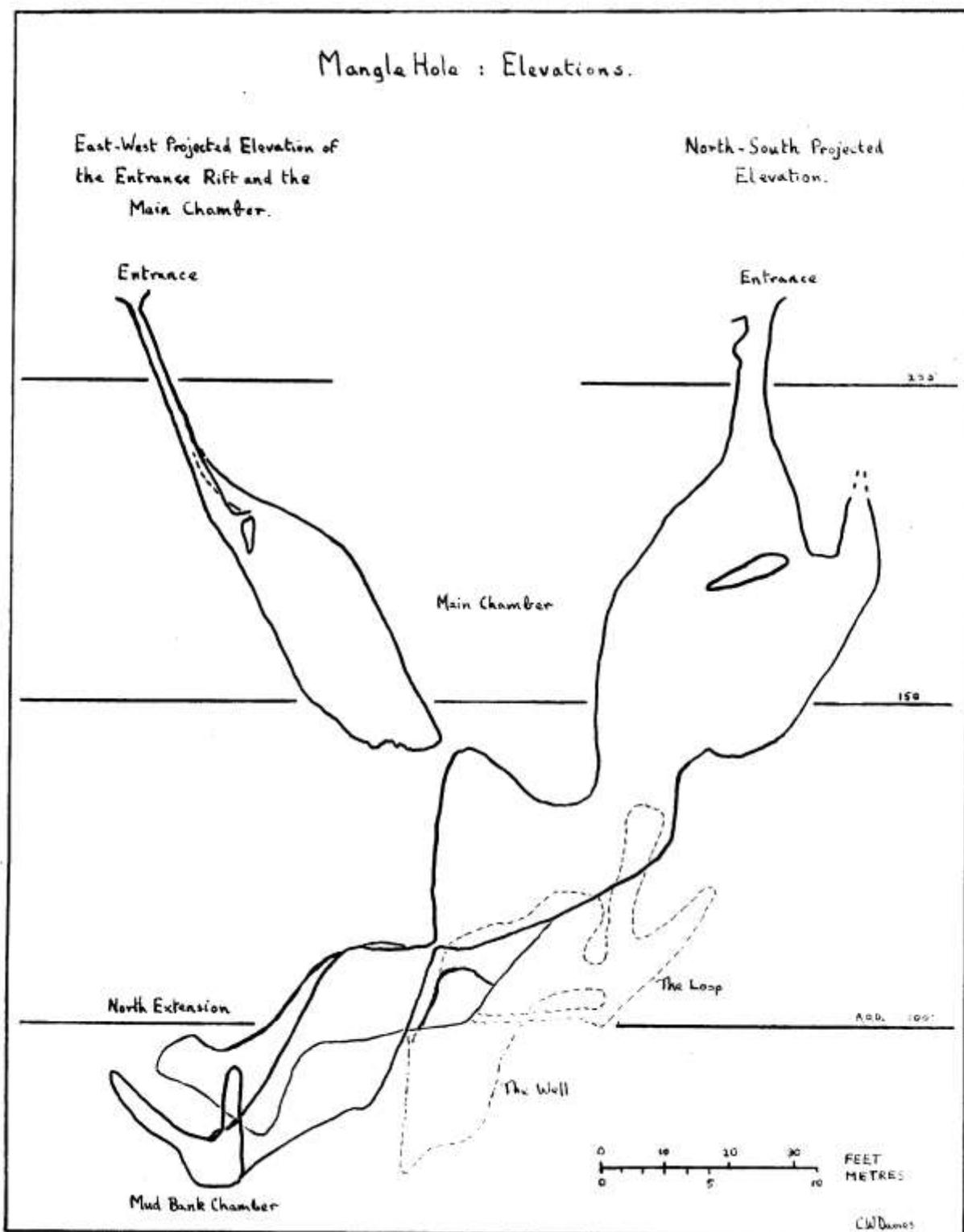
PLAN



N.B. Individual passages in the Maze are omitted due to its complexity.



C.W. Davies.



To the left of the crossroads is 'Mud Bank Chamber'. It is approached by passing through a boulder maze in the floor. The chamber ends with two 6m blind avens and a small trickle of

water which disappears through a small hole in the floor. The whole chamber is covered with thick deposits of silty mud. Several yards of white tape have been placed here to define and protect the unique mud formations. Northward from the crossroads is the north extension, a 9m mud covered passage.

The Watertable

The whole of the system below the cross-roads is covered in a layer of silty mud exhibiting fine fluting and mud stalagmites which are probably the result of sedimentation from a fluctuating water level. When first seen these passages were dry but on the 6th February 1971 they were filled with still water to a depth of 5m above the original cave bottom. Further measurements showed that this water was 3m below the highest level of the mud and 27m above sea level.

Geology

The entrance shaft follows a steep N-S joint in the Dolomitic Conglomerate. Twelve metres down it enters the Carboniferous Limestone. The remainder of the cave follows the dip of the carboniferous limestone rock which in this area is about 70° to the north. There are a few mineral deposits - a colony of perfect large dog-toothed crystals in the Well passage and dendritic coatings on boulders in the main chamber and the entrance rift.

Geomorphology

The cave was formed under phreatic conditions, when the water table was at least 60m above sea level. The lower series shows characteristic phreatic passage features:- a maze, pockets, blind avens, collapse and calcite crystallisations. Collapse in the carboniferous limestone has occurred along the joint planes, the debris forming a large boulder ruckle and a scree slope.

The entrance shaft and the east wall of the great chamber are grooved by vadose channels, by the action of seepage. Besides the calcite crystals there are few calcite deposits, no stalagmites or stalactites, but one or two narrow curtains hanging on the walls of the main chamber.

Survey Notes

The instruments used were an oil filled prismatic compass, an Abney level and a 100 foot steel tape. The grading varies from CRG grade 4-5. The surveying was carried out by starting at the bottom and working up and took 12 hours to complete.

Is this the Gulf?

The evidence is inconclusive but suggests it is not. It is likely that recent blasting in Sandford Quarry has helped to dislodge some of the loose material at the top of the rift and thus revealed the cave beneath. Bones of a hedgehog were found near the top of the Well and parts of a rabbit's skeleton were scattered over the floor of the main chamber. This suggests that the entrance rift had been open in the past to small mammals but it was certainly unknown to cavers prior to its discovery last year.

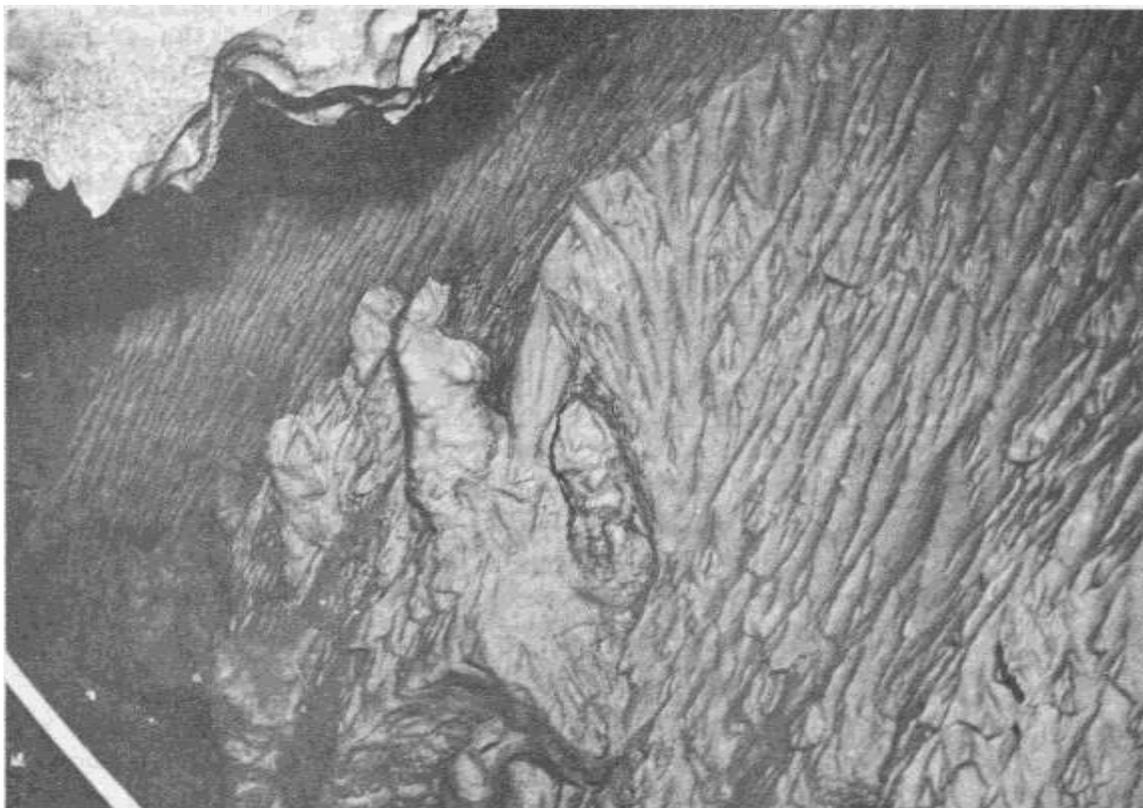


Plate 1. Mud fluting and mud stalagmites in the Well. Photo: C.M. Williams



Plate 2. Fossil coral in the loop passage. Photo: C.M. Williams

There was no sign of any previous human exploration. There are several shallow mine workings all around the entrance and if the present shaft was open when miners were active it would be strange if they did not bother to enter it. But this was 200 to 300 years ago - long enough for all traces to have vanished.

Rutter's description of the Gulf is not reliable as he refers to the entrance being 146m above sea level whereas Sandford Hill is only 127m high. Mangle Hole entrance is 64m O.D. Also the miners described the hole as being 73m deep and this depth from the cave entrance would be below sea level.

THE ORIGIN AND DEVELOPMENT OF CAVES

A report on the C.R.G. Symposium held at Vaughan College, Leicester, 6.3.71.

When you're looking round the lecture rooms for a C.R.G. symposium it's lucky that the backs of heads in such a meeting are so typical. The hair creeping on to the shoulders, the mixture of anoraks and tweed jackets, the chunky sweaters. Having crept in at the back of the first lecture one quickly had one's choice of lecture room confirmed as the forceful tones of Trevor Ford boomed out on the topic of structural geology and the location of caves. If the Karst Police ever initiate a Task Force, Trevor would make a good Barlow. There's no nonsense about his style!

Dr. Ford said that it was inevitable that parts of a limestone mass, or even a single bed, must show preferential solution. Bedding planes and joints are of course the major structural features affecting solution but subtler influences such as Stylolite seams (formed by pressure solution during lithification) were described in relation to cave formation.

Next up was A.C. Waltham, who lectured on a geological theme - citing porosity and purity of limestones, together with structure as the guiding influences. He said there are also topographic controls - distribution of superficial deposits, drainage patterns at the swallet end and the level of the resurgence. Ultimately, he said, it might be possible to predict the course and pattern of impenetrable cave systems from purely surface evidence. Actually, one was tempted to ask why all the expertise shown at the Symposium had not yet been turned toward this task - or was it all too busy thinking to dig?

Later Tony Waltham lectured with great skill from Derek Ford's notes on a paper entitled, 'Some Effects of Geologic Structure upon Patterns of Limestone Cavern Development'. He summed up the Mendip models which formed the basis of his research. In the most concise sentence in any of the abstracts he stated, "Watertables do not determine the locus of major cave development: caves determine the locii (sic) of the local piezometric surfaces". Major vadose caves are formed where swallets are big and there's sufficient relief, deep phreatic caves result from low groundwater transmissivity and watertable type caves from high transmissivity. Transmissivity varies with structure and increases with time. A refreshing change, this, from the doctrine that "all caves is different". At the scale of the caver and his favourite caves the differences are bound to seem important but fortunately the product of spotting the generalities, which apply to all systems, is a better understanding of the processes involved.

To end the morning Dr. Alfred Bögli, who, by appearances alone, could have been nothing other than a central European professor, gave us an exposition in laudable but broken English of his work on mix-corrosion. This has been readable to German audiences for some time. A smart move to get such a warm personality to lecture on a topic essential to all the others' work - namely that of how solution can possibly occur at depth when water is apparently saturated there! In the space of time that it took to show a few slides of the morphological effects of mix-corrosion (the extra solution made possible by waters of different hardnesses meeting), Dr. Bögli started a new phase of thought amongst practising speleologists about the phreatic passages which give them such delight.

Later, in the evening, and after a passable meal, Dr. Bögli gave a wonderfully warm-hearted talk whilst showing us some of the slides which have made his cave photography so famous.

Returning to the afternoon session, George Bray showed that the titration used for so long to derive hardness figures was by no means sacrosanct - he had tried a variety of new reagents and indicators, together with electrical methods. He had also some titillating cliff hangers on the topic of oxidation as a cave forming agent. He was followed by Dingle Smith who also did well to impress cavers that limestone hydrology was but part of groundwater studies but did form one end of a hydrogeological series of rocks - the other end being sands and gravels, in which the assumptions of a watertable and Darcy's Law were mostly valid. He backed up the statement by Derek Ford that, as Karst Police work with spores proved, water tables were not regional by any means on Mendip - for obvious reasons of porosity and structure. His mention of the water tracing reminded us that in fact karst hydrogeological studies are quite well ahead of the field, a fact which is becoming known slowly to those with influence!

The K.P. also batted for the last wicket, the author of this report launching into abrasion. Most people knew that he would quickly say that abrasion did not enlarge caves, except in floods, and spend the remaining half-hour talking about July 1968! The fact that he was introduced as a member of the Flood Studies Team who caves full-time (and professionally) will cause a snigger to those readers who have watched his paunch grow on the Chalk!

Gordon Warwick lectured last, on the topic of 'Caves and the Ice Age'. One only has to cross the Severn Bridge to get into 'glacial' caving and the contrast with Mendip is obvious to all who've done this. In those caving areas affected by glaciation there is a fluctuating balance between the large systems which meltwater and snow patches opened up for us and those pre-glacial caves which deposition of till effectively closed down for us. The author of this report often has pleasant dreams of what the Ystradfellte area looked like before gaining its mantle of grot! In the periglacial areas, such as Mendip, the effects of the cold are mainly around the cave entrances, where deposits of finely shattered rock are produced by freezing and thawing.

Trevor Ford concluded by saying that he'd heard so many different ways of cave formation during the day that perhaps the old belief that they were eaten out by bacteria, in the manner of Gruyere cheese, should again be investigated. I'm sure all Wessex Members will be able to think of better ways than that!

M.D.N.

LETTER TO THE EDITOR

Dear Sir,

Being a local historian and archaeologist, I was fascinated to read the children's story "Spellbound", by Heardian in your December Journal. Like many poems, nursery rhymes and stories, these local tales do have a basis of fact, reflecting true incidents - although they suffer both in the passage of time and the accuracy of the letter! A classic example is the rhyme about Little Jack Horner, the story of the Horner family of Mells.

The first thing that strikes one about your story is that the incidents and characters have a parallel in history - and this is backed up by facts gathered from scrolls consulted at Charterhouse Monastery.

Let us examine the characters of Mike, Jim and Freddie: Mike, in my opinion, is Michael Barron Cavelet of Benter, a long knight who did indeed, by stealth, occupy an Inn used once by the good knight Sir Barabobath. 'Jim' is undoubtedly Sir James Nanofathom of Wookey, an academic who dabbled with the elements and by whom rainfall, thunder and lightning were converted into printed pages. Freddie, in your story, is probably Sir Frederick Freefall of Ashwick Castle, a knight of whom remarkable facts are recalled.

All of the above owned lands on Mendip and ruled a fierce and sometimes cruel manor. Their treatment of the serfs of Shepton is worthy of note.

The story, too, is remarkably close to the truth. Big Willie in the story is Prince William of Cheddar, a Knight of the Water Table whose continuous search for the Holy Pail took him to four corners of the world. Archaeological evidence has proved that he lived on Mendip - the discovery of a pail in a Burrington dig in 1970 caused a world stir - the initials W.I.S. (Water Is Speleological) proving it to be one of the Prince's earlier relics. On his return from crusades in Africa and Iberia he found that a false knight was in his domain and preaching a new religion to the peasants.

One knight, Sir Lyconet, who came from Sherwood Forest, made friends with Sir Barabobath and another Knight of the Watertable, Sir Algol Compiler, on the pretext of studying at the shrine of St. Dunstons.

After his treachery was discovered Sir Lyconet was banished to Fordlandia to live among the Regina Indians.

Another knight who seemed to follow the same path was banished to the Manor of Howbery in Berkshire; he was Sir G.O. Morph Crummock, a black bearded knight now doing pennance at Flood Abbey.

The position of the three Knights of Nhasa - Cavelet, Nanofathom and Freefall - is not certain. They were not, as far as we know, Knights of the Watertable, neither were they evil Karst Knights. It now seems that they used these troubled times to carry out tomb robbing. One of those robbed was near North Hill. It consists of a typical 3rd century depression leading to a 4th dynasty vertical shaft which shows distinctive Nhasa influence. The shaft leads presumably to the burial chamber but all evidence is lost, apart from the mounds of excavated material.

I have studied these tips and am satisfied that remains found there are of Polorammon, the God King whose great power can be seen all over Mendip.

There is evidence that Sir Lyconet secretly returned to Mendip in the first year of the new reign of Sir William of Cheddar, dwelling disguised as a serf in a hovel at Priddy, together with concubines and magic potions to throw into streams in order to destroy the water table. However, the Knights of the Watertable discovered the plot and on the night of the full moon placed two books against the hovel, one (the Bodleian Book of Furds) facing west across the Atlantic, the other (a little book of Mendip containing many wise sayings) facing towards the stone circles of Stanton Barrington.

Full of wrath, Sir Lyconet revealed himself. He then dressed and rushed to Priddy Pool, casting the Mendip book into the water. A hand appeared with two digits raised in scorn. Sir Lyconet fled back across the sea.

I hope your readers find these revealing facts helpful in their interpretation of local folklore and legend.

Yours etc.,

Morticelock Wheelbrace

LEVELLING ON MENDIP

J.R. Church

Introduction

Soon after the opening of Nine Barrows Swallet and Boveways Cave surveys of the two caves were commenced. In order that the finished surveys should indicate the altitude of the entrances it was necessary that these be determined with the greatest possible accuracy. To enable this to be done the Club was fortunate enough to be able to borrow a Level and, whilst it was in our possession, the opportunity was taken to resurvey the altitudes of the entrances of a few of the other Mendip caves, these having previously been determined by various less exact techniques. This article is intended as a brief record of the work which was done with the Level during a period extending from August 1967 to March 1968.

Description of the Work

The datum level was taken from a Bench Mark on a cottage on Priddy Green. The altitude of this was found from the Ordnance Survey and was related to levels obtained in a closed traverse taking in Priddy Green, Nine Barrows Lane and Eastwater Lane. This traverse had a closure error of 1.15' which, whilst not being good, was considered acceptable bearing in mind the inexperience of the majority of the surveyors. In the final results this error was distributed equally between the 66 levels obtained

This traverse resulted in a Temporary Bench Mark (T.B.M.) being established on a rainwater gully by Boveways Cottage and this was used as the datum for the levelling of the entrances of Nine Barrows Swallet, Boveways Cave and North Hill Swallet. A T.B.M. was also established on the Headquarters Site at Upper Pitts.

From the T.B.M. at Boveways Cottage a further closed traverse was done which resulted in a closure error of 0.1', this improvement doubtless being attributable to the increasing experience of the surveyors! This traverse took in the old entrance to Eastwater Cavern (at that time blocked) and a further T.B.M. was established here, taking the form of a drill mark on solid rock above the entrance.

The survey was finally extended to include the entrances of Cuckoo Cleaves, Hunters Hole and St. Cuthbert's Swallet. Various T.B.M's were established on this section of the survey also.

Results

The following table summarises the principal results of the work and compares the altitudes obtained with those given in "The complete Caves of Mendip".

<u>Site</u>	Altitude (feet A.O.D.)	
	Levelled	From "Caves of Mendip"
Nine Barrows Swallet - concrete by padlock	854.7	875
Boveways Cave - Grating level	881.9	881
Priddy Green Sink - cover level	780.0	780
Eastwater Cavern - old grating level	781.3	780
Eastwater Cavern - T.B.M.	809.4	-
North Hill Swallet - rim of concrete pipe 2" below extreme top	831.7	833
Cuckoo Cleeves - rim of concrete pipe 2" below extreme top	845.1	845
Hunters Hole - level of lid	801.6	810
St. Cuthbert's Swallet - level of lid	788.8	780
Boveways Cottage - T.B.M.	845.9	-
Upper Pitts - T.B.M. (Nail in telegraph post 2'4" above ground level)	841.6	-
The Belfry - step of changing room	808.7	-

Acknowledgements

So many people helped with the levelling that it is almost an impossible task to list them here. It is hoped that the results set out above will act as a tribute to the work which they so willingly undertook. However, particular thanks are due to Jenny Murrell, who borrowed the Level and instructed several Club members in its use.

THE HISTORY OF THE PRESENT DIG AT RHINO RIFT

A. Audsley

Rhino Rift was originally dug as a possible archaeological site by the U.B.S.S. and it was at this time that most of the choking was removed from the entrance. They later tackled the site as a cave dig, but were forced to abandon it because of lack of stacking space within the cave and the great difficulty of removing spoil to the entrance.

The idea for the present dig germinated during a walk down the Longwood Valley, when it was decided to take a quick look down Rhino to see if the July floods, or even time itself, had in any way affected the then terminal boulder choke. It was found, in fact, that the choke had slumped somewhat, revealing further passage which quickly narrowed down into an impassable slot. Although the slot was only 3-4" wide, a pronounced echo could be heard from the cavity beyond and the situation seemed quite promising - Rhino was about to go. Accordingly, work was begun on enlarging the slot to permit further investigation. A few applications of chemical aid to caving and about six weekends worth of hammering had enlarged the slot sufficiently to permit the entry of the diggers into a mud-choked aven.

A further few weeks were spent in digging in the mud at the far side of the aven, but although the floor had been lowered about 4', no way on appeared and by then all the stacking space was used. The only alternative left was to remove spoil to the surface. With this in mind, it was decided to construct some form of spoil removal system. The alternatives considered were as follows: (1) a monorail system, (2) an overhead cable system, (3) a more or less conventional railway, or (4) canvas bags hauled over a stationary bed of conveyor belting.

These alternatives were considered in the light of the following assumptions: (1) that the quantity of spoil to be removed was considerable, and (2) that the digging team would remain small and, therefore, any mechanised system should be capable of being operated by two people. On considering these factors, it was thought that the limited carrying capacity of both the monorail and the cable railway heavily outweighed their advantageous width requirements and that the only viable method of working would be to enlarge the rift sufficiently to take the conventional railway system. From purely economic reasons, the track emerged in 4'6" sections and 12" nominal gauge, which would fit into a passage 24" wide. Having fixed the design for the railway, the next task was to modify the rift to take it.

A 4' deep cutting was driven through the old spoil heap outside the rift, and a new spoil heap started to the east of the entrance. At this depth, the rift was originally in the region of 4" wide. The rock on both sides of the entrance was then quarried away (mainly using wedges, chisels and picks, as it was quite heavily weathered) until the entrance was sufficiently wide to take the projected railway. Work then progressed into the cave; all protrusions were removed and the rift was widened where necessary. When 40' of straightened, graded and ballasted rail bed had been produced, a timber trestle was erected on the surface to take the

winch and the railway was laid from this down into the cave. At the same time, a second track was run out over the spoil heap, to facilitate the emptying of the trucks, and a stone site hut was constructed at the end of the railway to provide shelter for the hapless surface workers. As the railway was laid into the cave, the work of grading the bottom was continued, the working face being kept about six feet in advance of the railhead to prevent undue blast damage to the track. This was a reasonable compromise (but not entirely effective).

The track was initially laid to a point 15' short of the aven and here the floor was lowered about 5' to create a reasonably comfortable working-space and to uncover a bedding-plane that was thought to exist under the right-hand wall of the chamber. This bedding-plane had initially 4" of air space over a floor of calcite coated clay fill, and was open for about 15'. As this bedding-plane took a slight draught, it was decided to push down it, rather than to continue on into the aven. Consequently, the calcite and clay fill was removed, enabling the diggers to enter, but the way was blocked by fairly substantial blocks of rock, with a very small canyon meandering tantalisingly in between. Large quantities of the aforementioned chemical aid were administered to these unfortunate blocks and a rabbit burrow was dug in between for a distance of thirty feet, at which point it intersected a strike passage.

The strike passage was approximately 30' long, 3' wide, 4' high and heavily choked with stal in both directions. A rather futile attempt was made to dig in the choke at the right hand end of the passage, but only twelve feet of progress had been made before the whole passage was choked with deads and working conditions were hampered by high concentrations of carbon dioxide. Rabbiting in this way was obviously a complete waste of time and so, returning to the chamber the whole of the bedding passage was widened, made as straight as possible and the railway was laid into the strike passage.

The deads were first removed from the passage and then the floor was lowered to generate a free loading space. At a depth of 4' below the railway a small hole was uncovered in the floor which took a howling gale and through which a chamber, estimated as 9' wide, 6' high and at least 30' long, could be seen. We were in - much jubilation!

Alas, it was not so. On enlarging the hole, it was found that the chamber had somehow shrunk to a miserably tight 15' long rift passage, heavily choked with stal at the far end. Furthermore, the howling gale had ceased to blow and was presumed to have been sealed off by bang debris that had fallen into the entrance. Two logical alternatives now existed, either to search for the draught or to tackle the stal choke at the end of the passage.

However, before embarking on either of these courses, both of which would necessarily involve the removal of considerable quantities of rock, it was decided to have one final push to the far left extremity of the strike passage. It was just possible (although somewhat improbable) that the passage might branch off down dip and thus provide an easier way on. Now, unfortunately, at this date the passage had been back-stacked with such dedication that it was well and truly choked to within a few inches of the roof. Rather than dig out this

mixture of polythene bags, bang wire, rock and clay, the way on was blasted over the top of the fill, through solid and the far end of the passage was reached. (This accounts for the rather unusual shape of the passage today, as the original back-stacking has now been removed).

The terminal choke was modified somewhat and open space did, indeed, exist beyond. A rather low bedding-plane was found, which headed in the direction of the aven at the end of the entrance rift. Despite one or two rather half-hearted attempts to persuade it to the contrary, this bedding-plane stubbornly insisted on remaining an inlet, and so attention once again returned to the right hand choking.

It was now decided to sink a pit at the end of the railway and, if a satisfactory way on could not be found within six to eight feet, to enlarge the lower rift passage to enable the stal choke to be dug out. When, after ten feet down, no hole bigger than a two inch crack had appeared in the wall it was decided to drive forward at this level and to enlarge the rift passage to a more reasonable size, in case it proved necessary to run the railway along it. Unfortunately, the concomitant destruction of the stal floor in the rift passage released large quantities of incredibly malignant porridge and this, aided by a heavy drip from a small bedding-plane high on the right-hand wall made digging somewhat troublesome for a few weekends. However, on the weekend of the 6-7th. March, a small slot was uncovered at the far end of the passage and open space could be seen beyond. One further bang and the way was open; but instead of the expected 20' extension, the diggers found that they had entered a chamber of appreciable size, with a floor that sloped away into blackness. Stones thrown over the edge fell with ominous silence before hitting the floor and then could be heard crashing down a further pitch before rumbling off into the distance.

At this stage, the diggers went into a state of shock and were to be seen wandering about muttering dementedly to themselves. However, they recovered sufficiently to mount an attack on Wednesday 17th March at 1900 hours. The first pitch was descended and found to be 100' deep to a sloping boulder-strewn floor, the lower end of which lead immediately to the top of another pitch. The top of this pitch was in a very unstable condition, and two hours were spent heaving rocks over the edge before even a vague approximation to bed-rock could be seen. The pitch was then descended and was found to be 50' deep to a boulder ledge, at the edge of which was yet another pitch. At this point, it was decided to curtail the exploration until a stronger team could be assembled. Accordingly, the party made their way out of the cave, reaching the surface at 0200 hours on Thursday.

On Saturday 20th March, the timorous men of E.S.C.C. were reinforced by the tigers of N.A.S.A. and, armed with incredible lengths of rope and ladder (and a field telephone which, understandably, refused to work), the party descended at 1400 hours. The third pitch was descended and found to be 75' deep with a small choked extension at the bottom. The party duly returned to the surface at 2000 hours.

THE EXTENSION

The first pitch is approximately rectangular in section, about 40' x 20' at the top, with a flat bedding roof about 10' above it's lip. The pitch is a trifle awkward to negotiate, as there is an overhang at the immediate top and for the first twenty feet the ladder hangs in a narrow cleft, which is festooned with numerous stal protuberances. After twenty feet there is a small ledge, and a larger one after a further twenty, thereafter the ladder hangs more or less freely. The pitch enlarges uniformly in cross section towards the bottom where it is approximately 60' x 40'.

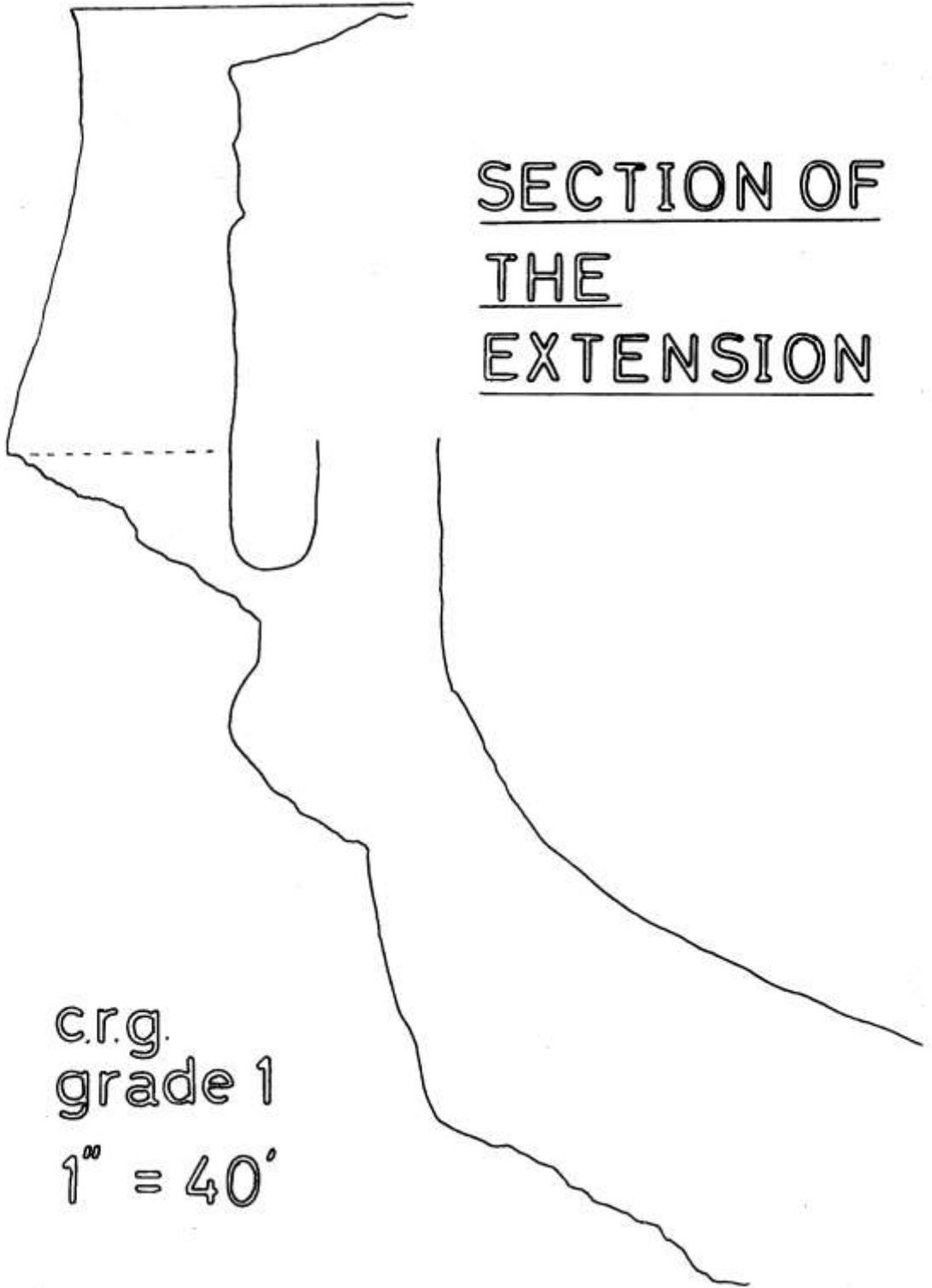
The floor of this pitch is a boulder slope angled at about 40 degrees towards one side of the chamber, where a second pitch can be seen. This second pitch is 50' deep. The ladder hangs against the wall for the first 20' and then it hangs freely until about 5' from the bottom, where the wall slopes towards it again. This pitch is about 25' wide, approximately rectangular in section, but as yet of unestimated length; in the roof there is an aven of unknown, but considerable, height. The floor of the pitch is a steeply sloping boulder strewn ledge, about 10' x 20' leading immediately to the head of the third pitch. This descends for 75' to yet another boulder floor, at the lower end of which is 30' of well decorated rift passage, 4' wide and about 5½ high. This passage ends in a stal slope, but there is a small hole in the floor at the right hand side of the passage and a small stream can be seen flowing 8' below. The head of the third pitch is in a very dangerous condition, due to a large number of delicately poised boulders and will have to be stabilised before any attempt is made to dig the choke at the bottom.

The present end of the cave is in the region of 400' below the entrance and, in view of this, there is some doubt about the likelihood of any large scale horizontal development at the bottom, but there is only one way to verify this. There are also two other possible sites for further extension. By traversing across the tops of both the first and second pitches, side inlets could be reached, and it is possible that one or both of these might yield some footage of passage. It is hoped that the traverse across the second pitch will take place in the not too distant future, but the traverse across the first will have to wait until we have built up a large supply of tranquilizers!

One further, but rather remote, possibility exists and that is the chance that it will prove possible to dig into the aven at the top of the second pitch. It is admittedly an academic question, but if it were so then we might be able to have a 200' pitch on Mendip!

29th March, 1971.

SECTION OF
THE
EXTENSION



c.r.g.
grade 1
 $1'' = 40'$

REVIEWS

Transactions of the Cave Research Group, Volume 12, No. 4, 1970

Each new issue of this publication looks better - a good enough aim for any Editor. Added to this is the fact that the papers reflect the very latest findings of scientific speleology. Mendip comes out very well in the latest issue - at least four authors living in our area.

The paper by A.R. Burke describes more work in 'his' vertical caves under Grit caprock near Ystradfellte. The paper is an excellent example of how to bring the powerful tools of modern laboratory instruments and simulation to bear on a caving problem - in this case some peaty forms of stalactite. Most surprising for the hydrologist is that small particles of peat can move through the intergranular spaces, as well as the joints, in the Grit.

David Drew's paper presents the chemical results of his Ph.D. study on East Mendip. He deals, in the usual concise style, with swallet and cave stream harnesses, the importance of percolation water and, in conclusion, the difficulty in interpreting resurgence hardness magnitudes and amplitudes without extreme local variations of CO₂ supply or mix-corrosion. It seems to the reviewer, however, that resurgence harnesses are explainable in terms of hydrological regime if enough areas are studied and the local special cases regarded as 'noise' - a scale problem.

R.A. Halliwell, from Hull, continues Alastair Pitty's work on percolation water by a study on the Reyfad-Pollnacrom system in Co. Fermanagh. The frequency of drips at several points in the caves is correlated with surface rainfall at certain intervals previous. There has yet to be a concise statement of the validity of this simple correlation stuff with data which so obviously deserves a time series approach. However, one suspects that with both Halliwell's and Pitty's results the outcome of a more sophisticated technique would be just the same. The great variety of reaction times of drips in caves is the major conclusion. There is a description of some of the formations. Good to see Fermanagh being studied at last - we'll see how results compare with Clare.

Roger Stenner presents the results of applying his 'aggressiveness' method to G.B. Cavern. Stenner's work is a model for us all - his precise methodology dominates and no lines are shot in the way of conclusion. World-shattering statements about limestone solution have been made with only half the data - in fact one criticism might be that not enough generalisations are made with the results of a lot of hard work. A comparison with Derek Ford's sampling in the same cave shows how far techniques and concepts have changed in a very short time.

The list of Portland caves is brought up to date in a short paper, with map and surveys by Churcher, Butler and Bartlett - a must for devotees of the area.

After such a lot of precision stuff it is pleasant to find a final paper which allows the reader relaxed reverie. Swindell's talk to the C.R.G. A.G.M. on the caving exploits of the Yorkshire Ramblers Club, 1894-1930 is reprinted with a few of the illustrations. The style is just right and merges well with the borrowings from log books and reports. Yorkshire caving always seems

'ard' but to bottom Gaping Ghyll in 1896 really catches the imagination. So does signalling with pistols and sending messages in kettles.

With such a lot of good and well-presented material it is a pity that one moan about editorship must be made - there are several spelling and punctuation mistakes. While you don't have to look far to see them in this magazine one feels that where scientific work of international importance is presented there ought to be more author/editor checks at a suitable proof stage.

M.D.N.

'Throughflow on Hillslopes and its Relation to the Stream Hydrograph', by Darrell Weyman, in Bull. of the Int. Assoc. of Scientific Hydrology, 15(3), 1970

At first sight this is not a paper relevant to cavers and should not be reviewed here. I do so because of its local interest - Darrell's working sites may be inspected by any rambler up the East Twin stream at Burrington - and because the process which he describes has underlying relevance to flooding of caves and percolation.

He describes, from an empirical study, what happens when rain falls on the slopes bordering a 230m section of the East Twin between his two 'V Notch' weirs. By installing troughs and soil moisture apparatus in trial plots he has shown that, for 16 storms in late 1969 and early 1970 runoff from the 12 degree slopes next to the stream was by subsurface roots. Infiltration occurs until the water reaches a change in soil texture. During heavy rain it is diverted down slope at the junction of the 'B' and 'B/C' horizons, some 45cms down. During more moderate rain the water reaches the bedrock junction before flowing laterally to the stream. Though this lateral flow (or through flow) can occur quite rapidly, especially during moist antecedent conditions, the flood peak on the East Twin is generated by the upper, bowl-shaped catchment on the peaty podsol. Here again flow is underground - in natural pipes in the peat.

The fact that many of our swallet catchments are like Darrell's means that stress laid on the state of the soil in J.D.H./M.D.N.'s flood publication was advisedly great. Streams can rise without a sign of water running over the land surface. On slopes such as the sides of surface depressions water will move laterally through the soil and concentrate its volume and its chemical aggressiveness at the bottom - hence accentuating the feature and not contributing to general surface lowering.

M.D.N.

'Some Aspects of the Carboniferous Limestone in Relation to its Landforms', (with particular reference to N.W. Yorkshire and County Clare), by M.M. and G.S. Sweeting, in *Revue Géographique des Pays Méditerranéens*, 1969

The lack of progress made in the classification of limestones during the last century is stressed at the beginning of this paper. The authors then suggest that Folk's classification - Micrites, Biomicrites and Sparry Limestones (based on ascending proportions of calcite and changes in both the grains and the cement) has useful applications to karst geomorphology and hydrology. In spite of being less completely calcite than sparry limestones, biomicrites have the highest porosity and are the most susceptible to weathering. This is borne out by the visual correlation between weathering and composition of Yorkshire and Burren pavements. In the west of Yorkshire too the waters of pools on the pavements reaches only 60 - 80 ppm. in hardness (the limestone is sparry), whereas on the biomicrites further east hardness reaches 120 - 160 ppm.

The presence of quartz in the beds also makes limestones less soluble - as demonstrated by the scars on the north-west side of Ingleborough. When pyrite occurs with calcite it may actually aid solution during its change to sulphuric acid on oxidation.

Comparisons are made between Yorkshire's higher proportion of biomicrites and the Burren's higher proportion of massive, sparry limestones. The authors conclude that lithology could well be the key to the prominent, undissected pavements of the Burren and the canyon type caves. All that is missing, one feels, is the use of the suitable spatial statistics to prove that the similarities and, more important, the differences are what they seem to be by eye!

M.D.N.

The British Caver Vol. 55, January 1971 iv + 94pp 3 plates numerous illus. in text. Price 15/- post free from Tony Oldham, 17 Freemantle Road, Easville, Bristol BS5 6SY.

I have often remarked that the only way to get a good review is to write it oneself, so stepping where angel's fear to tread here goes.

This is the first BC to be edited by T.O. but I will leave it up to the reader to judge how far he has left his mark.

The first article is by Jim Smart on the caves of Caldey. Most of these are sea caves; many are important archaeological sites, but a recently opened up series contained some fine formations. This article is followed by a four paged bibliography.

Next is a 32 paged account by Anne Oldham on a caving expedition to Swedish Lapland. Between being attacked by Lemmings and poaching the Lapplander's fish they even explored quite a few virgin caves.

Austria is represented by an article on Eisriesenwelt's 50 year Jubilee. There is a brief note on the caves of Brazil, and Great Britain is depicted by an account of Wookey Hole in 1480.

Have you ever heard of Kingston Caves? This is an old name for Mitchelstown Caves. An old

account dating from 1838 has been reprinted with suitable modern comments. The article is illustrated by an old cave print.

The Tamesis Caving Club write on their discoveries in Jama Dimnice in Yugoslavia. Whilst, still in Yugoslavia, there is a tribute to Luke Cec the discoverer of the Postojna Caves.

R.H.A. Staniforth has done some very nice cave sketches and writes a few words about them under the heading Casual Comment.

A page of miscellaneous news, and a precis entitled "What the papers say" precede the Book Review section. This covers caving books from all over the world. One reviewer commented that he could see no logic in the way these caving books were selected - well that's easy to answer, they all represent review copies sent to the BC by kindly publishers all over the world.

Some of the duplicating is a little patchy but the editor craves apology for this in his editorial.

This latest issue of the BC lives up to its fine reputation as a "Magazine" with something to interest everybody.

A.D.O.

LIST OF UNPAID SUBSCRIPTIONS

The following were found to be unpaid during a recent scan of the list. The Editor apologises to any Member who has subsequently paid up but wishes to remind those who have now got their names in the Journal for this year that they can henceforth pay up without fear of obscurity!

Atkinson, T.	Clarke, A.G.
Attwood, H.C.	Clatworthy, N.R.
Audsley, A.R.	Collins, Mr. & Mrs. R.
Baker, K.F.	Cornwell, J.
Barratt, J.P.	Dare, H.R.
Barton, M.	Darville, J.M.
Berry, D.J.	Davies, F.J.
Bignell, R.	Dawe, K.
Bland, R.L.	Day, Mr. & Mrs. R. W.
Bolt, G.	Dolman, J.W.
Bridges, Mr. & Mrs. L.C.	Drew, D.P.
Bridle, R.	Evans, D.G.
Brown, H.B.	Evans, M.H.
Burleton, A.S.	Farthing, I.C.
Burnett, J.M.	Feltham, R.K.
Burton-Spencer, A.J.	Fincham, A.
Calvert, J.M.	Ford, Dr. & Mrs. D.C.
Camburn, E.	Gabb, M.L.
Causer, S.	Gannicott, R.A.
Chappell, R.A.	George, N.
Chard, T.H.	Glennie, E.A.
Childs, J.J.	Godden, S.D.

Goverd, K.A.
Graham, A.C.
Green, A.J.
Gully, A.M.
Hanham, C.
Harding, R.
Hardwick, D.W.
Harper, R.C.
Hobbis, C.R.
Holland, L.
Holland, M.J.
Holland, M.
Hooper, Mr. & Mrs. J.H.D.
Hunt, M.N.
Hurworth, A.
James, K.D.
Jarratt, R.A.
Jolliffe, J.G.
Kenney, Mr. & Mrs. C.H.
Kent, Mr. & Mrs. L.J.
Lawrence, A.J.
Letheren, J.R.
Lewis, R.G.
McCormack, A.
MacGregor, R.A.
Manuel, D.G.
Marriot, J.
Marriot, G.
Marshall, J.S.
Maxwell, W.G.R.
Meade-King, S.G.
Merret, S.M.
Mines, R.G.
Moore, G.
Morris, Mr. & Mrs. W. A.
Moxley, M.J.
Padfield, M.
Pearce, Dr. R.A.J.
Pearson, Mr. & Mrs. W.A.
Peckham, P.H.
Pickstone, C.
Player, M.B.
Pointing, G.H.
Prewer, B.E.
Quilliam, B.
Reckert, N.

Reynolds, F.A.
Reynolds, P.M.
Rigg, Mr. & Mrs. A.J.
Roberts, G.A.
Robertson, J.A.
Rosser, A.J.
Savage, D.
Sharpe, M.J.
Sharpe, T.J.
Smart, J.A.
Smart, P.L.
Smethurst, B.
Statham, I.
Staynings, Mr. & Mrs. R.J.
Smith, S.
Stuckey, J.W.
Teasdale, Mr. & Mrs. L.M.
Thomas, J.A.
Thompson, A.J.
Trenchard, S.M.
Tooth, Mr. & Mrs. T.J.
Tringham, D.A.
Tuck, Mr. & Mrs. N.W.
Urwin, K.M.
Venn, J.
Warburton, D.
Watts, Dr. P.
Weatherly, I.
Wellard, C.R.
West, R.M.
Weston, P.L.
White, A.J.
Whitley, R.H.
Wilbourn, P.
Wileman, J.P.
Wilkinson, T.
Witcombe, R.G.
Woods, D.C.
Woodward, A.J.
Wolley, R.
Wynne-Roberts, S.G.
Bristol Grammar School
Connaught Secondary School
Kingswood School
Pollacks House C.C.
Southtown C.C.

This paper reads exceptionally clearly and the author is not timorous about his conclusions which revise work done in the area over twenty years ago by Dr. Sweeting. The author has put in an enormous amount of field work: geological mapping taking on the third dimension for this surveyor! The fact that additions and corrections can be made to Dr. Sweeting's work is due, says the author, to the advance of speleological techniques and equipment during the twenty year period. In 1950 Sweeting suggested that the caves of the area were vadose in origin and hence their levels, which fell into three main zones, could be correlated with changes of base level and a chronology of cave development associated with stages of surface planation was developed. This work was, of course, given the a priori assumption of level water tables in Carboniferous Limestones!

Waltham contends that many of the systems in the area are pre-Glacial and phreatic, with evidence from Marble Steps Pot and Gaping Gill. The hydrostatic head required to form them could not develop in a landscape trenched by the present glacial valleys. Additionally, many contain glacial material. Good examples of post-Glacial, vadose passages may be found in the Long Churn entrances to the Alum Pot system. Other vadose passages occur in the form of pitches - along joints or faults. Many vadose caves are clearly an integral part of the present day drainage system to the deep glacial valleys.

A geological description prefaces the account of cavern development in the area. The regional dip is 1 - 4 degrees to the north but it is steeper near the Dent and Craven Faults. Near these, too, the joints (spaced 0.5 - 3m apart) are often over 30m deep - away from the faults they may only be a bed thick. Shale bands are the other main speleogenetic feature and Waltham has mapped these, in three main zones (bands 1cm to 2m thick) across the region.

The model of cavern development is that phreatic development occurred along the line of maximum hydraulic gradient - to the Craven lowlands before glaciation. Preferential lines were more soluble beds and certain bedding planes and joints. After glaciation and the deep erosion of valleys in the limestone, vadose development occurred. There is no evidence in the present caves for 'watertable' control over development. There is, however, ample evidence for cave levels being controlled in part by the shale bands. These two main points lead the author to question Sweeting's conclusion about denudation chronology. There is no evidence, using the larger sample of caves open to the author, for the linking of cave development to surface planation except for the change in hydrological conditions brought about in the anisotropic rock by the glacial erosion of valleys.

M.D.N.