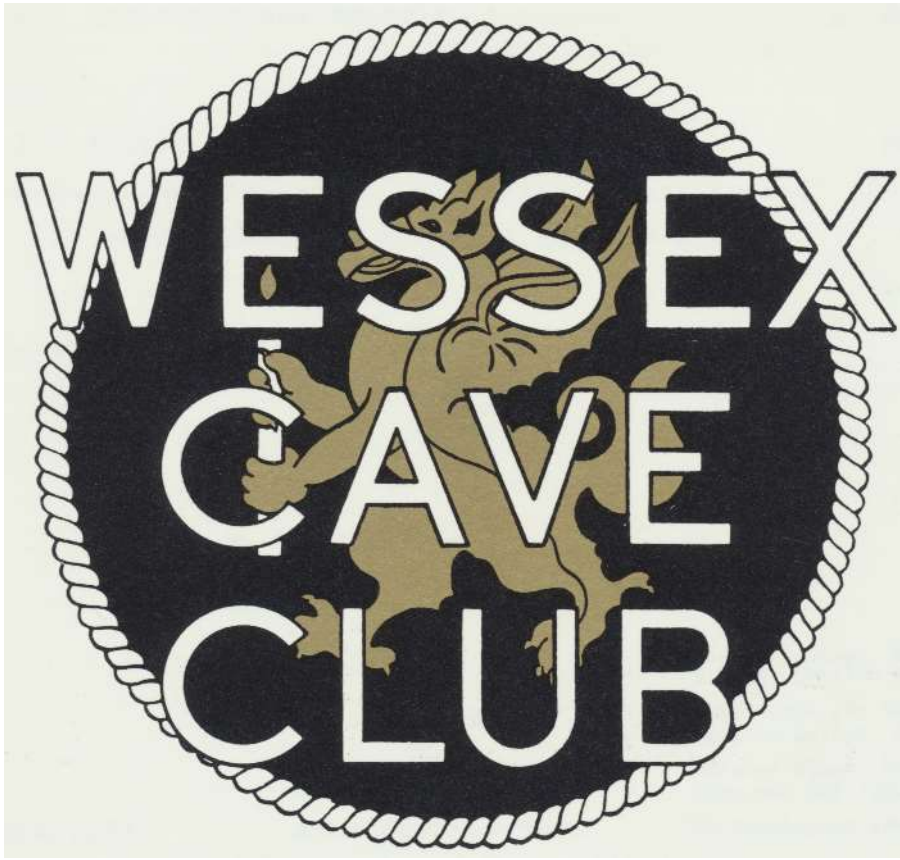
WESSEX
CAVE
CLUB

CONTENTS

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CLUB NEWS

There has been considerable resentment by members arriving at Upper Pitts and finding the place filled to overflowing by visitors. While not wanting to present the hostile image certain other clubs are known for, and needing the financial income from guests, we should like to restrict access to Upper Pitts in some systematic way so that work on the completion of the building may proceed. The state of the place at the moment would hardly impress any of the authorities who helped us with financial grants!

To remedy this the Committee has decided that there will be a change of rules to hut booking. Mike York will handle the complete party booking system - no party invited or approved by another member may turn up at Upper Pitts without the booking going through Mike. This will avoid the regrettable overcrowding caused by a misunderstanding a while ago.

Secondly, the first complete weekend of every month will ostensibly be 'Members Only', starting in April (or from May for most of you receiving this Journal late in the month). No visiting parties will be accommodated on these weekends. However, the system will break down if Members do not avail themselves of the opportunity for social, speleological and WORK activities on these occasions. Just to emphasize the need for WORK, the first three weekends in May (2nd.,9th.,16th.) will be given over to the amazing number of jobs which need doing at Upper Pitts. You must come.

Another matter of immediate attention is that of the A.G.M. and Annual Dinner, fixed this year for 17th. of October. The A.G.M. will be held in Priddy Village Hall and those who would like to be nominated for posts on the Committee should begin to plan now. Mere stirrers should also begin to polish their spoons! This year we need to revise all the rules to cater for changes in the Age of Majority and currency notation.

The Dinner, which provided only Bones of Contention for years now will most likely be held in a hired room with outside caterers. A likely venue at the moment is Frome. If any members have heard good reports of any catering firm in the area they should inform us quickly - if not used this year they will be handy for future reference.

The Balch memorial volume is selling very well and in order for us to plan any reprinting well ahead we should be glad of any further orders to be made clearly and early. The Editor would be glad to hear of anybody who requires copies of the other Occasional Publications (the water-tracing volumes) so that their stocks may also be rationalised.

The georesistivity gear is now with Jenny Murrell and is available for limited use until an organised team from Bath begins work with it. It would be handy if those who have used it would write up an account, to be carried in this Journal, of its performance and results. This is essential for the smooth operation of the apparatus in the future - don't starve interested scientists of your results!

There are still 60 Members who have not paid subscriptions for 1970. They will not be reading this as we cut off their supply of Journals - but if you know them please jog their memories and cheque-books.

If any of you are Leaders for any restricted-access cave - like Dan-Yr-Ogof and O.F.D., St. Cuthberts etc., please hand in your permit if you do not wish to continue as you may be holding down places for other interested and active cavers. This is particularly the case in South Wales, where the S.W.C.C. look at their list before granting any more leaderships over and above the allotted numbers. Also in connection with caving and permits, those of you between 18 and 21 who hold Charterhouse Caving Committee Indemnity Forms should get them renewed. You are now adults in the eye of the law and no longer need one signed by your parents.

Those of you who would like Club car badges should get together and make an order. Individual supplies are impossible. Jenny Murrell knows the manufacturer. Those who want their Volume 10 Journals bound are asked to contact Phil Davies. A new concession to members by Sportsfair of the Horsefair, Bristol - 7½% off anything on production of a MEMBERSHIP CARD. If you don't think these exist you should lobby your local Wessex man. Remember that Bryants offer 10%, but there may be items which they don't stock.

Tony Philpott (one 'l', two 't's') is still after all photographic material related to Club activities and individuals. It has been suggested that any members who want to be instantly recognised, by new members and visitors alike, should contribute a photograph of themselves for the records. Tony is still wanting stills for his film on Mendip Caving, or tape recordings of well-known personalities. Any way, let's load him up with movie film, colour slides, colour prints, black and whites and old negatives. He will return any on request to the owner.

New Members

Mr. L. Grabb, 42 Grange Avenue, Hanham, Nr. Bristol, BS15 3PF.
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CLUB MEETS

Wednesday, April 15th	l8.00hrs. Lamb Leer. Leader: P. Gibbs, 40 Hollywood Road, Brislington, Bristol 4.
Sunday, May 3rd *	11.00hrs. August Longwood. Leader: G. Marriott, 8 David Road, Whitchurch, Bristol.
Tuesday, May 5th	19.30hrs. Ladder Practice. Leader: C. Hawkes, 3 Christchurch Road, Clifton, Bristol 8.
w/e May l6th/l7th *	South Wales Leader: T.E. Reynolds, 23 Camden Road, Bristol, BS3 1QA.
Wednesday May 27th	Redcliffe Caves (meet Redcliffe Wharf). Leader: Jenny Murrell, 1 Clifton Hill, Bristol, BS8 1BN.
w/e June 7th/9th	Devon. Leader: Don Thomson, Pinkacre, Leigh-on- Mendip, nr. Bath, Somerset.
Sunday, May 28th	10.00hrs. Sludge Pit, Nine Barrows, etc. Leader: J.D. Hanwell, 'Chaumbey', Wells Road, Wookey, Somerset.

Provisional Trips

Spring	Portland Caves. Leader: M.Dewdney-York, Oddset, 19 Alfred Place, Cotham, Bristol.
Yorkshire w/e * -	Sometime in June or July - or autumn. Don Thompson would like to hear from anyone who is interested, especially those who could manage one or two days extra up there.

* Wet suits and nife cells essential.

Please write to the leader – no letters, no trip. Please would volunteers to lead write to Jenny Murrell. We have not paid a visit to Derbyshire lately!

WOOKEY 20 AND BEYOND

T. E. Reynolds

Until the start of this year very little exploratory diving had been done at Wookey Hole since 1968. This was due partly to Dave Savage's departure for Kenya and partly to the fact that the owner of the caves, Mrs. Olive Hodgkinson, prefers diving to take place in the winter when the number of tourists are fewer. The dives done by the Cave Diving Group in Wookey Hole up to the middle of 1968 have been described by Dave Savage in a previous issue of the Journal. This article carries on the story from the point where Dave left off.

Apart from a few training dives no serious diving was done at Wookey in 1969, but Saturday January 3rd 1970 saw the arrival at Wookey of a party including James Cobbett., Mike Jeanmaire, John Parker and Brian Woodward, with Oliver Lloyd acting as controller. The object of the trip was to push on upstream after re-laying the line from 9 to 14 which was broken. James Cobbett and John Parker dived first from Wookey 9 with James leading. But, at the slot James found that he could not get through since his back mounted twin set was too bulky. So, he handed the line reel over to John and returned to 9 to wait with Brian Woodward and Mike Jeanmaire for John to return. After half an hour or so when there was no sign of John they began to get a bit worried so Brian set off from 9 after John to find out what had happened to him.

Soon after parting company with James, John had found the near end of Dave Savage's line and had tied his line from 9 onto Dave's line. He then left his line reel behind and continued on along Dave's line. When he reached the line reel at the end of Dave's line he took this and pushed on upstream for another 50 ft or so until he could see an ascending rift above him. He swam up this and broke surface. From the point where he had surfaced two awkward squeezes lead off to a chamber (the 19th) with a pool in the floor. From the pool a boulder slope led up towards the roof of the chamber. A route through these boulders led to a large (200ft long, 60ft high, 70ft wide) chamber with a lake in one corner and some very impressive rock flutings down one wall. From the opposite end of the chamber a passage led out past some superb mud formations. This passage was at first boulder strewn, but climbed fairly steadily with one or two low bits until it changed into a rift sloping at an angle of 45 degrees with some good stalactites in the roof. Several small trickles flowed down from the top of the rift. The rift continued rising until a boulder choke was reached. This was the furthest point reached by John on this occasion. He estimated that the total passage length was about 2,000 ft. When John got back to the sump pool Brian surfaced in 19 to find out what had happened to him, having followed John's line through from 9. So, the two of them went on a quick tour of the new extensions before returning to 9.

Whilst it was all happening in 20, the divers waiting in 9 had got rather worried about the long absence of John and Brian, so when John had gone for a little over an hour James returned to 3 to report the position. As a result some more full bottles of air were brought into the cave and ferried through into 9. A long wait then followed, but after a further hour and a half the tension in 3 subsided when John surfaced with the news of the discovery.

As a result of the new find, a trip was planned for the 24th January with the object of doing further exploration work in the new extensions and also to use some radio-location apparatus which had been borrowed from the Cwmbran Caving Club in order to see where the end point of the cave was on the surface. So, on the 24th a party of divers consisting of James Cobbett, Phil Collett, John Parker, Tim Reynolds, Maire Urwin, and Brian Woodward set out from 3 carrying the radio-location gear. Each diver also carried his boots since exploring passages with only neoprene socks on the feet becomes a bit painful after a time. Owing to the rather poor visibility compared with the previous dive the line got pulled up into a tight section of the sump just before 19 which gave most people a nasty fright. In addition there were several coils of loose line around in the slot which was none too pleasant since at that depth there is not much time to get free before the air supply runs out. However, everyone got through safely, but whilst dekitting both John and Maire lost their boots which fell into the pool in 19 (2 pairs down, 4 to go). The coil was first set up by the lake in the large chamber, and this was then moved to a point about one third of the way along the new passage where it was left whilst the party set off to explore. The boulder choke was passed, the bottom boulders being limestone and the top ones conglomerate. The way up through the boulders led into a chamber about 30ft square with the walls and the roof of conglomerate. From this chamber two routes led back down into the limestone - one going for about 200 ft. and the other for about 300 ft. before they both closed down. After a further look around the party packed up the coil and returned to the sump pool where they kitted up and started back for 9. It was on the return journey that the sump really took its toll and each diver surfaced in 9 with an even bigger tale of disaster. The score ran as follows (in order of appearance): Tim Reynolds - lost boots, Maire Urwin - tangled up in the line between 14 and 9 three times, and each time she halted to free herself she slid back down to the bottom of 14, Phil Collett - leak in the high pressure hose to his pressure guage resulting in the loss of nearly all the air in the cylinder he was using, John Parker - the cylinder he was using came loose nearly pulling the gag out of his mouth, Brian Woodward - got the line tied in a knot round his finger and had quite a job freeing his finger. Finally James Cobbett surfaced with a tale of woe that beat everything. He had (i) lost a fin and nearly got stuck when he went to retrieve it (ii) got his boots tied round the line and had to cut them loose in order to free himself and finally (iii) had got tangled in the line at 15 and had cut the line in order to free himself. So, somewhat chastened by this and two further pairs of boots down (the score being C.D.G. 2, Wookey 4 we set off to Wookey 3 to be congratulated and dosed with whisky by Mrs. Hodgkinson and interviewed by the press

before we could escape to the relative safety of the Hunters. The radio-location transmitter which we had taken down the cave had been picked up on the surface. A surface party of Mel Davies, Jim Hanwell and Janet Woodward had the unenviable task of wandering over the top of Mendip in rather unpleasant weather conditions whilst they picked up the signals. The first point (by the lake in 20) was not picked up clearly, but the second point had come through well and was estimated to be about 100ft down. Since this was only a third of the way along the new passage and the passage rises considerably to the end, the end of the cave could be quite near the surface.

The next trip was planned for the 14th February with the object of tidying up the line between 9 and 15, taking some photos of the formations in the new discoveries for Mrs. Hodgkinson and to do some diving upstream. This trip was something of a fiasco. The divers taking part were Andrew Brooks, John Parker, Tim Reynolds and Brian Woodward. Mrs. Hodgkinson had previously been instructed to obtain a waterproof camera for the trip. So we duly arrived at the cave to find the press there in force - we were even filmed whilst changing! At the cave entrance some individual turned up with two Nikonos cameras which he thrust into our hands for us to take down. We gaped in astonishment. The cameras themselves were very neat little jobs, but had a flash gun unit about two foot long attached to them. When we protested that they were a little vulnerable to take through like that, he blithely said that they were insured and rushed off. The cameras were eventually repacked in a more suitable way and we set off for 20. In Wookey 9 John dived first to sort out the line which he was able to do without too much trouble, cutting out the loose line and rejoining the line where James had cut it. This left only two lines going on from 9, one to 20 and the other to 13. John then changed bottles and set off for 20 with Tim Reynolds following, John carrying a further spare bottle and Tim a line reel for further diving upstream. On arriving at 19 John relaid the line so that it came up in the pool in 19 which made getting into and out of the water in 19 much easier. When the line was sorted out they sat and waited for Andrew and Brian to appear. After waiting the best part of an hour John and Tim were getting very worried (the other two should only have been 10 minutes behind at the most) so the plan to dive upstream was cancelled and they set off to have a look round the big chamber to warm up before starting back. Whilst probing around in the big chamber a further 50ft of passage that ended in another sump was found. They then kitted up and set out back for 9 not knowing what had happened. On arrival in 9 they found that Andrew (who was carrying the cameras) had somehow managed to get tangled in the line twice and had only freed himself at the expense of cutting his boots loose (C.D.G. 4, Wookey 5). After this experience he had decided not to come through. So, we returned to 3 for another attack from the press after a rather abortive trip.

After this fiasco another trip was fixed for the 7th March with the same objectives. So, on the 7th a party consisting of Andrew Brooks, Phil Collett, John Parker, Tim Reynolds, and Brian Woodward assembled at Wookey. The cameras this time having

been borrowed from the University of Bristol Sub-aqua club and packed by John the night before. No trouble was experienced in getting through to 19 - the new route taken by the line being a great improvement. When he got to 19 Phil dived back down into the sump again to try and find some boots (he had not brought any with him) and found two pairs (Maire's and James'). This success was upset by Andrew losing his boots so the score was - C.D.G. 9, Wookey 4. The cameras were then taken up towards the end of the new passage, with the intention of surveying back towards the big chamber. En route to the end Brian and John explored a side passage which was reached by a rather hairy traverse; this passage proved to be about 200 ft. long. The photography went fairly smoothly until the big chamber was reached when the flash gun packed up. So, it was decided that it was time to have a crack at some diving. Tim Reynolds kitted up first and had a dive in the lake in the big chamber. This went down nearly vertically for some 40 to 50 ft. before closing down in a 1 ft. by 2 ft. oval hole which did not seem wise to push at that depth. Then John kitted up and had a dive upstream from the 19th chamber. He found himself in a big underwater passage which suddenly went vertically downwards. He descended this drop for about 60ft. when it started to bell out so he felt that it was wiser to return. By now it was getting late so the party kitted up and set off back towards 3. There were no major mishaps on the return save that one of John Parker's boots got lost (final score C.D.G. 9, Wookey 5). Eight of the photographs came out (2 of which accompany this article) which was a good return for the effort put into the trip.

At present there are three main jobs which have yet to be done in the new extensions. The first is to take in the radio-location apparatus again and fix the end chamber in the cave accurately on the surface, the second is to do another series of dives upstream and the third is to make a survey of the cave. It is hoped that once the end chamber has been accurately located, and if it is not too deep, that it might prove possible to sink a shaft down from the surface into the new extensions. This would make the second and third jobs much easier and could also lead to a lot of further discoveries leading off from the new parts.

Equipment notes

As in recent dives at Wookey over the last few years all the divers who have been to Wookey 19 and 20 have used open circuit compressed air equipment. The most favoured being two side mounted 40 cu.ft. bottles with two separate single hose two stage valves (one on each bottle). This gives a reasonable margin of air for the trip to 20 - the round trip from 3 to 20 and back again to 3 uses between ⅓rd and ½ of the available air supply of 80 cu.ft. if everything goes well. Obviously this does not leave much margin for any further diving work in 20. However, with the line now relaid in the wider parts of the sump it is no problem for a diver to take through two extra bottles in addition to the two he is using, and so it is hoped to push on upstream in spite of the depth which the cave appears to be descending to again. The lights used have been a single nife or edison cell

and these have given no problems to date (thankfully!). For the trip through the sumps all the divers have used fins and tied their boots onto themselves to take them through. Unfortunately boots carried this way have a habit of getting snagged on things which accounts for the rather high boot loss on the trips, but there does not appear to be any way round the problem - save buying expendable boots.

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COBBSTT, J. Wookey Hole - now the years of effort pay off. Descent, (10), 2-5.

Acknowledgements

The survey and photographs which accompany this article were reproduced with the kind permission of the Cave Diving Group (Somerset Section).

Plate One: The Successful Diving Party, 25th January, 1970 celebrate with Mrs. Olive Hodgkinson. Left to right: Maire Urwin, James Cobbett, Brian Woodward, Oliver Lloyd, Tim Reynolds, John Parker and Phil Collett.

Plate Two: Inside Wookey 20 - See page 51.

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Photos taken by Norman Heal, Wells and C.D.G.

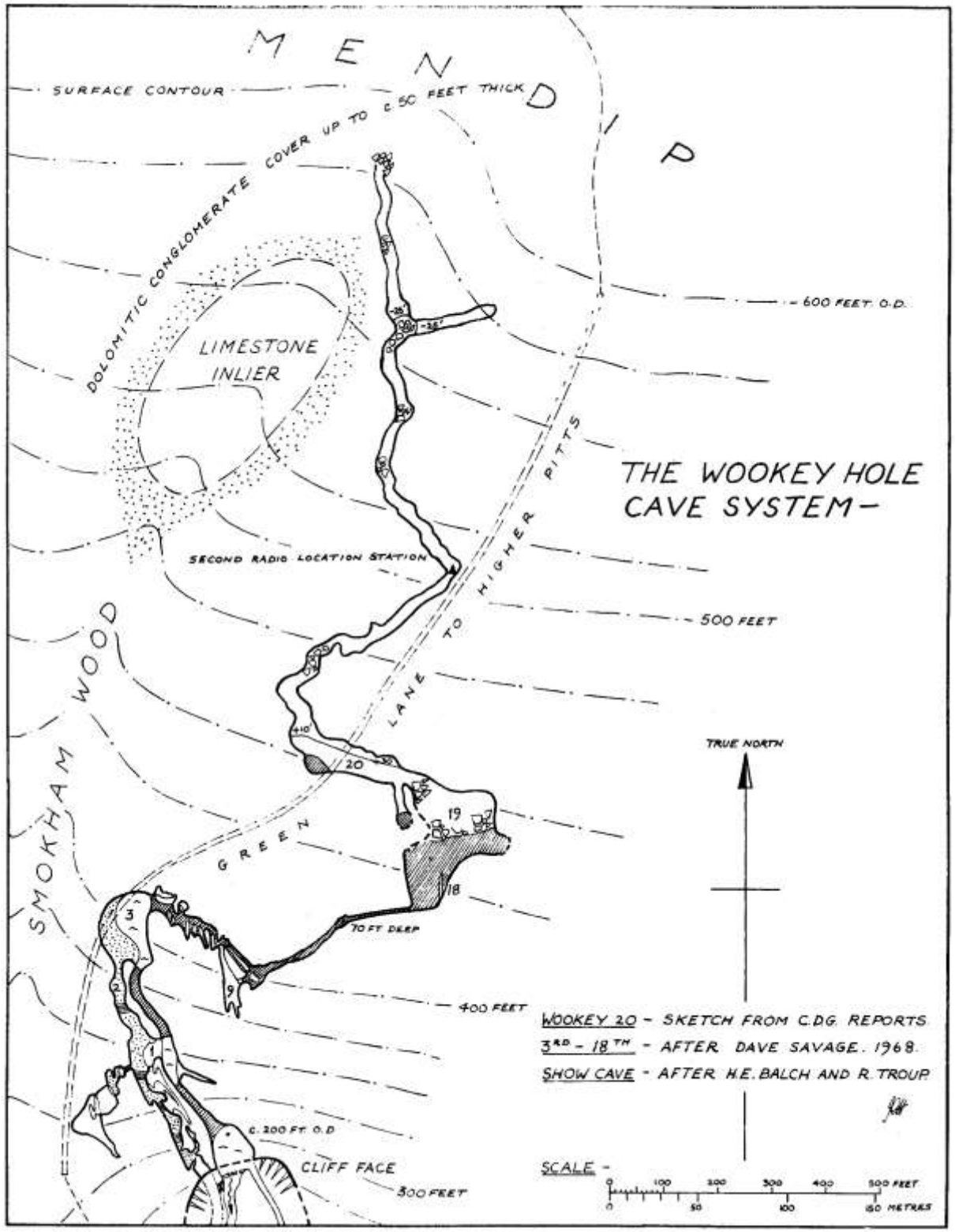
MENDIP
SURFACE CONTOUR
DOLOMITIC CONGLOMERATE COVER UP TO c. 50 FEET THICK
LIMESTONE INLIER
600 FEET O.D.
THE WOOKEY HOLE CAVE SYSTEM—
SECOND RADIO LOCATION STATION
PITTS
HIGHER
TO
LANE
500 FEET
SMOKHAM WOOD
GREEN
TRUE NORTH
70 FT DEEP
400 FEET
c. 200 FT. O.D
CLIFF FACE
300 FEET
WOOKEY 20 - SKETCH FROM C.D.G. REPORTS
3RD - 18TH - AFTER DAVE SAVAGE. 1968.
SHOW CAVE - AFTER H.E. BALCH AND R. TROUP
SCALE -
100 200 300 400 500 FEET
50 100 150 METRES

Figure 1

DIVER MEETS DIGGER?

by J. D. Hanwell

Over one hundred years since the notable court action (Hodgkinson v Ennor 1863), which settled the St. Cuthberts to Wookey Hole link of the underground River Axe, the prospect of a negotiable through trip is once again in vogue on Mendip. Recent discoveries in both systems have added a touch of reality to the lingering Balch dream, 'of ample passage-ways and low gradients leading down by easy stages to grand subterranean vaults..... towards Wookey Hole'. (W.I. Stanton 1969). Although H.E. Balch himself, and many since, have been forced to accept that the stages are proving anything but 'easy', the lure of ample passageways remains as strong as ever.

It's been a matter of divers at one end and diggers at the other. Since Graham Balcombe and his followers gave birth to the Cave Diving Group at Wookey Hole in 1938, forward progress has been painstakingly slow, and, although very rewarding in its particular way, hardly successful in its ultimate aims (D. Savage 1968). The unexpected success which fell to John Parker on January 3rd. this year has more than justified the efforts of his predecessors, some now as far afield as America and Africa. Apart from numerous television and press announcements, the first written reports of Wookey 20 came from James Cobbett (1970), Brian Woodward (1970) and the article which precedes this one. There is now a C.D.G. Newsletter Offprint (P. Kaye) describing operations on the day of the first discovery.

Meanwhile, at the Priddy end, the whole saga was given a fillip by Dave Drew's water tracing (1967). Apart from clinching the 'hot' Swildons to Cheddar or Wookey controversy in favour of the latter, it focused diggers' attentions on St. Cuthberts Sump as the most likely place to push. The breakthrough here came after the long dry autumn of 1969, on 31st. of October, when Martin Mills forced an entry into the lofty St. Cuthberts II. Bob Craig's summary (1970) of these events contains a survey of the new passage relative to the surface.

The current situation is presented on the sketch map of the Priddy - Wookey Hole area (Fig.2) and the block diagram (Fig.3). While the map depicts the major feeding swallets around North Hill, the block diagram attempts to illustrate the essential features of the geological structure hereabouts, relative to recent discoveries. (It is an isometric view, cut away along suitable N-S planes to show projected sections of the Wookey Hole and St. Cuthberts II systems. For clarity the surface features have been simplified and slightly exaggerated). The St. Cuthberts portion is clearly more reliable than the Wookey one, which deserves more comment.

On the first planned operation into Wookey 20, on 25th of January, the divers took in a radio location device, proven successfully at Porth-yr-Ogof, and other sites in South Wales. Mel Davies operated the receiving device on the surface with Janet Woodward and the writer. Stationed roughly over the likely position of the large chamber reported beyond Dave Savage's final survey point, a weak signal was isolated from the background crackle. A frantic search followed, akin to the proverbial needle and haystack situation and not made easier by the weather, darkness and interference from the Penn Hill television transmitter. Finally a second

signal was picked up and located by a cairn. It transpired that the coil had been parked and transmitting for a good hour whilst the explorers were away along the new series. Based on this seemingly reliable second location and various divers' reports a provisional survey has been made (Fig.1).

The possibility that the end lies not far below the surface has caused some excitement over easier access, and poses the fascinating, if speculative geomorphological prospects. No one, least of all the writer, is prepared to state firm conclusions on either aspect until a thorough check has been made. However, perhaps fellow dreamers will find encouragement from the following 'educated guesses' based on information to hand.

The general direction of the Wookey extension is borne out by other observations. The limestone here dips approximately WSW and the passage ascends across an appropriately inclined bedding-plane. Several divers independently confirm recording bearings slightly to the west of magnetic north on their compasses. Of even greater interest is the well considered claim that the passage extends about 300 feet into the base of the Dolomitic Conglomerate. Since the water surface throughout Wookey stands barely over 200ft. O.D., this means that some of the reported avens at the end might top 500ft. O.D. Now, accepting the accuracy of Dave Savage's C.R.G. Grade 4 line from 3 to 19, and the alignment and length of the provisional survey, the surface above the end is circa 550ft.O,D. On the face of it, a mere 50 feet of rock lies above the end of the cave! As conventional surveying would seem unrealistic for the moment, the 'ifs' can only be confirmed or denied by further radio location and readings from an aneroid taken through in a pressurised container.

Supposing the information we have now is correct the end lies close to the eastern flank of the Smokham inlier. The tongue of Dolomitic Conglomerate that infils a pre-Triassic valley on the southern flank has been intermittently re-excavated to expose part of its limestone floor. This 'window' of limestone figures prominently on the local One Inch Geological Survey maps (1963). Unless it is a butte, or a pinnacle-like feature with precipitous buried cliffs the surrounding Dolomitic Conglomerate cannot be of great thickness. Whilst a butte form cannot be discounted in view of the arid conditions under which the valley was originally excavated, other outcrops nearby suggest this is not the case. At Wookey Hole the buried valley must assume the more ravine-like characteristics so graphically illustrated in H.E. Balch's book on the area (1914) but towards Higher Pitts this seems unlikely. At NGR ST53331.4863, about 500ft. to the north of the Smokham outcrop, Dolomitic Conglomerate is found resting unconformably on a substantial exposure of limestone. It is too small to have been included on the One Inch map but, curiously, it escapes mention in the District Memoir (Green and Welch, 1965), though can hardly have been missed. Short of concocting elaborate theories for its presence as a large separate block, it seems more economical to regard the Conglomerate as being very thin and incomplete to the north and east of the main inlier. The cave appears to head into this area and the prospect cannot be ruled out of a relatively short dig through the Conglomerate.

Having speculated thus there seems little harm in continuing, if only to encourage debate or positive action to establish the contrary. The essence of Derek Ford's thesis on the St. Cuthberts - Wookey Hole levels (1968) is that some natural barrier or dam in the Ebbor area prolonged phreatic development behind it until the Wookey outlets were established. In the early phases a

high-level outlet at circa 550ft. is envisaged breaching the dam. Much later, with the lower level Wookey resurgence in operation downward leakage would have occurred behind the dam. The ups and downs of his phreatic model conform well to the alternating shallows and deeps discovered along the streamway, and the ascending Wookey 20 to the leakage line. The dam would have been the impermeable Lower Coal Series and younger rocks - possibly even the Lower Lias Clays. Ford and Stanton (1968) propose that the inclined erosion step above Smokham may be a remnant of a deformed surface at the base of the transgressive Lias. Fig. 4 generally illustrates what Ford has in mind.

It is tempting to correlate Wookey 20 with the higher level St. Cuthberts outlet and its capture by the modern resurgence. From photographic evidence there appear to be scallops going in - i.e. towards the resurgence, in Wookey 20 - perhaps indicating the final swallet-like conditions. If so what of possible Ebbor/Wookey links (say from Kids Hole) and 'fossil' routes towards St. Cuthberts from the end of Wookey 20? No apologies are made for these predictions, for this is the stuff dreams are made of. It's certainly a spur to diggers and divers alike.

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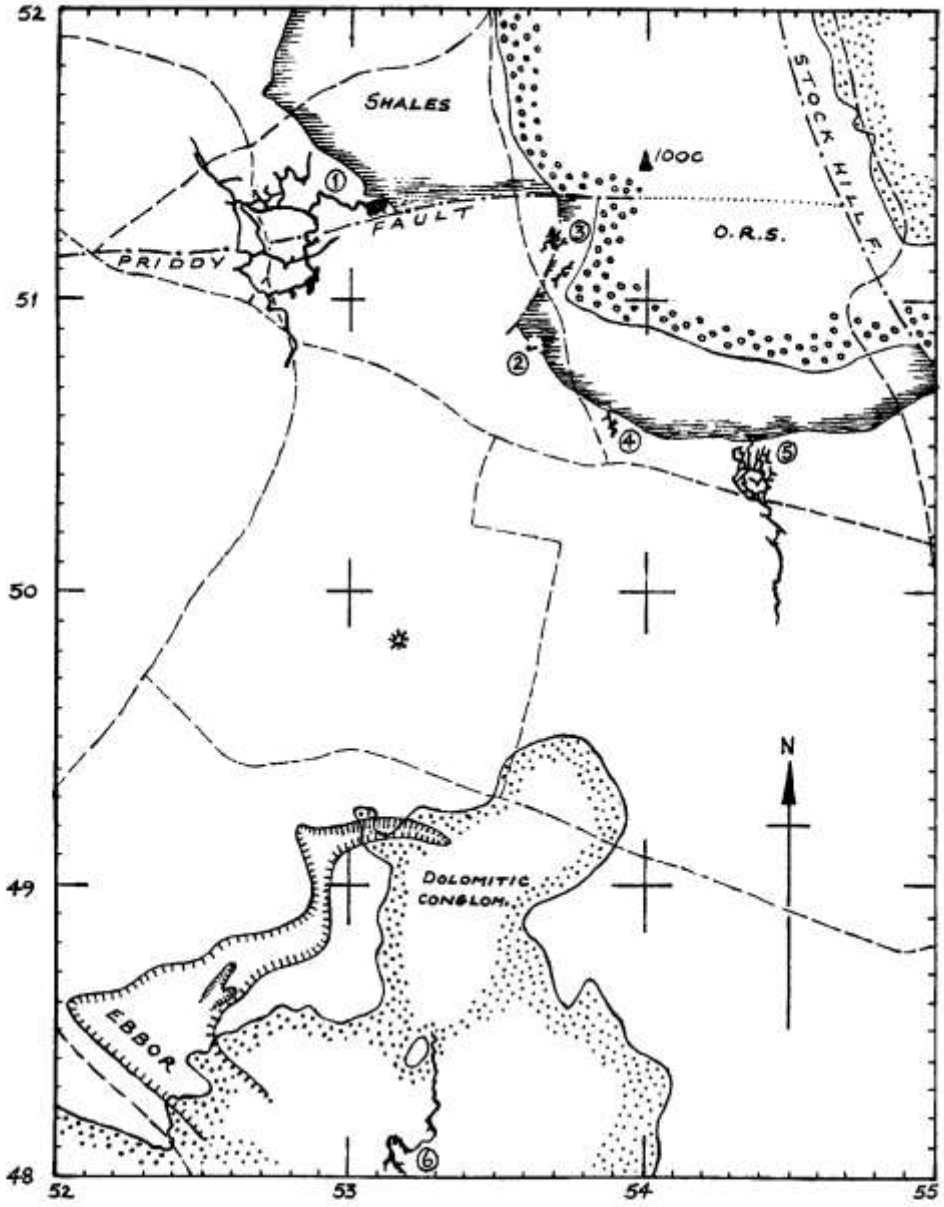
Editor's Note: Both explorers and writers are indebted to Mrs Olive Hodgkinson for her help in preparing these articles.

FIG. 2 THE MAJOR FEEDERS OF WOOKEY HOLE

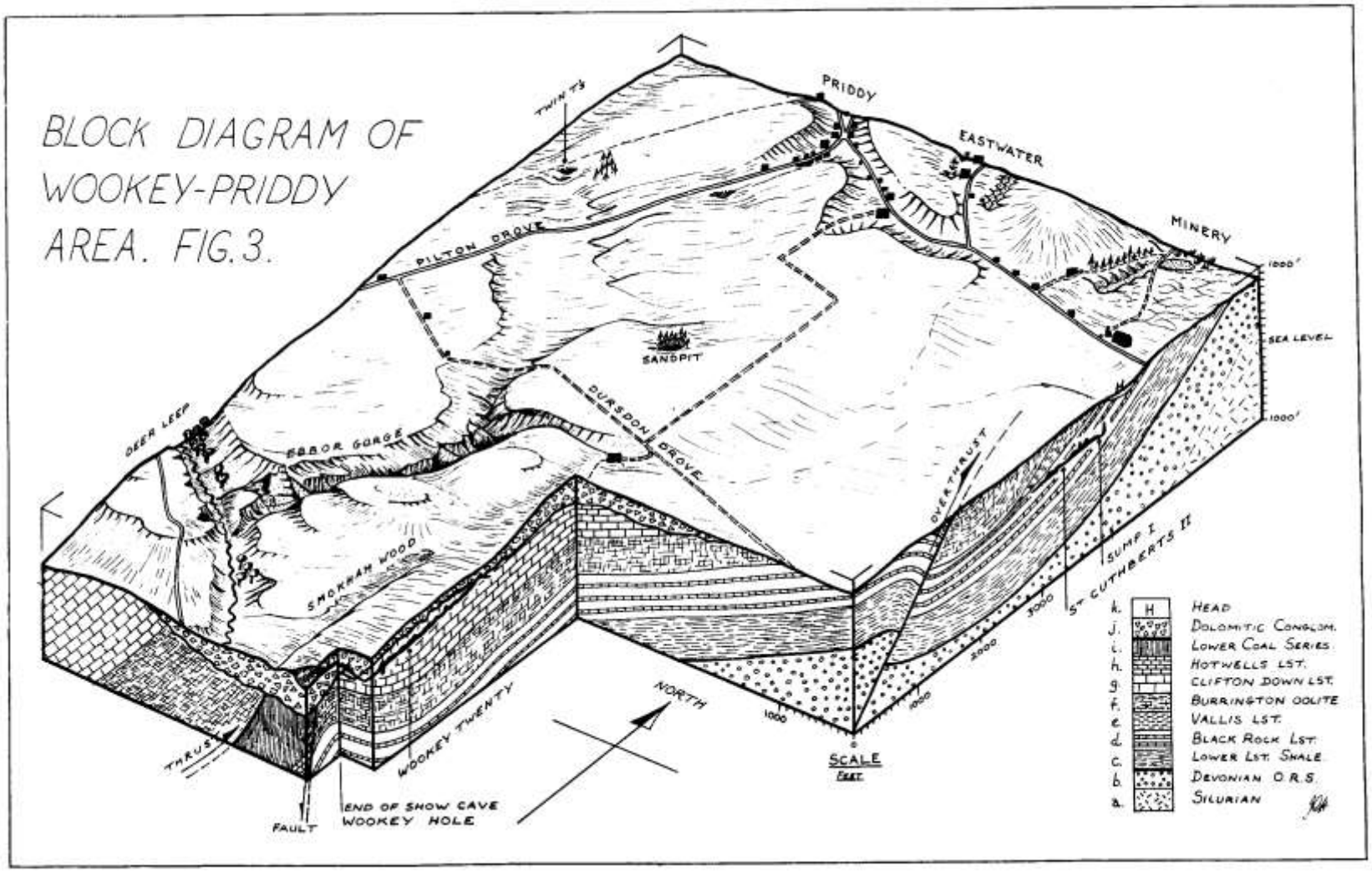


SCALE 1: 25,000 (WITH NATIONAL GRID KILOMETRE SQUARES)

ROADS AND DROVES.

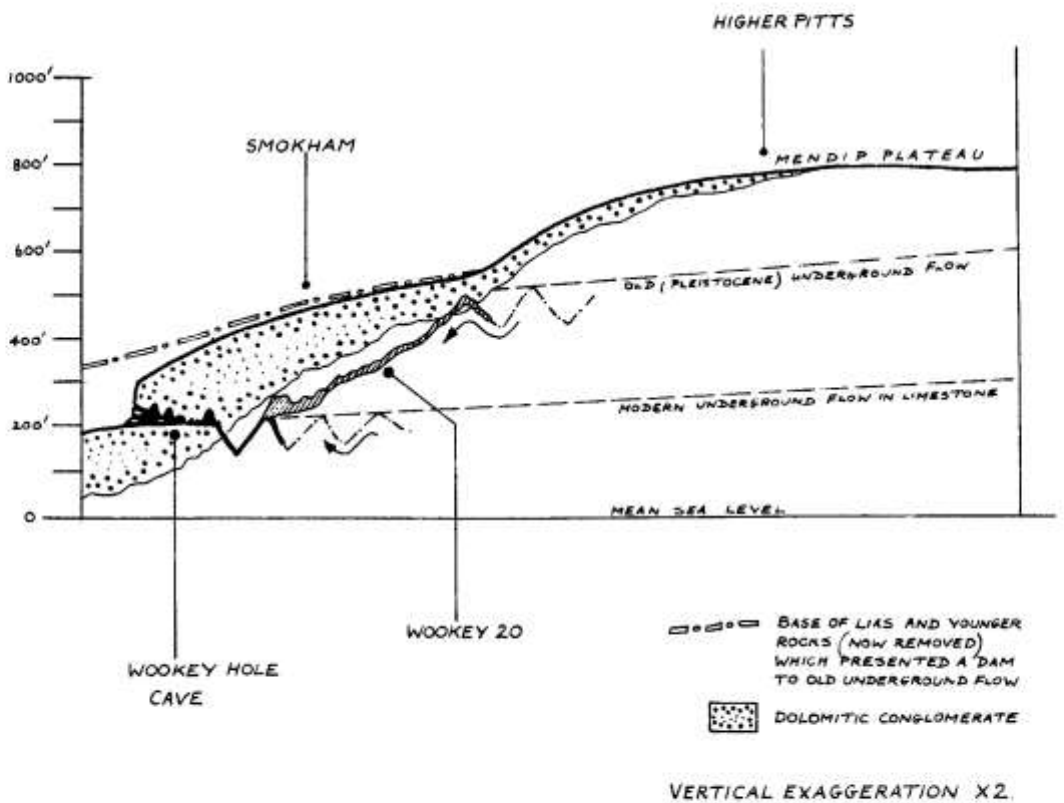
KNOWN CAVES:-

① SWILDONS HOLE
② NORTH HILL SWALLET
③ SLUDGE PIT AND NINE BARROWS SWALLET
④ EASTWATER CAVERN.
⑤ ST. CUTHBERT'S SWALLET.
⑥ WOOKEY HOLE CAVE


BLOCK DIAGRAM OF WOOKEY-PRIDDY AREA. FIG. 3.
TWIN T's
PRIDDY
EASTWATER
MINERY
PILTON DROVE
SANDPIT
DURSDON DROVE
DEER LEAP
EBBOR GORGE
SMOKHAM WOOD
OVERTHRUST
SUMP I
ST CUTHBERTS II
SEA LEVEL
1000'
1000'
3000
2000
1000
NORTH
SCALE
FEET
THRUST
FAULT
WOOKEY TWENTY
END OF SNOW CAVE
WOOKEY HOLE
k. H HEAD
j. DOLOMITIC CONGLOM.
i. LOWER COAL SERIES
h. HOTWELLS LST.
g. CLIFTON DOWN LST.
f. BURRINGTON OOLITE
e. VALLIS LST.
d. BLACK ROCK LST.
c. LOWER LST. SHALE
b. DEVONIAN O.R.S.
a. SILURIAN

A POSSIBLE EXPLANATION OF WOOKEY TWENTY

FIG. 4.



VERTICAL EXAGGERATION X2.

NOTE: IF IT IS CORRECT THAT SCALLOPING IN "20" INDICATES DOWNWARD LEAKAGE BENEATH THE DAM, THEN AN OLD BURIED OUTLET AT WOOKEY IS SUGGESTED, LIKE ST. ANDREW'S, WELLS.

The 5th. International Congress of Speleology, Stuttgart, September 1969.

Not many of us can find the time or money to attend the four-yearly international gatherings of speleologists. We thus rely on local delegates to report before the long-delayed Proceedings are published (the 1965 Congress saw the light of print in 1968!). Prof. Tratman presented his report on the 1969 Congress to the A.G.M. of the U.B.S.S. in Bristol on 2nd March.

Trat began by criticising the organisational ability of the Germans in making no provision for translation or sporting caving, for not projecting lecturers' slides adequately. Derek Ford showed his opinion of the lecturing arrangements by merely showing his slides. The whole of the English-speaking delegation were so disturbed at one point that they went to see the film 'Battle of Britain' in German.

After five days of conference the Congress is divided into excursion parties and Trat joined one to the Upper Danube and alpine karst areas of Germany/Austria. He visited several show caves including one which got warmer with depth due, he was told, to the heat of the earth’s core! The larger scale of continental karst was demonstrated in one slide showing a quarry in a single deposit of tufa ! The locals use the porous, insulating stone for building.

One whole day of the trip was given to exploring churches and monasteries - which didn't impress most international speleos! Although tallies of wine and beer-drinking bouts were not revealed directly in the lecture one gathered that most delegates entered into the spirit of the thing.

A visit was paid to an area of salt karst - solutional features being developed in gypsum deposits. The higher alpine solutional features, including deep shafts formed by snow melt, made one think of the effect of Pleistocene climatic changes on our karst. Fantastic slides of ice caves were shown, including one of enormous scallops caused in the ice by out-blowing winds.

The Mammuthohle was visited on a tour conducted by Trimmel, who was felled by one of Tratman's questions. After describing the cave as purely tectonic and formed by collapse E.K.T. asked what the fallen strata fell into, if the cave was wholly tectonic? Yet again the subtleties of European language barriers seem to have barred a satisfactory communication link.

The next Congress will be in Czechoslovakia in 1973. If we think hard and work hard between now and the following one perhaps it could be held, for the first time, here? Any offers?

COMPUTERISED CAVING

An account of the symposium on 'Cave Surveying' by P.R. Cousins

The 1970 symposium organised by the C.R.G. was held in the comfortable confines of Vaughan College in Leicester. Well over 200 cavers managed to attend in spite of early morning blizzards, and were able to listen to ten twenty minute lectures during Saturday, March the 7th, on the subject of 'Cave Surveying'. In addition several recent surveys were on sale in a well laid out exhibition of surveying equipment and techniques. Since every lecturer contributed a great amount of information in the short time available to him the following summaries may not do full justice, but if the C.R.G. keep to their avowed intention of producing the proceedings in 'less than the least possible time' these papers will certainly be a valuable and timely contribution to the art of underground survey.

After a round of coffee, which was particularly welcome to those who had travelled to the East Midlands that morning, Dave Brook started the day with a brief history of surveying in Yorkshire; the early surveys of the Y.R.C., and Simpson, following through to the 'tramline' surveys of the 1950s - in which only a line was taken and the outline sketched from memory! Notable exceptions to this rule were of course praised. After describing his early surveying with a hand-held prismatic compass and mentioning his own early version of a survey head, Dave described the surveying he has done with Suunto instruments and simple annotated sketch records. Significantly the accurate recording of detail such as shale bands at intervals down pitches was emphasised in several of his slides.

Following a short discussion period Brian Ellis contended that the survey unit 'a la Mendip' was superior to the Suunto instruments - though he emphasised that neither are perfect. However the necessity of taking sights on steeply sloping legs (which occur more frequently in Mendip caves) does accentuate these advantages. Brian explained the principles and many of the details of the construction of his latest survey unit which has cost a total of £7. The full parts list will appear in the transactions.

Changing to yet another region and style, Paddy O'Reilly now recounted his own work in surveying Ogof Ffynnon Ddu. After some trials with prismatics he had adopted the Silva liquid-filled compass, and corrected his grade 4 traverses with a series of Cave to Surface radio location points. Often working only with his wife he has surveyed almost twenty miles of cave in two years. On this size of system even typing the input cards for a computer is a daunting task and the final drawing on two 10 ft by 5 ft sheets an impressive achievement.

Dave Irwin now posed the question - regrettably to an audience who had been sitting still rather too long - 'what is an accurate survey'? He suggested that accuracy implied a survey drawn to known limits from which detail could be scaled off with known precision. For this to be possible three views of the Cave must be presented and the information should be distributed among them without clutter such as 'stalagmite', 'gravel' etc. Even features such as blind avens might best not appear on the plan! Dave recommended the establishment of a new detailed standard for features based on many practical problems of display encountered by surveyors.

After lunch the symposium was resumed by S.J. ('Alfie') Collins who intended (?) to provide 'comic relief' with his particularly well arranged colour slides. Following a summary of the main uses of a cave survey, and the ways of presenting information, 'Alfie' described the techniques and pitfalls of dissected displays. He continued to discuss the uses and misuses of conventional signs, a topic which was rapidly developed into the now familiar Route Severity Diagram in full detail. A highlight of the discussion which followed was an overwhelming forest of hands in favour of this form of pictorial map.

A concise and non-technical lecture on the design and use of Electromagnetic induction equipment was now given by Bill Birchenough. His device, which is easily portable, comprises a 2 ft diameter aerial, run from 4 NiFe cells and oscillating at 4 Kilohertz. After describing the mode of calibration and use for this equipment Bill then warned that a licence was now required from the G. P.O. under the schedule of 'Pipe Finding Devices'!

The most profusely illustrated lecture of the day now followed when Tony Waltham disclosed the information which could be extracted from a good survey. After explaining the significance of Flat-Roofed sections, angular pitches, and sharp passage corners - all of which could be lost by unobservant surveyors or poor draughtsmen - several examples of connexions made after publication of a survey were given. Tony continued his lecture past fascinating glimpses of the Mamouth/Flint Ridge system, and the difference between Vadose and Phreatic passages to the delineation of the Lost Johns catchment area. This was shown to be split in twain and a syncline - invisible on the surface - predicted.

Due to the unavoidable absence of Oliver Lloyd, his lecture was now ably presented by James Cobbett. After describing the early underwater surveys with 'Aflo', James outlined the technique now evolved using a tagged courlene line and Suunto diving compass. Describing his own experiences in Porth yr Ogof, he explained the problems encountered with magnetic variation due to steel air tanks, radio location fixes in the vicinity of buried pipes, and Diver-surveyors going on strike! The value of these symposia was apparent when a member of the audience detailed the locations of the offending pipes.

The days proceedings were concluded with a panel discussion on the use of computers to assist surveyors. The lead into this discussion came from two short papers; one by John Wilcock who described the available hardware with particular reference to the availability of large Digital Incremental Plotters; and the other by Keith Hanna who gave an account of the analysis of stream meander patterns. Another instance of bad surveying was highlighted by Keith, in that many surveyors when 'cutting corners' during their attempts to get long legs fail to record enough data to reproduce the true meander pattern for the application of Fourier Analysis. If faithfully recorded this pattern could give a valuable insight into past climatic conditions. The discussion covered the availability of various types of computers and hardware, and the cost of hiring time, with a strong exhortation to everyone who could to use a computer.

Continued on page 45.

MENDIP NOTES

by Schizomycetes

Death of Mrs. Speed

With the death of Mrs. Emily Speed, licensee of the New Inn, Priddy, yet another facet of Mendip seems likely to fade into memory. Although never a popular rendezvous for the caving fraternity, many of us recall the quaintness of the New Inn and the charm of the Speed family over the years. Few establishments can lay claim to having been run by a single family for 260 years, and Emily Speed was very anxious to preserve the tradition well established by her late husband, Oliver. Like him, she will be remembered as one of Mendip's popular characters.

Despite ill-health, especially in winter, she was still serving behind the bar at the beginning of the year at the great age of 82. Her death, early in February must bring with it the sad prospect that the Inn might be 'developed'. We extend our sympathy to her family and many relatives in the Priddy area.

Watch out for this!

Bob Lewis did his bit for European Conservation Year last month when he intercepted a tanker on the Hillgrove-Hunters road, discharging an evil-smelling liquid into a field. The farmer was consulted and admitted allowing the contractors to dump waste there. It seems unlikely that there will be trouble in this case, but it was reported to the Chief Chemist of Bristol Waterworks (Bristol 665881) and Bristol Avon River Authority (Bath 24275) in the hope that pollution of underground water could be averted. There are several firms driving tankers full of waste to lonely spots on Mendip (vide Nedghill case last year) and it is the job of those about early in the morning to take down particulars of their movements in case one has dangerous material aboard.

At a time when the authorities are pressing hard to curtail caving on the grounds that contamination of water may result we must point out the planks in the eyes of others before removing our very small mote! For example, why has no refuse been collected from Upper Pitts, necessitating dumping on to a limestone aquifer?!

However, one thing must be stopped - camping in caves for charitable purposes means soiling the cave and its water. Two cases, in Swildons and Goatchurch have received considerable and laudatory press. But yonder chemist reads a different meaning into them.

Nixon, beware Reynolds, last of the big spenders!

When Tim Reynolds, late of this column, begins his American holiday in the summer he will have the useful job of dispensing of the Wessex dollar bank account, a largely prestigious enterprise we initiated some time ago to help publication sales, expeditions etc. The time has come to close it and T.E.R. will be blowing the lot (while replacing an equivalent amount of Sterling in Britain). Ask him to bring you back something!

Sex and the married caver

Since Desmond Morris is not Hut-Warden there have to be certain rules about sleeping arrangements at Upper Pitts. Full, tribal freedoms cannot, regrettably, be allowed. Some firm rules will soon appear in the H.Q. stating that men cannot sleep in the women's quarters and that the Library may not be used for sleeping unless there's an overspill. (They should see a Library near here!). Those of you who fight the constraints of the Human Zoo may see considerable loopholes in these rules and it will be the job of those present to widen or narrow these. The simple message remains; the bunks are too small and the accommodation too crowded for any but idiots to consider La Dolce Vita at Upper Pitts. Think carefully before expressing desires or opinions on double accommodation - you're almost bound to raise somebody's anger.

The Complete Caves of Mendip

Nick Barrington's new book, fully revised with help from Willie Stanton, will be out in the Autumn. The book will be very different from the current edition and contain much additional information about water-tracing, smaller caves and better guidance to those caves already well-known by locals.

Swildons Entrance

When the danger of frost damage is over concreting work will begin. Anyone interested in helping with the completion of the Entrance Blockhouse (best-known cave sight in Britain?) should contact Hugh Pearson or David Tombs.

Little Neath party have mixed fortunes

The U.B.S.S. party rescued from L.N.R.C. last month by the Westminster and some sandbags are reported to have found a considerable length of new passage before getting into difficulties on the way out. Together with the recent additions to surveying of the cave and the planned radio-location and fluorescein tests the U.B.S.S. should soon be rivalling the Swansea Valley workers in rate of progress. Two questions are posed, however. Are some members of the Society who cave in Wales sufficiently mindful of the flood risk? When can we expect more U.B.S.S. work on Mendip (will they get from G.B. to Cheddar via something?).

LETTERS TO THE EDITOR

Sidcot School,
Winscombe,
Somerset.

17th February 1970.

Dear Mr. Newson,

We feel we have made significant enough progress on Bos Swallet in the past few years to make a report. The Sidcot School Speleological Society have now opened up Bos Swallet. It was initially opened by the S.S.S.S. under the leadership of William Stanton in 1947 but digging in the present phase of activity did not begin until 1964. However, when Mike Winward left much of the enthusiasm did too and the rather boring job of clearing and strengthening the entrance did not appeal to many.

Eventually, in May 1969 we penetrated the 1947 entrance. A well defined passage, sloping at approximately 50 degrees, was blocked about 10 metres from the entrance. This squeeze was finally passed on January 31st. 1970 when C. Davies and myself got through, only to find that the major cause of obstruction was W.I. Stanton's bucket. Presumably we have now reached the limit he reached in 1947 and though the cave is open again we feel that its instability should deter all but the most careful explorer.

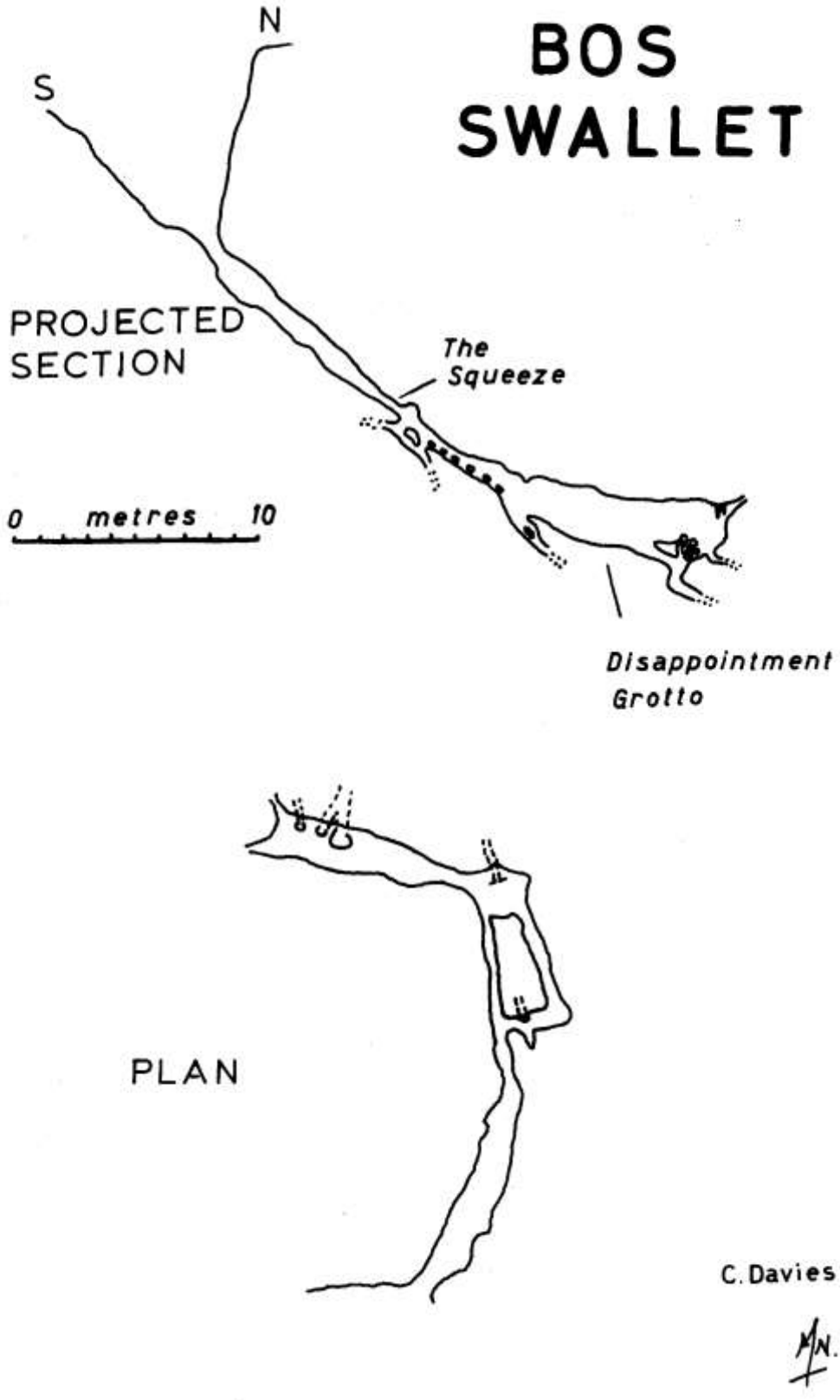
If anyone is willing to help with further work, please contact C. Davies, Secretary of the School Speleological Society at the address given above.

Yours sincerely,
Stephen Crabtree.

****

Computerised Caving continued from page 42.

Inevitably amongst the mass of valuable information presented in this symposium it is possible to find gaps and incomplete parts, and for the amateur perhaps the most useful additions might have been some discussion on drawing aids, paper sizes, and reproduction facilities. No account was given of the merits of the 'leap frog' survey, nor of the need to keep leg lengths within bounds. Even target illumination was not mentioned '. But it would be unfair to criticise the organisers on these grounds since together with topics such as aerial Survey, Georesistivity prospecting, and Seismic prospecting they have enough material for a second symposia next year.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Grotto
PLAN
C. Davies

REVIEWS

Some Morphological Characteristics of the Dinaric Karst - by Ivan Gams. Geographical Journal (Royal Geographical Society) Vol. 135; Part 4 (Dec. 1969), pp 563-572.

Ivan Gams must be almost as well known to British speleologists as the 'classical' karst region he describes in this brief paper. Your reviewer well remembers his enthusiasm and zest for caving as a member of what must have been one of the first post-War British caving expeditions to the Slovenian karst in 1955. Not the least of these vivid recollections being his almost nonchalant skills on the steep ice slopes during the first descent of the yawning chasm high up Mt. Triglav in the Julian Alps.

The impressive statistics of some 9,000 to 12,000 caverns (many of which remain unexplored) in the Dinaric Karst are often attraction enough for cave-starved explorers in this country. But, in Yugoslavia, cave exploration has a more down-to-earth basis (if readers will pardon the pun). The availability of water provides a major key to economic development in the vast limestone 'wasteland' bordering the country's long and spectacular Adriatic coastline. Speleological research is therefore of national importance. It is calculated that about a quarter of the Dinaric drainage, 'flows off to the Adriatic without any profit for the territory.... therefore one of the chief tasks of science (is) to find out how to keep these waters on the surface'. Much of this water resurges beneath the Adriatic Sea.

The initiation of widespread karstification is assigned to the Neogene (late Tertiary times, beginning about 25 million years ago), and so is termed 'youthful' in comparison to other central European districts. This is based on the view that considerable areas of limestone were buried beneath the impermeable cover rocks before this time, and at a lower level. Karstification was thus contemporary with the spasmodic uplift of the Dinaric folds, which continued into the Pleistocene. However, there is no clear statement of the traditional view that there are elevated and deformed erosion surfaces developed in the Upper Pliocene. These were alleged to be dissected during later uplifts, during which the sea level of the Adriatic was lowered. The rapidity of karstification is explained by, 'the outstanding corrosion intensity resulting from the abundant annual precipitation'. One suspects a more complicated explanation than that. Indeed this is hinted at many times - for example, stal. formation is said to have ceased in caves throughout the Mediterranean area following the deforestation and soil erosion of the early historical period - the reason cited being the resultant decline in aggressiveness of percolation water.

Most of the article is of a general descriptive nature, and of necessity somewhat sketchy and speculative in approach. It concludes with some consideration in depth of polje formation and the existing contrasting theories. Again an economic connotation is put on them since they represent potential natural reservoirs if sealed - typical of the 'resource-based' approach of the research there.

The appendix lists 111 classified show caves in Yugoslavia and will help the casual tourist caver.

J.D. Hanwell.

Transactions of the Cave Research Group, Vol. 11, No. 4, 1969 Symposium on Cave Photography

It used to be easy to criticise the standard of work contained in C.R.G. Transactions - but no more. Following the volume containing fundamental new approaches to carbonate chemistry (reviewed in this Journal, 11(127)), this edition covers all aspects of cave photography from an eight penny flash bulb to a Scanning Electron Microscope for as little as £18,000!

The resourcefulness of those who would rather leave the cave with the print than the memory is breath taking (as are some of the prints!).

We have Dennis Kemp teaching us how to prepare the precision conditions for colour-processing under expedition conditions! He uses plastic washing-up bowls, river water and a non-stick saucepan! One wonders if the chemist down the road does things like this too. Alan Coase, in his paper, tells of how his electronic flash has its own wet-suit, while Alan Wicks, having tried much expensive equipment before the Gouffre Berger, chose the old ammunition box method of protecting equipment.

Wicks also makes the useful point that wide-angle lenses are essential to show the majesty of very large caves. Most of the authors implore the use of multi-flash methods - probably most readers, like me, are wondering why the cave shots they take look so full of unnatural contrast. This appears to be the effect of single flash photography. It is also useful to know that a Kodak 'High Speed Ektachrome' can be rated at 400 ASA if you remember to tell the processors.

Alan Coase does a consumers report on Which Camera you need for cave photography, using a handy chart for performance and cost. A paper on close-up photography, with splendid illustration, makes it clear that it is the extremes of scale which qualify a good photographer - 'snaps' of middle-distant, statue-like cavers being the general result 'we others' produce.

The more useful research possibilities of photography are dealt with in Trevor Ford's contribution on the Stereoscan. A series of plates back up the claim that careful crystallographic and mineralogical investigation of speleothems are now possible.....if you own a Stereoscan. The offer is made of the use of Leicester University's machine for as little as £5 per hour! (Try that in Soho). A paper on the use of aerial photographs in karst research makes the obvious point that until we can get refined infra-red or heat-sensing cameras, the underground exploration must still be done by getting dirty. While surface features showing up in ordinary photos are often a guide to underground potential they remain unreliable. What price Crummock and his Precision Infra-red Sub-Surface Evaluation Device?

M.D.N.

Report of the 1967 Bristol University Karst Hydrology Expedition to Jamaica, by D.I. Smith, P.P. Drew, T. Atkinson, F.H. and H.M. Nicholson. British Speleological Association 1969.

As with all expedition reports one immediately wonders why it took so long to produce such a report and why, after reading it, a venture which took so much time and money did not yield startling and original results! However, this is not the point of such expeditions which do far more in terms of giving people experience of fieldwork in new areas and promoting international goodwill.

Seven papers are incorporated in this volume, with an introduction by Dingle Smith. Tim Atkinson deals with the Geology and Cave Exploration in an understandably descriptive manner. Data is then presented by Smith on the hydrology of the study area and pays particular attention to the calculation of evapotranspiration - so that total runoff may be more reliably calculated for erosion predictions. The tropical climate seems to combine ideal conditions for limestone solution, the heaviest precipitation coinciding with high temperatures and soil activity. However, as Smith shows in his next paper, the effectiveness of this rain is reduced because of the self-same coincidence, a total precipitation of 100 inches being reduced by almost half to give effective runoff.

When total erosion is calculated, using the Williams modification of the Corbel formula, a figure of 86mm/1000 years is arrived at. (The reviewer here uses the mixed array of metric and Imperial scales used in these papers). A mean total hardness of 172ppm. is chosen for the calculations - showing that the increase in surface lowering over temperate areas like Mendip (circa 30 to 40 mm/1000 years) is not because of a greater concentration of limestone in the water but to the removal mechanism - stream discharge. Two comments appear valid on the calculation: first, the limits imposed by using rainfall data and not accurate stream discharges (see Drew's thesis) are not stressed, and, second, there is no indication of what the reliable balance is between the removal from the surface (by percolation water) and that from underground in cave passage enlargement. However, Smith justifiably uses the figures to help explain the problem of bauxite formation on the island. He also concludes that there is no obvious difference between the two major lithological limestone groups in Jamaica, in terms of limestone solution.

Dave Drew’s paper on water tracing describes, yet again, the properties of those remarkable substances Lycopodium spore and Pyranine Conc. One wonders why the size of the spores and meshes is given in microns while the shape of the conical nets is described by resorting to feet and inches - this hurts when one has experienced editors and examiners who demand parity of measures. The value of the tracing was heightened in the case of Jamaica by the considerable economic need for water resource planning. Tratman's short paper on these resources and one case of pollution affecting the

Expedition emphasizes these problems.

The paper of major significance is that of Mr. and Mrs. Nicholson. Their method for determining soil carbon dioxide seems, worms permitting, to have great value in probing the relation between soil conditions and limestone solution. Though they do not study the morphological aspects and their work is in an experimental stage, the early conclusions on the relation between soil texture, moisture, land-use and soil CO2 are very promising. Atkinson is currently preparing to use this method on Mendip. Both Smith's work on solution rates from indirect measurement and the Nicholsons' on the potential for erosion by soil water would be more effectively drawn together had the results of the micro-erosion meter been presented. Instead a brief comment on the method is given by High and Hanna, together with the fact that not enough erosion was recorded to reach significance in the time they were in Jamaica. There are plans to rectify this situation by visiting in a few years.

Though the B.S.A.'s presentation is an improvement on previous styles there seems a lack of strict editorial policy. Aspects of this have already been commented on. There are a few silly spelling mistakes and some copies have blank pages. Over all the volume is a little too large for the contribution it makes but an invaluable guide to future visitors.

M.D.N.

Ogof Ffynnon Ddu,Penwyllt, Breconshire, by P.M. O'Reilly, S.E. O'Reilly and C.M. Fairbairn. pub, by South Wales Cave Club, Penwyllt, Pen-y-Cae.

This is the long-awaited guide, survey and account of the nation's largest cave. That it is also the nation's most dug cave adds human interest to the account and is a lesson in endeavour to us all!

Though discovered in 1946, O.F.D. was really developed to its present extent and status by a grand effort between 1967 and 1969. Close on the heels of this stint comes this publication. It consists of an exciting historical account of discovery, followed by a well-arranged, if slightly traditional view of the geomorphology. O'Reilly has no formal training in geomorphology and has made a thoroughly praiseworthy attempt - one which will please those usually baffled and sceptical when presented with 'The Pleistocene', 'Hydraulic Gradient' etc. etc. That most of the work is slightly dated in concept is solely because the area has not had a detailed study on it for several years.

Essential points arising from the study are the strong control exercised by jointing in the system, the rapid response and low hardness of percolation water and the possibility that abrasion may have aided solution in cave formation. There is an attempt at a chronology of the cave's development and this must be taken as the best model until further studies

can be made.

The survey is of excellent quality, at the incredible scale of 1:1250. Both sheets are well drawn and hand-coloured. Sections are reduced to a few representative drawings. Inside the text of the account is a map relating the cave to surface features, together with photographs and line diagrams of excellent quality. There is also a handy reference list of 55 papers.

M.D.N.

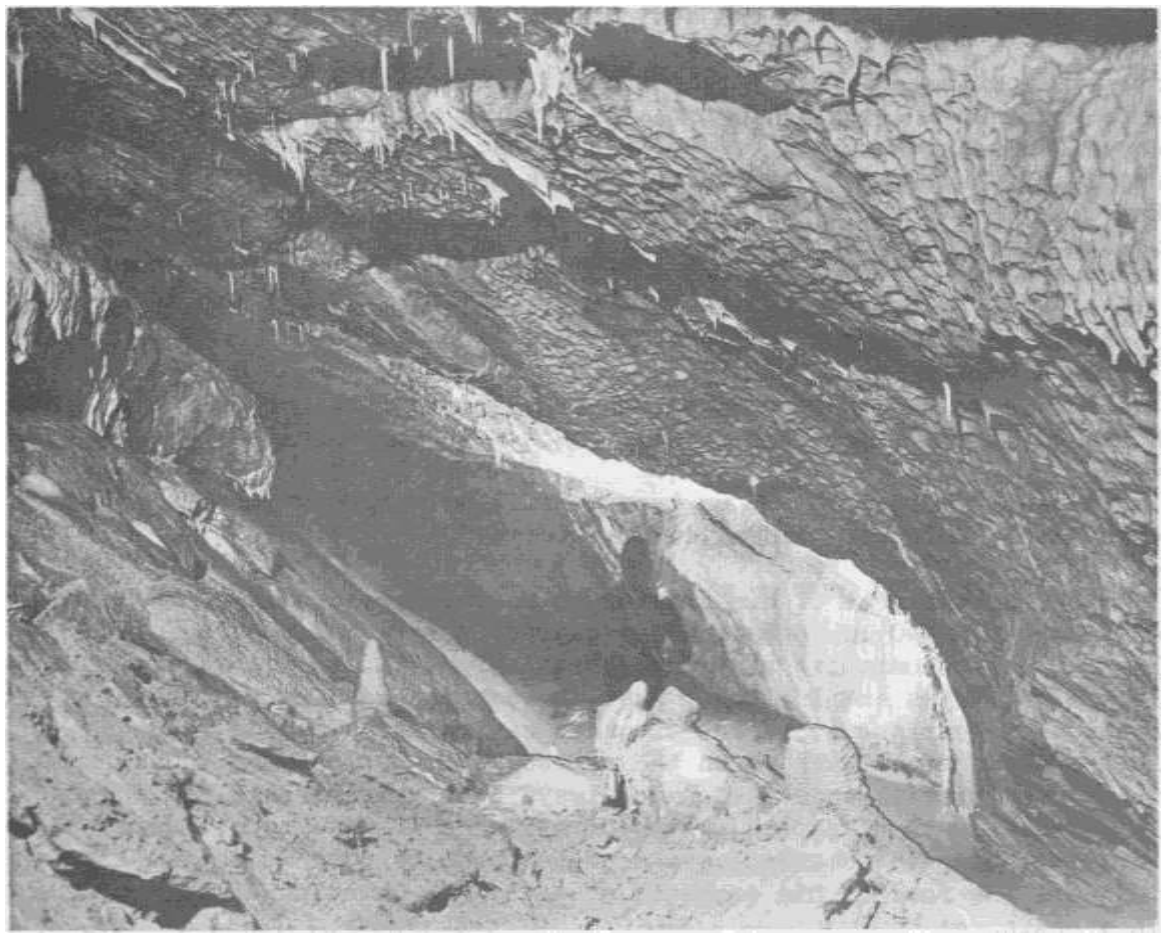

Plate Two: Inside Wookey 20 – See page 32

OBITUARY

A sad loss to international speleology was announced in early March - the death, in a car crash in Spain, of Jean Corbel. He was a prolific writer on the erosion of karst landscapes and devised the well-known formula for computing total solutional loss from an area and expressing it as a figure for surface lowering. He believed in the morphological and process differences caused by climatic variation across the globe, holding the latterly-unpopular view that temperature was all important in controlling limestone solution.

Because his field area was the world he travelled very widely and worked exceptionally hard. Always speaking in a very clear, almost 'O Level' French, he was widely known and admired in the karst areas of Europe for his energy and dedication. Not only did he write on karst but also entered the field of periglaciation and the weathering of siliceous materials. Though some of his work has met with unfavourable reaction it was the fact that he did it and stimulated the younger workers which is important. Of late he had published papers on more specific fields but he is perhaps best known for his incredibly comprehensive 'Les Karst de Nord-Ouest Europe'. It is perhaps worth quoting, in Corbel's easy French, some of the things he said about Mendip.

'En été on en compte plus de 10 speleologues au kilometre. C'est certainement le record du monde!'

'Dans la region de Priddy nous trouvons la butte gréseuse de North Hill. Elle est très petite!' (N.A.S.A. note please).

(Cheddar Gorge) 'C'est un type parfait de gorge periglaciaire, exactement analogue a celles du Spitsberg'.

During the rest of his chapter on Mendip he states that the rate of erosion (0.040 mm. per thousand years) is very low because of the low rainfall, comparing the 'feebleness' of Mendip to the activity in Yorkshire, Wales and Ireland. Just as we enjoy reading what he said about us as our guest, scores of other caving areas may do likewise - such was the speed with which the man worked. He last visited us in the middle sixties and would have always been welcome back. His very large collection of papers will bear his name in limestone studies for many years to come and as a more personal tribute we should like to quote one more of his comments about us - a description of Mendip in a sentence:

'Apres avoir franchi les rebords escarpés, en découvre un plateau a peine ondulé; cette haute surface d'allure, si calm, est tranchée par des gorges et des canions bordés de veritables falaises, comme celles de Cheddar Gorge ou Burrington Combe'.