

THE WESSEX CAVE CLUB JOURNAL

VOLUME 22 NUMBER 238

JUNE 1993

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Contents

Club notes	34
Caving notes	35
Notes for contributors	35
Letters to the editor	36
Dig your own cave!	38
Longwood Valley Sink	42
Discovery at a snail's pace	45
Annual general meeting	46
Saturday afternoon in the vegetable patch	46
Club diary	47
25 years ago	48

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Opinions expressed in the Journal are not necessarily those of the Club or the Editor.

club notes

We note with regret the recent deaths of Ted Mason, former president of the MNRC, and of Bob Davies whose dives in Wookey in the fifties included the infamous occasion when he went missing for several hours between Wookey 11 and Wookey 13.

Wessex People

Change of address: **Dave Morrison** is in the middle of moving and for the present is best contacted via Kingswood Borough Council, The Civic Centre, High Street, Kingswood, BS15 2TR, 0272 601121 x 347. **Paul and Fiona Lambert** can now be found at 27 Fourways Close, Castle Cary, Somerset, BA7 7JF, 0963 50721

New members

A warm welcome to:

Colin Raikin, 3 Lays Cottages, Lays Lane, Blagdon, Avon, BS18 6RQ

David Cooke, 33 Lowerstoke Gardens, Roehampton, London, SW15 4JB

Mark Kellaway, 33 Lowerstoke Gardens, Roehampton, London, SW15 4JB

Debs Morgenstern, 12 Goodyers Gardens, London, NW4 2HD

Congratulations to Paul and Fiona Lambert on the arrival of a son, Jack Oliver, on 9 May, and to Tony and Sarah King (nee Willis) who were recently married.

Upper Pitts

A lock was finally fitted to the door of the library at **Upper Pitts** over the Easter weekend. This has the same key as the hut doors, so will not prevent members from having easy access to the club's collection of books and periodicals, but should help to stop the library from becoming a general dumping and dossing ground. Mike Dewdney-York, who has been doing sterling work sorting out the collection, has put forward a guidelines about the use of the library which should help to expand and look after the collection.

Sign all books out before taking them away;

- Journals and periodicals are not to leave the library (they are much more difficult to replace than books and some were recently found in the rubbish pile in the lounge);
- No more than two books out on loan to any one member at any one time;
- Books to be returned after a maximum of one month;

- Please keep the library door and the book case doors locked when not in use;
- If books are found to be damaged, defaced or just plain missing, please let Mike know so he can sort the problem out;

These guidelines can be varied in special cases by contacting Mike. However, if they help to reduce the losses of books and periodicals they will make more funds available to expand the library.

The situation over the **fire regulations** has yet to be resolved although we are hopeful that the need to have a fire certificate (and thus meet the legal requirements on alarms, doors etc) will prove not to be mandatory. In the meanwhile we are instigating a plan of improvements which includes purchasing a replacement fire escape from the Gloucester County Cricket ground in Bristol (it's cheaper than making a new one) and replacement of the foam mattresses. However, it has been decided that we should press ahead with the improvements to the **kitchen** as originally planned, so over the period 6-26 June we will complete a programme of work which should see the new fittings in place and fully functional for the start to our 'busy' season at the end of August. This has already been the subject of a 'stop press' news release to all club members but anyone who would like more details or to offer their assistance can contact Struan (0380 722828) or Pete (0935 410197).

Further to the note in the last Journal regarding the issue of new hut keys, all **door locks** in Upper Pitts are now of the new pattern. Please send Pete an SAE with any requests for replacement keys.

This year's **Annual Dinner** will again be held at the Coxley Vineyard, near Wells. Full details of the event will appear in the next Journal, but the event is to be held on Saturday 16 October 1993 (see notice elsewhere in this issue). Rooms are available at the Vineyard for those who wish to stay the night: cost will be between £40.00 and £50.00. Please contact Colin Masters (0252 712585) or Marion Batten (0422 321535) if you wish to book a room as they will be able to get better rates than if you contact the Vineyard direct.

Someone has pinched all the **BDH containers** from the shed outside Upper Pitts - these are almost uniquely useful for transporting sand and cement down caves so if anyone knows of their whereabouts (or can provide replacements) they would definitely please the Wednesday Nighters!

And finally, the **barrel ban** has now been lifted, but members are reminded that barrels should be booked via the committee in future.

caving

notes

An inevitable consequence of the tragedy at New Year has been an increase in activity by traffic police in the area around Priddy. In particular, several people are being 'done' for **parking on the wrong side of the road after dark**, both outside the Hunter's and along the road into Priddy. At risk of sounding puritanical, the evidence is that they have good reason for taking such action and Club members parking cars along the main road after dark are asked to be careful to park safely and legally.

Tav has relinquished his position as a **Pen Park Hole** leader, and Jim Moon has taken his place: Jim can be contacted on 0272 425391. Visitors to the cave should note that leaving a person to guard the car while the others are down the hole is recommended!

Ray Bradley, Community Police Officer for Blagdon, writing in the Parish magazine, reports that there have again been a spate of **break-ins to cars** on their patch. From the description given not only is the route the thieves take from Bristol around the local beauty spots and back to Bristol known but the police also have a good idea of the numbers and identities of the cars concerned. A list of cars was recently posted on the notice board at Upper Pitts, and will be updated whenever new lists are issued. Anyone seeing any of these vehicles is urged to contact PC Bradley on 0761 462098 or Cheddar Police on 0823 337911.

A note from the **Devon and Cornwall Underground Council** notes that even this area is not free of break-ins to cavers' cars.

A brief note in the latest Axbridge Caving Group newsletter reveals that samples of stal taken from their new discovery (**Shute Shelve Cavern**) last November is over 350,000 years old. The note says this is "pretty old as far as Mendip caves go" but fails to point out that it's about half the age of some of the deposits behind the fridge at Upper Pitts.

SWCC have recently published their rules for parties visiting **OFDII and Cwmdwr**. Full details are available from the Caving Secretary, but the main point to be noted by visitors is that parties are requested to have vacated the cave by 17.00 on Sundays. Also in Wales, police have arrested two people suspected of perpetrating car break-ins in the Brecon Beacons.

On **Llangattwg**, meanwhile, moves are afoot which could have major implications for all cavers throughout the UK. Brecon Beacons National Park recently attempted to enforce a planning order (they are the local planning authority) restricting the use of the Chelsea Speleological Society's Whitewalls hut to club members and preventing further exploration under the mountain.

This apparently all stems from complaints by a local MP to the Park as a result of pressure from a few local residents. There seems no doubt that the National Park have been panicked into taking this action which has little basis either in law or on demonstrable evidence. The situation is still extremely fluid, with the CSS having put the matter in the hands of a solicitor. Members of Cambrian Caving Council are handling the matter at present but hopefully they will have the sense to call upon the resources available to them from BCRA and NCA if the situation deteriorates any further. This dispute could set important national precedents and unfortunately the time may be coming when it is no longer possible for individual regional councils to act in isolation from one another if the wider interests of cavers throughout the country are to be protected.

News from CNCC recently includes a request that novice parties should steer clear of **Hagg Gill Pot** (it's particularly sensitive to damage by novices) and a recommendation that tackle bags should be carried out of water in high flow conditions. This last point comes from the inquest into the death of a caver at the **Kingsdale Master Cave** pitch last year: another fact visitors to this cave may like to note is that the pitch (which is about 12 feet high) fills to the upper level with water in flood.

NOTES FOR CONTRIBUTORS

Submissions of any caving related material from members are welcome for the Journal. If possible, please type your manuscript on one side of the paper using widely spaced lines. However, hand written submissions are perfectly acceptable so long as they are clear. It sometimes helps to print names and other difficult words!

If you use a word processor, please send your submission on disc - I can convert from most formats of computer including MS-DOS, BBC and Amstrad. Please make sure that you include a hard copy of your submission as well as the disc since this helps to spot errors and odd characters.

Line drawings, sketch maps and diagrams are all welcome. They should be supplied in the size at which they are to be printed. Make sure that lettering is large and bold.

If you copy drawings or photo's, or quote, from another publication, please make sure you inform me before publication so that I can make arrangements regarding copyright

I would like to thank Richard Kenney for his assistance in the preparation of this issue and, in particular, Pete Cousins for the preparation of the index to Volume 21.

NJW

letters to the editor

Dear Editor,

Phil Hendy's letter in last WCCJ and your response to it reminded me of the occasion a prominent club member (not Phil) embedded an axe in the arm of a chair at Upper Pitts (missing the female occupant's fingers by around 1 centimetre) before retiring in what was clearly a disgruntled state. All in a day's fun, I suppose; but not necessarily "good-natured".

Speaking of impromptu events, readers will not be altogether surprised to learn that the fire which swept Crook Peak last month (destroying 10 acres of "heathland") was started by some of the same persons working for the National Trust in the Cheddar Gorge (under the personal supervision of the Mendip N.T. Warden). The harm done was not enormous, but if you or I (as opposed to an official conservation body) had done it, we'd be in court about now!

I am amused by Graham Mullen's assertion that the Cheddar flora hasn't managed without interference by man. Were he correct, the Cheddar Pink (native of the Alps and Cheddar only) would, you'd think, be more widespread than it is. Perhaps Graham can explain why there is more of it in relatively inaccessible spots (where neither sheep nor people go). Could it be that it has been eaten by people or dug-up by sheep? I don't see any reason why the more vertical parts of the Gorge - at least those where the Longleat Estate Abseil Group don't interfere - shouldn't be regarded as fully natural habitats; Q.E.D.

Yours etc..

Bob Lewis.
Bristol
3 April 1993

Dear Nick,

Re NCA proposals, J.WCC 22(237) March 93, pp24-28, 31.

Going through the article by numbers and your comments, omitting points I generally agree with:

1.1 Fine!

1.2 Clause 3.06. Professional caving training's controversy arises largely from fears of undue influence. The traders provide a service, and no more. We should not fall out with them, but must keep them constitutionally at a friendly distance. Potential NCA or Regional Council officers ought to publish any professional interest in caving prior to election. A worse threat are "adventure" or "management training" traders

with little or no genuine interest in and respect for caves. Unfortunately they lead to all professional cavers being neoprene-glued with the same brush. Worst is the rumoured danger of commercial monopolising of non-show-caves access.

NCA must therefore openly avoid doing anything which may in future compromise its aims & independence, and our caving.

1.4.3 NCA should recognise bodies like CDG or BCRA are **clubs**, despite appearances, though still uphold their valuable technical roles. (I'm not criticising: I'm a BCRA member.)

1.4.4-5 True, and I agree. NCA must avoid anything which may encourage outsiders to deny cave access for "conservation". Already English Nature has taken over Knock Fell Caverns, allowing access only for "scientific studies". Who approves access applications? How? If non-cavers like E.N. insist on academic qualifications and copies of subsequent reports, all but a small elite would be barred - probably even the discoverers. There has even been a rumour of some (non-caving? certainly selfish) geologists wanting E.N. to gate parts of a major Mendip cave. (See Ric Halliwell's Editorial to Craven PC "Record" 30 (April '93).)

NCA must resist this most vigorously, telling such bodies their actions are unacceptable and will not be implemented.

1.7.* -1.8.*. Various internal rules: all present and correct, but 1.7.3 (disposal of assets) may need reinforcing.

2.2 I could not agree more with your note here.

3. * Individual membership may mean multiple votes to the NCA + BCRA (say) + club member, assuming the individual's clubs' ballots bring "his" results. Bizarre, but is this behind some of the debate? Again, BCRA etc. clubs.

4. * If NCA created less work - including work-studies - it would have less of a work-load problem! Meet on Sunday mornings in caving areas, perhaps in club huts? WCC has previously hosted NCA Executives.

5. * I disagree with NCA's premise. NCA should not be an employer, and ought to contract out only the minimum, really necessary (primarily routine secretarial work. We are amateur cavers (for whatever motives), and while we expect high standards from our voluntary representatives in our service, we should not "carry" professionals. If we had more money it should go directly towards caving, not to salaries, particularly of hangers-on like Development Officers".

The vague and unnecessary Training Co-ordinator post is to go: good!. So should the un-defined "Development Officer" which is totally against better financial independence and cave conservation. D.Os are an empire building Sports Council grant-aid condition, to encourage greater use of costly public sports facilities, coaching, etc. Originally, Sports Council referred to caves themselves as "facilities"!

Oh yes: "Governing bodies"... A favourite S.C.-ism. That quango loves these! NCA is NOT and should never be, one.

6. * "Accreditation" is a weasel word: beware the insurance/trade snare, so we have to use "approved" gear.

7 1 Re my observations on 1.4.*.

8. * NCA won't improve its image, or its information service, by bureaucracy. That will only reinforce the poor reputation it is trying to lose. "Speleoscene" and such publications, not extra officers, are the way forwards.

9. * Fine, but again, "Special Committee..."??

10. * C&A, caving's biggest issue, is sharpened by bodies who originally helped us, now trying to stop us caving (see 1.4.*. above). Re-think 10.2: many ask does caving need more cavers?, despite the implicit hypocrisy. I think NCA should promote the ethic, that caving is only for anyone proving a genuine liking and respect for, and interest in, caves and caving as such. "Adventure" sellers ought to be prevailed upon either to put the caves first, or do something else.

12.3. No. As explained earlier. Ignoring professional cavers will not stop their trade, but NCA should not develop schemes for them! NCA cannot have it all ways. Only by seeing the professionals' services as just that, independent of, but scrutinised by, NCA on our behalf, can we exert any sensible influence on them.

To sum up: the NCA proposals are generally good, but some areas still need consideration, particularly the ambivalent relations between NCA and professional cavers, Sports Council and other bodies; and conservation and access. NCA must act for cavers as a whole, and must be seen to do so. NCA is our representative body, after all. Hopefully us lot wot merely go caving might even have an NCA to crow about (warts and all)!

Yours rather gloomily.

Nigel Graham
Weymouth
25 April 1993

Rather than (yet again!) fill the pages of the Journal with politics I will cover some of the points raised by Nigel in a future article - NJW

Dear Nick,

I hear than Denis Warburton's article from Volume 7 of the *WCC Journal* was recently reprinted by the NSS as part of a series of classic papers. Presumably the Club's permission was freely given: however it would appear that Denis himself was not asked. I can see no excuse for this oversight as several current members of WCC - myself and Maurice Hewins for a start - know where to find him. Can you shed some light on this oversight: and is Denis eventually to be given a copy of his re-printed article - which I am sure he would be delighted to receive???

Regards

Pete Cousins,
Lichfield
25 May 1993.

Denis' article was reprinted in Vol 8 No. 3 of Compass and Tape, the Journal of the NSS's Surveying and Cartography specialist group published in the winter of 1990. The only reason I got to hear about it was because I reviewed this edition of Compass and Tape (along with many other North American Journals) for the BCRA - the review was printed in Caves and Caving No. 57.

I have not been approached at any time by the NSS or any of its constituent bodies for permission to reprint the article. Such permission is normally freely given, with the proviso that anything involving extensive quotation from the work of one author must also have the permission of that author before it goes ahead. I would further expect a donation to Club funds if the publication is a commercial effort intended to make money for any individual.

Since Compass and Tape is a specialist Journal, with a circulation of perhaps 100, I was not unduly perturbed by the publication of Denis' article and your letter is the first that I have heard that there might be a larger scale publication in progress. The WCC exchanges Journals with the NSS and I would be surprised if a large scale publication of material which is Club copyright went ahead without us being contacted in advance. The most likely explanation is confusion with the Compass and Tape publication but I would be interested to know if you have further details.—NJW

HUT WORKING WEEKEND

JUNE 26-27

Tools, materials and guidance provided.

Come and help with the great kitchen shifting exercise!

Dig your own cave!

Recent digging activities on Mendip have been revolutionised by the use of mechanical earth moving equipment to speed up initial site investigation in a By Dave Morrison and Nick Williams variety of sites. While this technique is an addition to, rather than a replacement for, the techniques employed to dig caves on Mendip over many years, it has seen some interesting developments in the attitude to cave digging both by the local cavers and by the land-owners. Although the application of this technique has not been without controversy, the purpose of this article is to describe the engineering techniques involved rather than discuss the pros and cons of cave exploration by this means. The following article is based upon a lecture given by Dave at the 1992 BCRA conference and covers some of the details of the technique as well as describing the results at a few sites.

**by Dave Morrison
and
Nick Williams**

The use of mechanical digging equipment was first suggested for the purposes of recovering caves lost to land filling rather than for investigating new sites. In 1989 a case of infilling of a deep depression on western Mendip resulted in the loss of Ubley Hill pot whose entrance was buried under several thousand tons of rubble. As a compromise to removing all of the spoil from the depression, an excavator was used to remove enough of the infilling to allow the entrance to the cave to be uncovered and a 30' vertical shaft of concrete pipes was installed to make the access permanent. The depression was subsequently re-filled and levelled.

The essential pre-requisites for this technique are a suitable excavator and a suitable digging site. The machine used for most excavations on Mendip has been a 'Hymac' tracked shovel with an arm reach of about twenty feet. A machine such as this would normally cost around £200 per day to hire, with running costs of the order of £50 in diesel and other consumables. Large contractors machines such as this

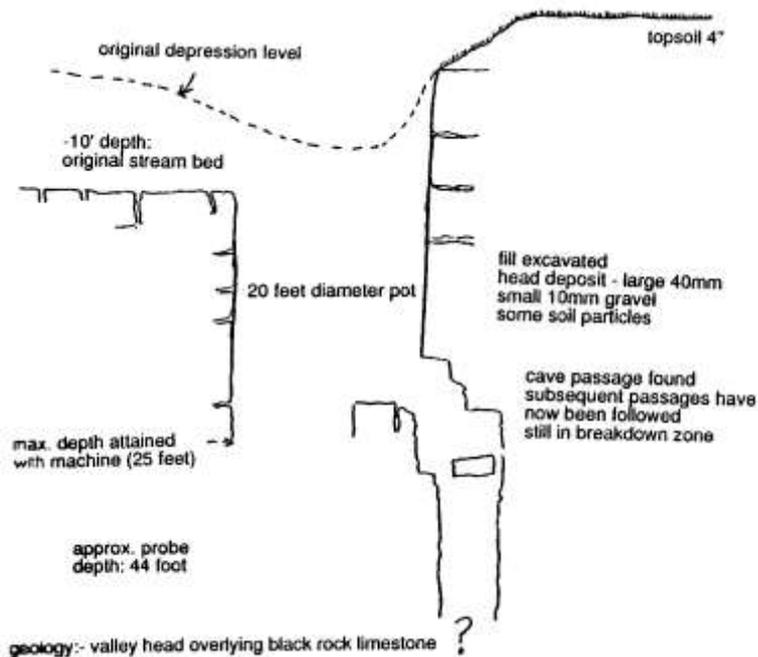
need a considerable amount of skill and practice to operate, and are thus not normally available to cavers on a 'self drive' basis. Since a 20 - 30 feet deep shaft will take one to two days to dig, and a 35 - 40 feet deep shaft 4-5 days it can be seen that this is not a cheap enterprise!

Suitable digging sites are essentially those where the landowner has given the necessary permission and is fully aware of the implications of this. While the long term impact of the technique is relatively small, during the actual digging the noise and mess can be significant. (Helpers on the Mendip digging sessions have noted that they are a great deal more pleasant if the weather is reasonably dry, as otherwise everything seems to disappear under a layer of mud!) In the case of attempts to recover a known but buried cave it is also important to have a good idea where the lost cave entrance is situated in relation to the remaining surface features and it will be necessary to examine old photographs, surveys and maps, and talk to those who previously visited the site, in order to locate the entrance in the shortest possible time. Not only does this minimise costs but it also reduces the chances of causing damage to the cave by digging in the wrong place.

By its very nature, mechanical digging involves moving a great deal of spoil in a very short time in comparison to the normal rate of cave digging activities. However, the longer term damage done by the technique is of no greater significance than that done by more conventional techniques, and may be even be less. Because, over the course of a single weekend, it is possible to progress a potential dig site to a point where all the workings are



The Hymac at work: Eighteen Acre Cave, June 1991



Eighteen Acre Cave - cross section E-W after excavation

below the level of the surface there are sites where the technique has important advantages in respect of security and visual impact. While the excavator is a heavy vehicle, the large surface area of the tracks results in a very low ground pressure, often less than a caver's boot, so ground compaction is minimal. The digger also does surprisingly little damage to any bed rock encountered during the operation so this method of excavation offers a unique opportunity to study and photograph the strata.

Although the end result of the excavation is often a shaft lined with concrete rings this need not necessarily always be the case. If the site is suitable it may be possible to create a shaft using natural rock taken from the hole, and if the site is close to a field boundary or wall the landowner may allow the cave to stay as an open hole. In this case the spoil can be removed or levelled and the site fenced.

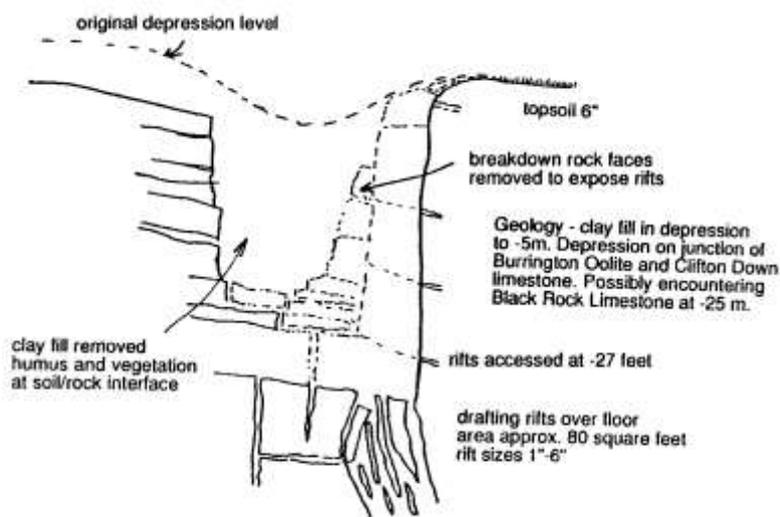
To the uninitiated cave digging looks like a pretty low technology activity and to a large extent this is the truth. However, as with all caving activities there is some element of risk and it is important never to be complacent about safety around the dig site. There are a few basic rules which should always be borne in mind when preparing for and carrying out a mechanised dig. As a preliminary to any digging operation an area around the site

should be staked out and roped off. This is a basic safety precaution around any dig: It helps to prevent stock and humans from falling into the workings accidentally and by providing a line beyond which spectators are not encouraged to pass it helps to give the person in charge of the dig an easier job in monitoring the site and the hazards which are developing within it. The site roped off should include the area required for dumping the spoil at the side of the hole.

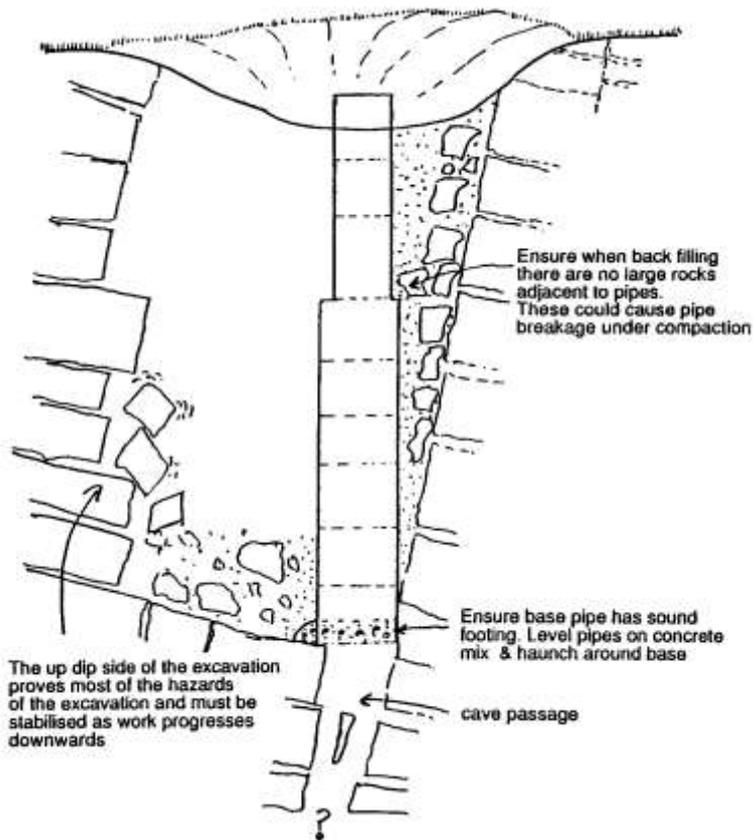
Secondly, it is essential that the solid rock walls be found and the ground around checked, as a cavity under the soil surface could prove a little embarrassing if found whilst the machine is driving over it! While the ground pressure from the machine is low, as mentioned above, the overall weight of the machine is high and if a large enough cavity exists for the whole of the weight to bear on one load supporting arch or boulder, the result may be catastrophic collapse.

Thirdly, check the machine. Enough fuel, water, oil, hydraulic oil should be available, the tracks must be tight enough and all bolts and pins in place and intact. Adequate bucket size is also important; 2 - 3 feet width has been shown to be right for small holes while 3 - 4 feet width is necessary for large excavations.

Another important point is that there should be one person who has entire control of the site management and whose primary duty is to watch for danger developing before it does any harm. While this person may need to heed advice on engineering or other aspects of the dig it is important that they be in overall charge of the digging



Whitepit cross section E-W after excavation



Whitepit cross section showing position of pipes

operation and that their instructions be obeyed by every member of the work force present. Good communications between the digger driver and the other members of the digging team are important: hand and other signals should be agreed in advance and the use of CB or other radios can help with communications above the noise of the machine. A useful first aid kit needs to be available, as does an adequate means of sending for additional help if required. Typical safety equipment needed at the dig site includes helmets, belts, ropes, karabiners and slings, ladders, solid heavy steel ladders, lights, safety goggles and gloves.

While the excavator is working the hole there should be nobody in the area below cab height, and unless needed all personnel should be outside the area marked out by the boundary ropes. Any one working alongside the digging bucket must be careful to ensure they are visible to the driver but must also take responsibility for keeping themselves out of the path of the bucket. When the machine has finished working below depth, attention should turn to stabilising the sides and the removal of all loose stones and rocks. The resultant hole is surprisingly safe but bank watchers should be posted whilst all subterranean works are carried out. No person should enter the hole until the sides of the excavation have been cut to solid rock or battered to a safe angle. If no rock is present it will be necessary to shore the sides of the hole to keep it safe. Under no circumstances should the site be left unattended until it has been made safe: If necessary this may mean back filling the hole temporarily until

work can commence the following day.

Once cave passage has been identified a means of permanent access must be provided. This can take the form of concrete pipes, or dry stone walling using the excavator and the largest stones available. The machine can move rocks up to 4 tons around the base of the hole and can lift easily and place lumps of rock up to 1 ton (as with Nettle Pot on Mendip). Experience has shown that unless the depression is on limestone of less than 18° dip the rock does not have the correct cleavage for using large stone walling and concrete pipes should be readily available on site as an alternative. Pipes may or may not be reinforced with steel bands. Reinforced pipes are best moved by drilling 1" holes within 6" of the top and using pipe lifting ring bolts. Unreinforced pipes might be cracked by drilling so use 3 ton webbing belts and 'D' rings threaded through the pipe.

The pipes used should be ogee jointed and each pipe will weigh up to 800 lbs dependant on aggregate. The optimum size is 750mm I.D., 900mm O.D. These can easily be handled by the digger, but if there is a need to manhandle pipes into position they will need to be lighter so they can be

lifted safely. Pipes can be cut around their circumference with an angle grinder or disc cutter and if three or four sections of the right sized I-girder are placed around the circumference on top of the pipe the next section will sit securely on top. Pipe rings should be set on a concrete plinth and back filled as each pipe is laid. It is very important to compact fill evenly around each pipe and ensure that there are no large stones or sharp edges giving rise to uneven loading as these will cause the pipe to fracture. Ideally the pipes should be surrounded by a sleeve of concrete or pea gravel but this is an expensive option (and gravel may 'drain away' into an active doline) so small aggregate or clay can be used as an alternative.

For the finishing touches a purpose made steel lid/gate should be placed on top with a ring bolt for ladder. Holes to relieve water pressure on the pipes can be drilled at a later date.

Discovery at a snail's pace

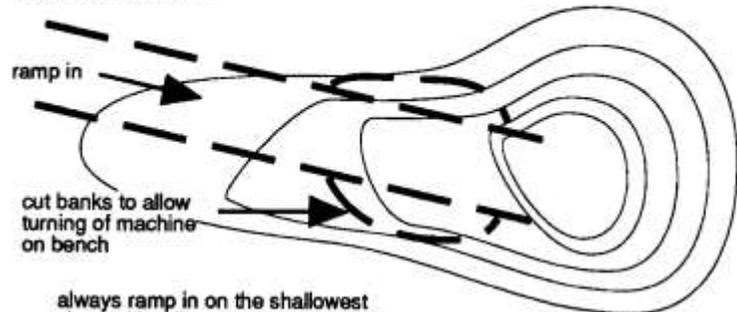
- continued from page 45

So all my research was merely repeating work that had been completed a century before. Heigh-ho! But it was fascinating fun.

Reprinted, with permission, from New Scientist

SHALLOW EXCAVATIONS

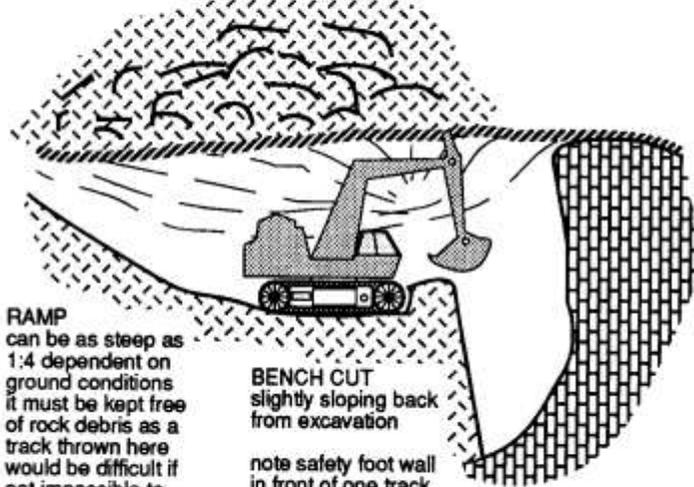
Associated with elongated depressions less than 30 feet in diameter across the steep face



always ramp in on the shallowest slope: this will be the original stream course and the most stable base

top soil should be piled away from major spoil heaps for re-use after backfilling

Excavation spoil should be stacked as far away as possible to either side of the machine



RAMP
can be as steep as 1:4 dependent on ground conditions it must be kept free of rock debris as a track thrown here would be difficult if not impossible to re-fit

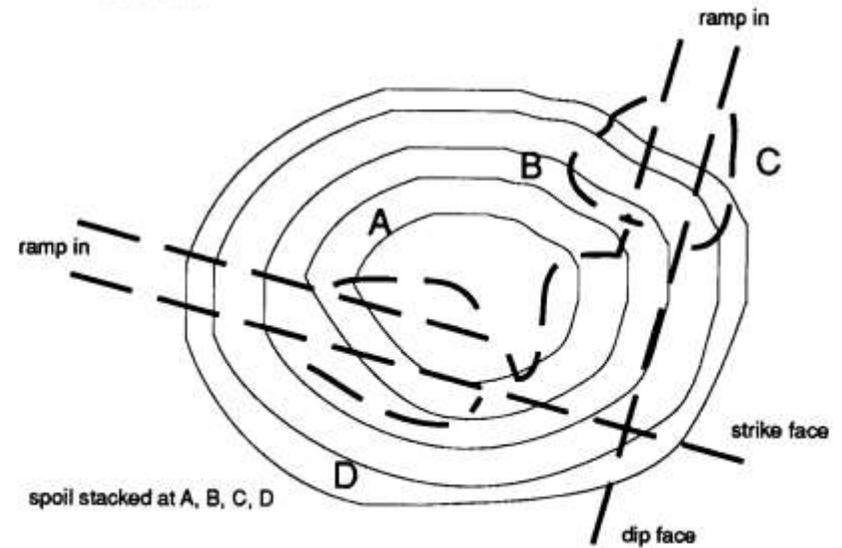
BENCH CUT
slightly sloping back from excavation

note safety foot wall in front of one track only: excavation can be to the front of the other track enabling driver to see bottom of hole

DEEP EXCAVATIONS

up to 40 feet deep and associated with circular depressions greater than 30 feet in diameter (eg Cow Hole)

two ramps and benches are required to achieve the depth as both the dip and strike faces have to be worked given the arc of the machine bucket, this allows the removal of the most stubborn obstacles from two



firstly establish solid dip and strike rock face positions by removing the top soil

generally the dip face will run parallel to the steep side of the depression, the strike face will meet this at right angles on the low side of the depression - the junction of these faces will be the best place to excavate the shaft

note: this is not necessarily the lowest point of the depression, but has proved the most successful and safest place to access cave passage at such depths

Longwood Valley Sink

Richard Witcombe

Longwood Valley Sink (the "Sing" of "The Complete Caves of Mendip") has been the scene of a sustained but sadly unsuccessful digging effort by Wessex/ATLAS cavers lasting from 1984 to 1990. Unwilling to see such hard work go to waste, a small contingent of the original digging team has recently returned to try again, this time pursuing a much smaller but mud-free, higher level option in the cave. It therefore seems an appropriate time to make a brief record of the travails and disappointments of those first six years.

Longwood Valley Sink is situated at an altitude of 680' on the right hand side of the valley floor, well beyond the main swallet and some 100 yards past the junction with the Rhino Rift valley. During the Great Flood of 1968 there was a report that water emerged at this point, but it seems likely that what was observed was no more than the sink overflowing because of the sheer size of the flood pulse. The short cherty rift opened up by the flood was probed by the Axbridge CG within hours of the water subsiding and then dug inconclusively by the Mendip CG.

In 1974/75, Wessex diggers arrived on the scene and broke into a steeply descending rift choked at a depth of 30' by large rocks and stream debris. Digging was made difficult by the instability of the entrance and by a bottleneck in the rift, and little progress was made at the terminal choke.

Interest revived in the late 70s but despite the installation of an oil drum entrance, spoil removal remained a problem. The answer chosen was an additional adit entrance, to be driven mainly on a "cut and cover" basis to an interception point with the main rift 15' below the surface.

Work proceeded on a desultory basis from 1981 to 1984 and resulted in a steeply inclined but still blind trench shored up with corrugated steel. Les Oxborough of the East Somerset CC and an ex-Royal Engineer constructed the first part of the adit proper, fabricating 20' of stout timber tunnel down the trench line. The bang

men then took over and blasted through 6' of rock to make a rather shaky connection with the main rift. A railway was laid through the tunnel, and on the surface, a flood channel was constructed and backfilling over the adit commenced. A heavy duty winch was already in situ at the mouth of the adit but it was decided that haulage from the bottom of the cave would be greatly facilitated by the installation of a second winch above the drum shaft. On 16 June 1984, the redundant Thrupe winch - a veteran also of the Viaduct Sink campaign -

was delivered to the site by Land Rover, and underground digging in earnest commenced.

The cave at this time terminated in a flat out 8' crawl over rocks and mud at the foot of the main rift. The rift itself was nearly 4' wide at the bottom, and it was decided to clear out the floor of the rift sufficiently to allow a proper look at the prospects of the terminal passage. After a few sessions removing chockstones and bang debris from the top of the rift, what was to become the standard haulage format was adopted - a digger at the bottom of the rift filling a bucket, a surface worker hauling the bucket up the rift by means of the drum winch, a transfer man at the top of the rift emptying the bucket into a railway truck in the adit (2/3 buckets per truckload), and the surface worker transferring to the adit winch and hauling out the truck. By this means

and with a judicious use of bang for smashing a few large boulders, 150 truckloads of spoil were brought out by the end of 1984. The rift was now much roomier, up to 6' wide in places, and the terminal passage more accessible but there was no sign of a quick way on either in the floor or at the far end.

During 1985 378 truckloads of spoil were removed from the rift. The "upstream" wall of boulders



The entrance adit and railway (photo- Clive North)

jammed across the rift became increasingly threatening and timber shoring was installed, courtesy of the Somerset Trust for Nature Conservation tree thinning programme. The year ended with a severe flash flood. Luckily the drum shaft became quickly blocked by detritus and much of the water flowed on past the dig. Underground, there was no evidence of significant ponding, but equally no sign of an obvious water exit. The water had been polluted by diesel from a pumping station up valley and the smell hung around the dig for many weeks.

The effective bottom of the rift was reached in 1986. At a depth of 45' from the surface, the excavation hit a 45 degree sloping floor with a mud filled slot only a few inches wide. Digging moved into the terminal passage but the steep floor proved too deep to follow. Instead the passage was excavated to a comfortable walking height - comfortable, that is, apart from the floor. It proved a very wet year and the floor of the passage soon became a quagmire.

Ponding between digging sessions meant bailing into temporary mud walled dams, and inevitably progress slowed. A severe flood on 19 May 1986 left signs that water had backed up 10' to 12' and dampened any expectation of an early breakthrough, and it was all the more surprising

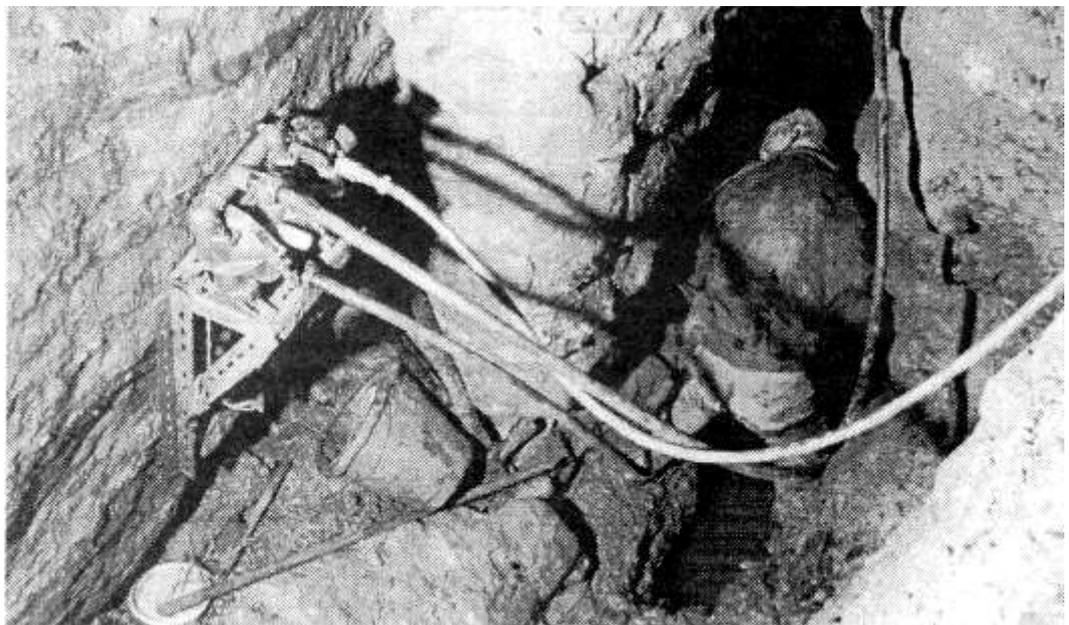
therefore when a terminal boulder was blown up in October 1986 to reveal open passage all of 8' long! There were indications by way of undercutting that the passage may be trending round to the right, but probing failed to reveal any obvious easy digging option. The year ended with a truck tally of 246 and a digging face that was a swamp of mud and buried boulders.

1987 turned out to be a make and mend year, as well as another rainy one. The old wooden gate had rotted through and had to be replaced by a steel grid, and the railway, truck and winches were thoroughly overhauled. The adit winch had been seated on a wooden frame which duly collapsed and in its place a stone and concrete platform was constructed.

Underground, ponded water became a major problem. Heavy percolation plus regular flash floods meant that digging sessions had to start with bailing operations and then continue in "Western Front" conditions. An

examination of the Longwood Swallet main sink showed it to be heavily silted up, and it was concluded that a clear out operation here might well alleviate the flash flooding of the lower valley. After several sessions hauling out rotting sticks and detritus, the swallowing capacity of the upper sink was greatly increased and a marginal improvement in digging conditions was achieved. Inevitably, these non-digging activities ate into the front line performance, and only 83 truckloads of banged rock and slurry came out during that year. The terminal passage was bigger by that amount but the way on was no clearer.

Another wet winter again concentrated minds on the water problem. Bailing into mud walled dams was an inadequate solution during all but the dry season, and it was decided that the final solution must be some sort of pump to remove all accumulated water from the cave. The first trials were conducted with a heavy duty hand



The pump in operation (photo - Clive North)

pump that had started life many decades before as a sludge pump at the former Oakhill Brewery. It was not a success. With the pump at the bottom of the dig, the most vigorous pumping failed to raise the water above the level of the lower end of the adit. A further attempt was made using a bucket and second pump at the bottom of the adit but only a few drips ever reached the bucket

The answer to the problem proved to be an expensive one. Clive North purchased a new compressed air Blagdon double diaphragm pump and a portable (by Land Rover) Clarke Air/Honda petrol-driven compressor. A dexion frame was made for the pump and bolted to the left hand wall at the bottom of the rift. After a false start on 17 August 1988 due to a clogged inlet hose filter, the system was successfully brought into action on 22 August, raising a hosepipe of water to the surface and allowing it to drain away down valley. Two hours later a lake some 12' long and up to 6' wide and 18" deep had been reduced to a few puddles. The surface

compressed air pressure was noted at 70 psi but 50' below this had reduced to only 45 psi. The pumping rate was never accurately calculated but it was clear that it was never going to be a fast process and digging would be significantly delayed whenever percolation or flood water gathered.

Not counting breakdowns due to clogging of hoses and filters, most digging sessions hereafter commenced with between half an hour and two hours of tedious pumping. Needless to say, pump, hoses and compressor were taken away after each session.

Whilst the various pumping trials had been proceeding, it had been decided to cut out the lengthy and labour intensive haulage system, and instead dump further spoil underground behind retaining walls in the now unnecessarily spacious main rift.

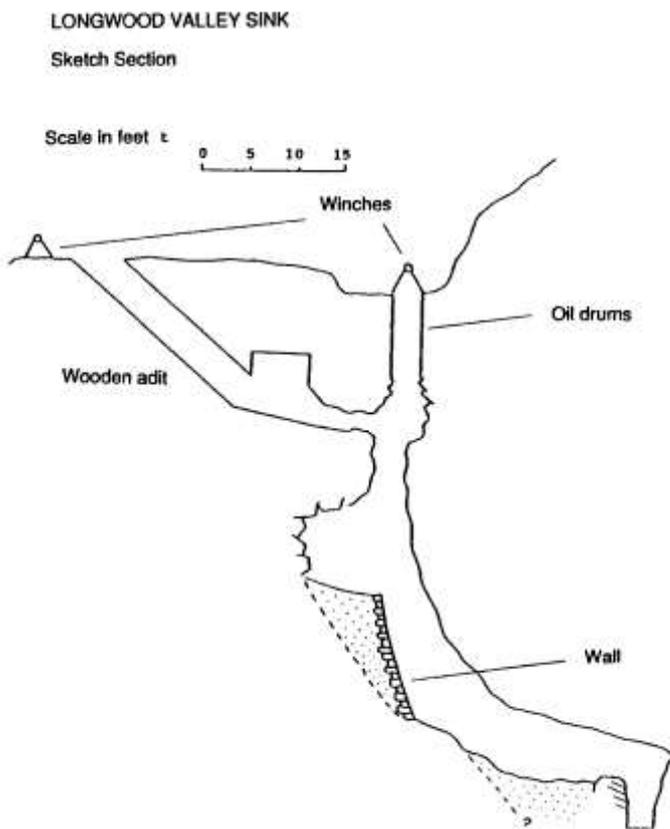
On 9 July 1988, work started on a stone and concrete wall at the foot of the rift and the first new spoil was dumped behind it on 29 August. At this time also the bedding plane roof at the head of the shaft began looking a trifle unsupported, and to calm the nerves some grouted walls and steelwork were installed. The digging sequence now incorporated one walling session for every two or three digging/dumping sessions, with the added irony of periodically having to take back underground good quality walling rocks, some collected from as far away as Black Rock Quarry and carried up to the dig by Land Rover! By October 1989, a total of 823 buckets of mud and rock had been deposited behind a

wall which had grown to over 13' in height.

What had the diggers to show for all this effort? Very little - the terminal passage still refused to yield any new air space. The left hand wall went straight down into the mud in fairly featureless fashion, a solid wall was encountered straight ahead at about 20' from the base of the rift, and the right hand side, despite being heavily undercut to a depth of 5', ended too in a blank wall with only a totally choked bedding plane a few inches high leading onwards. The boulders which had dropped from the ceiling to create the undercut were distributed in the glutinous mud floor, and were regularly banged as the search for a way on continued.

From October 1989 until June 1990, work concentrated on following the end wall downwards, with the heavy grey mud being dumped in the abandoned undercut. A depth of 8' was reached between the end wall and a large boulder, but percolation ponding and a threat of mud collapse without elaborate shoring eventually brought the whole operation to a halt.

The diggers concluded that they were trying to excavate a choked shaft or very steeply inclined rift which could continue downwards for tens of feet. The mud, derived probably from degraded shales, was of the type that refused to leave the spade and bucket, and contained hardly a stone to relieve the monotony. With heavy heart, it was decided to abandon the bottom dig.



The ATLAS diggers returned to their home base of Thrupe Lane Swallet and vented their frustration on the link between the Railway Series and Atlas Pot. But Longwood Valley Sink was not entirely forgotten. A visit by Willie Stanton was arranged in 1991 and a couple of tiny tubes less than a foot in diameter running off horizontally from the top of the main rift were examined in some detail. Willie felt that they probably represented a proto-cave of Triassic age, and as such it was anyone's guess what might lie beyond.

Two of the original team, Clive North and the author, decided that a last ditch effort was called for and formulated a plan to blast a tunnel along the line of the tubes. Work on the Mark Two dig duly started on 3 January 1993 - I will keep you posted!

The bottom dig was principally the work of Ken Appleby, Pauline Mason, Simon Meade-King, Clive North, Janet North and the author, aided and abetted, especially in the early days by Dave Morrison, one of the instigators of the dig, Duncan Frew, Nigel Graham, Jim Rands, Colin Rogers and many others on a one off basis.

To be continued

Way back in 1969, I took part in the exploration of a new cave near Priddy. The discoverers had dug a shaft in the bottom of a grassy sinkhole and entered a small chamber with stalactites. It was a fairly ordinary grotto with one unusual feature: the roof was pockmarked by scores of round holes that penetrated a few centimetres up into the rock. Thrust your finger into potters' clay, waggle it slightly and withdraw it, and you will have made a hole. But these holes were in hard Mendip limestone. We had never seen their like in other caves, but nobody could explain their origin. I forgot about them. Until, that is, the summer of 1984. It was a warm evening on Mendip, and I descended another sinkhole to escape

Discovery at a snail's pace

by Willie Stanton

from the pestilential flies. Reclining on the short turf, I looked up at a limestone outcrop. What were those round holes in the over-hanging bit? Memory flashed back 15 years, to the Priddy cave.

Serendipity, the gift of making discoveries by accident, is gratifying, but it takes energy and enthusiasm to follow up a discovery. During the next few months I examined limestone outcrops from end to end of the Mendips and found, now that I knew where to look, several thousand of the mysterious round holes. Family walks were delayed while I ran my fingers beneath rock overhangs close to the ground. The finger-sized tubes with their smooth walls and round terminations were instantly recognisable to the touch.

I found them in natural cliffs, in isolated rock outcrops, and even in the standing stones of Stanton Drew, erected by Bronze Age Man. An excursion to Torbay located them in hard Devonian limestone near Kent's Cavern and in the sea cliffs at Berry Head.

What on earth were they? They were not fossil relics of a bygone age, because they were common, though shorter than usual, in small quarries that were opened to build dry stone walls when the Royal Forest of Mendip was enclosed, about 200 years ago. Also, they had inhabitants. Sometimes my finger encountered movement, once accompanied by angry buzzing, but the usual residents were snails. Not the garden snail, *Helix aspersa*, which is too big to enter most holes, but a smaller species spirally striped in yellow and brown, the dark-lipped banded snail (*Cepaea nemoralis*).

Just as a carpenter, examining holes in a block of wood, can determine that they were made by a drill, or a chisel, a nail, a screw, a red-hot iron or a deathwatch beetle, so a geologist, given enough evidence, can deduce how holes in rock were formed. The round holes, typically located beneath overhangs protected from the weather, and uniform in size range, smoothness, shape and orientation, could not have been created by random atmospheric weathering. They were, therefore, bored by some organism that habitually dissolves or scrapes away the limestone in a characteristic fashion. The creature must be small enough to enter the holes, must have a

good reason for always boring up, never down and probably favours a damp, shady environment

The evidence of the small quarries is critical. The creature is still actively enlarging the holes, therefore one might reasonably expect to encounter it sometimes in them. Which brings me back to *Cepaea nemoralis*.

Snails need plenty of lime for their shells, and their relatives the marine molluscs are well known for their ability to bore holes in rock. Consider also that you seldom find a group of holes without several resident snails, that the holes are usually tailored to fit adult snails snugly, that snails like to return to the same roost day after day, and that natural selection probably favours

snails that use such safe refuges, and it doesn't take a Sherlock Holmes to deduce that *Cepaea nemoralis*, by some instinctive activity common to many generations over hundreds of years, excavates characteristic round holes in limestone.

I now wrote a short account of snail holes for a scientific journal. The editor sent it to a snail expert for refereeing. Alas! The expert, unimpressed, commented that snails cannot bore holes in limestone. If their secretions were acid they would dissolve their own shells. *Helix aspersa* wouldn't have had time to bore the holes because it was introduced to Britain in Roman times. The holes were probably formed by non-biological weathering.

Was this peer review? I thought not. With no ado I submitted the paper to the Bristol Naturalist's Society, whose editor, a distinguished zoologist, accepted it with a few cautious revisions.

A year later, Israeli scientists described how snails, feeding on endolithic lichens in the Negev Desert, gouged grooves in porous limestone. They had filmed the snails doing it. Fired by their example I constructed, on the domestic lawn, an artificial limestone outcrop and populated it with *Cepaea nemoralis*. In three years a wide dimple, nearly a millimetre deep, has developed in the polished flat limestone overhang. To counter all criticism I should have set up a control outcrop, similar to the first but without the snails, in case something totally unsuspected is doing the boring. I didn't do so, and now I wonder if it's worth the effort. After all, snail holes are not very important.

This fact struck home when I found a reference to snail holes in a geology textbook published in 1887. Nine authors were cited and I obtained copies of all their papers from the British Museum and elsewhere. The 19th century had seen lively controversy among geologists and naturalists about the origin of tubular holes that they found in overhanging limestone outcrops from Northumbria and Wales down to Boulogne and even Sicily. Proposed origins included random atmospheric weathering, boring by marine molluscs when sea levels were higher, and boring by land snails of the genus *Cepaea*. By 1870 the land snail theory was generally accepted. Interest waned, and few modern scientists have ever heard of snail holes.

Continued on page 41

Saturday afternoon in the vegetable patch

John (Braindead) Baker

As the junior member on the trip I have been delegated to write this account of our visit Up North (I seem to have been delegated many tasks - cooking, making tea, washing up etc - etc).

On an overcast southeast Thursday night we set off at 19:30 hours with the intention of avoiding the traffic. All went well until we reached that well known bottleneck, Birmingham, at 22:00. Quick thinking and we set off round the holdup along the A38 and A5 picking up the M6 at junction 12. North bound again, with closing time approaching, we made our first stop at Knutsford services. Watered and refreshed the next stop was Leyland to collect string and bolts. By the time we got there it was 00:30 hours; too late to continue so we borrowed Mr Editor's floor and arrived in Ingleton before Bernie's opened on Friday morning.

Fed and watered we made our way to Horton to find the Craven Pothole Club and make ourselves known. It was a very wet Good Friday so once installed we took local advice and headed up the Pennine Way behind the CPC hut to Sell Gill Holes. All was well: we had the cave to

ourselves. Down the 1st pitch and rigging the traverse on the second pitch I went down to find the rope hovering six feet from the floor; back up for some hasty re-rigging: back down only to realise we'd left ourselves with the shortest rope for the largest pitch; back out to the entrance and change ropes. Eventually we reached bottom to see the extent of the waterfall from the alternative route (we'd never seen the like on Mendip).

Friday night we headed over to the Hill Inn to pay homage to John and Sue (*I think it's more likely they paid homage to the good lord Theakson - Ed*) and meet up with Sheffield University. As always the pub was swelling with pilgrims from all over the country. A few jars and a rendezvous for Saturday. The weather took a remarkable change for the better but Colin's enthusiasm changed as he had to put on wet gear. We headed towards the Allotment and Nick Pot. No one fancied doing Vulcan Pitch (101m from just below the surface) so we entered at Thornber's and headed towards The Traverse of the Gods. Following the guide book we had

Continued on page 47

THE WESSEX CAVE CLUB

ANNUAL GENERAL MEETING

will be held on

October 16 1993

2.30PM at the Hunter's Lodge Inn, Priddy

To be followed by the

ANNUAL DINNER

At the Coxley Vinyard, near Wells

MENU AND DETAILS IN THE NEXT JOURNAL

club diary

June

- 12th: Yorkshire booking: Hurnell Moss Pot
13th: Yorkshire booking: Gingling Hole
26th-27th: Hut working weekend
27th: Committee meeting, 10.00 am at Upper Pitts

July

- 3rd: Slaughter Stream Cave trip: limited numbers: contact Nick Williams or Andy Summerskill
Yorkshire booking: Hammer Pot
4th: Yorkshire booking: Little Hull Pot
10th: Wessex Challenge, Burrington Combe
10th-11th: 1993 Caver's Fair at Pindale Farm, Hope Valley, Derbyshire
25th: Committee meeting, 10.00 am at Upper Pitts

August

- 14th: International Congress of Speleology, Beijing, People's Republic of China
Otter Hole trip, Limited numbers, contact Andy Summerskill
23rd-26th: National Association of Mining History Organisations annual conference, Douglas, Isle of Man
29th: Columns open day, OFD, South Wales

September

- 4th: CSCC Meeting, Hunter's Lodge
5th: Committee meeting, 10.00am at Upper Pitts
18th-19th: BCRA Conference, Bristol University
18th: Yorkshire booking: Pen-y-ghent Pot
19th: Yorkshire booking: Birks Fell Cave and County Pot.

October

- 2nd: Yorkshire booking: Juniper Gulf
3rd: Yorkshire booking: Gaping Gill main shaft
16th: Wessex Annual General Meeting and dinner
30th: MRO Underground hauling practice in St Cuthberts Swallet
20th: CSCC meeting. Hunter's Lodge

November

- 13th: Yorkshire booking: John's Cave
14th: Gavel Pot

December

- 4th: Yorkshire booking: Top Sink - Lancaster Hole
5th: Yorkshire booking: Wretched Rabbit
29th: Yorkshire booking: Ling-Kin East/Rift Pot
30th: Yorkshire booking: Notts Pot
31st: Yorkshire booking: Lost John's Cave

January 1994

- 15th: CSCC meeting, Hunter's Lodge

Saturday afternoon in the vegetable patch

- continued from page 46

enough rope to reach the sump and we got to the ledge below but couldn't find a free hang so it was back to the traverse to find a better hang. This however meant that we were rigging from 20 feet higher than intended — yes you guessed it; the longest rope was now too short so we had to tack on another piece of string and pass a knot! It's a very deep pot and a nice training exercise but it is a shame there's nothing at the bottom.

We made our way back to the SUSS hut (a railway carriage behind the Hill Inn) so Colin didn't have to drive to the pub and we all partook in a Peculiar evening in the Hill Inn. It wasn't until we'd slept off our hangovers that we headed towards Clapham and Gaping Gill. Another long walk this time to Flood Entrance Pot, Colin, following behind Sarah and Simon on the entrance pitch, reached the rebelay complete with tackle pack. He changed over safely then casually lowered the tackle sack but however unknown to him the sack was no longer attached and it fell the remaining 50 foot, just missing Sarah thanks to a loud yell of "BELOW". Once down the pitches we headed to the Main Chamber and Mud Hall and then back out. All in all a much better trip than Bar Pot with no crowds. We made the surface with plenty of time to make last orders in the New Inn. Indeed the whole weekend was very enjoyable (except the epic journeys north and south).

We'd like to give a very special thank you to Simon, Sarah and Mark of Sheffield University for allowing us to cave with them and all the rigging duties Simon performed and to Mr Editor for the loan of 150m of rope and 20 bolts.

P.S. Every Committee member needs a small boy, especially on an expedition — Colin Masters

