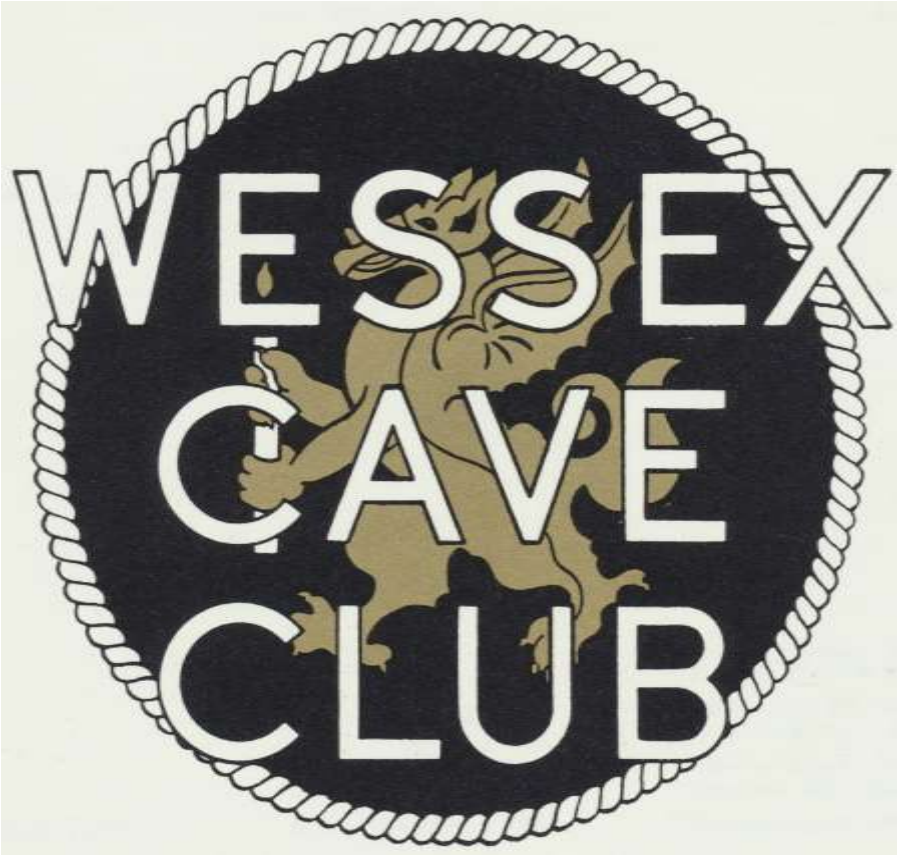

WESSEX
CAVE
CLUB

## FOREWORD

The recent fatal accidents have brought to the fore the question of just what claims are covered by the Club's Public Liability Policy, and your committee are examining the whole subject afresh. With this in mind, I thought members may be interested in the following extracts from the 'policy'.

"the Association indemnifies the Insured ---in respect of all sums which the Insured shall become legally liable to pay as compensation in respect of:-

(a) Bodily injury or illness (fatal or otherwise) sustained by any person other than a person who at the time of sustaining such injury is engaged in the service of the Insured.

(b) Accidental damage to property not belonging to the Insured.

resulting from the fault or negligence of the Insured or from defects in the premises or any equipment used by them in the course of the activities of the Club caused during the currency of this Policy anywhere in the United Kingdom.

Exclusions. The indemnity granted by this Policy shall not apply or include:-

1. Claims resulting from the use of tackle or gear (other than ladders, ropes, hand winches or other hand operated or carried equipment) or from the use of power driven machinery or vehicles for any purpose to which the Road Traffic Acts apply.
2. The explosion of steam plant.
3. Claims made against a member or guest, for and by members of their respective family.

4. Claims made by any member or guests for damage to their own clothing, equipment or other property belonging to any of them.
5. Claims resulting from wilful damage by the Insured.
6. Liability specially assumed under contract.

Memo.

(a) for the purpose of this Insurance, the committee Club, and Members and guests described in the Schedule as the "Insured" shall be regarded as being separately insured hereby, if a claim arises as between several parties.
(b) for the term "guests" shall be deemed to include visitors from similar Clubs or Societies and other visitors participating in the Club activities at the invitation of the Club or the Members.
(c) if any claim for which the Insured would be entitled to indemnity under this Insurance is made against any Landlord or Public Authority upon whose property the Insured are engaged, the Association will regard the said Landlord or Authority as if they were the Insured for the purpose of the indemnity granted by this Insurance.
(d) Casual helpers receiving occasional gratuities from the Insured shall not be deemed to be in the employ of the Insured for the purpose of this Insurance.

Limit of Indemnity any single accident - £50,000.

In addition the Policy covers all law costs awarded to any claimants or incurred in the defence of claim that is contested by or with the consent of the Association. One condition of the Policy is that all reasonable steps are taken to prevent accidents.

Headquarters.
Members have remarked on the improvements that have taken place at Hillgrove during the last few months. The place is much cleaner and more pleasant to visit. It is hoped that everyone using the hut and its facilities will co-operate in keeping everything as clean as possible. The major overhaul of Eastwater hut is well under way, but this has resulted in it not being available for use by members. The working party hope to complete their work over the Whitsun.

Swildons.
Christopher Hawkes, David Farr and Robert Lawder have now dug away part of the floor of the mud sump at the entrance to Paradise Regained series so that Robert is now able to crawl through on hands and knees. Under a thin surface layer of fine mud they found coarse gravel. A small pool of water has already collected on this gravel, so unfortunately there does not seem to be any drainage from in it yet, and bailing will presumably still be required from time to time.

Tackle.
Club members are still persisting in hanging ladders in an incorrect fashion with the short wires at the top of the ladders brought tightly together. There is really no excuse for this sort of thing as it does increase the wear on the ladder to a remarkable degree. It is suggested that any member who is tempted to do this sort of thing should go to Bristol (practically any evening by appointment) to spend theee hours or so repairing the damage to club tackle that has been caused in this way - it should cure them of this particular aberration for good! All our metal tethers have been lost stolen or strayed, so we have had to make a couple of new ones. It has been suggested that a member who fails to return these belays with the tackle should be asked to pay for them, and we will be keeping a closer check on the tackle from now on.

Hon Sec. F. Frost, 22, Wolseley Rd., Bishopston, Bristol 7.
Phone Bristol 44221.
Hon Treas. G. Williams, Cedarwood, Cadbury Camp Lane, Clapton-in-Gordano, Nr.BristoI.

We welcome the following new Members.

J.S. BAILY. The Thatched Cottage Bove Town, Glastonbury, Somerset.
C.H. HERBERT. 22, Brake Rd, Ashton Gate, Bristol 3.
R.F.F. HUGHES. 51, Sandown Road, Bristol 4.
A.F.J. MOORE. 31, Greenvale, Timsbury, Nr. Bath, Som.

Forthcoming Events.

G.B. Guest Days. May 9th-10th. July 4th-5th.

Club Supper.

All being well we hope to hold this event at Hillgrove early in July. As accommodation is strictly limited members interested must send their names to the Hon Secretary as soon as possible.

Journal

Members are warned that if they lend their copies to non-members who fail to return them that it may not be possible to obtain another copy. Most of the spare back numbers have now been given to members.

# GRADING CAVES

The practice of grading British caves by using a formal terminology to express assessment of difficulty was introduced by Norman Thornber in his first guidebook "Pennine Underground". He made an initial distinction between a Cave (C) and a Pothole (P) and then used the now familiar qualitative terms "Easy" (E), "Moderate" (M), "Difficult" (D), "Very Difficult" (V.D.), "Severe" (S), and "Super-Severe" (S.S.). This practice was adopted by A.H. and R.D. Stride when they wrote the Mendip section of "Britain Underground" in 1953 and by Nicholas Barrington in "The Caves of Mendip" 1957. None of these publications discusses the criteria used or the principles followed in making these assessments; so this article aims to describe what, it is felt, have been some past shortcomings involved in grading, with the hope that it will create discussion of the problems that arise.

Thornber borrowed his terminology, and probably the whole idea of comparative grading of difficulty, from the established practice of British rock-climbers. If this parent practice is compared with its spelaeological offspring, several important differences are noticed. To begin with, there is no equivalent in rock-climbing to Cave or Pothole. These qualifications seem intended to distinguish a hole which contains pitches or high-angled scrambling from one where no ladders are needed and the going is largely horizontal or easy angled. But the precise distinction is not clear. For example, Barrington terms Lamb Leer, with its pitches of sixty and sixty-five feet and relatively short lengths of passage between and beyond, a Cave; but Swildon's to Sump 1, with pitches of thirty-five and twenty feet and much greater lengths of passage, a Pothole.

In the adaptation to caving usage the term for the highest grade has been changed. Following "Severe", climbers use "Very Severe" with, since 1945, the further grade "Exceptionally Severe". Cavers use "Super-Severe". Why this change was made may be immaterial (although I think "Super-Severe" an ugly term), but with which climbing term is it to be equated? When this question was put to several philologists who were neither cavers nor climbers, each coupled it with "Exceptionally Severe". I can think of no S.S. Mendip cave which demands in any of its sections the finesse required to ascend an E.S. rock climb so, relative to climbing, Mendip caving is, in my opinion over-graded.

This may, however, be thought a quibble because caves are graded for cavers, albeit it might confuse somebody who is more familiar with climbing terminology. A more important question is "How difficult is a Difficult cave"? A probable answer will be "Harder than a Moderate cave". If a similar question were put to a climber he would, it must be admitted, give a similar reply but he would have a clearer picture of what "Difficult" means. This is not because the absolute values involved have been tabulated but because he knows the nature and limits of the criteria used; in other words, precisely how the assessment has been arrived at. On a rock climb each pitch, (a section between two successive belay points), is assessed on the technical merit of the hardest move or moves that it contains. There is no consideration of the factor of exposure, (how far the climber will fall if he comes off), how tiring the pitch is or how far the climb is from the nearest habitations. There appear to be no such recognised limitations of criteria in caving

practice; but the application of limits if a much more difficult task than in climbing, is indeed almost the whole problem as I see it, and will be discussed below. Before doing so, it is interesting to note a further contrast.

From what I have just said it will be evident that there are no hard and fast rules about technical difficulty itself in climbing practice. Assessments of grade must therefore ultimately be subjective but every attempt is made to reduce the subjective element as much as possible. Climbing guide books in Great Britain are published on a regional basis. In each region only one club publishes the one or more guide books required; for example, the Climbers' Club for North Wales. These are prepared by the ablest members whose standards of ability are well known to one another. Usually two such climbers will be assigned to write the guide book about a particular cliff or group of cliffs. In order to do so they ascend all known routes and when the task is finished climb elsewhere in the region to check their gradings against those of others. They are then in an excellent position to make a relative assessment of grades of climbs in their regional context. Further, close comparisons of grading practice are made between different regions and are found constantly in climbing literature. Thus, before recent revision, it was generally accepted that the Lake District climbs were slightly overgraded relative chose of North Wales.

Caving practice seems to show no instance of this careful comparison. In Nicholas Barrington's guide, Eastwater, St. Cuthbert's, and Swildon's have been graded independently by separate individuals. This is not to criticise the descriptions, or Barrington for calling upon the services of out-

standing authorities on these caves, but to point out that there does not seem to have been any prior discussion between them of the criteria involved in comparative grading; merely acceptance of ideas that do not appear to have been formulated in print. In addition, caving literature lacks any comparisons of standards of grading between say, Mendip and Yorkshire. How does Penyghent Pot (S.S.P.) compare with the Black Hole Series (S.S.P.)?

Assessing the grade of a cave by what are presumed to be present methods is more difficult than assessing rock climbs for two principal reasons. Firstly, the criterion of technical difficulty cannot be dissociated from the criteria of duration, or time and energy taken in travelling a distance underground. Secondly, once at the end of the cave, with the journey, as described and graded in the guidebook, completed, one faces the necessity in most instances of returning by the same route, and uphill too. Duration might be equated with the factor of exposure and its attendant nervous strain in rock climbing but, unlike the latter, it cannot legitimately be ignored because every step or wriggle taken beyond a section of a cave of certain technical difficulty is consuming energy that might be useful in that section on return. British climbing offers no adequate comparison with the return to the surface because once up most rock routes there is an easy path to the valleys. Thus, by an uncritical acceptance and application of rock climbing methodology, caves must be graded by synthesising assessments of technical difficulty with the factor of duration and the whole then multiplied by 2 plus 'A' to allow for the return journey, 'A' being the extra difficulty of returning uphill, a factor not at all easy to determine.

The application of these principles leads to many anomalies. Because of the "Duration times 2, plus A" factor, no part of a cave beyond a section of given grade can be other than that grade or higher. Swildon's Four itself is Easy, but such is its remote situation that it must be graded S.S.P. Thus there is no opportunity in caving for the climbers' practice of grading individual pitches.

To suggest a further complication, what proportion of the whole grade is allotted to each of these various criteria? There appears to be no general principle for Mendip. Both Sidcot Swallet and Stoke lane Slocker are S.C. in the 1957 guidebook; the former presumably because of the wholly technical difficulty of its squeezes; the latter because of the sustained awkwardness of its crawls - The Duration criterion being equated with the Technical - plus the sump. Many people might agree with the principle of this rule-of-thumb method - few caves are alike - but it is legitimate to ask them which of the above caves they consider to be the more serious proposition.

In this context, whilst the value of purely technical comparisons of different ladder pitches, sumps, wall climbs etc. is not questioned (if the limits of the particular criterion be recognised), I should doubt whether it is valid to grade a cave by its squeezes also. In a squeeze the ultimate limit is the size of the caver, not his ability; the corollary in rock climbing is the move that can only be made by a person with exceptional reach - the climber will not attach a grade to it. Tke Primrose Pot is not S.S. to some; it is simply impossible because, begging pardon, their heads are too big. No amount of training elsewhere will alter this situation.

In conclusion, it is suggested that the grading of caves is in some confusion. This is in part because of a lack of formulation, but chiefly because the principles of the British rock climbing guidebook with its single criterion for comparative grading have been adopted uncritically by cavers who try to work them using two or more criteria. It may be that clarification in the pages of this journal and elsewhere will readily settle the formulation problem, but if cave grades are to be properly explicable and comparable throughout the country, would it not be better to drop the whole idea of grading by multiple criteria and substitute a single and different one?

An assessment of the difficulty involved in getting a helpless person out of a cave, or part of a cave, would furnish this. To some extent this approach is artificial because grading a cave by it will involve assessments of the technical and duration factors, but these will now be rigidly framed as is the use of the technical criterion in rock climbing. Squeezes which, it has been argued, cannot legitimately be graded by the technical criterion, can certainly be graded in terms of the difficulty presented to people, who, themselves able to pass them, have to get someone else through.

This is not a revolutionary proposal; if adopted it would probably make little change to Mendip grading, the greatest effect being in the down grading of the shorter caves because of the reduced logistic problem. It may be thought unwarrantably gloomy but it would be effective inasmuch as beginners, or experienced cavers, approaching a new cave or caving region with guidebooks in their hands, will know how the gradings given have been arrived at, and precisely what they mean.

DEREK FORD

# THE FATAL ACCIDENT IN PEAK CAVERN

Press descriptions of the recent accident in Peak Cavern, Castleton, were better than is often the case, but nevertheless have left questions unanswered in many cavers' minds. It is hoped that this account will help to clarify some of the puzzling features. It is based on first hand accounts from persons present in the earlier stages of the abortive rescue operations, and personal observation of the later stages.

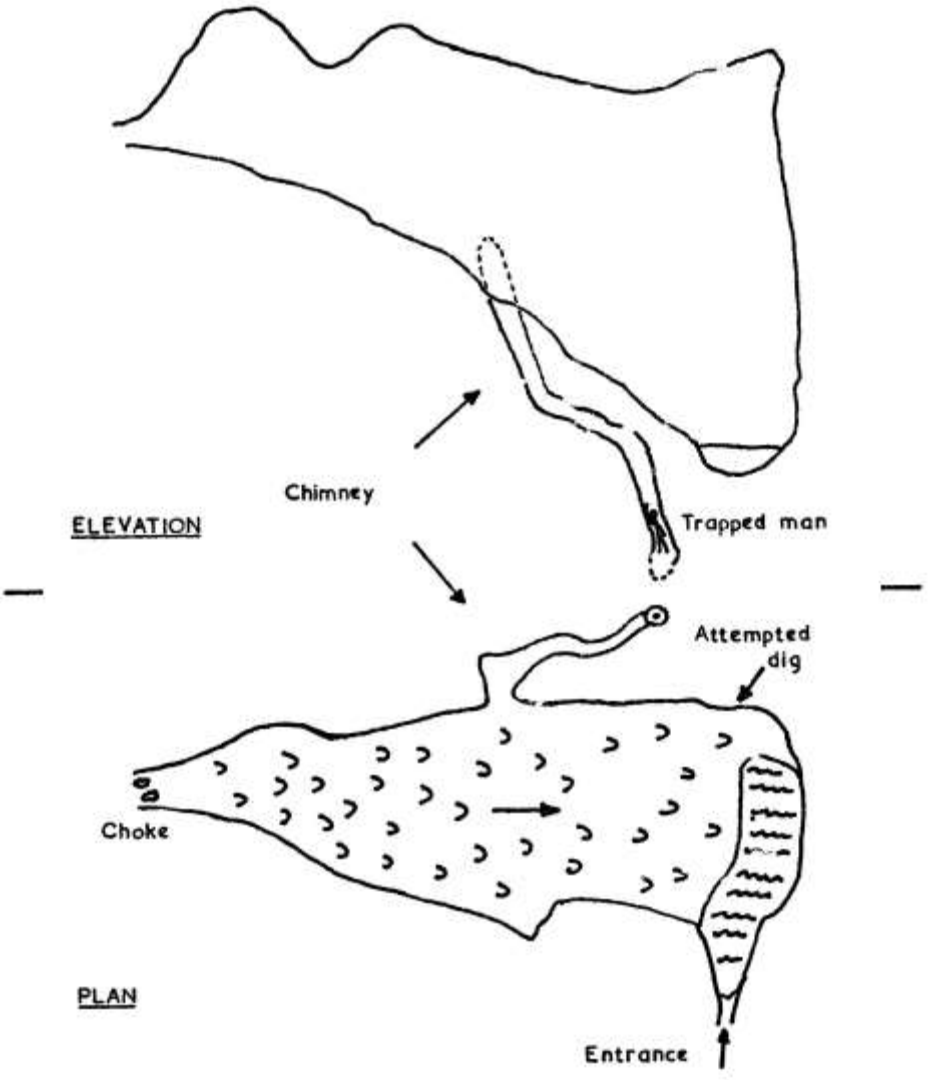
Much of Peak Cavern will be familiar to Wessex members. Beyond the tunnel-like commercial cave a short, wet crawl, the Muddy Ducks, leads into a sizeable and easy passage which continues into a fine master cave system. Running uphill from this link section is a meandering muddy tube which gives a long hands-and-knees crawl and ends in a choke. The latter was excavated in February this year and gives access to a high-level rambling series of muddy crawls and larger chambers with attractive formations. The series as known before the weekend of the accident ended in a high rift chamber (see the sketch) with a floor of steeply inclined flowstone dipping into a pool about four feet deep. There were two unexplored passages in the chamber: one, a crawl at the top of the flowstone, ending in a choke taking a draught; the other, a narrow chimney dropping steeply away from a slot in the side wall halfway down the flowstone slope. There was no draught in it. This was the chimney in which Neil Moss became trapped.

He had come up to Oxford six months previously with a little caving experience and a great deal of enthusiasm for the sport. He stood six feet three inches in height and was broad-shouldered in proportion. During the week preceding the accident he took part in the Oxford Caving Club meet in Derbyshire and stayed on in Castleton

when this finished to join friends in the local B.S.A. group who were visiting the new discoveries in Peak Cavern on Sunday, the 22nd of March. On that day he accompanied the first of two planned parties, entering the cave about 11 a.m. He was well-clad, may indeed have been wearing an exposure suit (there is uncertainty on this point) and was using a carbide lamp. When the party reached the final chamber Moss volunteered to descend the chimney. It was 2 4 p.m.. He went down on an alloy ladder giving an account of his findings as he went. After fifteen feet of steep chimney he entered a more gently inclined, narrow passage with an S-bend in it. It finished with an awkward angular turn into a very constricted vertical tube which was about ten feet deep. Moss wriggled down it with a struggle and found himself in a slightly larger place blocked with choke material - a dead end. He turned to re-ascend and immediately became stuck at his shoulders in the bottom of the tube. One arm was above his head, the other pinned by his side. He told the others above some sort of obstruction at knee-level prevented him from getting back down.

He was therefore encouraged to try to get farther up, but could not. The others were unable to give him any practical assistance until one of them had gone off and found an old rope* elsewhere in the cave. This was taken down the chimney to him by a small man, Peter Crabtree, who gave me an account of what occurred. Moss was able to pass the rope under his higher shoulder, or possibly both, and the party in the chamber began hauling on it. But it proved to be too worn,* and broke. Crabtree, who was directing hauling operations from the lower end of the S-bend, then noticed that his own breathing was becoming very hard and that Moss was wandering in his speech. This appears to have been the first intimation that carbon dioxide was building up around the trapped man. Crabtree had to retreat and a full scale rescue was set in motion. It was about 8 p.m.

## SKETCH OF THE FINAL CHAMBER & CHIMNEY.



Happenings during the ensuing thirty-six hours before the rescue was abandoned have been widely described in the Press and need not be repeated in detail. Moss, himself, was fully unconscious from about 6 a.m. Monday onwards. His breathing became progressively weaker throughout that day and could not be heard after midnight. Until about 8 p.m. efforts were concentrated upon getting a regular supply of oxygen to him and clearing the air. Probes were made by very small men when they were available, notably by Ron Peters who gallantly went down head first and managed to fix a second stouter rope round the trapped mar. Unfortunately it was of no use. In addition, a team began to dig into the right hand wall of the chamber by the pool where a crack extended towards the chimney, but it soon became too solid for manual excavation. After 8 p.m. the air was found to be a little clearer. Bob Leakey went down to assess the situation. He decided to give up attempts to pull Moss up, and instead asked for very small men to try to kick him down out of the squeeze, in the hope that there was room below for somebody to administer aid to him. Attempts to do this continued until 8 a.m. the following morning when a doctor pronounced Moss to be dead, but were no more successful than the earlier efforts in the other direction. It seems unlikely that all the efforts of rescuers from the outset moved the wedged body more than a very few inches.

Several features of this accident stand out and invite comment. Firstly, the nature of it was unusual, possibly unique, in caving history. People have died of exposure or in falls before but not by becoming immovably stuck in a squeeze and then poisoned by $CO_2$. Neil Moss's exploration may appear imprudent in retrospect but the venture was and is by no means an uncommon one. There is a certain logic in a large man being first to attempt narrow places. If he gets stuck then it is reasonable to expect that a 'ferret' will be able to help him, but not- vice versa. In this

case sheer bad luck plays a considerable part.

Secondly, how did Moss become so wedged in a squeeze that he had already passed through once that neither he nor anyone else could move him up or down? It has been suggested that the air became bad so quickly in the bottom of the tube that already when he turned to come out his physical strength and mental judgement were impaired by its effects. But Peter Crabtree's evidence suggests that it was not bad until at least two hours later. Certainly this case seems to dispute the oft- quoted. maxim that one can always count on being able to return through a squeeze if it can be passed in the first instance.

Thirdly, it may be stressed that there was a lapse of at least twenty-four hours between the call-out and the time that the air problem was, in part, overcome. The rescue organization cannot be blamed for the lack of an adequate purifying device at the ready if, as has been suggested, such a case had never been heard of before. Now that it has occurred and ended so unhappily, it would seem prudent for cave rescue organizations to furnish themselves with such an apparatus so that, if needed, it is available without delay.

Finally, some of these who took part doubt whether the hauling ropes were of use, although, once Moss was unconscious, there seems to have been no alternative other than Leakey's idea. Save where there is a completely straight and regular tube between a trapped man and the hauling point it is very difficult to get the pull where it is needed, in the centre of the cross-sectional area. It is much better to give the man a rope and let him pull himself. In the case in point the pull would tend to lift one side of the trunk relative to the other and so jam it tighter. This is tantamount to saying that once Neil Moss lost the ability to help himself he had very little

chance indeed. This may seem a harsh verdict in view of the unsparing efforts of so many others but it lends point to the call for a purifying apparatus that will keep a trapped person conscious and so able to help himself.

D.C. FORD
St. Edmund Hall, Oxford

* See special Note p. 247.

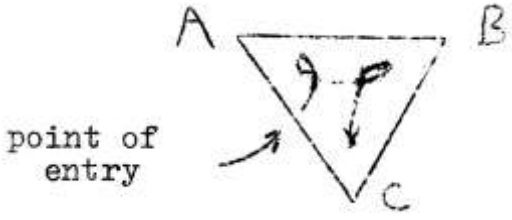
## PARKINSON'S LAWS FOR CAVERS, or, ANIMAL BEHAVIOUS IN CAVES. (contd.)

Following the publication in this Journal of the results of our preliminary study of the application of Parkinson's Laws to cavers our study of cavers psychology has been continuing. In this second article we shall describe some of the further discoveries that have been made.

First of all we shall consider the thorny problem of the seven stages in a caver's career, from the schoolboy with unlimited weekends at his disposal to the armchair ex-caver with none. In his preliminary discussion of this problem C.H. Kenney made the basic error of assuming that this process is a two-dimensional one, whereas in fact of course it is a three-dimensional one.

In the best traditions of the physical sciences we shall draw a triangle ABC in which the corner A represents cavers who spend so much of their time underground that they have very little time left in which to make a noise when on the surface; corner C represents cavers who spend so much time on the surface making noises that they have little or no time left to go underground; while corner B represents that valuable body of cavers who neither make noises on the surface nor go underground, but who are nevertheless invaluable to the club by making alloy ladders for corner A to use, by duplicating literary masterpieces such as this one, or by looking after the club's cash to mention but a few. The triangle is drawn on the page in such a way that gravity acts towards the

corner C, as shown:




The great advantage of this system is that the progress of a caver through the caving world can be represented by a locus, and by measuring his closest approach to the corners of the triangle his value to the club may be assessed.

In the diagram shown the road to ruin is shown of a caver who entered the triangle in the usual place midway along AC and then spent a few profitable years in the corner B (three years is the period spent by the majority of committee members in the corner B) and when last heard from be was plunging rapidly towards the corner C. In some cases the final plunge towards ruin in the corner C can be prevented by making the man concerned an honorary member or a Vice-President. In other cases the triangle will be found to be half full of water and the man becomes a diver.

The second problem we shall consider is that if the "super caver" who, without much apparent effort, will spend 18 hours in a cave without fatigue. The easiest way, of course, is never to go near the cave at all, and, by the skillful choice of audience and by the skillful use of understatement on matters with which the audience is familiar, to build up a legend. This method properly belongs to corner C and so cannot be used by an active caver because he might be called upon to give a demonstration which would be terrible.

The only true and painless method, so far as we have been able to discover, requires that the cavers concerned should indeed spend long hours in the cave, even though they might not be quite so long as afterwards described. The vital thing is to confine one's activities to a single cave, preferably one which is as unpleasant as possible. Then, by learning every foothold of the way, it is indeed possible to spend remarkably long hours underground with very little effort, and the illusion can be strengthened by occasionally taking in someone who has never seen the cave before, who will therefore be sorely distressed. The third method is actually to be a super caver, but this is much more difficult and therefore rare. Another gambit which is useful if it can be applied is to make out a "Leaders List", or "You are not good enough to come with me Jack!". This is a useful device to employ because it can ensure the safety of one's own retirement whilst making it as diff cult as possible for other, equally competent cavers, to go into the cave.

The third main problem which we shall consider is the old one to discover in what circumstances a caver will describe himself as a "spelaeologist". This curious word is sometimes used to describe the caver as a person, or sometimes in adjective form in the title of a club. Its meaning, so far as we have been able to discover, refers to "undeground", and so far as we have been able to find out, its use is largely confined to the bottom of the triangle described. This is not a general rule, however, for on occasion it has been found to occur more than half way up or even at the top. An effort was made by statistical analysis to correlate the use of this word with a tendency of the user to enter into "painted helmet" competitions, but without success. The problem is a

difficult one.

This brief paper should serve to indicate current trends along which spelaeopsychological research is being carried out. Other problems waiting attention include spelaeoparasitology or a study of the tendency of certain cavers to make handsome profits selling photographs of their fellows to newspapers, or by selling exposure suits to their caving friends at twice the price they gave for them, or by stealing other peoples equipment on cave rescues. In the meantime if anybody hears of a vacant chair at a University in spelaeohumbug I think that I am just the chap for the job. Box number ** Wessex Cave Club.

PHILLITAS

(Note. The author of the above article suggested I may be 'shot down' by those who feel they are caricatured by Phillitas, so I will shelter behind the orthodox "The views expressed are those of the author of any article, and do not necessarily coincide with the views of the Editor". Having said that I should mention that one of my many pet aversions is the helmet blazoned with the initials, etc., of the wearer. Could it not be an advanced case of our old friend the "Inferiority Complex". Editor).

# EARLY DAYS IN GOATCHURCH

Upwards of fifty years ago the then owner of Goatchurch had an idea (or so we were told) of turning it into a show cave. Anyway he fitted a gate, cut the steps, provided the handrail, installed acetylene lighting and gave an opening tea-party in the cave, to which my two brothers and I were invited.

Now, we knew better than to venture into what I now know as Aveline's Hole as we had been told that it was a bottomless pit, but the sight of the hole in Goatchurch was too much for us. We felt sure that there must be something worth finding down below and while eating our tea we decided to have a look.

A day or two later we set out, having made sure that no one knew where we were going. Acetylene bicycle lamps with some spare carbide and matches, our alpine rope and some chocolate was the outfit, and, of course, ordinary clothes.

In those days the stream was not impounded by the waterworks and ran in full strength down to its sink hole, but I cannot remember seeing in inside.

To get into the cave we climbed over the spiked railings alongside the locked gate, which was quite a squeeze. The rope was secured to the handrail and we set off down. Blindly following our noses led us to a large chamber and we looked around for the fossil bones, robber's loot, etc., that we had hoped for. A very cursory inspection shewed us that there was nothing doing in that line, so we barged on down.

After a bit we saw a notice "THIS WAY TO HELL" chalked or the wall. This had to be looked into, so I started along a passage, and, after passing a hairpin bend, found myself at full length pushing the smelly lamp in front of me and closely followed by the other two. The passage appeared to go slightly downhill, to be getting smaller, and to be running into earth rather than rock, so I began to wander whether our retreat was as secure as I should like. However, to my relief we soon emerged into a chamber with our passage continuing on a smaller scale on the far side.

My clear recollection of this chamber is that it was a rift not much bigger than required for the three of us with a fine stalactite curtain on which we, regrettably, scratched our initials and the date.

We then retraced our steps with, as far as I can remember, no difficulty in finding our way.

When climbing out over the railing my next brother slipped, and gouged a piece out of the inside of his thigh. Fortunately our first aid was successful, and we did not have to report the casualty.

The whole affair was a good example of what not to do, and I have often thought how lucky we were to get away with it.

I carried the clear recollection of the terminal chamber in my mind until I next went down a cave, which was forty odd years later when I set out to guide my two sons down Goatchurch. In contrast to the blundering success of the first trip it took several visits before I found the drainpipe, the chalked notice having gone; and to my

surprise the chamber at the end was quite different from my recollection of it.

I should like to be able to claim this as another "lost chamber", but am afraid it is just faulty memory. However, in that case I have the consolation of knowing that we did not, in fact, commit the crime of scratching our initials on the curtain.

P.B.LAWDER

## THE USE OF CAVING FOR YOUTH TRAINING

Although the Outward Bound Trust has not, to the writer's knowledge included caving in its training programmes so far, it is anticipated that this activity will be utilised for the leadership training of Engineering Apprentices.

It is certainly being used by many Scout Groups who endeavour to satisfy the incessant hunger for adventure by it's most active members.

Leadership training for youths requires sessions and practice in Observation, Teamwork, Example, Skill, Physical fitness and Mental alertness.

Caving amply fulfils all of these requirements as well as providing opportunities to explore and take an interest in Geology and Archaeology. The finding of some cave entrances requires skill in map reading too.

The training officer must, as in mountaineering and rock climbing, recognize his responsibility and the evident dangers that exist, and so teach himself and his charges to exercise proper care and attention.

The guidance and advice that can he given by an organization like the W.C.C. are of considerable importance and affiliated membership is strongly recommended. With the aid of such advice the following rules for caving have been made out as a guide to these youngsters before attempting to explore.

## RULES FOR CAVING.

1. Never go alone.

2. Clothing - old woollen underclothes, boiler suit, padded cap or helmet. Boots studded with triple hobs.

3. Suitable lighting equipment must be carried with spare batteries and bulbs, plus candles and sealed matches.

4. Do not have a heavy meal just before caving but take with you some boiled sweets or a packet of glucose tablets.

5. Check ladders and lifelines and ropes frequently. Never use old rope or rope which is more than two years old.

6. Keep close together but not so close that you get a kick in the face from the chap in front.

7. Always help the caver behind you and use a line even if you think you can manage without.

8. If you are stuck in a "tight" don't struggle. Just relax as though laying in bed and you will find yourself getting smaller and more able to slip out.

9. Not more than one at a time on a caving ladder or section of a fixed ladder.

10. Tell someone where you are going and at what time you plan to come home.

11. Always treat cuts and scratches immediately and have a hot hath and a good meal as soon as possible after a caving expedition.

12. Do not go caving if you have a cold or do not feel well. Keep fit and healthy

13. Don't stay in a cave too long. Remember you have still got to climb out again.

14. Most caves are very old and have a beauty all their own. Don't spoil or damage them in way, other people have worked very hard to find and dig them so that you can enjoy your caving.

C.A.T. BEAUCHAMP.

## BOOK REVIEWS.

LASCAUX PAINTINGS AND ENGRAVINGS By Annette Laming (Penguin Books, 1959) 208p., map, plan, sections, illus., index, bibliog. (Pelican A419)

This new book on Lascaux is almost the cheapest which has appeared on the cave but it is well illustrated and the designs are adequately described within a general framework of Palaeolithic cave art. It is well worthwhile for its own sake, too, for its cautious and sensible approach to the interpretation of cave art, which it is shown cannot be completely-explained by the commonly held theory of sympathetic hunting magic. No alternative theory is advanced but the author suggests systematic research which

should he carried out before the true meaning can he deduced. Particular importance is attached to the groupings of paintings, which it seems is more often deliberate than used to be thought; it is even suggested that some of these groupings may depict very ancient myths or legends.

There is an interesting discussion on the age of the Lascaux paintings. Though their perigordian style would place them at about 20,000 B.C., carbon dating of associated archaeological remains makes them 7,000 years younger, or round about 13,000 B.C., a date which is supported to some extent by the fauna of the time.

T.R.S.
18.4.59

ANNALES DE SPÉLÉOLOGIE, Vol. XII, 1957 (1959)
(Soc. Spél. de France, 74, Rue de la Fédération, Paris, 15)
80p., maps, plans, sections, illus., bibliog. About £1.10.0

This volume includes an important paper (28pp) by Phillipe Renault on the enlargement of caves; that is on the stages of their history which succeed the formation of the simple bedding caves and passages. He describes the two principal processes at work as collapse and subsidence. Collapse (eboulement, or what the Americans call breakdown) of rock forming the roof of a chamber is determined principally by the mechanical strength of the roof, whereas subsidence (affaisement) of a cave floor is a gradual process resulting from solution of the rock below. In many cases one stage follows the other, the collapse debris slowly setting as running or even trickling water reduces it. Each process is discussed in detail and the effects on it examined of the geological structure, mechanical properties

(regarding the rock as an engineering structure), water and the local climate.

Another paper describes the artificial production in the Moulis underground laboratory of some of the less common calcite formations.

T.R.S.
25.3.59

CAVE SURVEYING IN SOUTH AUSTRALIA By R.T.Sexton
(Cave Exploration Group (South Australia), Occasional Papers No.l, 1958.)*
21p., plans, sections, illus., bibliog.

South Australia is the possessor of a number of good cave surveyors who have developed a technique particularly suited to the nature of their caves. Most of these occur in recent porous limestones where narrow passages are uncommon and the many vast collapse chambers present problems of their own. A tripod-mounted miner's dial, incorporating a gravity controlled clinometer, is used for the traverse, and the stadia hairs in the telescope enable series of distances to the walls of a large chamber to be obtained rapidly by tacheometry. The size and dryness of most South Australian caves enable the traverse to be plotted immediately underground so that the detail can be sketched in round an accorate framework on the spot. To facilitate this drawing a special slotted protractor has been developed by which the horizontal and vertical equivalents of the measured distances can be plotted directly. The C.R.G. standard symbols have been adopted, with some additions.

Three sample surveys are included as folding plates.

T.R.S.
24.3.59

*( Obtainable from the Group,c/o S.Australian Museum, Adelaide)

THE SPRINGS OF ADVENTURE By Wilfrid Noyce
(John Murray, London, 1958) 252p., illus., index, bibliog. About l8s.0d

This book is a study of the reasons, often subconscious, why people climb or cave or explore - the physical enjoyment of healthy action, self-proving by doing something physically unpleasant, the charm of achieving something large and rarely done, a love of contrast, escape from oppressive civilization, companionship, the furthering of science, or even 'fame'. Noyce suggests that, whereas mountaineering began in the last century as a science and rapidly developed into a sport, caving is changing steadily from a pure sport to more and more of a science.

The author has climbed in many parts of the world and was a member of the 1953 Everest expedition.

T.R.S. 26.3.59

AUX PAYS DES EAUX FOLLES By Norbert Casteret
(Perrin, Paris, 1958) 246p., section, illus. 15.0d

"Au Pays des Eaux Folles" has the same merits and faults as its predecessors, and is good reading for any caver.

Part I deals with the exploration of the Grotte de Cigalere, summarizing Casteret's early discoveries there, made with his wife before the war, and describing in some detail the Franco-Belgian expeditions of 1953 and 1955. The 1953 party penetrated a total distance of 3 kms. and climbed 16 of the waterfalls that had been impeding progress. In 1954 a camp was

set up at the foot of the 7th waterfall and the expedition reached the head of the 25th, nearly 5 kms. from the entrance. Flooding delayed the return of the exploring party who were trapped not far from the entrance and though the explorers all emerged safely one of the younger rescuers was drowned. Casteret joins the 1955 party (in the previous years he had been engaged at Pierre St. Martin) and a camp was set up 4 kms. inside the cave. From there yet another waterfall was climbed 60ft high, but only a hundred yards or so beyond it the passage closed in a sump.

The second half of the book consists of anecdotes, some of them told for the first time, all on the theme of cave watersumps, cave diving (and its accidents), water divining and water tracing.

The cover picture is one taken by an Englishman in Derbyshire but most of the other illustrations are of a low standard. There is a sketch elevation of the cave (pp.72-3) but there is no reference to it in the text and one only comes across it after reading many pages where it would have been useful.

T.R.S.
8.3.59.

*THE FATAL ACCIDENT IN PEAK CAVERN.
Special NOTE.

At the inquest on May 6th it was stated that the rope which was f' diameter, was for use as a hand line, and was not a rope which would normally be used for hauling. It broke three times.

EDITOR.