THE AMATEUR IS A USEFUL ASSET TO SPELEOLOGY

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AIM

The aim of this paper is to demonstrate that the amateur speleologist is of considerable importance in the development of Speleological Science. In fact it will be shown that without his assistance, the accumulation of scientific knowledge of caves would be severely retarded.

DEFINITIONS

Before starting out to prove this statement, it is necessary to define the terms used so that there will be no misunderstanding caused through ambiguity.

For the purpose of this paper, Speleology is defined as a complex amalgum of disciplines embracing the branch of any science which deals with the properties of natural cavities in the earth's crust or the inhabitants of those cavities.

From the above definition, when mention is made in the paper of 'the scientist', the person referred to is anyone with a genuine scientific interest in caves or their contents, who has had formal education in one of the Speleological disciplines. He, then, is the 'professional' even though he may receive no remuneration for his labours, as opposed to 'the amateur' referred to in the title of this paper.

The amateur is a member of the proletariat of caving society who has had no formal training in the sciences but whose interest in caves has been created by any of a variety of non-scientific stimuli; physical exercise, the spice of danger, escapism or sheer idle curiosity.

Between the black and white of scientist and non-scientist, there are a number of people who might be described as grey. It is not proposed to deal with this category of person here, not because their contribution to speleology is insignificant, but because, for a simple person like the author, they are an unnecessary complication which does not affect the validity of the thesis.

INTRODUCTION

There has been, in the past, a tendency for the scientist caver to view non-scientists at best somewhat patronizingly and at worst as a form of vermin which slowly and inexorably reduce all caves to smooth walled sewers of no scientific value. The eventual outcome may be as bad as is feared, but

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the deterioration can be slowed down and much additional data gathered if the reserve of energy available in the form of the amateur caver were harnessed and used efficiently. To demonstrate this, it is proposed to deal with the subject in the following manner:

Firstly, to outline some of the problems which the scientist meets in his quest for information;

Secondly, to demonstrate that lack of knowledge rather than wilful destructiveness is at the root of many of the amateur's transgressions; and

Thirdly, to suggest a solution which could help to correct the problems outlined in parts one and two.

These arguments will demonstrate the place of the amateur in speleology and how professional and amateur can work together to their mutual advantage and for the benefit of speleology as a whole.

THE PROBLEMS OF THE SCIENTIST

In speleology, there are a number of problems confronting the scientist in his quest for data which are not always present in other fields. For example, it may be perfectly satisfactory for the geologist to wander about the countryside collecting rock samples on his own, though I understand he prefers to employ students to carry his specimens, but if the speleologist is to gather his specimens and samples, he will need assistance before he can even enter all but the simplest of cave systems. In all probability he would prefer to do his field work in company with a fellow professional of the same discipline, but, when one considers the breadth of speleology and the limited number of speleologists, the chances of achieving this are very poor.

Time, closely allied with chance, is another problem. Looking for caves is like looking for a needle in a haystack and a great deal of time may be lost before underground investigations can even begin. The most fertile field for the speleologist is the virgin cave and these do not grow on trees, if you will pardon the metaphor. Not only should the cave be in pristine condition for best results, but, depending on the subject being investigated, it must also be the right sort of cave. A dry cave, no matter how full of bats, is useless to the hydrologist and a smooth walled river cave is of little use in the study of crystal formations. Therefore, the chances of a scientist discovering a new cave containing the conditions which he needs are reduced to perhaps once or twice in a lifetime. Science cannot wait that long. Many searchers are required and the more the merrier.

As in geology, before any new discoveries can be fully written up, their location must be surveyed and mapped with at least reasonable accuracy. Only in this way can perspective be obtained and the true import of the discovery revealed. There will be a requirement therefore, to survey caves and no matter how learned the scientist, he cannot hold both ends of the measuring tape at once. He will need assistance for this task as well.

An essential for the progress of any science is free interchange of knowledge and ready availability of existing documentation. Speleology although a broad field, is restricted in the sense that it interests a comparatively few people. Because of this, public libraries and similar institutions do not contain a great wealth of information of use to the speleologist. What is needed, and what in fact have been established wherever there is active interest in caves, are societies and caving fraternities of one type or another. In order to be viable and worthwhile, these societies need office bearers who need little if any scientific knowledge to carry out their tasks effectively. Though we often find the scientist officiating in various capacities, these jobs take time and detract from the most efficient use of his hard earned knowledge. These tasks are best fulfilled by amateurs.

THE PROBLEMS OF THE AMATEUR

The problems referred to now will be those caused by the amateur as well as those which confront him.

There is, of course, a 'ratbag element' among cavers as in any other field of human activity. Coping with this problem is beyond the scope of the paper and apart from personal example and active discouragement of vandalism, probably little can be done to overcome it. It is ventured to suggest however, that most damage to caves is caused inadvertently through accident. We cannot avoid the latter, but much can be done to alleviate the former. Lack of information and, what is more to the point, lack of knowledge of how to gain information, is the amateur's greatest problem. In the following section a method of overcoming this problem will be suggested.

The problem of maintaining interest in the amateur is one which is perhaps not often considered. Some schools of thought would propose that the amateur should be discouraged rather than encouraged. The thesis proposed here is that the amateur is a useful asset to speleology and it therefore follows that effort spent in maintaining his interest would be a sound investment.

The number of cavers, both amateur and scientist, who are active members of caving clubs and societies are few when compared with those who have enjoyed caving in the past but have drifted away to other interests. Those drifters represent loss of capital and most of them drifted because they became bored. Having crawled through a few dozen caves, all the others are much the same from the point of view of the superficial observer. What is needed is to open the eyes of the tyro, to show him the wealth and diversity of caving and provide him with the wherewithal to continue to widen his horizons. Above all, he needs an interesting and worthwhile task to do and the knowledge of how to do it. This will keep him out of mischief and ensure that he does not commit sins through ignorance; more importantly, it will maintain his interest in caving.

THE CURE

We have discussed a number, though by no means all the problems confronting the professional and the amateur speleologist. Now let us see what can be done to solve these problems. There is no panacea for all these ills, but the cure suggested could go a long way to giving speleology more vitality with which to face the future. When the problems of the amateur and the scientist are considered together, the two sides of the argument are seen either to generate each other or to be counter-balancing. The answer then lies in unification of the two sides to cancel out the opposing forces and reach a state of equilibrium.

The scientists' problems are basically caused by two things: the need for assistance; and the ignorance of the amateur. The amateurs' problems are caused by the need to be usefully occupied in an interesting task and by the need for information. The scientist needs labour, the amateur needs information. Conversely the scientist has the information and the amateur has labour to offer.

In the past there has been haphazard use of the resources available. The scientists have clamoured, often unheeded, for people to go on trips to gather water samples or dig for bones. The amateurs have attended occasional lectures and read what literature is available in the layman's tongue to broaden their knowledge. This process is primitive and can only maintain speleology at subsistence level. What is needed is the proper organization and effective use of the information and manpower available. It is suggested therefore, that societies, as controlling bodies, should produce and follow regular training programmes in various branches of speleology. They should enlist the assistance of the scientists in their group to give a series of lectures designed to educate the amateurs in the basics of

various branches of speleology. The number of lectures and their content will vary according to the subject, (five or six might be a reasonable number spread over three months) but they must be pitched at the layman's level, they must be made as interesting as possible by the use of slides, specimens and other training aids, and they should be designed to teach the amateur those things which will make him a useful field assistant and fire him with enthusiasm to learn more.

When a series of lectures is complete, or even at appropriate stages during the series, field trips should be organised to consolidate the theory taught and demonstrate its practical application. Not all the subjects will interest everyone, and that is as it should be, but it could be almost guaranteed that the scientist would reap, as a reward for his labours, sufficient enthusiastic and capable field assistants to enable him to carry out his work effectively. In any case, the results will be directly proportional to the effort invested.

CONCLUSION

The paper has demonstrated that the scientist has problems which can be largely solved by the provision of a semi-skilled labour force. The scientists and their accumulated knowledge are the life blood of speleology and it has been shown that the amateur caver can supply, with training, the labour force which will keep the pulse of speleology throbbing. Without the amateur, speleology would die or at best subside into suspended animation. With the amateur, developed and guided by the scientist under the auspices of the societies, speleology can develop into a dynamic science. It is therefore submitted that the amateur is a valuable asset to speleology.

DISCUSSION

John Dunkley, S.U.S.S.: I think this paper is probably one of the most significant I've heard at an A.S.F. Conference and also one of the most significant ones I've read, because I think you have put your finger right on it when you say that there is a tendency for scientists to think that their non-academic fellows aren't terribly qualified to help them. At the same time I think it's also true that a lot of unqualified people are rather hesitant to undertake any work in co-operation with some of their more qualified

colleagues because they don't know where to start. I'd rather hoped when I saw that this was going to be a paper at the Conference, that we might be able to have a few people here who could give a supplementary paper on how the amateur can be of assistance in various branches of speleology. I do rather hope that we might be able to get some discussion going and although we haven't got the papers at this Conference or the personnel to present them, I hope that in the future we might have a few more papers to carry your lecture on in greater depth in particular sciences.

Roly Webb: I rather felt that various individuals have made efforts in various directions; not only this but most things that happen in speleology are extremely haphazard - speleologists are extremely haphazard people. We were speaking about poor old Edie Smith today, she was one of the greatest of these haphazard people. She hated any form of formality and so forth. I don't know whether we, as her children, have inherited or whether it's just inherent in human nature, but it seems to me that if only we could get organised, not necessarily as a military body, but at least get organised in some fashion or other we could do so much more in the limited time available to us.

Elery Hamilton-Smith: If I could just take up John Dunkley's suggestion: firstly, to comment on what I think is one of the real barriers and problems here, is the ineptness and incompetence of certain scientists. And I suspect that there is a very major area of problem on this side rather than on the speleos side.

I've been involved in a very large number of moves where various speleo societies have tried to make use of scientific personnel. Some of these have been extremely successful and some of these have been extremely unsuccessful. Speleology is, in itself, a fairly highly specialised science, and the fact that a guy is a biologist or a geologist or something doesn't necessarily mean he knows anything about speleological science and it may be that he's a bloody sight more ignorant than 90% of the amateurs. He's also quite likely to be a peasant-type person in regard to ethical issues or conservation issues: I could name one certain well known biologist who cleaned up about two-thirds of the population of Victoria's rarest bat in one fell swoop with one cartridge, and probably cleaned up about 2000 juvenile Horseshoes with the next few cartridges. I could continue but I won't - it makes me sick.

So I think there's a problem here and we have got to think in terms of a real two way system. We can contribute to helping the scientist adapt his special know-how to the special issues of speleology.

Just picking up briefly on John's point, I won't stay on my feet too long or it will be a second paper already: the amateur has made an enormous contribution to cave biology in Australia already. Most specimens have been collected by amateurs - I don't quite know where Roly rates me in this (Roly: Dark grey!). In fact, apart from the work I've done, a very large number of people, some of them are here today, have collected a very large number of specimens, many of which have been pretty significant and valuable specimens. There has been an awful lot of donkey work go in on some of these by various speleos and this certainly, is one major area of co-operation.

Alan Hill, C.E.G.S.A.: I feel that Roly has created a slightly new line of policy with this talk. I was impressed by it myself, but I do feel that to this point in our discussion we have been generalising a little bit. I was wondering if we could bring the discussion at this stage to what positive steps we can take to bring this about. We are looking for a more direct interchange between the scientific people and our own people. C.E.G.S.A. does try to follow a little bit of this policy line: in our general meetings we try wherever possible to get scientific people along to give us talks - we ask them to us - one at a time. Out of this we get most interesting, learned people. They realise they're amongst amateur types and they can speak down to us and we can communicate with them. This is only one way. I'm wondering if there are any other ways people could put forward here that we could take advantage of later on. Another effort that C.E.G.S.A. put over, with very mixed success I'm afraid, a few years ago: we tried to introduce a summer school at one of the camps over a period of several weekends not too far out of Adelaide, where we tried to bring in authorities on a mixed variety of scientific and topical subjects on caving. Unfortunately it didn't have the following we would have liked but there must have been some success out of it.

Now could I ask if there are any other positive ways that we can help to create this interchange?

Ted Anderson, S.U.S.S.: One thing that came to mind out of what Roly has said was this business of field days and practical aspects of this, apart from the lectures and what not. I have myself found in the past that when you ask some scientific person to come along and give a lecture on his particular field of activity, there is often a lot of questions as to how we speleologists should conduct ourselves in regard to this activity when we are in a

cave. What Elery has said is that very often the chap himself is very ignorant of the practical aspects of caving anyway, and he finds he very often can't answer these questions because he's not aware of what already goes on on caving trips and in caves, and therefore can't very easily make suggestions for improvement or otherwise. I think the important aspect in this instance is to have field trips and bring the person along, which provides the opportunity for interchange both ways. It's very much better if the scientist can see what we are doing, the way we go about what we are doing and at the same time take the opportunity to point out the errors and make useful comments. I think this practical side of it is not only likely to produce better results but it has the advantage of attracting possibly more of the cavers along. I know that S.U.S.S. have very often had difficulty in getting sufficient numbers to this kind of lecture because many feel they are just not interested in this particular branch of science, whereas if they happened to be on a caving trip anyway, there's a far better chance of them picking up a bit of additional knowledge.

Roly Webb: The trouble with the odd lecture that we have had in the past is that it's been isolated - we have had only one on any particular subject in a year, perhaps two or three. There has been no follow-up to it, and the lone man coming along hears a lot of stuff, some of which he finds interesting and some of which goes over his head. Then, because there is insufficient information he can put this to no good use and in the due course of time, sometimes very short, he forgets it all. So we're now back to square one again. The scientist has gained nothing from the effort he has put into his lecture - except perhaps a cup of tea - so we haven't achieved anything other than that time has passed. This is why I suggest that the scientist, and we needn't be to hard in our definition of "scientist": any of you blokes with a B.Sc. and doing active field work in a scientific fashion could look at yourselves inwardly on this, and could gather under your wing a group of people and train them. And use them. Whilst you might find some cavers that are not interested because they may have had insufficient experience or may be purely interested in the physical side of the sport, you will find some who are, and although a lot of this is just going to flow off the backs of some people like water you're going to get something back for your efforts. You're going to get some value out of the work you've put into it, and you will then be able to carry out your own studies more efficiently. You can't, obviously, hope for a 100% success or even 50% but you are going to get some, which is better than none, which you are getting at the moment.

Glenn Hunt, S.U.S.S.: I want to extend what Roly has said and what Elery has said. Most people have been talking about direct co-operation between the scientist and the amateur. However there are several cases in which the amateur makes his casual observations on a cave, records these, and the scientist gets to know these through society journals etc. We can't underestimate the importance of this. For instance, S.U.S.S. was fortunate enough to have for a member for a while Ed. Ongley, a geomorphologist, and John happened to take him into Serpentine Cave at Jenolan and he was so excited by the meandering of the passage that he wrote a paper, and a very high powered paper at that. But he wasn't satisfied with just Serpentine, he then proceeded to ask around amateurs to see if people could tell him where further examples of this sort of thing occurred, and he was lucky in a couple of instances. I think that this indirect filtering of information to the scientist from the casual observer or amateur caver is very important. So this business of educating the amateur into observing certain features of caves in which scientists might be interested, or what is more important to then go and record these in trip reports or something like this. I think this is one of the main fields of co-operation between the amateur and the scientist.

Roly Webb: Yes, you've touched on a subject which I didn't touch on and which I think is vital though rarely happens, and that is trip reports; and not just "We went there, we went in, we came out, and the following people were present". Trip reports to be of any use should be as detailed as possible and should record everything you see whether you think it's important or not. Sooner or later a scientist is going to need some information on a cave on a certain subject and he's going to delve through papers and, lo-and-behold, he finds that you've written something of unique value to him. Whereas otherwise its just lost and wasted and you have wasted your time except that you might have got a bit of exercise.

Elery Hamilton-Smith: Perhaps if I could add another comment here: there is a body called the Cave Research Foundation in the United States which is in fact a pretty high-powered research organisation, but contains a number of rank amateurs on Roly's definition, but nevertheless they have turned out in the last few years an incredible amount of really top-level scientific work. They have a publication which is very pertinent to the present discussion and which I think any society who is interested in the research side of things should see. It's, I think, called "An Integrated Cave Research Programme". It outlines the total field of research possibilities in speleology in a very clear, simple and useful way. It would be well worth looking at at society level. These sort of publications don't seem to be readily

available in Australia. There are three special bulletins put out by this organisation and this, I think, is No. 2.

Roly Webb: As a suggestion, I think it would be a great idea if A.S.F. were to organise the importation of a quantity of booklets of this type which are of great use, and which people don't know about, and have them available to people as and when they want them. It's the sort of investment on which we couldn't very well lose out.

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