NEWCASTLE UNIVERSITY SPELEOLOGICAL SOCIETY

Guide for Prospective Cavers

C O N T E N T S

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Despite the title of this Handbook, the editors hope that it will benefit not only prospectives but all people interested in speleology, including the more experienced.

For a long time it has been felt by the members of this society that a simple statement of the more basic knowledge which every caver should have, was desirable. We assume that all "experienced" cavers MUST of necessity be familiar with the contents of this publication, however it will do no harm for them to read it all the same.

It cannot be over emphasised that this is only the most basic introduction to caving and will only be of real benefit if used to supplement, not replace, personal supervision by an experienced caver. If you are interested in learning about caving and are not already a member of a club, we most strongly urge you to contact one of the established clubs. They will arrange for you to attend trips designed to give you the RIGHT kind of training. This is the only way of your being sure that your visits to caves wont be permament.

The editors wish to take this opportunity of expressing their thanks to all those who assisted in the preparation of this handbook. In particular we would like to thank Allan Fenwick and Noel White who are partly to blame for the contents. We would also like to extend our thanks to the University of Newcastle Students Association for the use of their facilities.

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in the formation of caves suggests that an efflux of water is well worth investigating; it has also prompted the tracing of the path of water while under the ground. In addition since the above process is augmented by collapses of the rock, any depression in the ground (or "sink") may indicate the presence of a cave.

Over the years, techniques have been developed which minimise the dangers incurred in caving. In more recent times, with the increase in popularity of skin-diving, even caves flooded with water have been explored. As well as exploring caves, speleologists have mapped some of the larger caves. This has been carried out by orthodox surveying methods or more recently using electronic apparatus to eliminate the cumulative errors inherent in the old method.

A certain amount of information of a scientific nature has been assembled on caves; for example, the temperature cycle in a cave, humidity and atmospheric content (particularly with regard to the proportion of carbon dioxide). On the lighter, and certainly more entertaining side, many speleologists are extremely keen photographers, and for good reason, since the scope for subjects is virtually inexhaustible.

Now the above activities are, to a large extent, for the extension of knowledge about caves. The fact that the information may be used in wider fields is only of secondary importance to cavers. On the other hand, there are some branches of science which, though they are studied in caves, have no real connection with speleology as such. An example of this is the study of life forms which spend part or all of their existence in caves. In particular, much work has been carried out in the research into bats and an extensive bat-banding system has been initiated which enables their migratory habits to be studied. In the field of archeology, finds of the remains of aborigines along with their implements, evidence of habitation, etc. have been made. In addition the remains of certain animals, now believed to be extinct, have been found.

I have endeavoured in the above to list briefly some of the activities that may be enjoyed in speleology as distinct from caving. These activities are to be encouraged, both for the furtherance of knowledge on caves and the prestige of the society. However, though the above may be given as the ostensible reason for going caving, in most cases they do not furnish the real reason.

Speleology, like many pastimes, has it own brand of mysticism. Just as no doubt heights have their fascination for the mountain-climber, the speleologist is entranced by the absolute quiet and darkness of caves, and their great beauty is a lure to return again and again.

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The principal aim of every speleologist should be the preservation of caves. Without it all other aims become meaningless. Whatever your reason for being interested in speleology, be it sporting, scientific or aesthetic, conservation must always be your first consideration.

Caves require protection from a) damage resulting from direct human interference, and b) damage resulting from natural effects caused by human interference.

Item a) means in simple terms that caves must be protected firstly from you, and secondly from other people. Your contribution towards protecting caves from yourself is to take great care to avoid damaging them in any way either physically or aesthetically. This means avoiding breaking or dirtying formation, walls or floors, or leaving any litter or other evidence of your having been there. Ideally we should aim to leave a cave totally unaltered by our visit. It sometimes happens that progress through a cave is blocked by formation. The most careful consideration must always be given before removing the obstruction, with a view to its preservation, perhaps by finding an alternative route. Under no circumstances should formation be removed from a cave for private collections. There is NO excuse for this. The argument "if I don't someone else will" as an excuse is logically invalid and morally repulsive. You do what is right and encourage others to do the same.

To prevent damage caused by other people avoid talking about caves and caving where you are likely to be overheard. Unfortunately a considerable proportion of the community has no interest in conservation, and many are wantonly destructive. One has only to visit any cave widely known throughout a locality to see conclusive proof of this. The compulsive name-writer also makes his presence obvious, some have even taken pots of paint with them to Ayers Rock expressly for the purpose of immortalising their names in six-foot letters across its face. The type that would do that has no hesitation in

doing the same to caves, most of which are by comparison readily accessible.

Never reveal the location of a cave to anyone but experienced and responsible cavers. Do not even tell your parents or your best friend. You may be able to trust them, but can you trust the people they tell? What they do not know they cannot tell others. This does not mean be secretive, but for most purposes the name of the nearest large town or the district should suffice.

Do not tamper with nature. A cave is a delicately balanced environment, try to minimise the extent to which you disturb it. It is <u>not</u> advisable to open new entrances to a cave, even if the existing one is dangerous. New or enlarged entrances increase and alter patterns of air circulation with the result that the cave dries out, and a dry cave is a dead cave. It is far better to restrict your own access than to "kill" a cave by providing too much access to air. The drying out of a cave results in the eventual loss of most of the formation, as well as destruction of the biological environment. Remember always that any damage can never be repaired, and under the most ideal conditions may take centuries to become hidden.

The points given above are some of the most important aspects of cave conservation. It is only right and natural that your interests should also extend to conservation above the surface. Above or below the surface, the entire subject of conservation can be summarised in two simple rules -

1. Do not damage or destroy <u>anything</u> unnecessarily,
2. When you leave a place, leave it with no sign of your ever having been there.

Obey these two rules and no-one will have grounds to criticize your actions.

CAVE SAFETY

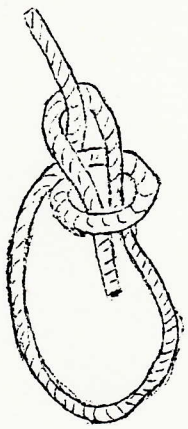
The history of Australian caving has been remarkably free from accidents. Since these days more difficult caves and caving areas are being visited by Australian speleologists with greater frequency the Australian Speleological Federation (A.S.F.) has prepared a "Code of cave safety" with a view to help maintain our good safety record. However cave safety is still YOUR responsibility.

Our club adopts the A.S.F. code explicitly, feeling that it is not only good common sense, but down-right necessity to do all possible to render caving safe and hence enjoyable. Some of the more important points of the A.S.F. code, which the prospective caver should be aware of, are set out below.

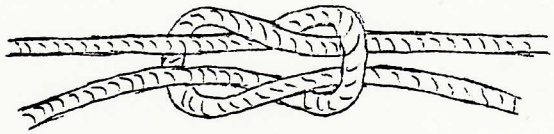
1) No person to go caving alone
2) Two totally independent sources of light (not matches) to be carried by each person
3) Do not uncap carbide lamps in confines
4) Suitable clothing (one-piece boiler suit) and helmet to be worn underground
5) Don't take underground anyone whose ability is affected by drugs or LIQUOR
6) Each caving trip to be disciplined by an experienced and responsible trip leader
7) Constant inspection to be made, and care taken of, safety lines, abseiling ropes, cable ladders, etc. None of which should ever be used for any purpose other than that for which they are intended (e.g. Don't tow vehicles with them)
8) Any person ascending or descending a pitch greater than 30° by means of a cable ladder should be attached to a safety rope controlled by a properly secured belay man. No more than one person to be ascending or descending a pitch at any one time.
9) Suitable knots to be used to attach safety lines, abseiling ropes etc. (Note: use at least one half hitch on tail rope of a bowline knot)

One of the requirements for full membership in any caving club should be proficiency at tying certain knots. In our club every prospective must be able to tie the following:

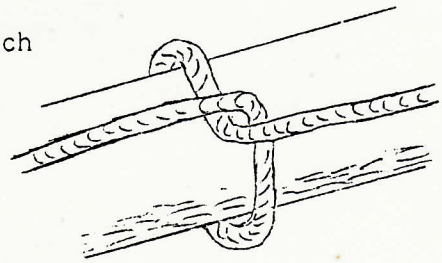
(a) Bowline



(b) Reef



(c) Half Hitch



The golden rule of cave safety is to enter a cave only if it is safe to do so with the equipment which is on hand, and never to enter a cave which appears intrinsically unsafe, e.g. loose rock walls or ceilings.

Foul air (always check with a naked flame, and if in doubt, stay out).

THE CAVERS CODE OF ETHICS

as set down by the Australian Speleological Federation

Introduction:

This code, which N.U.S.S. fully supports, is a formulation of what any responsible person would take for granted. The rules are designed to make caving more enjoyable, and to eliminate sources of friction.

Public Relations:

Clubs shall not engage in any occupation which is contrary to law or public welfare.

They shall uphold before the public at all times the status of speleology and the reputation of the Federation.

They shall, in reporting their work, avoid and discourage sensationalism, exaggeration and unwarranted statements.

They shall reduce to a minimum the time during which they appear in public in caving dress.

They shall treat guides and other officials of tourist caves courteously and respectfully and uphold their dignity before the public.

They shall leave their camp sites at least as tidy as they find them, taking care to extinguish camp fires. When camping near others, they shall carefully obey the established rules of good camping conduct.

Behaviour on Properties:

They shall seek permission from the owner or guardian before entering private property or caves reserves.

They shall close all gates on properties or reserves after use.

They shall take care to avoid interference with stock or crops.

They shall not, except in cases of emergency, presume on the goodwill of owners in dry areas for supplies of water. Prior arrangements must be made.

They shall, where a cave entrance has been blocked by the owner to prevent injury to livestock, either reblock the entrance after use or construct a substantial and permanent fence around it.

They shall, wherever possible, invite the owner or guardian to participate in the trip for which permission is sought. If the owner or guardian or his representative does not participate, he should be provided with a report of the work done.

Behaviour in Caves:

They shall not leave rubbish in caves. Spent carbide, flash bulbs, wrappings or other rubbish must be buried or brought out of cave.

They shall not disfigure caves by any markings except survey points, which shall be neat and inconspicuous.

They shall take care to avoid disfigurement or destruction of the formation. In certain cases, with the permission of the trip leader, or, in a public cave, of the authority in charge, it shall be permissable to remove formation for the purpose of scientific study where such study cannot reasonably be carried out in the cave.

They shall not under any circumstances leave faeces in caves. They shall prepare themselves beforehand or, when camping underground, make provision for the removal of faeces.

Inter-Club Relations:

They shall, before entering an area under the guardianship of another club, inform the guardian club of their intentions, stating the size of the party, caves to be visited and intended projects.

They shall offer all possible help to clubs entering areas under their guardianship, supplying information already available, supplying members to assist and making all necessary arrangements with the local authorities.

They shall, having visited an area under the guardianship of another club, provide that club with a trip report, maps and photographs (if any are made) in order to keep the area files up to date.

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GLOSSARY OF COMMON TERMS

CAVE An underground hollow usually with a horizontal entrance (O.E.D.) It must be large enough to allow some access, and have some part totally excluded from daylight.

SINK-HOLE This is the most obvious sign of underground drainage. It is a depression in the ground where surface water flows into the underground drainage system. They vary in diamter from a few feet to several hundred feet, and in depth from a few inches to tens of feet. Cave entrances are commonly found in or around them.

DOLINE A depression resulting from the collapse of a cave.

EFLUX A place where water flows out of the ground.

BEDDING-PLANE The plane on which a bedded rock was originally laid down. It will be found to be marked by a series of parallel fracture planes between the individual beds. At the time of deposition of the rock it was horizontal or nearly so, but may be found at any angle as a result of subsequent earth-movements. Its present orientation is measured in terms of its strike and dip.

JOINT A fracture plane approximately perpendicular to the bedding plane if it is present. Joints occur in sets which are parallel and approximately equally spaced. Most rocks have two or more intersecting sets of joints.

TRAVERTINE A cellular deposit of calcium carbonate formed where calcium-bearing ground-water becomes exposed to the air. Its porosity varies widely and it sometimes has an earthy texture.

FORMATION This term is used by speleologists to denote the compact deposits of calcite formed in caves and other cavities in limestone. Formation composed of other minerals besides calcite is less commonly found. These other minerals include gypsum, dolomite, limonite and chalcedony. The common types of formation are defined below.

Stalactites Pendant columns formed by dripping of calcium-charged waters. They are the most common formation.

Stalagmites Similar to stalactites but projecting upwards. Formed

where the water from a stalactite deposits calcite on the floor. When a stalactite and a stalagmite become joined together a column is formed.

Straws Pendant formation of about the same diameter as a drinking straw, and of uniform diameter along its length. They are hollow, the water for their growth being supplied down their centre. They are extremely fragile and seldom exceed three feet, although exceptional ones have been known to exceed fifteen feet.

Helictites These are eccentric stalactites, which alter in thickness and direction in an altogether unpredictable fashion. They are also referred to as "mysteries". A heligmite is a similar formation projecting from the floor. Their origin is not understood.

Oolites A spherical calcite concretion similar in structure and appearance to a pearl. They are also known as "cave pearls", and are most commonly of the order of half an inch in diameter.

Flow-stone This includes all types of formation formed by a thin film or stream of water flowing over walls or floor of a cave. It includes a great variety of formation which has no generally accepted name.

CAVE FILL This is the red soil which forms the floor of most caves. It is derived in part from soil washed into the cave from outside, but chiefly it is the insoluable residue left after the calcite has been dissolved out of the limestone.

BRECCIA A rock formed by the cementing of angular rock fragments. A cave breccia is formed from fragments of limestone and formation cemented together, generally with cave fill or calcite. If it contains pieces of bone then it is known as a bone breccia.

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ARE YOU AWARE that bats are protected by law in the same way that koalas and lyre-birds are protected, and that it is illegal to kill them or keep them in captivity?