CONSERVATION AND SOUTH AUSTRALIA - UNDERGROUND

G. Gartrell *

Say the word "Underground" to a caver and a chill will race up his spine. But say it to the bloke in the street and he may show a vague glimmer of interest, or just think you are unhinged. This is about the best reaction you can hope for. There are much worse responses. He could think you are being insulting and hit you. On average, however, a blank stare will be forthcoming, and from that you may deduce that the word "underground" is synonymous with the phrase - "OUT OF SIGHT - OUT OF MIND".

You have not got a hope of conserving caves while this state of general knowledge about them persists. It is necessary to educate people on the one hand, a hard job at any time, whatever the subject, and at the same time try to convince them that something which is out of sight - out of mind, and just a hole they might fall into, is to their advantage.

Conservation is in practice a fight by a few against man's expedience and lack of foresight. Most people will probably find this definition of it objectionable or feel that it is true but applies to the other bloke. Rather like traffic laws in a way - we all know that we can drive faster than the speed limit safely, but we need laws to protect us from all the mug drivers around these days. I'm alright - it's the other bloke again. However even if not always appreciated, it can be understood by most when applied to the problems of extinction of species, effects of insecticides, scenery scarring, water catchment areas, pollution, and so forth. The Lock Progress Association, like many similar bodies, is all in favour of Conservation. They just think it should be done somewhere else though, and don't give a damn about an existing National Park that they think should squeeze up to half its size to let in a few farmers. Progress of that sort is often something we are better off without. Even the professional kangaroo shooters look up between shots, with tears in their eyes, and shake their heads sadly at the way these mugs from the cities, these weekenders, are coming up and driving the poor old reds to extinction - that other bloke is a real terror.

But human nature has always been so, and despite all our outward signs of technical cleverness these days, human nature has not changed all that much since the dark ages. We cannot hope to get the majority of people on side by saying that conservation is directly to protect or assist species other than man. To most of us, self is number one

* President, Cave Exploration Group (S.A.)

chap. Man won't generally realize that such things as natural balance between species occur, and that even the little bacteria in his cheese are contributing to his welfare. It is not practical to consider conservation in its most pure sense. Of course, that means changing nothing. Strictly speaking one should stop breathing lest one blow a fly off course. Not even I would agree to that proposal.

The best and most generally acceptable definition (or maxim) for Conservation is that it should imply - "The widest possible use, over a long term (emphasise long, most people have short memories) of all our natural resources, applied to the benefit of man."

The practical application of this is another story. Too often man with his cleverness at creating fertile land out of barren wastes, and his enthusiasm to make Nature more efficient, does not weigh all factors before bursting out with one of his schemes. Even when he is consciously trying to do his best for all in some development project, what is actually best, in the long range is not always clear. It is human to make mistakes. In the old days when the human population was in balance with the rest these mistakes were not too serious. One could move on to greener pastures. We cannot afford the same mistakes today. The World is shrinking at an alarming rate. Do you realise it was only less than twelve years ago that the first satellite was launched. Today men have been around the back of the moon. One hundred years from now, at present rates, it will be standing room only, and that includes the middle of the Nullarbor. Conservation is not a luxury. It is a necessity, and it is up to this present generation of people to save what they can, now, and to plan our future development so that we do have a future.

Well, this does apply to caves. I think that all of us here today realise this. Really, all that we can do to promote the conservation of caves is to try and sweep away the ignorance and cobwebs of superstition which are uppermost in most peoples' ideas of caves. Oh dear - we are back again to that repulsive idea of trying to educate people. The answer is - just keep trying. A little bit sinks in each time.

I will now review a few facets of knowledge about caves and try to give you a bit of perspective.

DEFINITION

First of all - what is a cave? Uh-oh. Trouble already. They are all different. I can best say that caves are part of the geography of the countryside surrounding them, and will influence it and be influenced by it to some degree. They are both regional and individual in character. In

essence the term "Cave" refers to a natural feature, usually accessible to man, and usually with a dark zone inside it, commonly formed by solution or erosion of rock. The rock is most commonly limestone, although significant cavities may be produced in other materials.

Caves are a comparatively rare part of our surroundings. Even the biggest of them are small when compared with major scenic features on the surface, and the total volume of all limestone caves in the world has been estimated to be of the order of only ten cubic miles, or less than one ten-millionth of the total volume of the oceans. Some town-planning authorities have come up with a figure of 4½% as the minimum area which should be set aside for reserves. Averaging this over the world, or worse still, averaging it over Australia, which does not over-abound with caves, we find that the proportion of this 4½% which would be taken up by caves, if every cave in Australia was protected, at least by a small plot of land around the entrance, would still be very small. In regard to land use, we could comfortably protect all caves this way. Like trees, caves may be destroyed in a much shorter time than it takes them to grow, so that any threats to cave conservation are an immediate and urgent problem. Unlike trees, however, once a cave is destroyed we cannot plant a seedling in its place and repair the damage.

At present Australian caves are little worse off than those of most other comparable parts of the world in this respect, although a few countries have very strong laws for the protection of caves - but, as our population grows, so do those agencies which tend to destroy caves, or have a conflicting interest.

These agencies fall into a number of broad categories. Here are a few:-

a. Commercial interests and civil authorities, concerned with quarrying, road building and so forth.

b. Certain farmers and land-owners.

c. Casual vandals and souvenir hunters.

d. Entrance dynamiters.

I shall dismiss the last two groups first, and not talk too much about the first, as other speakers will be dealing with this.

Casual Vandals

Among the casual or organised vandals of recent history none perhaps would surpass the illustrious English poet, Alexander Pope. In his day it was the height of fashion to

have a concrete grotto in the bottom of the garden, and if it was desired to outdo the Jones's next door, natural stalactites stuck in the roof were a must. So expeditions with soldiers to various caves were arranged, and while some would point their blunderbusses to the ceiling, others would hold a net underneath and catch the bits, a procedure which must have been jolly fine sport. Modern-day vandals are still with us, but less imaginative perhaps, and less likely to make the pages of history.

Entrance Dynamiters

The fourth group I mentioned, the entrance dynamiters, do just what the name says, first of all crying out - "This cave is too dangerous". They are usually well intentioned but misguided. In some ways they are like film censors. They close a cave to all to protect some who are inexperienced or ill-equipped. Too bad about the cave's natural inhabitants. A better solution in our eyes would be the installation of a gate, capable of withstanding onslaughts by modern safebreaking apparatus, preferably with a key which could be wielded by a responsible person.

Imagine somebody bulldozing Wilpena Pound to protect people from falling off St. Mary's Peak or getting lost there. Ridiculous it may be, but if Wilpena was a cave, public pressure or something similar would have cooked its goose for just the same reason.

Some land-owners in this category have a more understandable if less public spirited reason. If a caver were to injure himself in their cave they might be legally liable. Solution: get rid of the cave. No case has been tested in court as far as I know, and it is doubtful if one would succeed, but the bad publicity created and bad public relations generally would close caves like tidal oysters all over the countryside. Official organizations representing cavers should discourage members from ever thinking or even speaking light-heartedly along these lines, and get their members to sign indemnity forms, which may not always be strictly legal documents, but are certainly better than nothing.

- - - - -

We should conserve caves just because I like them, that is a good enough reason, but you may want better reasons, so here are a few.

REASONS FOR THE CONSERVATION OF CAVES

1. They are natural wonders of limited occurrence which must be saved so that future generations may enjoy the same pleasures that we get from caves today.

   a. In this class lie present Tourist Caves and others of outstanding scenic potential, which might become show caves in the future. Population growth, ease of access, and available finance are governing factors in the development of these caves, but the time to protect them is now. I should just say in passing here, that while it is generally recognised even among cavers, that one of the most effective ways of protecting a cave is to make it into a Tourist Cave with a lock, experience shows that there is more to the protection of a cave than just a gate. A great tunnel, known as the Binoomea Cut, has in recent times been driven through the hillside at Jenolan, N.S.W. to provide a new entrance into a couple of caves, including the Orient Cave. The doors on this tunnel are like great refrigerator doors, and hermetically seal the opening when people are not actually passing through. Otherwise, the tunnel would have created new airflow patterns in the caves, and temperature differences, and most probably dried the decoration out and deadened it in a big way. The construction of pathways through caves, and the installation of lights are also fields which have just as many hidden pitfalls, but that is another story.

   b. Besides Tourist Caves, we should preserve others in their natural state as "Underground Wilderness Areas", to cater for those with a deeper interest in caves than just the viewing of pretty stalactites and so forth. Speleology as a hobby or relaxation, and even the sport of underground mountaineering are pursuits equally as valid as their surface counterparts. The majority of organised cavers are <u>not</u> dare-devil nitwits despite the fact that most newspaper accounts of caving incidents seem to convey a different impression. This is understandable, and generally not the fault of the reporter. Serious cavers are not publicity seekers. Publicity can be dangerous, and even publicity "as a public service" does not always have the desired effect. Say that a cave is dangerous, and you may not keep those away that would not have gone there anyway so much as attract the attention of the dare-devils who decide to try it for themselves. Joe Brown and his cousins cross the road every day without getting into trouble. One day one gets run over and gets his name in the paper. We all cross

the road, and know the risks involved, so when we read his name in the paper we don't write letters to the paper demanding that the motor-car be banned or roads abolished. It is the same in caving. There are safety practices and rules. It is safe - we have very few accidents indeed. But people don't know much about caving, and when they read accounts of these accidents, they have no personal experience to go by and so can only believe what they read and get their impressions that way. Quite a diversion I must say, but I cannot emphasize too strongly that publicity is the most powerful lever in the World today, and the most often misused or wrongly directed lever at that. It is our vehicle for that education that I was talking about, and at the same time it can be our bane.

Back to "Underground Wilderness Areas" -

You may be familiar with that relatively recent idea of the declaration of "Wilderness Areas" as distinct from "National Pleasure Resorts", a need which has become a bit more widely recognised lately, both in the United States and in Australia. A wilderness area is a place where no permanent structures or roads are permitted and where man is "only transient" where he must take to his feet and come to terms with his surroundings rather than regiment them. Psychologists recognise that our need for these areas even as an escape from urban living is becoming greater as the pressures of big-city civilisation increase.

Amongst the few areas in Australia at present which fall into this category and would be familiar to most of us are portions of Kosciusko State Park in southern New South Wales, and the Cradle Mt.-Lake St. Clair National Park in Tasmania. Closer to home we have Flinders Chase and Hambidge, and I suppose we could put Wilpena Pound into this category too. You know what a job it is trying to hang on to these let alone getting any more dedicated.

The idea of Underground Wilderness is just as fundamental as that of surface wilderness and equally important, and probably ten times as hard to convince disinterested persons about.

Problems can arise, of course, when a cave which should be protected in this way turns up under land which cannot similarly be declared a wilderness area - a town perhaps - where uncontrolled drainage from the surface may cause pollution of the cave below.

2. The second main reason for protecting caves is that they are a distinct and different part of our environment, with their own populations of insects, micro-organisms, fish, crustaceans and so on.

We can divide these up into three distinct categories.

a. Trogloxenes: Partly surface dependent.

b. Troglophiles: These are cave lovers - they prefer caves totally but could exist without them.

c. Troglobites: These are creatures adapted completely to life in the cave and not equipped for life outside. The most common differences found for these compared with surface relatives is a loss of pigmentation, and a loss of eyesight, eventually even loss of eyes altogether.

There are well over a thousand species to date discovered in caves alone, and a number of these have only ever been observed in one cave. They have probably evolved in their own cave and never been able to move outside it. Of that estimated total volume of caves in the World of about ten cubic miles probably eight cubic miles still have yet to be examined for evidence of troglobitic population.

Studies of these creatures are still in their infancy but have already yielded some interesting results and have raised many more questions than they have answered.

Recorded occurrences of Australia's only known true troglobite, so far, an eyeless cockroach, are in caves widely separated on the Nullabor Plain. Cockroaches are thought to be slow in comparison with many creatures to undergo evolutionary changes, and the lack of eyes indicates that they have been co: .ed underground for a considerable period. They have lost their eyes, or at least only vestigial eyes remain, but have not lost their pigmentation, whereas the reverse is the usual order. In view of their adaptation, have several isolated occurrences of a species undergone parallel changes with no contact between the groups, or are the cockroaches widespread under the Plain throughout a hypothetical system of small tunnels linking all caves in the region? This may be extremely far-fetched or it may not. There do exist considerable complexes of anastomoses in some areas, as evidenced by the occurences of blow-holes. Further studies of this are either going to tell us surprising things about the Nullarbor, or give us a

new look at the processes of evolution, or else throw light on the biggest coincidence of all time. A parallel situation may be found in the United States, where two isolated and only occurrences of the same species of shrimp, I believe, are in widely separated caves, conceivably linked by waterfilled passages running several hundred miles through the particular band of limestone in which they occur.

At what stage does a creature with eyesight which has elected to spend its life in darkness begin the process of losing its eyesight and eyes altogether? Is evolution a selective accident, or is it reasonable to expect that colonies of cockroaches widely separated but under similar conditions might keep neck and neck in their evolutionary transformations? How fast do these evolutionary changes proceed? Troglobites, whose specific adaptations are similar for a wide range of species, could very well hold the key to our understanding of evolutionary processes.

Trogloxenes

Perhaps the most famous of trogloxenes would be the bats, studies of which are interesting from many points of view. Nocturnal in habit, the bats of the South-east sleep in caves by day and catch about half their weight of insects each night. Farmers have come to welcome the ibis as a friend. Few of them also realise how much the bat is on their side.

The numbers of bats in the huge colony of the Bat cave at Naracoorte, S.A. has recently been estimated at about one quarter of its former strength, although I cannot say how reliable that census was. It is possible the depletion was due to a disease, possibly the drought was responsible, possibly insecticides - no one knows for certain.

Recently a bat banded during a C.S.I.R.O. bat-banding programme in a railway tunnel at North Sydney was caught in a cave at Glencoe in the South-east of South Australia, nearly seven hundred miles away.

Bats employ a sonar system (a sort of sound-wave radar) and some species emit squeaks as high as 108 kilo-cycles per second. In comparison the limit of audibility of human hearing is generally not much better than around 17 kilo-cycles per second.

Bats have other remarkable attributes, but I hope that I have already made my point. The relatively dry South Australian caves have a particularly sparse fauna, but make up for this in other directions.

I refer to the fields of paleontology and archaeology - or anthropology.

Caves with vertical entrances have often in the past acted as animal traps, and cave micro-climatic conditions, which are so consistent, with yearly variations in temperature commonly of the order of only 1°F and which have been responsible or essential for the maintenance of the highly specialised forms of life found therein, are also favourable for the preservation of fossil material. In humid caves, fleshy remains are likely to be attacked by micro-organisms, but in dry ones even these may be preserved. Bones will be preserved in any case, and usually in well stratified layers of in-fill material. Within the caves these deposits will usually be free from weathering effects and disturbances normally encountered above ground. Often they are rich in material, and may be read by a trained person almost like a book about our past, with all pages intact in some cases. Recent finds of Thylacine (Tasmanian wolf) remains on the Nullarbor and in the Flinders Ranges are examples of this.

In many parts of the World caves have been inhabited by pre-historic man, who has left paintings on the walls which have been amazingly preserved to the present day. Implements made or used by them have often been found by excavating the floors of such caves. In Australia the aborigines have kept fairly clear of the deeper recesses of caves, with perhaps one notable exception. Koonalda Cave in the South Australian section of the Nullarbor Plain has been the site of an aboriginal workshop. In the limestone walls of the cave, numerous nodules of flint have been exposed, particularly in one section, and these were valued for toolmaking.

Anthropologists have now excavated this site to a depth of around twenty feet, passing through distinct strata all the way, and evidence from this dig dates aboriginal occupation as far back as 18,000 years ago, which is I believe, the most ancient evidence of this so far discovered. Mr. Bob. Edwards of the South Australian Museum has recently completed production of a film on this work which should appear on television and elsewhere soon.

It is important that I should emphasize most strongly that some of the most significant caves in this respect have the least imposing appearance, and much may be lost when the fate of a cave is left to an untrained or disinterested land-owner or civil authority to decide.

A local surface parallel to this situation is the different views of the Geological Society of South Australia, who see the area to the rear and North of Hallet Cove Beach, south of Adelaide known as the Hallet Cove Badlands as a unique area and an invaluable Geological show-piece, and on the other hand the real-estate developers who got their hooks into it and proposed to beautify this scar on the face of the earth by the action of

bulldozers, paving the way for an American-style shopping centre and the works.

I should add that caves are one of the few frontiers left on earth above the ocean surface where the probability of unexpected discoveries from systematic exploration is very high. Again some of the least imposing caves will not always be so. A relatively small cave in Tasmania, although never just a rabbit hole, which required a 2 hour hike through almost impenetrable bush just to reach the entrance, became the focus of attention last year, when a couple of cavers were able to find a way past a rock-pile choking one passage. The cave now has more than 7 miles of passage surveyed, more discoveries likely, and the Australian record of a 720 foot deep shaft, which includes one free ladder drop of 360 feet. There is, most fortunately, a reasonable chance of this cave becoming the nucleus of a new National Park.

Although relatively little sophisticated scientific work has been carried out in Australian caves to date, the potential is definitely there, and all that is required is the people and time to do it. Systematic exploration is, of course, the first stage of scientific study, and a necessary basis for all further work.

Certain Farmers and Land-owners

Earlier I mentioned that one agency in conflict with caves was a group I called "Certain Farmers and Land-owners". I should perhaps extend this to include some civic authorities as well.

As I have already said: Caves are part of the geography of their surrounding country, and are generally formed by water action. Commonly they trap surface streams and divert them underground, and occasionally, as in the South-east (and the Nullarbor) they are so comprehensive and efficient (and the country rock is so porous) that little or no evidence of normal surface drainage patterns exists.

The Nullarbor is virtually unpopulated, and its water-table varies between 250 and 400 feet below the Plain. On the other hand - the South-east is populated and has a water-table between zero feet and 100 feet below the surface, on average probably around 30 feet. It is the South-east I will refer to in particular now.

Recently there was an emergency at Keith, on the main Adelaide to Melbourne road, when the town water supply (which consists of bores) was found to be polluted. The solution in this case was to forget about those bores and drill some deeper ones into another layer, but where has the

pollution come from? The answer is not all that hard to see. Man is the answer. He has himself to blame but will look at everything else first before believing it.

Over the past decade or so, due to the great South-eastern Drainage Scheme, average South-eastern water-tables have dropped by amounts near ten feet. This represents an enormous volume of water through the highly porous rock. The population has increased during this time and will no doubt continue to do so. Practically all water supplies are from bores or else the Blue Lake at Mount Gambier. The source of the water in the Blue Lake is shrouded in mystery, but the rock near water level is ordinary Gambier limestone, and whether or not the deep down indefatigable source of crystal clear water is all that it is hoped to be, increased pumping of the Blue Lake will increase the flow of ground-water into the Lake from the surrounding rock.

Significantly, it was recently reported in the Border Watch, a South-eastern paper, that the Blue Lake water has been found to have an alarming increase in its bacterial count, and to be good stuff to drink if you'd like a bit of gastro-enteritis. Public health measures have been implemented and kept very hush hush, but nobody will really get up and go to the source of the problem. They would be too unpopular. They still won't believe that prevention is better than cure. Even in Mount Gambier itself the storm and town street drains run conveniently into the Town Hall Cave. I suppose it could be worse.

Many farmers and others, not having an Engineering and Water Supply sewer passing the house, just drill down until they find a cavity. Some don't even have to drill. When sheep or cattle die, it isn't necessary to bury them - there are plenty of holes to throw them down, along with your old fence wire, household rubbish and anything else you've got, perhaps the old car even.

Earl's Cave, one of a system of largely interconnected and water-filled sinkholes, with water to a depth of about 200 feet, south of Mount Gambier, was useful after the great bushfires some years back. Reports vary, but somewhere between several hundred and 40,000 burnt sheep carcasses were thrown into that unfortunate hole. I don't know which figure is the closer but it certainly was still putrid several years ago, with a sea of legs sticking up out of green slime. It is probably this lot that is now finding its way into the Blue Lake germ by germ. The District Council has since erected a "RUBBISH DUMPING PROHIBITED" sign but on our last reconnaissance that too had been heaved in and in its turn was becoming buried by fresh offerings. The Council has since, at our request, erected a further sign and re-fenced the area.

Five Corners Cave - a most extensive system on the outskirts of Mount Gambier itself, probably with several miles of passage, and large calcite-flake covered lakes in flatteners at the water-table connecting large domes, now has a dairy built over one entrance hole, which is a convenient drain. This must be seen to be appreciated, but anyone contemplating doing so is likely to contract some disease to remember the occasion by.

I was going to say that pollution of this magnitude of surface streams would be unbelievable, but that's not so. I've dragged everything else in and now I will drag in the new Victoria Square Fountain in the centre of Adelaide. No, it isn't polluted, well, no more than usual, but it is one of the greatest travesties of our time. South-Australia is the driest State in the driest continent in the World. You think we would value our creeks and rivers. The fountain has three corners, each representing a S.A. river and one of these has a statue representing the Murray. Another represents the Onkaparinga River, south of Adelaide. It lacks something. It doesn't smell quite right. If you can walk along the banks of the Onkaparinga River below the Noarlunga Abattoirs where the blood and guts drain down from above and where the river actually gives off bubbles of green gas you have a stronger stomach than I, but you won't wonder anymore why the fish float up dead further downstream.

While this state lasts above ground, what hope have we got for a better deal for Underground South Australia.

Perhaps it is not generally realised in the South-east that the degree of joint enlargement through water action is as great as it is. Where water in other areas might be filtered by gravel beds and passage through a reasonable quantity of rock, the cavernous and porous nature of the South-eastern limestone is such that water may pass for any conceivable distance through it with almost no purification at all.

Household drains situated right alongside water bores - too bad about the neighbours, any old hole a convenient rubbish tip, pollution that may travel for miles. What a time bomb the whole thing is. The signs are plainly there to anyone interested enough to look for them, but Public Health Authorities can usually only act on positive evidence, and a comprehensive study to get this on a large and general scale would be difficult -if possible- most time consuming and expensive. Water underground does not flow in straight lines any more than surface streams do. It meanders along the path

of least resistance, a path which still will not generally be anything like a straight line even in the porous stone, and which may change with time, depending on hydraulic heads driving the water and so forth.

I must in fairness add that there are a number of farmers and others who are aware of these problems, and some who do take an active interest in their caves. Most of the others, fairly naturally, regard the holes as just another nuisance, or a convenience, or a magical bottomless pit, and have not given the matter more thought.

The right type of publicity and education might reach a lot of these people, and our surveys might eventually provide sufficient evidence to convince the Department of Public Health. Might is a funny word. If there were no traffic laws people might drive safely anyway, but if that were not the case and everyone got killed on the roads, there would not be any need for the laws in the end anyway, so why worry in the first place. Perhaps if we pretend the pollution isn't there it will go away, like spooks in the dark.

As a final point, to win over any animal lovers present, I probably do not need to say, although I still will, that pollution of a cave system in this way is almost guaranteed to destroy any natural community that may have been able to survive there previously. The constancy of cave conditions lends itself to the support of delicately balanced ecosystems to a degree probably unmatched above ground, and any change in those conditions will usually have a disastrous effect upon all members of those communities, whether directly or indirectly.

A simple example of this would be when extraneous bacteria are introduced and attack a member of a food chain, or say perhaps, an acidity, or pH, change in a cave stream could affect the ability of some species to breed, and again the chain could be broken. Pollution of one single cave by one thoughtless person could conceivably result in the extinction of one or more entire species with the greatest of ease.

I would be prepared to bet that the situation will not improve until pollution becomes sufficiently acute to be a major and widespread health problem, by which time it will be too late for whatever cave life might remain at the moment. I must add that as far as I know, few of these caves have been examined at all for troglobitic populations, and the only cave with a reasonable stream known until recently was named after the dead cow stuck down one entrance.

I will not pursue this line of discussion further at present. I think I should have got the point across by now. Nor will I discuss the other major predators of caves - the quarrying and public works interests. South Australia hasn't been too badly off in this direction so far, although a quarry for limestone on behalf of the Highways Department on Eyre Peninsula near Lake Hamilton was last heard to be within twenty yards of a nice and well decorated cave, and likely to eat it all up. This branch of the subject is best left to our friends in New South Wales and Queensland, who have plenty of good first hand experience to draw upon.

I hope that I have given some of you some new ideas, and re-awakened old ideas in others. If you haven't enjoyed listening to me at least you will be pleased to know that I have enjoyed talking to you.

I will finish off by telling you a secret about human nature. Tell enough people often enough how good you are and they will, despite themselves, start to believe you. Cavers are on the whole a quiet bunch, who generally only make loud noises late at night when they are not appreciated.

Even though we are only amateurs with limited time and money to follow our interests, there are no professionals, and if we don't do it - no one else does. Many of us do become experts in our own particular fields. Don't try to play it down, it's true. We should all strive towards some degree of expertise in some branch of speleology or caving practice. We should at all times conduct ourselves as experts especially when in the public gaze, and when we realise that we are experts, or assume the status of experts, like it or not we also assume a moral duty as experts to take up the case on behalf of caves when they are seen to be getting a raw deal from any source whatever.

We cannot hope to interest many people directly in caves themselves through education, although we will score a few converts, and it will never hurt anyone. Our greatest hope is to sell to people the idea that <u>we</u> are experts, and that caves <u>are</u> interesting to <u>some</u>, and have value for <u>all</u>, even if they themselves are not particularly interested in them.

I believe that we can get this message across much better. It isn't too much effort for people to absorb the idea, whereas they might undergo all sorts of traumatic experiences trying to develop a love for caves through the written and spoken word. Many are only too pleased to leave decisions to others, if only they know that the others are there to be approached.

We should be prepared to accept the responsibility - and should be given this - of deciding the fate of a cave which is in somebody's sights for quarrying say. If it has unique features, or is an outstanding example, we should say so and fight for its protection with all we have got. If it does not fit this description we should admit it, but still try to see if alternatives can be found which will save the cave and still keep the other party happy. One thing we must never do is accept someone else's half-baked word in the matter. If we have not had a chance to investigate a cave thoroughly before it is threatened, we must ask for time to do this, and then prepare a comprehensive report on it. This is fair enough. Here we are at a disadvantage, being amateurs with limited means and time, but we should not be shy about that. Let people know, and perhaps even some financial assistance might be found in some cases. It certainly won't if you don't. Even if we are at a disadvantage we must keep trying to do our best for caves. Never give up. Your efforts will not be entirely wasted. As the President of the National Speleological Society of America said in regard to conservation recently: "If you are not part of the solution, you are part of the problem." I'll leave you with that thought. Thank you.

DISCUSSION

Bill Wallis, N.U.C.C.: You mentioned the gating of caves rather than the complete blocking of entrances: does this also apply to caves which are say, in danger of collapse, rather than just dangerous because, say, someone may fall down the shaft?

Grant Gartrell: This is a point. It's very difficult to decide. On the one hand you have the cave in Claremont where a young chap was rescued recently after having his legs trapped by falling rock for many hours. This is generally considered "a crummy little cave" and no one would be particularly worried if it was completely filled in. But on the other hand I have heard of a cave in New South Wales, Grille Cave I think its called, where there has been raging torment, with various parties practically coming to blows. Some have been measuring the subsidence of the roof and claiming that the cave is in imminent danger of collapse and must be blocked at all costs. Others say that there is nothing happening and the cave should be left alone. Here you have the two opinions. Anything which is done to close that entrance off completely, to my way of thinking, is bad. Fair enough, put on a thundering great grille, throw away the key if necessary,

or just stick it in a big block of wax and keep it in your Quartermaster's store until the year 1999. But don't change the cave permanently - it's only one person's opinion, and natural processes do go on in caves - they are naturally eroding, things are falling out of the roof. Our personal experience is that things don't usually fall out of the roof very frequently, and you usually hear a rumbling noise and a creaking and step aside. I think that we should follow some policy of looking after all these caves even if they are intrinsically dangerous. We should rather warn people about them, make access to them restricted, and make sure people know what they are up for when they go in there. They are nevertheless interesting places and we shouln't try and censor them completely and ban them from the country.

Fred Sanders, C.E.G.S.A.: Mr. Speaker, in the South-East there are considerable problems in the land development, and one of the chief offenders in some sections has been the indiscriminate clearing by contractors for the Woods and Forests Department for the planting of pines. In many cases these holes have just been ruthlessly bulldozed over as just purely an inconvenience. I think this is something to be deplored.

Another question I think very adequately brought out in your speech is the matter of pollution, and few people outside of the cave groups realise and appreciate how much contamination has taken place. I would like to congratulate you on that point.

Grant Gartrell: Thank you Fred. There is one point I must emphasise, and that is a cave isn't just a complete room, with a door, and that's all there is to it. A cave is also composed of all sorts of little nooks and crannies and no-one would have any hope of finding out where these could lead pollution to.

Roly Webb: Another point is the pollution of camping areas in cave locations. This is in fact a hobby-horse of mine, and seems to be getting notably worse of late. I don't think speleologists are entirely to blame for this, but I am sure we do add to the rubbish either inadvertently or through negligence, but I do feel, that it is our responsibility to try and do something to prevent it or cure it where we see it. At Bungonia for example near the Grille Cave my family and I did an emu-bob on one occasion and collected a mound of rubbish about from here to the wall and then burnt it (probably during a fire restriction period!).

I would make a plea here to everybody that when they see rubbish about to try and do something about it if the time is available, and so we will avoid creating this sort of problem

ourselves.

Grant Gartrell: I would just like to reinforce that, and say that if you're not going to burn, bash and bury your rubbish (which is the recommended boy scout and bush-walkers way of getting rid of it when there is no rubbish bin handy), or if you're not prepared to bung it back in your car and take it right home with you which is the best way, then dig a deep hole - don't just leave it on the surface where the local dog is going to come along and dig it up - he will! - by crikey he will - a rubbish heap buried like that to a dog is terrific. I have seen this, ten minutes after a pile of rubbish has been buried it's back out on the surface, and it's your fault.

Don't just bury your own rubbish and forget the bloke over there, go and grab him by the ear if you can catch him throwing his stuff away and run the risk of being punched but try and educate people actively; and also, if you can't catch him in time just look after his rubbish too - otherwise you will probably have to pitch your tent over it next time.

Fred Sanders: I think the base answer to a lot of the problems which have been brought up is education at a much earlier stage. In other words, it is a matter we should try and teach our children. It should be brought to the notice of the Education Department and the general public at large that conservation also begins with a good education on how to behave and how to live with one another and how to keep the place tidy. This idea is awakening in many other countries.

Grant Gartrell: South Australia has recently changed its "Arbor Day", which was the one day a year when we used to choof out to the back of the school and plant another tree, to a more general idea of a "Conservation Day". So that shows the idea is awakening slowly.

Elery Hamilton-Smith: If I can comment on the problem of teaching conservation to young children, abstractions such as conservation are pretty hard to teach and you just can't start teaching them to young children. You know it's been said and I think there is a lot of truth in it "Sunday Schools have done more to drive people away from church than anything else", because they try to drill into little kids ideas which will inevitably be rejected once those kids start thinking in abstractions, which is somewhere around fifteen-sixteen years of age.

Now the point of all this is that I think we need to do a bit of real thinking, and educationalists need to do this too, about how one does educate people about conservation. It's not just

a matter of telling them because if you do just tell them about it while they're children they are much more likely to rebel against it and go to the opposite extreme rather than build it into their own behaviour. It's not nearly as simple as just telling people.

John Dunkley, SUSS: I would like to make the observation that in New South Wales we now have a Conservation Advisor to the Education Department. He is at present going around the schools in N.S.W. to find out how he can develop a conservation programme for the next decade.

Roly Webb: The thing about teaching children is that children are great mimics and although we are very few, the best way that we can teach is by example. Wherever we go we must set the example conservation-wise.

Mr. Brookman: I said I wouldn't mind a second helping before you finish up this session so I would like to observe (I might also mention that I'm Minister of Tourism) that I'm very pleased to know that we have subsidised you a little bit. I have noticed that having had an interest in conservation for quite a number of years and been in public life, that it is easier for a camel to pass through the eye of a needle than it is to gain complete approval from conservationists.

It is impossible, and I think that what Mr. Gartrell raised this morning was of tremendous interest to me and I am sure that everybody here learnt something, but it only goes to show that whilst there are a great many things which should be done in the future to prevent any evils, and which can probably be done now to arrest some that are already in progress, there are some others which I think probably we'll never be able to solve, to be quite realistic. These are the problems particularly associated with close settlement. This Onkaparinga River for instance - we have already so upset it by putting a large reservoir on it that it doesn't run very frequently below the reservoir, and we are putting another reservoir there to catch extra water still; on the other hand the abbatoirs have gone in for evaporating ponds and they are doing something about the pollution that was undoubtedly most offensive.

The matter of the bulldozing over of holes (I presume that's not a disrespectful word, to just call it a hole, because it's a hole in the ground) the matter of bulldozing them over and clearing forests is the sort of thing that I think could easily be prevented, and I would be quite happy to take up this sort of thing with the Conservator of Forests; my colleague the Minister of Forests would be interested in that.

Now, one other comment, this question of National Parks. I want to draw your attention here to one point which works somewhat in favour of National Parks and that is that the dedication of National Parks can be done simply by proclamation by the Government. To then alienate a National Park which is dedicated you would have to run the gauntlet of quite a large legislative process and go through both Houses of Parliament and so on. And whilst we don't get much publicity for this, that National Parks are being added to all the time, I jotted down the proclamations which have been made within the last nine months : the Flinders Ranges, the Coorong (several thousand acres), a quarter of million acres out in the far west in the county Wey - that is in dry country, York Peninsula, additions to Mowbray Creek, and five hundred or so acres at Goolwa which we had to buy back from a private owner.

What all this is leading up to as far as I am concerned is that you here have all got ideas and you're all discussing problems from a conservation point of view so why not assemble them in the form of suggestions and come along, perhaps Mr. Gartrell or a committee with him, come along and discuss with me the various suggestions which have come out of the Conference. I'd be happy to do that. They could be categorised so that they could be divided up: bullets to the Highways Department, rockets to the Forests Department, and so on. If you'd like to assemble those after the Conference Mr. Gartrell you will be very welcome, and I personally would think that we might be able to get some very concrete benefit from the suggestions that you are making.

****