Down Under All Over:

50 Years of Australian Speleology

50 years of snapshots of speleology in Australia

Chris Bradley, Cathy Brown, Jeanette Dunkley, John Dunkley, Susan White (eds)

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Convenor, ASF Publications Commission: Susan Q. White, BA, BSc, MSc, PhD.

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Stromatolitie dome near the Upper Skull Creek/ Supplejack contact. Photo Mark Sefton

FOREWORD

Fifty years ago this month speleologists from all over Australia travelled to Adelaide to meet like-minded friends, begin the modern era of exploration and study of the Nullarbor caves and karst an establish a precedent for many later expeditions, have a great time, and establish the Australian Speleological Federation.

In 2003 the ASF Executive began discussing ideas for a celebration of 50 years of ASF. The Cave Exploration Group of South Australia had done a superb job of organising the inaugural Conference and field trips in 1956, and readily agreed to host the 26th ASF Biennial Conference in Mount Gambier, simultaneously with our 50th anniversary.

Attention then turned to what special arrangements ASF itself could make to mark 50 years. We decided to locate and invite as many veterans of that first Conference as possible, and to produce some kind of publication to celebrate the occasion.

Well, practicalities prevailed and we decided to let the history and growth of ASF be revealed primarily through the pages of the quarterly newsletter. The objectives for this publication are threefold:

- to recapture the enthusiasm and remarkable foresight which envisaged a national speleological organisation and then accompanied ASF's formative years;

- to compile a selection of speleological writings conveying something of the flavour of the following half-century; and

- to provide a permanent record by documenting key achievements.

No doubt the time will come when an enterprising PhD student will find a trove of material in the archives of ASF and member societies, but for the moment, this will suffice. The most difficult decision was what to omit. The newsletter articles have been reformatted and in general have not been edited, but in a few cases, references and contemporary contact details have been omitted. We have retained the original typewritten format for a few archival letters and minutes.

Too much text, you say? Well, very few photographs and maps were published in the older newsletters, but we have included a few that were available digitally and which reproduced reasonably well.

So here it is: snapshots of speleology in Australia over the last 50 years.

The Editorial Team

(Chris Bradley, Cathy Brown, Jeanette Dunkley, John Dunkley, Susan White)
December 2006

VISION IN THE DARK – SNAPSHOTS OF ASF HISTORY

An overview of the history of ASF

John Dunkley

As noted in the circular from our founding President Brian J. O'Brien (see page 10), discussions on a Federation of Australian speleologists began within Sydney University Speleological Society in 1953, only seven years after our first speleological group, the Tasmanian Caverneering Club, was formed. Letters from the Sydney societies to other Australian groups in 1954 met with overall approval but indicated some of the difficulties, presaging also some of the great debates to follow. But eventually it all came together in Adelaide in December 1956.

At the opening of that inaugural Conference, Elery Hamilton-Smith expressed the hope that the federation *"would help the Australian societies to build up a standard of caving that would be one of the highest in the world"*. There have certainly been some truly remarkable successes: *Helictite* is one of only 5 or 6 peer-refereed cave science journals in the world, *Caves Australia* has reached a world standard of quality and content, we organised the world's first conferences on Cave Management. Numerous management agencies use our conservation and minimum impact codes. By any standards (only one fatality in 50 years, and very few serious accidents) our safety record is a tribute to cavers' willingness to abide by sensible ASF guidelines and to our success in publicising those codes and guidelines to other cave users. For nearly a decade now, ASF has had more members in proportion to our population than the highly regarded National Speleological Society in the USA, and is certainly more representative than our equivalent in the UK. What other country has an distributed electronic database of 8 or 10,000 of its caves? And what other major national cave organisation in the world publishes its own full Conference Proceedings?

So, how did we get there? Well, things started well. The inaugural Conference was a huge success, with field trips to Kangaroo Island and particularly to the Nullarbor setting precedents for the many multi-disciplinary expeditions that followed. Indeed, the discoveries in Koonalda Cave led to a revolution in Australian archaeology and the foundation of rock art research here.

The real difficulty was translating vision and idealism into action and achievement. An initial membership capitation fee of 2/- (20c.) was risibly inadequate to finance the Federation's objectives, and clubs found difficulty agreeing on what those objectives should be anyway. Enthusiasm waned somewhat over the next few years as distance and cost made their tyranny felt. Complaints about lack of ASF performance were not uncommon, yet from the very outset a few clubs placed priority on building their own strength, often at a cost to ASF's growth, or threatened withdrawal if their objectives differed. As with the larger Australian polity, from time to time the greater good was lost in interstate rivalries and centralist debates.

Some early effort was put into publicity, at considerable cost in time and money. A pioneering series of articles appeared in *"Walkabout"*, then Australia's leading geographical magazine. The first ASF non-serial publication, *"Caving in Australia"* somewhat over-reached itself financially, aiming to reach out to the public as well as to cavers, and to present Australian speleology to an overseas audience at the second International Congress of Speleology in 1958.

Overall, then, the first decade or more was rocky: lengthy argument and debate about constitutions and what role ASF should play, some club and interstate rivalry, and the first (but by no means the last) "them-and-us" moves to restrict membership to well-established groups. In the 1950s scientists had high social status and an initial emphasis on cave science (highlighted in the first newsletter, for example) helped establish our credentials but was not always well received by the essentially recreational cavers who actually paid the capitation fees. A research journal was mooted as early as 1960, but when an offer was made in 1962 to actually produce one, the chance was missed in arguments of an internal organisational nature, and 38 years passed before ASF finally acquired ownership of *Helictite*. Ten years and five Conferences passed before the first Proceedings was published.

Conservation and Management

But gradually a national consensus arose on key issues. A Conservation Commission was established in 1962 and from then on conservation occupied a great deal of effort. A new post-war generation moving through the education system produced a vast increase in tertiary qualified members. Social change beginning in the late 1960s throughout the western world underpinned environmental campaigns in Australia as younger people in particular questioned the emphasis on unrestrained development. Dams, mining and quarrying, irrigation schemes, roads, vegetation clearance and logging all impacted on caves and karst in one area or another, and such calls to arms often precipitated action to explore threatened areas whose public tenure had apparently been safe for 60 to 100 years and whose appeal had previously been to the emotions. ASF, for example, organised a multi-society exploration of Church Creek (NSW), and member clubs hastened to document such areas as Texas, Mt Etna and Bungonia, producing a stream of articles for their own and the ASF Newsletter. "Save Colong" was one of the first in the great bumper sticker phenomenon.

Yet in most cases legislative protection was weak and archaic, with initially indifferent public opinion still firmly entrenched in a post-war development ethos. As a result, governments and company directors unaccustomed to having their actions and inactions questioned by citizens and shareholders found themselves on the back foot as changes in social attitudes and beliefs forced the pace on legislative and judicial reform. This was an age of activism - public consultation was a socialist plot. Support snowballed as cavers organised public open days, abseiled down the face of buildings where shareholder meetings were in progress, or bought single shares so they

could stack meetings and ask awkward questions. There were no Ministers for the Environment in any Australian government, no Environmental Defenders Offices, no Environmental Protection Authorities. Dinosaur governments surviving for many years in Queensland and Tasmania meant that Ministers for Mines, Resources, Development and Big Things retained power even when environment did become an issue, and activism continued in those states well into the 1980s, the Franklin Dam & Mt Etna cases for example eventually being settled in the High Court. ASF ran some campaigns in its own name, some used our name to assist their credentials, others ran independently but with support from ASF. Over time precedents were established when ASF and members obtained standing before Mining Wardens Courts, brought cases to State Supreme Courts and eventually stood in the High Court of Australia in Canberra (where one of the Justices was a former member). Politicians and feature writers who attacked organisations like ours for what they claimed were our selfish motivations ate their words – and some cave managers today do not realise that there may have been nothing for them to manage but for the efforts of cavers.

As activism waned, we developed expertise and a national reputation for environmental advocacy, both by lobbying bureaucrats and politicians and through management consultancies. A Sydney newspaper once described us as a non-green conservation organisation, and this duality with recreational interests possibly aided our cause and public image with management agencies. In 1973 we organised the world's first Cave Management Conference and shortly afterwards a National Heritage Commission grant established a foundation for managing the diversity of Australia's caves and karst, moving us away from merely protecting stalactites. The legendary Karst Index project was seeded by a similar grant, taking only a decade or so to compile, and more grants followed. As the only experts in the field, ASF undertook studies for a variety of agencies of the Nullarbor, Jenolan, Cutta Cutta, Naracoorte, Tantanoola, Yallingup, Christmas Island and the NSW Central West, while a steady stream of submissions flowed to the decision-makers. Kitted out with boiler suit, bash hat and boots, the Minister for Lands was dragged through one of our grottiest and least appealing caves, a bat maternity site in eastern Victoria, to emphasise that they too need protecting. For several years the erstwhile Minister in NSW was a former member, introducing some innovatory karst protection legislation.

Caving

Techniques improved: home-made ladders were used in the early days and helmets made from Woolworths pudding basins were rumoured if not actually sighted. Carbide lights were abandoned long ago as inimical to cave conservation. Australian practitioners were world leaders in the diffusion of single rope techniques and associated safety measures, accelerating the exploration of the numerous deep, wet caves of Tasmania, New Zealand and eventually the world's deepest overseas.

Even quite small member clubs achieved remarkable results in cave area documentation and publishing, and new caves continue to be discovered even in well known areas. New cavers continue to be introduced to their local caves through commercial operations, ASF caving clubs, scout and church groups.

At various times, but showing a welcome resurgence recently has been exploration in remote areas. On the Nullarbor, the legendary aerial explorations by Captain Thomson in the 1930s have been replicated as parts of the Nullarbor are being gridded for caves using microlight aircraft, resulting in some remarkable fossil discoveries. As well as world class dives under the Nullarbor, cave divers systematically extended our knowledge of Junee resurgence, caves near Camooweal and Kununurra, and otherwise well explored haunts such as Jenolan and Wellington. And as recently as 1990 who had ever heard of the Ning Bings, Pungalina or Bullita (where our longest cave has now reached 110km)?

Corporate Governance

Membership grew steadily in the 1970s fuelled by conservation issues and free university education, remaining steady through the 1980s. In the 1990s we dealt with the new phenomenon of politically-driven panic programs (*"Let's be seen to do something about it")* such as accreditation for outdoor activity leadership, liability insurance, risk management and increased accountability for incorporated associations. ASF's reputation became recognised by securing representation on Jenolan Caves Trust and the Outdoor Recreation Council of Australia, where we were the only effective national representative body and succeeded in heading off the excesses of the push for accreditation. We received an award for organisational excellence in the provision and administration of outdoor recreation.

Until 1990 a major impediment to our functioning was that the Executive was constituted in a purely managerial role, with all significant decision-making in the hands of a Council meeting only once a year. While greatly aiding consensus in a more leisurely age, this entrenched a culture predicated on primarily recreational clubs as the only groups and individuals with a serious interest in caves and karst. First raised in 1960, individual membership took nearly 25 years to be achieved and debate recurs, while there is still no entirely satisfactory mechanism for involving groups and individuals with primarily non speleological aims but with caves as one of their interests. Nevertheless the Constitution was amended to move with the times, significantly in 1970 to establish permanent working commissions, in 1983 to register ASF as an incorporated association in the ACT, in 1990 to modernise corporate governance and give greater flexibility to the Executive, and in 2000 for registration as an Environmental Organisation.

Renewal

In the last decade a timely synergy emerged in ASF administration. *Helictite* and the Speleological Research Council's assets were acquired, *Australian Caver* was revamped into *Caves Australia*, insurance was surmounted, Annual Reports and electronic bulletins instituted, Council Meetings streamlined, and we saw a new electronic cave data base implemented, ASF registered as an Environmental Organisation and a tax-deductible environmental gift fund established. The growth of e-mail, the internet, cheap long-distance telephone calls, and electronic member lists vastly improved communication. The Executive met by conference call and e-mail, and recently funds have covered face-to-face meetings as travelling costs fell in real terms. As a result, although meeting agendas are heavier than ever, major issues are addressed more swiftly and productively by the Executive, and Council meetings seldom lead to significant dissension.

Retrospect

When judging the march of an organisation founded half a century ago, we need to recall prevailing social conditions. In 1956 the real standard of living in Australia, while among the highest in world, was only about one-third as high as now, and as recently as 1970

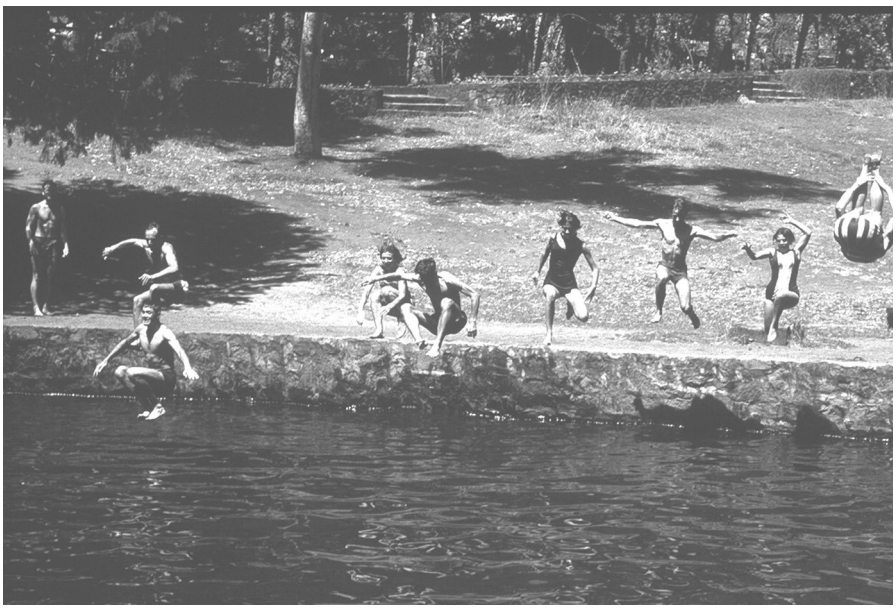
real incomes were only half those in 2006. Most cavers were young, few could afford cars, most roads to caves were partly dirt (even the Hume Highway had only just been completely tar-sealed), and hitchhiking was much safer and more common than today. Trains tended not to go near cave areas (although as recently as our 1988 Conference one member arrived on the wonderful but now sadly defunct rattler from Cairns to Chillagoe). When in 1964 ASF met in Western Australia for the first time, nearly 1,000km of the Eyre Highway across the Nullarbor was unsealed and nobody could afford the air fare; now our President crosses the continent for a weekend meeting. Sealing of the Perth - Darwin road was finished only in 1986. Communication was a major problem: postage was cheap and subsidised, but long distance telephone calls were ferociously expensive. And raising awareness of conservation issues like Mt Etna or south-west Tasmania was difficult when only a tiny proportion of the membership could visit or identify with such remote places.

Prospect

Challenges abound this century. The age of exploration is certainly not over: there is still significant unexplored karst, especially in northern Australia, not all of it remote by today's standards, but requiring well-organised expeditions. That may be one of the problems: longer, more stressful and less secure working hours with less unstructured leisure time reduce the ability of some clubs to focus on long-term projects, even those close to home, although there are commendable exceptions. Some clubs & to an extent ASF suffer from gentrification and maybe gerontocracy, but the university clubs who traditionally inject new talent are struggling because of withdrawal of government support. Although close to owning our own caves, ASF needs to grasp fully the potential or the implications of being an Environmental Organisation and could improve provision for certain peripheral interest groups such as cave divers, cave and karst conservancies, or even inactive, fossil cavers!

Closure of wild caves to other than commercial users has been largely averted but growth of commercial adventure tours continues. Perversely, as real incomes rise, the lure of profits, careers and consultancies may be creating a gulf between adventure operators, academics and managers on the one hand, and the more altruistic cavers on the other. For example, greater career pressure on University staff to publish in overseas journals impacts on *Helictite*, and academics find less time for the public teaching role that was once one of their duties. While encouraging greater professionalism, growth of a cave management bureaucracy and career structure may have widened the gap between primarily recreational cavers and managers who in some cases have little or no cave background. Some – there should be more – have provided much in-kind assistance fully compensating for the value of resource inventories, maps, informal wild cave management advice and other outcomes. A few – there should not be any - have been slow to acknowledge the value of speleological work, occasionally imposing permit fees while expecting cave maps to be lodged at no cost.

Finally, a mention of those who also toiled. We should celebrate our volunteers and there isn't space in this review to thank all those who made those 50 years possible. Some are listed in the Appendices but there will still be many unacknowledged. Among other quiet achievers who made it all possible are, for example, those who organised the Biennial Conferences and field trips, and those in member clubs who quietly ensured that throughout and despite our ups and downs, their club retained support for the ideal of a national organisation.



Cavers cooling off in the Araluen Pool WA at the ASF conference 1964-65. Photo Bill Crowle

DELIBERATIONS -
The Beginnings Of A National Organisation

AUSTRALIAN SPELEOLOGICAL FEDERATION.

As is now general knowledge, the move to form an Australian Speleological Federation was motivated primarily by the desire to improve speleology and speleological coordination throughout Australia, and to lift both at least to the standards displayed by Italy, Great Britain and some other countries.

In 1953 and early 1954, ideas on a Federation were discussed within S.U.S.S., and these resulted in letters being sent to other Australian societies in 1954. The response over the following months showed that the general concept met with overall approval, but indicated some of the difficulties that must be solved. To introduce a more universal viewpoint into early plans, SUSS invited Sydney Speleological Society representatives to discuss matters jointly, other Societies being accessible only by letter.

In time, and after several circulars and many letters, the points of view of all the Australian Societies were made known to all, these Societies being in the following areas: Sydney (2), Canberra, Cooma, Maitland, Orange, Mt.Isa, Tasmania and South Australia. A Draft Constitution has been circularised, as set out below, and this will be discussed and, it is hoped, decisions will be reached at the Inaugural Meeting to be held in Adelaide after Christmas, '56.

This Meeting will be held from midday on 27th December till an unknown hour of the night of 28th December, 1956. Pamanga N.F.C. camp, with beds, recreational hall and all other facilities has been booked from Christmas onwards. All meals will be provided, and beddin; will cost about 3/- per night, a not too exorbitant figure. It may be of slight interest to a few people, also, that the beach is about 200 yards from the camp.

The programme for the meeting is not finalised as yet, but will be along the following lines: talks on "Cave Terminology" and "Limestone and Lack of It" by C.E.G.(S.A.) experts, showing of overseas and local slides, a Symposium on "Cheap Caving" to be led by one of the SUSS experts if finance permits his attendance, Constitutional wranglings and formal inauguration of the Federation. The final night has been set aside, at least up to the present, for indeterminate and, perhaps, indiscriminate activities.

Following the meeting, expeditions organised by the South Australian group will go to the Nullabor - till 13th January - and Kangaroo Island - till 3rd January.

At the Meeting and the following trips all speleologists and caving dilettantes will be welcome. I hope you feel you can include yourself in one of these categories, and that you will make SUSS participation a numerical and fulsome success.

Brian J.O'Brien.

Sydney University Speleological Society,

Box 35, The Union,
University of Sydney,
SYDNEY.
26th August, 1956.

Dear Sir,

As you are aware, the Inaugural Meeting of the Australian Speleological Federation will be held on 27th - 28th December, 1956, near Adelaide. The Cave Exploration Group (S.A.) has booked the National Fitness Council camp at Parnanga for the occasion, and the Group will arrange meals and all facilities, as set out in the application forms you will have received by now. However, the amount of organisation involved in this catering and in the subsequent Nullabor and Kangaroo Island Expeditions has led the C.E.G. to request S.U.S.S. to be primarily responsible for the actual programme of the Meeting.

Accordingly, I wish to put before you the following provisional programme, for your consideration and suggestions, and for communication to those of your members who will attend the Meeting.

After lunch on 27th December, the Meeting will be declared open, each Society will give a brief (10 minutes) account of its activities and plans, and each delegate will have approximately 5 minutes to answer questions about his Society. The aim of this series of reports is to give all those attending the Meeting a general idea of the state of affairs in Australian speleology, to let them know "who's who", and so on.

Afternoon tea will be served, and then a South Australian geologist will give a talk on "Cave Terminology", and discussion will follow. On the night of the 27th a Symposium on "Cheap Caving" will be held. This is intended to cover more topics than its title might suggest, and to provide an opportunity for general dissemination of ideas. However, its theme will be centred on its title, and it is anticipated that many valuable notions will be aired by those present.

The morning session of the 28th will be taken up with a talk by one of the C.E.G. members on "Limestone and Lack of It", and associated discussion. Then in the afternoon will come discussion and voting on the Constitution, using the broad outline of the Draft Constitution which you have already received, and leading to a final Constitution before the evening session. The latter will consist of the formal inauguration of the Federation with a distinguished guest speaker, preceded by a Caveman's Dinner, and followed, it is hoped, by a brief talk and a showing of slides on "World Caving."

Most of the gatherings will take place in the hall in the camp, and the C.E.G. will arrange for all meals, tea-breaks and suppers, although obviously help will be appreciated in the preparations.

It is hoped that, in the near future, each Society will elect a Delegate to represent it and vote for it at the Meeting. Although most discussion will be general and open to all, on those matters which require a decision by vote, each Society shall have a single vote and this must be registered by an official delegate or proxy. It is apparent that an early election of a delegate where possible would be a good thing, and I would appreciate your forwarding to me the names and addresses of your principal and secondary delegates as soon as they are decided, so that copies of

our future correspondence may also be sent directly to them. A further very important matter is whether your delegate will be empowered to act in your name, or whether his final decision to join the Federation must be subject to the ratification of your Society. I would ask that you give this matter your consideration as soon as possible, bearing in mind that former case would give the Federation a much stronger basis at its creation, and I would be grateful if you can communicate your decision to me when it is made.

It seems desirable that each person attending the Meeting should have a prior publication giving abstracts of the various report and talks. If you can arrange that an abstract of the report on your Society be sent to me in the near future this would facilitate matters

The interest shown already in the Federation by various overseas groups and individuals has served as a reminder that we have an international standard to attain and surpass in Adelaide and afterwards. This, I feel sure, can be done only with your help and support. Accordingly, I shall look forward to your sending me any comments, criticisms or suggestions which you feel may contribute to a more successful Meeting and a stronger Federation.

Yours sincerely,

Brian J.O'Brien.

(President.)

Copies to: Canberra, Cooma, **Hunter Valley, Mt.Isa, Orange, S.A., Sydney, Tasmania, Victoria, W.A.**

Brian O'Brien (L) at Yarangobilly, 1953 (see Australian Caver 160, 2003

THE FIRST MEETING OF ASF

Minutes of proceedings at the First Conference of the Australian Speleological Federation, hold at Parnanga S.A. 26th.-28th. Dec.1956.

Please note that these minutes are a brief précis of actual proceedings. It is not economically possible nor is it necessary to circulate the total record. However, this is held in Federation files, and is therefore available to any member society for inspection.
The principle followed in making this précis has boon to put down all motions but to exclude the discussion on these unless this was of special significance.

Opening.
The meeting was declared open by the president of the host society – the Cave Exploration Group of South Australia – Mr. Elery Hamilton-Smith. He welcomed all delegates, and expressed the hope that this federation would help the Australian Societies to build up a standard of caving that would be one of the highest in the world.

Those Present.
The 49 people present at the official opening represented 14 speleological societies from all states of Australia, viz,

Canberra Speleological Society.
Cave Exploration Group (S.A.)
Cooranbong Speleological Society
Cooma Cave Club.
Hunter Valley Caving Club
Jenolan Speleological Society.
Mt. Isa Speleological Society,
Newcastle Tech. & Univ. College Speleological Society.
Orange Speleological Society.
Sydney Speleological Society.
Sydney University Speleological Society.
Tasmanian Caverneering Club.
Victorian Cave Exploration Society.
West Australian Caving Group.

Nomination of Chairman.

Mr. Brian J.O'Brien was nom. B.Nurse.
Sec. J.McGilchrist as chairman of conference.
No other nominations, so Mr. O'Brien was declared chairman and immediately took the chair.

General Business.
The spokesman of the various societies were introduced to the meeting and gave a brief account of their society, followed by general questioning from the meeting.

Motion : That the federation should extend a welcome to the new societies and offer to help them wherever possible.

Moved F.Brown.
Sec. L.Bishop.
Motion carried by acclamation.

Draft Constitution.
A draft constitution had been prepared by SUSS and SSS after consultation with all societies since 1954.
Motion : That the meeting should accept this draft constitution as a basis for discussion.
Moved. F.Brown.
Sec. A.Hunt. Carried.

The chairman pointed out at this juncture that only spokesmen or proxies ware entitled to vote and that each society was only entitled to one vote.

Motion : That Clause 1 should read "The organization shall be known as the Australian Speleological Federation".
Moved B.Nurse.
Sec. E.Hamilton-Smith.
Some discussion followed regarding the use of the wider term Australasian, But this was not favoured by the meeting.

AUSTRALIAN SPELEOLOGICAL FEDERATION.

Minutes of the first meeting of committee of the Australian Speleological Federation, held at Parnanga, S.A. on 28th. Dec. 1956.

Present :	B.J.0'Brien.	President.
	E.Hamilton-Smith.	Secretary.
	B.S. Nurse.	Treasurer.
	R.Anderson.	Librarian.
	J.Jennings.	Canberra Spel. Soc.
	A.L.Hill.	C.E.G. (S.A.)
	F.Brown	Tas. Caverneering Club.
	C.Wallace.	Jenolan Spel. Soc..
	R. Lane.	S.S.S.
	R.Bailey.	Vic. Cave Expl. Soc.
	D.Cartwright.	W.A. Cave Group.
	A.Hunt.	SUSS.
	J.McGilchrist.	Newcastle also proxy for Hunter Valley Club.

This meeting took the form of a discussion to lay down initial policy for the guidance of the executive and to plan the year's programme. Formal motion and voting was not therefore adopted unless it proved not possible to reach unanimous agreement upon any point.

Secretarial Records. The secretary to use own discretion in setting up filing and record system. Minutes to be roneoed for circulation and a copy kept in special file.

Letterhead. It was agreed that a simple Letterhead should be prepared. Procurement of this to be in the hands of S.S.S. as soon as design decided upon and funds available.

Finance. Very long discussion took place on initial financing of the Federation. It was decided an initial fund would be necessary quite apart from that forthcoming from first subscriptions. The means of raising this was discussed and the suggestion that each society should contribute a sum on the basis of 2/- per head of total membership was put to the vote for decision. This was passed, with F.Brown dissenting.

Conduct of Conference. Each society acting as host to an annual conference shall submit to the secretary a report on the conduct of conference and associated activities. This shall be in duplicate, and one copy shall be added to a file which shall pass in turn to the next host society.

Contact with other bodies. The secretary to circulate notice of the formation of the federation to overseas speleological societies and to interested scientific bodies.

Sub-Committees. That subcommittees be set up as below :

Cave Safety - convenor Des Lyons. To enquire into the question of safety in caving, the use and content of safety codes and other relevant matters.

Cave terminology - convener Joe Jennings. To enquire into the definition of terms in use in Australian Speleology.

Each of these to report back to the Federation committee with recommendations towards the formulation of National policy and standards.

Current Scientific Research. The secretary to be responsible for the co-ordination of current research projects in Australian Speleology.

Publication. It was felt desirable that the Federation should produce a high standard speleological publication, but that this was not economically possible at the moment. The report on the Nullarbor expedition to be compiled by the secretary, and the secretary and A.Hill to report to the next full committee meeting on possible avenues of publication for this report.

Information Bureau. The Librarian is to compile an index to all available data on Australian Caves and speleology. He is not to collect actual copies of references or publications at this stage.

SEEKING CAVE SECRETS

These speleologists left Hobart yesterday in three parties to explore caves at Hastings, the Florentine, and Mole Creek. They aim to explore the cave areas, map them, and trace underground rivers. Most of them are in the picture below.

● Dr. Marjorie Sweeting (centre), a lecturer at the Australian National University, Canberra, and Margaret Innes (right), of Sydney, help Robin Case, also of Sydney, with her rucksack.

Participants leave for field trips after Second Conference, Tasmania 1958
Newspaper cutting

DATES

Landmarks in Organisation and Publication

1946 Australia's first speleological society, Tasmanian Caverneering Club formed in Hobart
1948 Sydney University Speleological Society formed (first mainland society)
1953 Search & rescue at Yarrangobilly draws attention to other individuals & groups interested in caves
1956 Australian Speleological Federation founded, first national Conference held in Adelaide
1957 First issue of ASF Newsletter (later retitled Australian Caver and later still Caves Australia)
1962 First issue of Helictite; The Journal of Australasian Cave and Karst Science
1962 ASF Conservation Commission established
1964 Bat Research News - joint venture of ASF & CSIRO Division of Wildlife Research
1968 ASF Speleo Handbook published; ASF Conference Proceedings published for first time
1970 Constitution overhauled to facilitate ASF functioning ("The Green Thing")
1970 Australian Speleo Abstracts initiated
1972 Largest ASF Conference draws 150 to Nibicon, Cavers Dinner held on meandering Sydney Harbour ferry
1978 ASF Cave Management Newsletter inaugurated
1984 ASF incorporated in the Australian Capital Territory
1985 Australian Karst Index published; ASF Newsletter renamed Australian Caver
1988 Australian Geographic includes special section on caves
1991 New Constitution to facilitate governance of ASF
1990s ASF plays a leading role in the development of outdoor recreation leadership through NORLD & ORCA
1990s ASF representation on Jenolan Caves Reserve Trust enshrined in legislation
1994 Insurance first raises its divisive head!
1996 21st Biennial Conference celebrates 40 years of ASF, Quorn (SA)
1997 Publication of Karst of the Central West Catchment, NSW from NHT grant
2000 ASF acquires ownership of Helictite and other assets of the Speleological Research Council Ltd
2001 ASF registered as an Environmental Organisation by Department of Environment & Heritage, Canberra
2001 The Great Insurance Crisis is adroitly addressed
2003 Beneath the Surface: a natural history of Australian caves published for ASF by UNSW Press
2004 ASF co-hosts Limestone Coast international conferences at Naracoorte (International Geoscience Program – Global Karst Correlation), and First International Workshop on RAMSAR Subterranean Wetlands
2004 ASF wins Brisbane City Council Award for organisational excellence in an outdoor activities organisation
2004 Australian Caver renamed Caves Australia
2004 ASF Environment Fund makes its first grant to a member club (to assist documentation of Timor Caves, NSW)
2005 New software for Karst Index Database completed
2005 25th Biennial ASF Conference opened by Governor of Tasmania, Mr W.E.Cox
2006 ASF negotiates Memorandum of Understanding with Cement Australia for ownership of caves, karst & other property at Mt Etna, Central Qld.

Landmarks in Conservation and Management

1962 ASF Conservation Commission established; Caves and Conservation published
1965 Campaign against mining at Mt Etna commences
1967 Colong Campaign against mining eventually leads to preservation of caves
1974 ASF receives National Heritage grant, leading to a national cave documentation system
1971-75 'Save Bungonia' campaign, ASF/UNSWSS member sets precedent of standing before Mining Wardens Court; Bungonia Caves book published
1973 Proposed Pike Creek Dam (the first major ASF campaign submission / report on conservation issues)
1973 ASF hosts inaugural Australasian Conference on Cave Management, Jenolan
1974 First ASF cave management consultant report (Cave Reserves of the Katherine area)
1981 ASF undertakes Nullarbor Karst Study for WA Environmental Protection Authority
1983 High Court decision saves Franklin River (Tas) from inundation, caves & aboriginal sites preserved
1987 Establishment of Australasian Cave & Karst Management Association
1987 ASF contracted to advise on future management of Jenolan Caves
1988 Publication of The Management of Soluble Rock Landscapes: an Australian Perspective
1988 High Court of Australia returns Mt Etna Caves issue to the Supreme Court of Queensland; some caves blasted
1989 Compulsory acquisition of The Potholes at Buchan after more than 20 years campaigning against quarry threats
1991 ASF contracted to organise survey of Exit Cave, Tasmania following closure of nearby Benders Quarry
1991 ASF campaigns against quarrying at Yessabah Caves, NSW
1994 Victoria Fossil Cave (Naracoorte SA) receives World Heritage Listing
1994 ASF prosecutes Sellicks Hill Cave dispute, ends up in SA Supreme Court
1995 Australian team conducts cave & karst management training courses, Thailand
1998 ASF obtains NHT grant for fencing & revegetation work at Cliefden, NSW, carried out by NSWSC
1998 Mt Etna National Park extended to incorporate Cammoo Caves, end (almost!) of 37-year campaign
1999 ASF obtains NHT grant: NSWSC to document karst & caves in NSW Central West & rehabilitation at Stuart Town
1999 Reconciliation between conservationists & mining company over Mt Etna
2000 ASF takes mining lease applications at Mt Cripps (Tas.) to Mining Wardens Court
2000-4 ASF successfully pursues action in WA Mining Wardens Court over quarrying on Cape Range
2000 ASF participates in international seminar on guidelines for mining cavernous limestone areas, Bathurst
2004 Work commences on ASF book celebrating cave conservation issues
2007 ASF contracts to undertake rehabilitation work on eastern quarry, Mt Etna

Landmarks in Cave Exploration and Documentation

New South Wales
1946 Descent of Drum Cave, Bungonia, by winch
1953 Discovery of Chevalier Cave, Jenolan, using scaling poles; pioneer diving in Imperial Cave
1957 Divers link River Cave with Junction Cave, Wombeyan
1950s Exploration & surveying of Wee Jasper Caves
1960/61 Exploration of B31, Bungonia
1962 Exploration, discoveries and documentation at Coolemon
1962 Wiburds Lake Cave, Jenolan
1965 Exploration at Moparrabah, Macleay River
1965/66 Survey of Tuglow Cave
1967 Busting of The Efflux, Bungonia'
1969 Beginning of thorough documentation of Abercrombie Caves
1970/71 Surveying of Mammoth Cave Jenolan & publication of the "yellow book"
1971/5 Exploration & documentation of sea caves on south coast
1974/5 Filming of' 'Crystal Kingdom' movie
1974 Cave Rescue Group formed
1976 Discovery of new karst area at Deua
1975-2006 Discovery, exploration & survey of Spider Cave, Jenolan; linking with Tourist Caves
1980/90s Survey of Jenolan Tourist Cave system
1990s-2006 Advanced cave diving at Jenolan, Wellington, Wombeyan, Yarrangobilly Caves
1998 Tuglow Caves book
2004> Advanced surveying in Colong Cave

Northern Territory
1961/2 Exploration in Fenton area, 11 caves located at Douglas River
1980s Exploration & documentation in Katherine region
1991-2006 Expeditions to Gregory National Park explore & survey the 2 longest caves in Australia
2004 Bullita Cave system passes 100km; total length of Gregory Caves passes 150km
2005 Exploration & documentation commences at Pungalina

Queensland
1950s Early exploration of caves at Camooweal
1960s Explorations at Texas & Viator before Glen Lyon dam floods caves
1965 Campaign against mining at Mt Etna begins, first extensive exploration at Mt Etna & Limestone Ridge
1966 First major expedition to Chillagoe
1971 Publication of Mt Etna Caves book
1972 Exploration of Fanning River Caves
1975 Expedition by light aircraft to locate caves near Camooweal
1990s Expeditions to Mitchell-Palmer in search of caves and ghost bats
1990s> Exploration & documentation of Broken River Karst

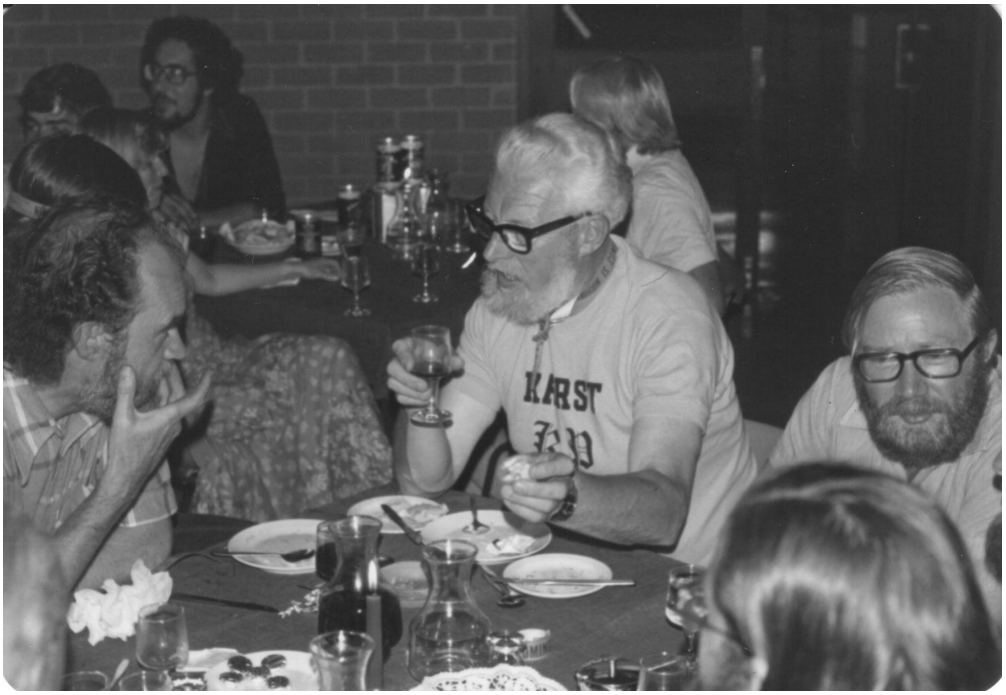
South Australia / Nullarbor
1950s Exploration of Nullarbor using light aircraft
1957 Expeditions following inaugural ASF Conference survey Koonalda & other Nullarbor caves
1966/67 First speleological books on Australian caves: Mullamullang Expeditions 1966; Caves of the Nullarbor 1967
1969 Discovery of fossil deposits, Victoria Fossil Cave (becomes World Heritage site in 1994)
1970s Documentation of south-east region
1970s> era of extensive cave diving begins, 11 (non-ASF) deaths from cave diving leads to formation of CDAA; publication of Cave Diving in Australia
1982 Nullarbor Cave Atlas published
1990s Documentation of Nullarbor region passes 2000 sites

Tasmania
1947 Discovery of Growling Swallet, rediscovery of Croesus Cave
1947 First speleological exploration of Mystery Creek Cave & Exit Cave
1948 Exploration of Kubla Khan Cave
1958 Discovery of river passages in Kubla Khan
1959 ASF Conference field trips - groundbreaking survey of Honeycomb Cave, Mole Ck
1967 Reconnaissance of Mt Anne, another mile in Exit Cave
1970 Exploration in Junee – Florentine deep caves; Tassy Pot 240m, deepest cave in Australia
1971 Exit Cave length reaches ten miles (16km), Australia's longest – Conference Concourse discovered
1971 Australia's longest pitch, 103m in Kellers Cellar, Mt Anne
1973 Precipitous Bluff expedition by amphibian aircraft
1976 Khazad Dum - Dwarrowdelf 322m, becomes Australia's deepest cave
1970s-80 'Rubber ducky' expeditions explore caves along Franklin River
1982 "For your Eyes Only" passage discovered by divers in Junee resurgence
1984 Vertical Caves of Tasmania book
1990s Exploration & documentation of Mt Cripps karst and caves
2000 Caves documented in Junee-Florentine area reach 638
2000> Exploration & documentation of caves at Gunns Plains

Victoria
1961 Scrubby Creek & Trogs Wallow, Buchan
1961 Dalleys Sinkhole, Buchan
1968 Extensions to Trog Dip
1973 Discovery of Exponential Pot
1973-83 Exploration & documentation of Bats Ridge
1990s Discovery, exploration & surveying of the Carmichael / Maze system at Mt Eccles
1998 Exploration & mapping of DD4

Western Australia
1958 Rediscovery & exploration of Easter Cave
1958 Discovery of Jewel Cave
1960s Aerial photos aid several Nullarbor Expeditions; Discovery, exploration & survey of Mullamullang Cave
1976 Survey of Easter Cave
1987 Beginning of major documentation and research at Cape Range
1979-84 Successive world record cave dives extend Cocklebiddy Cave to over 6km
1990-7 Search for new entrances on Nullarbor using motorised hang gliders & trikes
1991 Old Homestead Cave becomes longest cave in Australia (23km)
1993 Cape Range biospeleological survey
1993 Establishment of the Leeuwin-Naturaliste Ridge Permit System
1994 Expedition to new karst areas of the East Pilbara region
1996 Exploration of new karst areas in Wanneroo
1990s> Exploration of Nullarbor region using ultra-light aircraft
1998> Exploration, documentation & cave diving in Ning Bing Range & nearby East Kimberley
2003> Further diving in Cocklebiddy & other caves

Australian Expeditions Overseas
1963 Australian biospeleological expedition to New Caledonia & New Hebrides (Vanuatu)
1970s Expeditions to South Island, New Zealand
1973 Expedition to West Papua, Indonesia
1978 Atea Kananda & Mamo Kananda, Muller Ranges,New Guinea explore deepest cave in southern hemisphere
1980s-90s Expeditions in search of deep caves in Mexico
1981 Exploration of St Pauls Cave, Palawan, Philippines
1993 Expedition to Szechuan, China
1990s Reconnaissance trips to Laos
1985> 10 Expeditions to Thailand explore longest caves in mainland SE Asia & document Thai karst & caves
1988 Australians conduct world's first expedition in search of caves in Burma
1994 The Caves of Thailand book published
1990s Expeditions to Java, Seram & Sulawesi (Indonesia), Vietnam, China
1990s> Documentation of (mostly) lava caves of Mauritius, Rodriguez & Samoa
1999 – 2003 Exploration expeditions to Mt Owen, New Zealand
2000> Australians in international expeditions to Lechuguilla Cave (USA), Mexico , Abkhazia, Madagascar, China
2005 Expedition to East Timor for documentation in Iralalaro polje area



Nibicon dinner, 1972 Sydney. Elery Hamilton-Smith, John Masala, Joe Jennings, Ted Anderson
Photo Jeanette Dunkley

Australian Speleological Federation.

NEWSLETTER

No. 1. June 1957.

This is the first issue of what we trust will be a periodical newssheet of value to all interested in serious cave study. It is directed towards the co-ordination of Speleological research in Australia, and with the interest of Australian Societies in this field, has a very real purpose.

We intend to publish the following data in each issue, and would ask all societies and other readers to forward material to the editor for future publication.

1. News of current studies in specific fields, including not only pure science, but studies on techniques such as surveying, photography, underground camping, or equipment.

2. Problems of study on which advice, information, or specimens are desired..

3. Abstracts of recent publications of note which may otherwise escape the notice of speleos.

CAVE-WETAS or CAVE-LOCUSTS.

Dr. Ada Richards, Zoology Dept., Victoria University College, Box 196, P.O., Wellington, N.Z. has made an intensive study of this group and wants to see Australian specimens. Will probably be able to identify specimens forwarded. Specimens should be preserved in 75% alcohol and accompanied by details of locality where collected.

IDENTIFICATION OF BIOLOGICAL MATERIAL.

As you all know, most cave species are small invertebrates, often of obscure groups which are difficult to identify. I am endeavouring to build up a list of specialists in various groups able to help in this task. Would therefore like to hear from cavers with details of those groups which are at present posing this problem, and from specialists working in the groups concerned and interested in seeing cave species.

BAT RESEARCH.

At present, several Australian Societies are considering work in this field. Banding of bats is an almost essential part of any intensive study of this but if undertaken in this country, should be co-ordinated on an Australia wide basis, with liaison with all overseas bodies concerned in these studies. It is therefore suggested that a conference on this be held in conjunction with the executive committee meeting which is due to be held in Sydney next Dec. - Jan. In the meantime, all societies should be able to do much useful preliminary work, which is really essential before banding can be done. Will those interested please contact me, so that plans can be made for the conference?

CURRENT PROJECTS.

Dean Mullan. C.E.G.S.A., C/- S.Aust. Museum, Adelaide, S.A.
Study of radio wave conduction in caves, experimenting in a dry cave.

Alan Hill. C.E.G.S.A., address as above.
The origin of the Kelly Hill Cave System.

June Marlow. C.E.G.S.A., address as above.
Examination of cave pearls and helictites - conditions of development, origins, etc.

Henry Fairlie-Cunninghame. 45 Wyvern Ave., Chatswood. N.S.W.

Development of lighting equipment for photography in large caverns. Has also recently completed some very interesting work on inflation of hydrogen balloons for survey work.

Tom Draper. 66 Shortland Ave., Strathfield, N.S.W.
Also interested in photographic lighting of large caverns.

E.Hamilton-Smith. C/- Brotherhood of St.Laurence, 67 Brunswick St., Fitzroy, N6. Vict.
Animal ecology of a bat colony, situated at Naracoorte, S.A.

Enquiries and information for the next issue to the editor:

Hon. Secretary,
Australian Speleological Federation,
C/- Brotherhood of St.Laurence,
67 Brunswick St.,
Fitzroy, N.6.
Victoria.

Over the ensuing years numerous debates occurred over the role of the Newsletter. This one was typical of many a suffering editor:

The Purpose of the ASF Newsletter

Keith H. Clouten (editor)

ASF Newsletter 16 (1962)

At the ASF annual committee meeting last January, there was some discussion as to the purpose of the ASF Newsletter and the type of material which it could contain. On this point there has been, and always will be some differences of opinion. However the general feeling expressed at the committee meeting (and for that matter, at other ASF meetings) was that the Newsletter should contain the following:

1. A summary of the activities of each ASF society
2. A summary of ASF business matters as they concern the various executive officers of ASF.
3. Abstracts of useful periodical articles received by the ASF Librarian.
4. Progress reports from the ASF sub-committees

If all of this could be included in each issue of the Newsletter there would, presumably, be no complaints, and this publication would be fulfilling its purpose admirably. But the needed information is not always forthcoming. … With regard to the summaries of society activities, these have become very rare commodities indeed. … The editor would be pleased to hear from member societies or individual speleos who have constructive ideas or suggestions in connection with the ASF Newsletter. Although we will never please everyone, this will assist us in producing what at least the majority would like to see.


FRIENDLY GROUP OF CAVEMEN

Cavemen (and women) at the Australian Speleological Conference at Sturt Island this week (left to right): Miss Barbara Kent, Secretary of the Canberra Speleological Society; Mr. D. Jennings, geomorphologist from the A.N.U.; Mr. Ted Lane, Secretary of the Australian Speleological Federation and the Sydney S.S.; Mr. Warren Peck, President of the A.S.F. and the Sydney University S.S. and Mr. Ellery Hamilton-Smith, from Melbourne.

Newspaper cutting: Canberra Conference heavies

DIRECTIONS

After the inaugural Conference, the first communication from ASF, a letter from the President to members was sent via founding member clubs outlining some of the directions already undertaken. It was followed in June 1957 by the first

AUSTRALIAN SPELEOLOGICAL FEDERATION

School of Physics, University of
Sydney, Sydney,
20th March, 1957.
CIRCULAR
The President and Members,
Dear Speleos,

At the Inaugural Meeting of the Australian Speleological Federation, held in Adelaide in December, 1956, I received the great honour of being elected by the assembled delegates to be President of the Federation. It is my feeling that in this letter, my first one to you since my election, I should set out briefly what, in my opinion, are some of the benefits to be derived by you from your membership of the Federation.

Those of you who were fortunate enough to be able to attend the Adelaide Conference will have realised already one of the finest things resulting from the formation of the Federation — that is the opportunity to "meet the other blokes". About eighty-five speleologists from seven Australian states gathered at the camp at Adelaide, and this resulted in an extraordinary exchange of opinions, news, techniques and general information which, by itself alone, would justify the whole meeting. Add to this the informative talks at the meeting, and the very successful Nullarbor and Kangaroo Island expeditions afterwards, and I feel certain that everyone is looking forward with eagerness to the 1958 Convention, when the Tasmanian cavers will be the hosts.

The two expeditions I just mentioned, with all their successes also indicate the potential role for the Federation of "sponsoring" such general expeditions. The experience of overseas groups, particularly of the C.R.G. of Great Britain, has shown that it is wise for one Society to be the sole organising body for these joint expeditions, and the South Australian group has proved already that this can be a very successful method.

The inauguration of the Federation may be deemed one of the decisive factors influencing the formerly loose-knit groups at Cooranbong, Newcastle, Victoria and Western Australia to become officially constituted Societies. This we may claim with some justification that the A.S.F. has led to an important advance in Australian speleology even before its own formal birth and christening.

The very important matters of research coordination, the activities of the sub-committee investigating cave terminology and an A.S.F. Information Centre will be dealt with fully by your Secretary and Librarian, and I will content myself with commending them to your attention and consideration.

One last matter. Over the past half year or so I have received (and complied with) a number of requests by several overseas speleological groups, notably in Great Britain and the U.S.A. for articles on various facets of Australian speleology — on certain cave areas, Australian caves in general, on the Federation and its formation, on Australian caving, and on some cave research projects of my own. All these requests point up the fact that overseas groups are interested in our activities, and now that we have a National organisation I have no doubt that we shall soon bring Australian caving to the position where it can participate with pride in world speleology.

With very best wishes,

Brian J. O'Brien
President

Joe Jennings was a founder and second President of ASF, our Trustee until his death in 1984, our representative and the face of Australian speleology at international meetings, a strong supporter of lay as well as the professional study of caves, mentor to many and one who was a remarkably active exploratory and expeditionary caver as well as a distinguished scholar of caves and karst. The main content of Australian Caver 161 (March 2004) was given over to a tribute to Joe compiled by Andy Spate, a long-term Vice-president of ASF. Among the 25 or so published, we have included here some particularly apposite reminiscences of Joe's inestimable contribution to the corporate life of Australian speleology.

WITH JOE: AUSTRALIAN CAVING, CAVERS AND JOE JENNINGS

Andy Spate

Australian Caver 161 (2004)

It was with very great pleasure that I accepted an invitation from the Federation's Executive to act as Guest Editor in this edition of Australian Caver that is largely dedicated to the memory of Joe Jennings. This year marks twenty years since Joe's untimely death skiing on the mountains above Eucumbene Dam in the Snowy Mountains of New South Wales. Last year the University of New South Wales Press published Beneath the Surface: A Natural History of Australian Caves under the editorship of Brian Finlayson and Elery Hamilton-Smith. A copy of this excellent book should grace the shelves of every Australian caver.

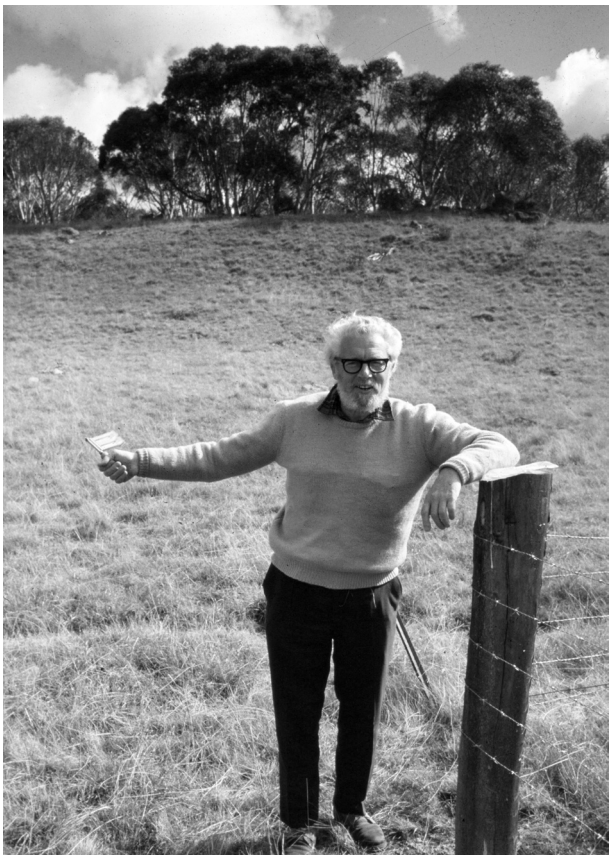
The Executive felt that this issue of the Australian Caver should mark the publication of this book, dedicated to Joe. John Dunkley and I sought contributions via ASF Clubs across Australia and from Joe's past scientific and caving colleagues across Australia. I thank all of them for their contributions. John Dunkley, in particular, deserves thanks for keeping me to the task and for performing editorial and layout suggestions.

I met Joe within a few days of his arrival in Australia in January 1953, started caving regularly with him in 1959 or '60 and was last with him in a cave within a week of his death nearly 32 years later. Scarcely a day goes by when I don't think of him somehow… He crammed an enormous amount into those years as a caver, explorer, scientist and lover of the Australian environment. As you will see when you read the contributions below Joe left different impressions on those he met – some found him a diplomat and others somewhat less so! Which reminds me of his mildly 'dirty' joke about the difference between a diplomat and a lady …

Joe was a wonderful mentor for me and many others as can be seen in many comments made below. Yes, he could be loud, almost belligerent (I well recall a bellowing Joe charging up a steep hill near Blue Waterholes toward a group of cavers - I won't identify their club - who were rolling boulders down the slope toward our group. They scattered!). But he was also wonderfully helpful and patient toward those groping to an understanding of any aspect of Australian environments. He didn't suffer fools gladly!

Joe was a caver - potholer - in Britain before the war and took up recreational caving in the mid-1950s. This soon stimulated his intellectual interest in karst. He was active in caving clubs and in the development of the Australian Speleological Federation - although the exigencies of speleopolitics enraged him! One measure of Joe's support of amateur speleology is that he organised the meeting room for the Canberra Speleological Society in the tearooms of the Old Hospital Building around 1960. When he moved into the new Coombs Building in 1963 he organised the use of a room there. CSS still meets in that building.

Like many of us in caving and other outdoor pursuits, he changed with the times in that the activities of his youth, such as digging and the burying of rubbish in the bush, evolved into a more responsible approach to the environments we were enjoying. A similar pattern can be seen in the development of the Federation itself.



Joe at Cooleman Plains. Photo: Andy Spate.

The following is an edited and supplemented version of material recently supplied to the Australian Dictionary of Biography

JENNINGS, JOSEPH NEWELL (1916-1984), geomorphologist, was born at Leeds, Yorkshire, United Kingdom, the only child of Joseph Newell Jennings, confectionary salesman and radio mechanic, and his wife Alice, née Rhodes. He was educated at the Oldershaw School for Boys, Merseyside. Known universally as Joe, he studied at Cambridge University and was awarded both Bachelor and Master of Arts. War service, largely in Iceland with the Royal Artillery, interrupted his doctoral studies in the Department of Botany at Cambridge and, nearly, his personal relationships.

Following the war, he accepted a lectureship at the University of Leeds but regulations inhibited him from resuming his doctoral studies but a grant from the Royal Geographical Society allowed him to continue the work on the origin of the Norfolk Broads. Although the work was meticulous and the conclusions valid from

the data obtained, further work with Dr Joyce Lambert demonstrated that his earlier ideas where invalid. This allowed him, with Lambert's assistance, to publish an able self-refutation. This was characteristic of Jennings in that he was able to accept new data and ideas that ran counter to his earlier opinions.

In 1952, he was appointed to the Department of Geography at the fledgling Australian National University where he was to spend the remainder of his career. He arrived, with his family, in January 1953 and became a naturalized Australian in 1963.

His academic career blossomed in Australia and covered a wide range of Australian landscapes – from changing sea levels to the highest peaks and from deserts to coral reefs. He commenced caving as a recreational activity in Canberra but soon became immersed in the science of caves and karst eventually became a world authority on karst geomorphology publishing two monographs on subject (the last posthumously). He also edited the Australian National University Press' seven volume An Introduction to Systematic Geomorphology as well as the long running series 'Australian Landform Examples' in the Australian Geographer. Ultimately his publications numbered over two hundred monographs, book chapters and papers with about 120 devoted to caves and karst. He was an Associate Editor for the prestigious journal Zeitschrift für Geomorphologie; held the Clarke medal of the Royal Society of New South Wales and the premier award of the Royal Geographical Society of London, the Victoria Medal.

His research was not confined to Australia but ranged from Britain to Iceland and Jan Mayen in the Arctic, and onto New Zealand, Papua New Guinea and Malaysia. As well as geomorphological studies, he also published in the fields of zoology, European exploration and landuse in Australia and in climatology. He enthusiastically accepted new ideas, methodologies and technologies to the very great advantage of his science.

In 1972, Cambridge University awarded Jennings was a Doctorate of Philosophy by Letters. At his insistence, this was in Botany rather than Geography marking the culmination of his research commenced before the War in that Department. It was recognised that Jennings' achievements should have been at a Doctor of Science but again he insisted that he be given the lesser degree appropriate to his original enrolment. Again this was a mark of his character in that he sought only appropriate recognition.

Jennings was a remarkable mentor for his students, co-workers and the caving community making his time freely available to many across the world. A considerable number of Australian and overseas landscape scientists owe much to his unflagging friendship and advice. He had an enormous influence on Australian and New Zealand cave science and exploration with particular emphasis on the Eastern Highlands, the Nullarbor and the Kimberly as well as sandstone karstlands across northern Australia. He was perhaps the first to publish, worldwide, on the unusual young karst landscapes in carbonate dunes of southern coastal Australia – the so-called 'syngenetic' karsts

He was a Founder and President of the Australian Speleological Federation and its Trustee from 1956 until his death. He played an active role in Australian recreational caving and promoted the study of caves in a number of caving societies lending his support and research in a number of significant local publications such as the Bungonia and Wombeyan books and journals such as Tower Karst. He had a very long-time role in supporting both the Speleological Research Council, Ltd, and its long-running journal, Helictite: the Journal of Australasian Cave Research. He was one of very few people, not American citizens, on whom the American National Speleological Society bestowed honorary life membership.

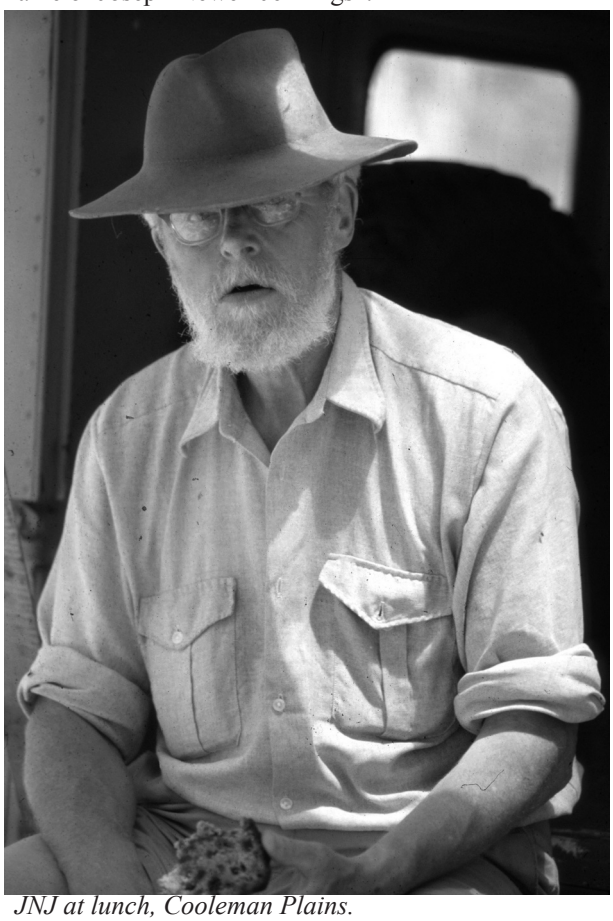
Jennings was fascinated by, and revelled in, the Australian 'bush' in all its manifold entities and was an active camper, bushwalker and skier as well as an enthusiastic lover of Australian red wines. He died on 24 August 1984 of a heart attack while skiing in the Snowy Mountains of New South Wales where he had conducted so much of his research into Australian landscapes. His devoted wife Betty, son Guy and daughters Sarah and Judy survive him. Judy continues to be involved in the science and management of Australia's natural resources.

For more information on Joe see the following:

Spate, A.P., and Gillieson, D.S. (1984) Joe Jennings - an obituary and karst bibliography, Helictite 22(2)35-42
Spate, O.H.K. and Spate, A.P., Obituary: Joseph Newell Jennings 1916-1984 (and comprehensive bibliography), Australian Geographical Studies, 23(2)325-337

In closing my remarks I would like to slightly paraphrase a paragraph from the Preface to John Tyndal's delightful Hours of Exercise in the Alps (Longmans, Green, and Co., London and Bombay, 1871, p viii).

"To the name of a friend who taught me in my boyhood how to handle a theodolite and lay a chain, and who afterwards turned his knowledge to account on the caves of the world … Of the firmness of a friendship, uninterrupted for an hour, and only strengthened by the weathering of 50 years of companionship, both physically and in spirit, he would need no assurance. Still, for the pleasure it gives myself, I connect this volume with the name of Joseph Newell Jennings".



JNJ at lunch, Cooleman Plains.
Photo: Andy Spate.

With Marjorie Coggan at London Bridge and Yarrangobilly (CSS)

One of the most amazing things about caving (working?) with Joe was that you never knew what you were letting yourself in for. There was always a theory to be put to the test. One day we would be slamming a sledgehammer into a metal plate lying on the ground in an attempt at low-budget seismic surveying. Another we would be lugging generators to the bottom of deep gorges or wheeling barrows through dense bush to enable the construction of stream-gauging weirs. This would be followed by sitting in the rain at some remote point of the Yarrangobilly River taking hourly water samples hoping to pick up the odd lycopodium spore to prove a link from a distant sink. On other occasions we fiddled with fluorimeters trying to detect the presence of optical brighteners (used for stream tracing) against high background levels of natural fluorescence. Then there was the time we wandered about the Yarrangobilly Plateau with very expensive and delicate pH meters. Around the same time, Joe's micro erosion studies at Yarrangobilly and Cooleman were in full swing. How fast does limestone erode when it is sitting in a cave stream, buried in the soil, or just sitting on the surface? Just set up the experiment and sit back and wait for 20 years.

From Steve Bunton(STC)

I once asked Joe if he'd come and look at a cave I knew about. At this time Joe had a heart condition and this trip involved a long walk up a steep hill. He replied that his specialist didn't mind him climbing any mountains – it was the committee meetings he had to avoid because they really got his blood pressure up!

Following a suggestion by then President Peter Berrill, the ASF Executive resolved in 1998 to apply for registration as an Environmental Organisation to strengthen our ability to support cave conservation endeavours, including an ability to receive tax-deductible gifts through its Public Fund (often referred to as the Environment Fund). The full implications of this directional change for ASF have yet to be realised, but the Fund's tax-deductible status was critical to discussions in 2006 regarding the proposed transfer to ASF of title to certain parcels of land and property at Mt Etna in Central Queensland containing caves and karst. Also in 2006 the Fund was able to make its first grant to a member society for environmental purposes.

ASF REGISTERED AS AN ENVIRONMENTAL ORGANISATION (amended and updated to 2006)

John Dunkley

Australian Caver 157 (2002), 161 (2004)

ASF was formally registered as an Environmental Organisation (EO) on 6th June 2001 by the then Minister for the Environment and Heritage, Senator Robert Hill. This was the culmination of three years work by the Executive and strong support from the clubs making up the ASF Council, which approved significant changes to our Constitution to meet the registration requirements. Registration brings significant benefits as well as obligations.

Benefits
As an EO, ASF and speleologists generally are perceived more positively and ASF enhances its corporate image and reputation.

Donations to the Public Fund are tax-deductible.

ASF is eligible to apply to Environment Australia for funding as an Environmental Organisation.

Obligations
The primary obligation is that we must ensure that the Fund is managed in accordance with the Constitution, and that everything on which it expends money must be consistent with, and be seen to be consistent with our environmental aims

Other Activities
Registration does not fetter us from carrying out the kind of activities which we have for many years. We can continue to offer insurance, to promote safety standards, to be an advocate for reasonable access conditions, to publish magazines and books, to hold conferences and seminars, and to represent Australian speleology nationally and internationally

Management
It is a requirement of registration (and now of our Constitution) that a majority of the Management Committee must be "persons who because of their tenure of some public office or their position in the community have a degree of responsibility to the community as a whole as distinct from obligations solely in regard to the environmental objectives of the Federation". Appointed by the Executive, the Directors of the Fund Management Committee are

Anne Atkinson OAM, MSc
Retired consultant, Cairns
(resigned due to ill health 2003)

Peter Berrill
Self-employed businessman, Rockhampton

Maria Comino LLB
Solicitor, Brisbane

Anthony Culberg, BCom, DipEd, TTC
Accountant, Hobart

John Dunkley, MEd, BEc, DipEd
Consultant & Company Director, Canberra

Kevin Kiernan, PhD
University Lecturer, Hobart

As well as considerable experience in speleological matters, all bring their professional expertise to the task. Founding Director Anne Atkinson received her OAM and MSc for study, publications and advocacy of the Undara Lava Caves system in north Queensland. As an environmental lawyer Maria Comino worked on the culmination of the Mt Etna epic. Kevin Kiernan is an authority on Tasmanian caves and karst and founded the Tasmanian Wilderness Society. Peter and John have both been President of ASF, while Tony is a former Secretary.

DEBATES

Many of the electronic debates that clog up internet sites were once conducted exclusively through the medium of ASF and club newsletters. A pity in a way as only a minority of members are likely to read or engage in such discussions. Some debates were drawn out and some recur in cycles. As usual, some produced much heat and little light and it is a mark of ASF's success that occasional healthy introspection is encouraged, while lasting acrimony has been almost non-existent. In recent years the most fiery were in response to external imposts such as the Great Insurance Crisis, caver accreditation, Leadership Standards and most recently, Risk Management. The advent of electronic communication has strengthened ASF by facilitating swifter and more frequent two-way communication with member clubs, and acrimonious debate is now rare in annual Council Meetings.

A small sample is followed by a list of others that will no doubt jog memories.

1. The Early Days - What Are We Here For?

OPENING ADDRESS - 3rd. Biennial Conference of ASF

Mgr Favier

ASF Newsletter 9 (1961)

(This address was given at Canberra on Dec.29th. 1960 by Mgr Favier. Some sections of the address have had to be omitted.)

I have been genuinely honoured by the request of your Canberra Convenor, Dave Purchase to officially open the third Biennial Conference of the ASF, and the first gathering of the Federal body in the ACT.

I congratulate you upon your initiative (1) in establishing the Federation and (2) in holding these Conferences in the face of a good deal of pessimistic apathy or even opposition from those yet to be converted to the benefits of federalism. The Federation and the Conventions both derive from the quality and quantity of the membership of constituent bodies, and their continued success will be based on the spirit of true comradeship and joint enterprise which prevails amongst most cavers.

Though Speleology is an 'ology' and is sometimes defined as the scientific study of caves., I venture to say that Speleology – for the average speleo – cannot be called a Science. It certainly does extend the frontiers of knowledge, it touches on many branches of science, and some few speleos are in the game for scientific reasons, but the majority take to it mainly because it is an adventure, because it is their sport. their recreation, their hobby. Therefore. let us not get too pompous or pontifical about it – let us have Conventions and papers, but let us not expect that all our Bods are going to turn into Boffins. Certainly, too, Speleology though not a Religion can lead a thinking person to Religion by the speleo's reverence for these beautiful and unusual works of God's Creation so unexpected within the very bowels of the earth – the shawls, the stalactites, the helictites, the massive and microscopic beauty of limestone caves, formed over geological aeons in the evolutionary cycle, by the operation and interaction of the Creator's laws of nature.

Therefore since – as I claim – caving is neither a Religion nor a Science, but rather a sport, let us beware of exaggerated claims for caving – claims that cannot be substantiated.

Certainly caving is not an appealing Sport to the vast multitude of men. To them there seem to be many more appealing ways of spending their leisure than in caving. To them it would seem much more sensible and pleasant to feel the gentle glow of King Sol on your back in the brilliant sunshine at Bondi than to feel in the pitch darkness the bite on your back of the stalactites as you wriggle – or shall we say reptate – through a squeeze, wondering as you get more and more stuck whether you'll lose only your ears or also your head if you're pulled out backwards; or whether, if you go forward into the unknown the foul air that's making your head boom is going to give you the K.O. before the sweat around your eyes blinds you or the water rising around your mouth drowns you. If you are a confirmed speleo, it's into all this that you'll go. not in present enjoyment; that will come in retrospect.

And so what is the honest answer to the question? Why do you do all this? The simplest and most honest is – "Because we like it." Few sports offer their devotees a wider range of disagreeable moments than does caving. Certainly, there is the aesthetic value of the views in the new cave, but there is also the very definite ascetic value of the descent, involving as it does risk, uncertainty, sacrifice, discomfort, hard rations, and dogged perseverance.

However, we speleos feel that to clamber for a day or so over virgin subterranean gullies, and down their waterfalls, to dive through syphons or to traverse chasms is an addition to our personality and an exercise of individuality – a personal achievement which involves preferring the happiness of effort to the pleasure of remaining comfortably in the rut.

Again, attend to science if that be your bent, collect your specimens, classify your rock formations, plan your trips, study your maps, announce your route, follow the safety code but go also and always to enjoy yourself. Go like a child into a region of wonderful things. Be attuned to the harmonies of Creation. Then will your precious sense of wonder never be blunted – then will you hear the music of the depths, and the thrilling voice of new and lonely places.

THE ROLE OF A.S.F.

Elery Hamilton-Smith

ASF Newsletter 22 (1963)

The Federation has acted to disseminate information among societies, to foster joint efforts and regular contact between them, to set standards in such aspects as ethics and conservation, to act as a liaison body with international contacts, and to develop a library.

As was only to be expected, many problems were encountered, and some friction existed between societies. However in overcoming these, steady progress has been made and the Federation grows stronger year by year.

Certain principles of Federation policy which have clearly emerged from debate in recent years are worth highlighting as these are often re-opened in later discussion by societies not aware of earlier decisions. The first is that the Federation can only be a co-ordinating body – it cannot and should not control its member societies; the second is that the keeping of trip reports and maps is a society responsibility, not the Federation's; and third, business should not be discussed at a meeting unless due notice has been given.

This latter point is one of considerable importance. Many of the disagreements in recent years have resulted from the introduction of new business during the meeting. It would appear -wise that a bylaw might be enacted prohibiting a meeting from dealing with any such business. Another suggestion which has been made is that greater progress might be achieved if meetings were to concentrate on points of common agreement rather than upon those Matters to which considerable opposition was raised. This might ultimately be embodied in a constitutional clause which demanded more than a simple majority to pass any motion. At this stage it is desired only to raise the issue for discussion and to highlight the need for unity and harmony if we are to achieve an effective national body.

The Executive of ASF

A frequent point of difficulty has been the appointment of the executive. Many enthusiastic individuals have undertaken the task of an office on the executive and then, often through circumstances beyond their control, have been unable to carry out their responsibilities. However it is pleasing to see that in each year a higher proportion of our executive have carried out their task conscientiously. Perhaps those offering in earlier years did not realise until in office, the formidable load of work they were undertaking.

Some thought also needs be given to the very careful selection of executive members both able and willing to carry out the work of their office. It is also desirable that provision be made for an element of continuity in the executive so that the experience and contacts gained are kept within our organization – yet this must be balanced by continual introduction of new personnel. The Secretary has further comments on this subject - see page 8.

The Future of ASF

We have made considerable progress, but we need further planning, stronger administrative machinery, greater unity between all and a better level of decision-making on the part of annual meetings. This means each society thinking about Federation more seriously, each appointing the best possible delegate to the Committee and supporting the Committee in the decisions which they make.

2. Whose caves are they anyway?

In various guises this is a recurrent argument. Traditional custodianship of caves has not been addressed, although at the 23rd ASF Conference at Bathurst in 2001 and a later meeting of the NSW Speleological Council an Aboriginal guest speaker enlightened the audience with his people's perspective on caves. Unfortunately this was not published.

WHAT IS A CAVE LIKE KUBLA KHAN FOR?

Roy Skinner

ASF Newsletter 67 (1975)

The recent film making effort in Kubla Khan Cave at Mole Creek by a party from the Mainland has evoked some critical comment from persons concerned about resultant damage caused in the process. It has also been stated that publicity surrounding the venture will more than compensate for the damage. A further point has been made that it is hoped the film will justify the use of the top entrance. Inherent in all these comments is a common concern for the cave's protection. Let us then try to determine by whom and for whom the cave should be protected.

First of all, the filming did take place and nobody legally could have prevented it. Some apprehension was expressed beforehand that some damage was bound to occur and this apparently was shown to be an accurate prophecy. The publicity was intended, by those who initiated it, to draw greater attention to an awareness of the cave's visual attractiveness. I think it would be correct to assume that this was the principal motivation for the decision to make a film there in the first place – with the challenge to the skill of the speleocinematographers as an added incentive. As for the quality of the film justifying the damage, according to reports filtering through, I think we can forget about this. It is unlikely to be acclaimed with any great enthusiasm as a milestone in the evolution of the cinematographic art, albeit my personal good wishes of success for the perpetrators.

So, a film was made, some damage occurred, considerable publicity accrued and the film can at best be expected to be moderately successful. Was the damage justified?

Kubla Khan is known - by everybody who knows anything – as Australia's most beautiful cave. As such, it is agreed that it must be preserved in its natural state as far as is humanly possible. Does this mean that it must be preserved by cavers for cavers for ever? I don't think so!

CAVE RIGHTS FOR TROGLOBITES

Norm Poulter

Australian Caver 128 (1991)

Abstract

Prior to, and during, our Bicentennial year it became increasingly popular, even trendy, for the media, politicians and individuals, to recount the continuing struggles of the Australian Aborigine – the original owners of Australia for land rights. Now, a couple of years after that monumental non-event, it is becoming fashionable to talk land rights again. This time, amongst others, there are those who are calling for land rights for Koalas!

Even though membership of speleological societies has declined in recent years, the pressure on caves and their faunal inhabitants has increased to the point where, in some caves, there is urgent need to raise more than a word or two about land – or more precisely – cave rights for troglobites. the original 'owners' of caves.

Have we mere terrestrials, who are infrequent cave visitors but who often perceive ourselves as the best or logical custodians of caves and all they contain, lost sight of the fact (either through arrogance or ignorance) that troglobites and their troglophile cousins have rights too?

Through eons of time people have entered caves for a variety of reasons ranging from habitation, art, religious rites, curiosity, impulse, recreation, mining, study or vandalistic intent. All these activities can and do have a detrimental effect on a cave and its environment or fauna, either through ignorance or sometimes callous indifference.

In recent times some people – especially cavers – have become aware of the physical damage that can and does happen to caves and have moved to protect them, often citing fauna or habitat protection to add plausibility to their argument.

All too often we talk about caves as if they are 'ours' and that we can do just about anything we like in them.

We lock them up to keep everyone but ourselves out.

We talk about being the custodians of caves for future generations to enjoy.

Future generations of 'us' – but cave fauna? I think not.

However, talk about preventing or restricting some or all of 'us' from going somewhere in a cave, or perhaps a whole cave, and all hell breaks loose. "You can't prevent us from going caving – we're cavers! We have a 'right' to go caving!" Do we?

We try to regulate our activities in certain areas and sections of caves. We certainly try to regulate the activities of others in caves, but do we really regulate ourselves very well in relation to a particular cave and fauna it may contain? Do we really care?

How many amongst the general cave and cave diving community have taken the time to question the immediate and cumulative effects of their activities on a cave's fauna or food supply? How many have given more than a passing thought to bat guano, so often contemptuously trodden underfoot in the haste to explore a cave's confines, excrement that may provide sustenance to a multitude of cave fauna, especially when so few cavers take the time and effort to look for such creatures, much

HI

YOU HAVE ENTERED THE AREA KNOWN AS THE "CALCITE CRAWL AND ARE ASKED NOT TO PROCEED ANY FURTHER.

A RICH AND DIVERSE TROGLOBITIC FAUNA COLONY EXISTS NEARBY AND YOUR PRESENCE CAN EASILY DISTURB OR DESTROY THEM OR THEIR HABITAT.

THE FOOD BASE IS THE DEGRADED BAT GUANO FOUND ON THE FLOOR AND SHOULD NOT BE TRODDEN ON UN-NECESSARILY.

VERY RARE AND DELICATE SPIDERS OCCUR. THEY AND THEIR WEBS ARE INVISIBLE TO DIRECT LIGHTING.

THE PASSAGE BEYOND THIS POINT BECOMES QUITE NARROW AND DOES NOT OPEN OUT TO ANYTHING THAT MAY BE PLEASING PHOTOGRAPHICALLY.

IF YOU WANT FURTHER INFORMATION REGARDING THE FAUNA OF THIS CAVE INCLUDING COPIES OF SCIENTIFIC PHOTOGRAPHS YOU ARE URGED TO CONTACT:

DR. MIKE GRAY
AUSTRALIAN MUSEUM
COLLEGE ST. SYDNEY 2000
(02)3398111

OR

NORMAN POULTER
S R G W A
P.O. BOX 120 NEDLANDS 6009
(09)2762495

PLEASE DO NOT PROCEED BEYOND THIS POINT
IF YOU ARE INTERESTED IN CAVING CONTACT:

THE SECRETARY
AUSTRALIAN SPELEOLOGICAL FEDERATION
P.O. BOX 388 BROADWAY 2007

SPELEOLOGICAL RESEARCH GROUP WA
P.O. BOX 120 NEDLANDS 6009
(09)2762495

WESTERN AUSTRALIAN SPELEOLOGICAL GROUP.
P.O. BOX 67 NEDLANDS 6009
(09)3867782

WITCHCLFFE AREA SPELEOLOGICAL SUB-GROUP
(097)555324

less understand their life cycle or needs.

Indeed, who would have thought that even degraded bat guano serves as a food source for cave fauna, as has been found recently in some caves of the Nullarbor Plain, and no doubt elsewhere. Have cavers, where there is no option but to proceed through guano, established a single file trail, even to the extent of walking in others' footsteps?

The point to be emphasized is that even the simple activity of tramping indiscriminately through vulnerable habitats like guano, litter and soil/mud deposits degrades them by breaking down their open structure to form hard compact substrates in which nothing can live. Hence the need for creation of trails which cause minimal disturbance within the cave.

A somewhat different but graphic example of the effects of indiscriminate tramping is to be seen in Roaches Rest Cave, a cave few cavers put much value upon. It once harboured a large community of troglobites (including cockroaches and spiders) which died out, probably with the close of a past moister climatic regime. The evidence for this lay in the accumulation of preserved troglobite carcasses that once littered the cave floor and formed a quite unique historical record of a community now extinct. A couple of decades of visitation and trampling has turned the cave floor into a dust bowl lacking any evidence of the former inhabitants (Gray, pers. comm). Part of the reason for this sort of destructive happening is that invertebrates are relatively invisible – better awareness becomes very important here.

Equally important, any other source of organic material in a cave should be left undisturbed. Such materials form vital energy 'hot spots' on which the cave biota depends. Even plant root systems whether alive or decaying and so often found in caves provide food and shelter for cave fauna.

THE MANAGEMENT PERSPECTIVE

Ernst Holland

Australian Caver 131 (1991)

Introduction

The intention of a manager is to control. Because managers of cave areas often felt that they had no control over those persons who entered the caves without paying or being employed by the management authority, it compromised this objective of control.

It could be argued that the first 'cavers' were the managers such as Moon of Buchan, Wilson of Jenolan. People such as Etheridge and Trickett could possibly come under either category i.e. managers and cavers. Today we see cavers who become managers and it has been interesting to note the change of perspective from these persons.

Historically it has been recognised that human entry to caves creates impacts. Jeremiah Wilson's referral to the use of fences and burning of Magnesium ribbon verifies this. Today it is recognised that everyone has impacts on caves, but because it is for the so called 'right' reasons (economic, safety, etc.), it is acceptable to some authorities, whereas to impact on a cave for fun is not seen as acceptable to those same authorities. However, it is seen by some cavers as being acceptable if it is to further their interests.

What managers were trying to protect were those features (basically the formations) that were seen to enhance the visitor experience from a tourism and education perspective (the visual experience). The caver wanted to experience the thrill of exploration (finding new caves), recreation (to enjoy themselves), and to gain scientific knowledge (even though this was seen as an excuse by many managers).

Sport versus Science

In British caving, conservation and access have involved the 'science-sport' conflict since Baker and Balch parted company earlier this century. Baker confessed that his priority was sport, and science the pretext. When the cause
of science failed to get him access to Swildon's Hole he resorted, as he put it, to 'cave-burglary', and justified his act of piracy on the grounds of 'sportsmanship'.

There is no more mention of Balch for the comparison to be made; he apparently maintained the ethic of science over sport. But even the genuine caver was very rarely successful in conveying that message because their knowledge was not shared and often resulted in repetition of the same work or projects: how many times is that cave going to be mapped? This resulted in the inability to recognise the overall contribution that each party was trying to achieve.

Managers and Cavers

Over the years there have been conflicts between managers and cavers as to who creates the major impacts. The fences that are put in a cave by managers to protect the features are thought of by the cavers as having an impact. The helmets worn by cavers where viewed by the managers as a threat to the features of the caves. This was seen at Hollow Hill, New Zealand during a management conference.

Managers are there to manage the caves (their ability to do so is a separate question). As such, unrestricted access was seen by the manager as an unacceptable, unknown quantity and had to be avoided at any cost. Also, managers felt that the resource and their credibility was threatened by the activities and attitude of cavers who would often question their right to manage.

In reaction to this, cave entry by permit was introduced as a means of control. However this ended up in the hands of administrators (head office) who had never been in caves, thought impact was something to do with teeth, and were just doing a job anyway. This compromised the local managers control and was seen as giving the caver a free go. This was especially obvious when the club newsletter would arrive and the report relating to a particular visit had no relationship to the permitted reason for the trip.

Many persons often try caving for the experience, then lose interest, get a fright, or take on other commitments. This results in a lot of short term cavers, only seen once by managers. For this reason some cavers were seen simply as non paying tourists.

A manager's view of cavers can often be influenced by: his or her background, specific management objectives, changing requirements beyond the control of the manager, and their own experiences.

This has resulted in the introduction of adventure tours with impacts that have become acceptable and with no

limits being set. By the same token, cavers frequently see themselves as having no impact, or claim: 'it was the other group that did it'. What defines an illegal caver when the regulations for an area, which are the manager's responsibility to enforce, state that an illegal caver is any person that enters a cave unaccompanied by a guide? Is familiarisation a guided tour?

The manager sees cavers emerging with mud all over their clothes as objectionable and not proper amongst the well dressed visitors. The visitors see it from the spectator's point of view and a sense of adventure. The real impact: what was done to the caves or how that mud was transported, is often overlooked.

Through the permit system cavers were directed to those areas that did not contain an abundance of formations or were seen as unimportant. This often resulted in the cavers taking a lot less care, because these caves were then regarded by them as being of no consequence.

Managers did not like the cavers forming, by use, an obvious pathway to a cave entrance because it showed other cavers where a cave was situated. The real problem is erosion, but the caver solves the problem by using the management concept of gating, which in itself attracts by the suggestion that a gate is guarding something important. The caver-explorer wishes to know where the water ends up, and so adds a chemical substance to assist. The manager is worried about the waters appearance being unnatural. What do the aquatic fauna think of it?

The caver-scientist removes bones for further study and the manager bemoans the fact that they can not now be put on public display as an added attraction. The scientist in the future wonders what the big hole is for?

The cave with the biggest shawl is developed for commercial gain by the management authority. The deepest cave is rigged for the ego of the caver. Development may be seen as long-term and rigging as short-term, but the rigging can be more frequent and consequently have the greater impact.

Pathways are developed through show caves to keep visitors to a defined area. Pathways develop in non-show caves because it is the easiest position in the cave to walk along. The pathway in the show cave is so aligned that the user will not fall and break a leg or formation. The accidentally formed pathway has no such considerations: you see the muddy hand marks on walls that have been used for support.

Call them tunnels and they are for the convenience of the visitor and unnatural. When they are digs, it is so you can find new caves. Management authorities have frequently created artificial water levels to assist their operation of show caves, while cavers attempt to lower water tables to further exploration.

Minimising Impacts

Many conferences, seminars, etc. have caused an awareness of impacts and so managers are now looking for guidelines and tools to control and minimise those impacts. The failure to recognise who is the cause of some impacts creates some resistance to the implementation of such guidelines and tools. But there have been many positive moves, with the managers recognising what cavers are about, and the assistance by cavers in various projects has been very welcome.

Finally, mention must be made of the tiny minority who will prove to be the salt of the earth in caving. The only people of this century's cavers who will not be hated and condemned, but revered by future generations will be those few, the Show Cave owners. Caves are continuously being eroded away by cavers, albeit usually unintentionally; floors are damaged and formations smashed. It is only with the protection of a Show Cave and the element of access control that goes with it, that some of our caves are likely to be conserved for future generations. Thus, those who will achieve ultimate fame will be the Show Cave owners and/or operators.

3. Is there really a "NSW problem"?

COMMITTEE MEETING – REFLECTIONS

E. Hamilton-Smith

ASF Newsletter 80 (1978)

The so-called "NSW problem" of the Federation made another of its frequent appearances. A membership application was rejected, partly because the real issues were lost in vociferous debate about proliferation of societies in NSW, and a less vociferous (but nevertheless strong) underlying concern by delegates from other states about the increasing voting strength of NSW societies.

I want to argue that the increasing number of NSW societies and the voting structure of the Federation are NOT the real issues. This is just a symptom of a much more important problem – namely that the number of cavers is growing rapidly but the number of caves is not. The Federation urgently needs to focus upon the real problem. Not only does the present situation in NSW have nation-wide implications, but it is a situation which is likely to develop in due course in most other parts of the country.

NSW – a non-coping strategy

Although the current NSW situation is not my major focus, it is important to examine what is happening in that state, and see what we can learn from it. I would go so far to say that Australian speleology has adopted strategies which are exacerbating the situation rather than solving it. This is not just because of NSW cavers, although they must accept a great deal of responsibility, but the failure of others to fully understand the problem is an Australia-wide responsibility.

NSW is the state which has experienced the most rapid increase in demand for outdoor recreation in general and speleology in particular. It has a relatively limited supply of caves, and restricted access to these. The result is that cavers are behaving like 27 monkeys in one cage with only 9 bananas between them – so caving in NSW is fragmented and lacks any sense of unity or direction.

A multitude of organized groups have developed, and probably less than half of these are involved in the Federation. Communication between groups ranges from reasonable to zero; attitudes and relationships are characterized by uncertainty, suspicion, distrust, parochialism. or even downright jealousy and hostility.

Naturally, I am aware of the efforts being made by the

NSW Speleological Council. However, I am equally aware that various delegates to the Council tell me what stupid bastards some other delegates are and that many cavers have never even heard of the Council.

Rational access policies are generally lacking, and although it is easy to criticise the various land management agencies, we must accept a share of the blame. The views put forward to these agencies by speleologists have generally been diverse, often contradictory, and usually both poorly developed and poorly enunciated.

Towards better strategies

If we are to help solve the problems in NSW and to reduce their future impact in other states, then we need to look very seriously at the way in which the total Federation tackles things. Here are some suggestions:

1. We must stop seeing the NSW situation as being separate from the rest of Australia, and accept much greater responsibility for trying to find a solution.

2. We must stop being exclusivist about membership and aim at involving every genuine and reasonably responsible group of cavers as fully as possible.

3. We must aim towards achieving organizational arrangements which will absorb the growing number of organized groups, will foster communication and co-operation between them, and will minimise the vote-counting power games which distract us from real problem-solving.

4. From this, we must develop sufficient unity and sense of direction to enable the formulation of a clear and strong policy base.

5. This in turn, must lead to not only better caving practice, but to better negotiating capacity in our relationships with land management authorities.

I fully appreciate that all this will not be easy, nor will it necessarily please everyone - but a little thought about the alternative should convince most people that it would be worth trying.

LETTER TO THE EDITOR

ASF Newsletter 81 (1978)

Mr. L. Moody,
ASF Newsletter Editor,

Dear Laurie,

For some time now I have pondered over where to publish an article, at club, ASF or WACCON even, calling for a change of attitude by ASF members, in response to a changing speleological scene. The comments made by Elery Hamilton-Smith in Committee Meeting Reflections have caused me to publicise my points briefly below.

It seems everyone is aware of the "NSW problem" except people in NSW. This paranoia seems to be the product of the imaginations of people outside NSW. Elery has probably been able to perceive this by virtue of the fact he is not from NSW either. If a NSW problem does exist in the minds of others then NSW can hardly be held most part responsible as he would suggest. My belief is that the NSW delegates who are the more senior members of the caving fraternity and not as active in caving as many others, do however, represent more mature views and more unified views on Australian Speleology. I guarantee they consider the interests of Australia more important than inter-society squabbles within their state. It is a pity other states don't consider Australia more important than their state, an attitude the afore-mentioned paranoia is symptomatic of.

I would like to agree with Elery in saying that "the increasing number of NSW societies and the voting structure of the Federation are NOT the real issues"* but I challenge his perception of what the problems are. It may be true in other states that there are too many cavers and too few caves and I admire the conservationist motive which underlies such a statement but in NSW this is not really the case (yet).

If the number of cavers in NSW is increasing then it is not through the expansion of ASF societies but through the expansion of non-affiliated activity and youth groups or the proliferation of new clubs, some wishing to join the federation. I believe it would be better to allow such new groups to join.

I can understand how the increase in the number of NSW societies could upset cavers from other states especially those like Victoria with a well-oiled unifying machinery which (unfortunately) only yields them 1 vote. I am not implying the Victorians are whingeing in fact I compliment them on their organisation and ability to overcome what I see as a problem NSW societies can't overcome!

If there is a NSW problem it is this:

There is absolutely no reason why any young, active, aspiring caver would want to join an ASF society despite the obvious benefits we can see for him. He would rather cave with friends, learn from his own experience and not commit himself totally to long, tedious scientific studies of caves when a large part of his interest is solely derived from uninhibited enjoyment of the cave environment and its surrounding bushland. It takes any fresher too long to break into a caving club and requires too much effort to become included in cliques arising from experiences he has not shared. It is not worth the bother and this energy threshold is our fault and thus we should not condemn any new group of cavers for wanting to do their own thing.

The fact that the number of societies is increasing is due also to the fact that older societies don't fade away. They retain several more senior members who often accentuate these cliques. The clubs experiencing less of this problem are the Uni. clubs who regularly experience almost complete membership turnover due mostly to the fact that their recruitment is assured. This is not to say such clubs don't have to work on recruiting, it is just that other clubs, like my own, have to work quite hard utilizing all possible channels. Such channels as the phone book, radio and shop bill-boards should be used to the fullest to encourage younger cavers to join our society rather than start their own for the obvious benefits to all concerned and especially for the good of the caves.

I congratulate Elery on his constructive suggestions towards overcoming the problems which face all ASF societies as a whole. Although he expected criticism I hope he sees me as not too displeased with his article.

Yours faithfully,

Stephen Bunton,

4. A short list of other long debates

This list includes the volume numbers for the ASF Newsletter/ Australian Caving/ Caves Australia. Have a read: some things never change!

Where is ASF going? Issue numbers 120, 139 among others

Should endangered caves be named after politicians who have the power to save them?

How secretive should we be? Should cave locations and details be publicised or should we restrict information? How can we press the case for conservation of caves if the public cannot see them?

Cave Rescue – should there be a separate organisation or should everyone be a rescuer 97, 98

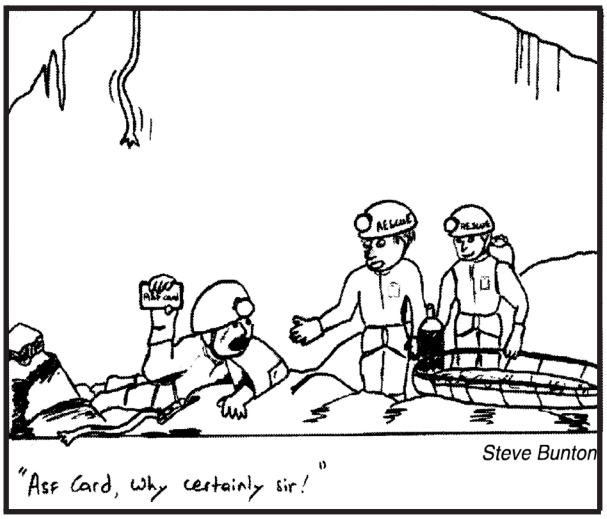
Should ASF benefit financially when its members use its resources in paid consultant work – 118

Is blasting and digging in caves justifiable? 117, 118, 123, 130

Is cave classification a useful management tool? - 130

Exclusive or inclusive? – should we embrace all who are interested in caves, or should we affect elitism? 107, 109

Why should we have to have insurance? - this debate was conducted mostly "behind the scenes" but emerged in e.g. 157



DESTINATIONS: Exploration and Discovery

Most accounts of significant cave discoveries were published in the newsletters of member clubs with maybe a brief note in ASF Newsletter, but occasionally somebody would write a comprehensive account for a wider audience. For some years the Newsletter ran a series on Caves of Australia to draw attention to the great variety of our caves and to encourage standards of documentation higher than in the traditional club trip report. Reports on exploration prospects or actual expeditions to remoter parts of Australia and overseas were more likely to feature in ASF Newsletter because of the wider readership.

1. On the local scene

Caves of Australia : No. 14
RESURRECTION CAVE, MT ETNA, QUEENSLAND

John Webb

ASF Newsletter 81 (1978)

The full moon cast an eerie glow over the benches and rubble piles of the quarry. Crouched behind a lantana thicket, the party gave their equipment a final once-over and synchronised their watches. Clad in khaki overalls to blend with the light-coloured limestone of the quarry, their faces blackened, they looked a savage crew. One by one they checked the cloth wrappings on their karabiners, ensuring no noise would give away their position to the listening ears they knew were ahead. As a particularly large cloud eclipsed the moon, the group moved into action, scurrying along the benches and using fallen blocks of limestone for cover.

As they approached the target, each one unslung his or her gear ready for instant use. Was this a P.L.0. attack on a secret Israeli base? A drug squad raid on a lonely farmhouse? NO, just a routine trip to Resurrection Cave!

The cave, E22, is located on Mt. Etna, a conical limestone peak about 25 km north of Rockhampton. Mt. Etna has been quarried for limestone since 1966 and is the subject of a protracted conservation battle which is by no means finished.

Over the 1967 Easter holidays a party of University of Queensland Speleological Society members, led by Henry Shannon, visited Mt. Etna. On the night of Easter Sunday they decided to check a local rumour that the quarry had broken into a beautiful cave, and in the wall behind Bench 1 they discovered a small hole. This lead to an 8 metre drop, where a metal ladder, stabilised by ropes, had been installed by the quarrymen. The cave was large and possessed excellent decoration, with magnificent helictites, straws and shawls. In 1971 later recalled the heat and "humidity of a previously closed system, red slippery mud, the occasional drips showing its life, and, above all, the perfection of its formations". It was named Resurrection or Quarrymans Cave, the former name having stuck.

It was necessary for parties to surreptitiously visit the cave at night because the entrance lies within mining leases held by Central Queensland Cement Pty Ltd (CQC), who operate the quarry. On several occasions company employees have seen cavers on Mt. Etna and forcefully demanded that they leave immediately. The opening paragraph of this article is only slightly exaggerated, as the foreman's house is just 400 metres from the cave entrance. During World War Two, Mt. Etna was used by commandos of Z Special Unit under Captain Sam Carey, for training in the use of limestone caves deep within enemy territory. Some UQSS members felt that their night-time excursions were carrying on a worthy tradition, and, despite the difficulties, the cave was visited up to three or four times a year.

In June, 1968 Paul Caffyn discovered a major extension, again very well decorated, but in March, 1969 the cave entrance was found to be covered with rubble, presumably bulldozed over from the bench above. This must have occurred very soon after a party of scouts went through the cave and wrote of their visit in the local paper. Prior to this, CQC surveyed the cave and produced a fairly accurate map for their own purposes. A small hole above the original one still allowed access, with an entrance pitch of 12 metres. Sometime before August 1971 the old entrance was re-opened when the boulder pile was removed by the company, and a wooden extension ladder installed. This hole was bulldozed over again and in December 1974 the upper entrance was found to be gated with a series of steel bars. It was possible to squeeze behind these and they made excellent anchor points when rigging the pitch. However, a visit in December 1977 discovered a considerable number of solid steel rods added to the gate so as to make it impenetrable. It must be pointed out that the company's rationale in gating the cave is at least partially legally based. If a person was injured in Resurrection, and it was suggested that CQC had been negligent in not preventing public access to a dangerous cave, then that person could possibly sue the company.

The cave itself is essentially linear and aligned WNW, with a surveyed length of 450 metres and a vertical range of 38 metres; the entrance is believed to be 4 to 5 metres below the original ground surface. The first chamber, at the foot of the entrance pitch, possesses excellent flowstone and gours. A long narrow passage connects with the second cavern of which on the north wall is a display of red-brown shawls edged with white. Above is a decorated aven with straws, and inset in the southern wall are live helictite clusters. The lowermost helictites have knife-like accumulations of mud on them, and indeed thick mud covers the floor and lower walls of much of the cave. This mud appears to have entered Resurrection some time ago, as unstained flowstone is forming over it in several places. In the north wall of the second chamber, a muddy crawl leads off but has not been surveyed. Blast damage in the first and second caverns is noticeable, with large stalactites up to 0.8 metres in diameter having fallen from the roof and impaled themselves in the mud. Some formations also appear to have been vandalised, probably by visitors when the ladders allowed easy access to the cave.

Continuing on, a series of narrow passages finishes in a large cavern. A crawl low down in the southern wall

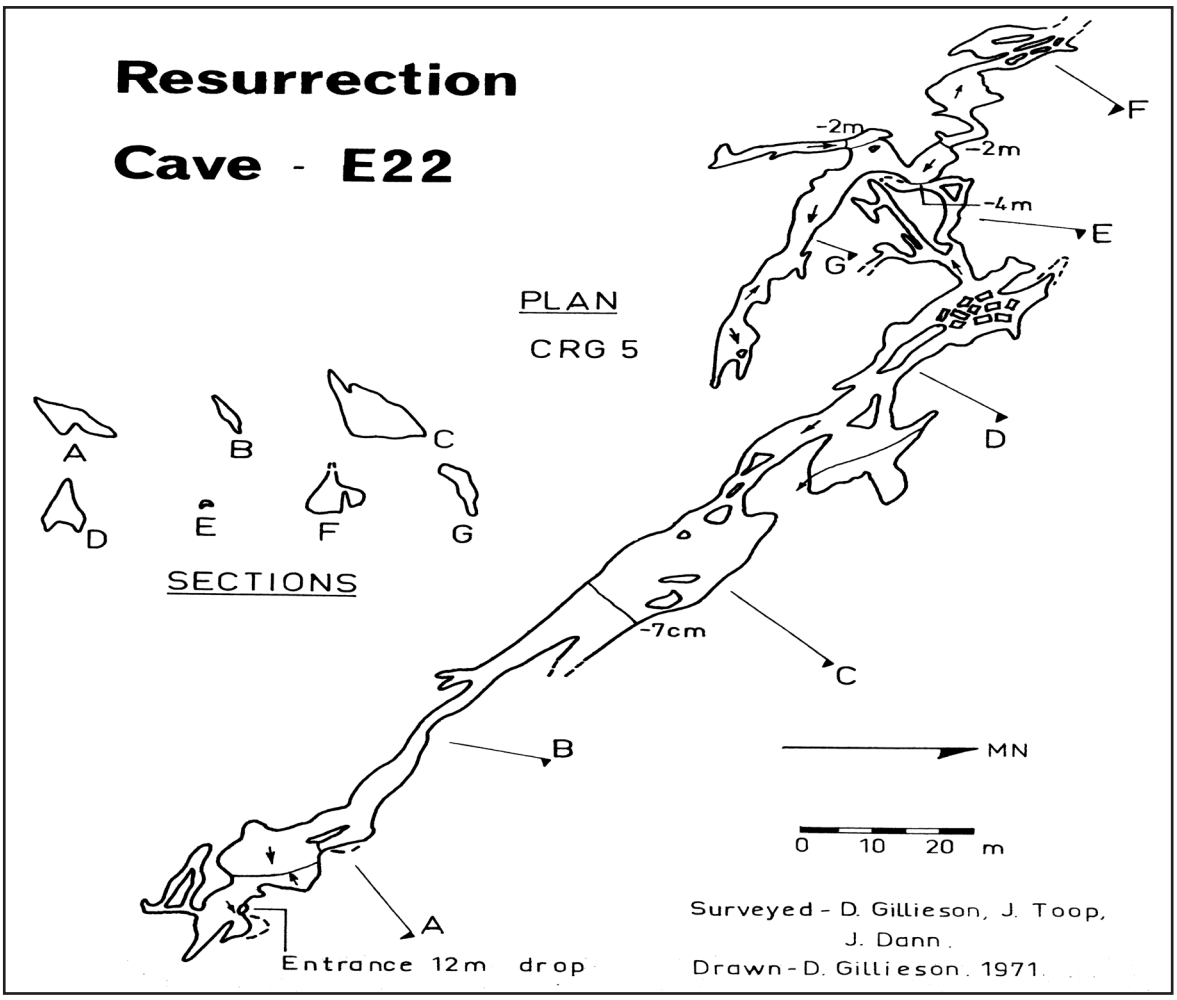
of this goes up a slope, through a squeeze and into the extensions, where passages lead off in three directions. The one going WNW has beautiful flowstone in its early sections, but soon degenerates as it has suffered heavily from blast damage. Huge boulders have fallen from the roof and cracks criss-cross the walls; some parts seem very unstable. This passage narrows but has been pushed until a smell of earth and vegetation became noticeable; a quick look at the quarry bench in this area has revealed a spot where this probably connects. The ESE part of the extensions has very good helictites in the roof and ends in a pitch which is unsurveyed. Another lead, yet to be fully explored, is a crawl off that going to the extensions; it becomes impassably narrow but a chamber can be seen ahead.

A few unidentified bats use Resurrection as a roosting site, which is interesting as the cave was probably completely closed before being broken into by the quarry. Small amounts of guano are present in places.

Resurrection Cave is without a doubt the best decorated cave in an area where good formations are uncommon, and its discovery added new impetus to the campaign then being waged against the limestone mining taking place. Today that battle continues, amid rumours that the quarry benches will be enlarged and Resurrection Cave will cease to exist. This is the cave that was "richly decorated in a way quite different to either of the existing groups of developed caves; it is extremely beautiful and would readily lend itself to tourist purposes".

This article is not only a description of Resurrection Cave but a plea for its salvation. YOU can help by writing to the "Courier Mail", Campbell Street, Bowen Hills, Queensland, 4006, and to the Queensland Premier (J. Bjelke-Peterson) and Mines Minister (R. Camm), c/- Parliament House, Brisbane, 4000, arguing that the quarrying should stop and Mt. Etna be made a national park.

(Much of the material in this article was derived from unpublished trip reports and personal communications from Mike Bourke, Lex Brown, Dave Gillieson and Henry Shannon. Other references cited in the original have been omitted)



Postscript: Under proposals received from Cement Australia, ownership of Resurrection Cave and the surrounding land will pass to ASF in 2008.

SCRUBBY CREEK CAVE

Lloyd Mill

ASF Newsletter 85 (1979)

In the North-West corner of the Buchan district is a cave called "Scrubby Creek". Not a very impressive name maybe, but the name belies the character of the cave. Scrubby Creek has been the scene of many an epic trip, not because of its being vertical and long, but because of the mud and water. It certainly is one of the hardest Victorian Caves and is possibly one of the finest sporting caves in Australia.

Geology

The cave is situated along the western edge of the Buchan Basin. The surface Scrubby Creek flows along the contact between the rugged, heavily forested Snowy River Volcanics and the more gentle cleared slopes of the Buchan Caves Limestone. The contact is considered to be depositional, with the limestones sitting conformably on the volcanics. The beds dip at moderate (thirty to fifty degrees) angles toward the east. The first part of the cave appears to mainly cut across the strike until the sump is reached. The sump is a very low section of passage extending some fifty metres. This lowness is possibly due to presence of a dolomite-rich portion of the limestone. This hasn't been tested, but dolomite is quite common in this part of the sequence.

From this point, the cave roughly follows the dip. Where the Loo extension comes in, the passage swings around ninety degrees and follows the strike. This is quite obvious in the large galleries at the far end, the roofs of which are large expanses of bedding plane dipping at about thirty degrees to the east.

The final rockpile appears to line up with a fault shown on Teichart and Talent's geological map.

Description

The resurgence of the cave is at the head of some large, scrub-covered tufa banks. The usual entrance is nearby and leads down to a few metres of low, dusty crawls, past the gate to a high, narrow passage. This goes over a deep pool of water via a bridge of star stakes. A second pool is crossed using a wooden bridge. These pools are actually a large water-filled chamber over which one walks. Beyond this, there are two possibilities to get to the sump. The first way is straight ahead to a small pool with a waterfall. Above this is a hairy climb of three metres (usually requiring a scaling pole). Climbing through a short section of rockpile brings one to the stream. This is followed over some gravel terraces and in waist-deep water to the start of the sump. This way is usually reserved for gear carting on work trips. For those on sporting trips, the rockpile to the left is negotiated. These two routes converge at the start of the sump. The sump is the most famous part of the cave. It is about fifty metres long and up to five metres wide. In places the roof dips down to and under the water but a way can be found through the higher bits where most of the head is kept dry. Half way in is a small pocket where two people can get their heads and shoulders out. The next two to three metres is real 'roof-sniffing' stuff. The danger lies in that there are virtually no sides to the sump. A false move followed by panic could see the victim off to the sides with no air space whatsoever. Fortunately there have not been any accidents yet but there have been a number of near misses. A safety line is usually rigged through the sump.

After the sump the passage is still reasonably low but gradually increases in height, especially where the Grand Fissure comes in. This is a reasonably well decorated high passage running above and slightly to the side of the passage back towards the entrance. It is possibly the remains of an old upper level of the stream.

The main passage continues on as a spacious but sparsely decorated stream passage until the first rockpile. This presents a few difficulties owing to the muddiness of the rocks and cavers and the constriction of wet suits.

After the rockpile the stream is rejoined. To the right and through some rocks is the Loo extension. This is a drained phreatic tube, barely walking height, which is about 200 metres long. At the moment it is the principal floodwater feeder for the system. It ends at the Siren Sump which has been traversed once. It is about sixty metres long with air space ranging down to one nostril, and with pockets of foul air present. This sump ends in a small chamber with a water-filled siphon on the other side which is only sixty metres away from Storm-water Cave, an inflow cave.

Back at the rockpile, the main passage heads off to the left and is the start of the infamous Trogs Wallow, 200 metres of glutinous mud. Walking is impossible, backstroke alternating with freestyle is recommended. At the end of this is the second rockpile, incorporating a squeeze. Soon after the rockpile, Whispering Chamber starts. This is a large passage running along the strike, with a stream flowing along the floor and next to some large talus. The roof is formed by the bedding planes which disappear into the blackness to the left.

About 150 metres further on is a large pile of talus across the passage. The stream flows under it on the left. This is in Xmas Hall, which is thirty metres or more high up. Up on the left is the beckoning hole which has been the target of a number of scaling attempts.

The passage gives up about 100 metres beyond Xmas Hall in a smaller stream passage where it reaches the impenetrable jumble of the third rockpile. This rockpile has "temporarily" halted progress for fifteen years.

History of Exploration

The resurgence of Scrubby Creek was first noted by A.E.Kitson in 1907, when he recorded the tufa banks down to the Buchan River. Frank Moon, the man credited with a lot of the early exploration work around Buchan, was always convinced of a large system in the hill. Sometime in the 1930s he made a free diving attempt on the resurgence, where he almost came to grief.

VCES and SASS speleos knew about the resurgence in the late 1950s but had done nothing owing to the difficulties involved. However on 3 September 1960 John Driscoll of SASS made a diving attempt using a hookah line. He reached a chamber but his line wedged between some rocks and he had some difficulties. In July of the following year a blasting attempt was made to widen the fissure to make diving easier and safer. When this was finished Peter Matthews went to have another look at an unpromising hole which he had found earlier, only this time the hole had a strong draught coming from a rockpile at the bottom. Serge Vercion and John Driscoll then joined Peter and they all commenced to dig

out the rockpile. The first small chamber was entered and excavations came to a halt approximately where the gate is now located.

On the following weekend John Driscoll, Jan Ling and Peter Matthews completed the dig and broke through, exploring as far as the main sump. On the next day, a large party consisting of Jan John, Peter, Ron Addison, John Noonan, Serge Vercion, Silva Vercion and Lorraine Newman, again moved to the sump where John Driscoll and John Noonan pushed the sump far enough to hear running water on the other at this time the water was too high for the sump to be penetrated.

On 26/27 August 1961, an abortive trip was made on the sump by John Driscoll, where he once again had difficulties. As the water was again too high owing to heavy rain, a phone line was installed to the sump and a survey commenced.

During September access to the sump was made easier by the installation of two bridges over deep pools, which made gear hauling much easier. Finally on 24 December John Driscoll, John Noonan and Ron Addison penetrated the sump while Peter Matthews and Lorraine Newman tended the safety line and found the sump to be about fifty metres long. The advance party extended the phone line through the sump and then pushed on to the start of Trogs Wallow, where they stopped owing to lack of time.

Three days later, John Driscoll, Peter Matthews and W. Kunert went through the sump, backed up by Serge Vercion stationed at the telephone at the entrance side of the sump. In ten hours, the main party pushed on to the final rockpile and returned. At the time this rockpile was considered a temporary halt to progress. However this was not to be so and many attempts have been made at this barrier.

The first of these was in April 1962 when a camping trip was undertaken by Elery Hamilton Smith, Ron Addison, John Driscoll, Lorraine Newman and Beth Sowden. Their intention was to thoroughly explore the cave and collect biological specimens. Total caving time amounted to 84 hours, which at that time was an Australian record. It was on this trip that Whispering Chamber got its name owing to occasional rocks (whole chunks of strata) falling from the ceiling, and the apparent need to whisper to prevent more rocks from falling. During this time Noonan, Serge Vercion and Peter Matthews completed the survey in trips of twelve, sixteen and fourteen hours.

For ten years after reaching of the final rockpile, many trips entered the cave, but discovered nothing new. Many of these trips tried cracking the final rockpile by various means but all failed. However, in 1971, a number of side passages were discovered, and two of these turned out to be quite important. The first of these is the Loo and is on the right just before Trogs Wallow. This was discovered by Daryl Carr and Lou Williams who, when venturing up the cave after some heavy flooding, noticed a sudden drop in the flood levels on the wall. Poking around the rockpile wall on the right, they noticed a four gallon drum squashed against some rocks. Further poking revealed the start of the Loo. The first sixty-five odd metres were reasonably easy drained phreatic tube. The next 100 metres is Buchan's longest and most dangerous sump, which is named Siren Sump. A total of fifty hours was spent in digging an eighteen metre long channel to lower the water in this sump to get through. Lou and Daryl penetrated the sump and found it to be approximately 100 metres long with an air space ranging from three to twenty-two centimetres, containing pockets of foul air. The sump finished in a large chamber with a siphon halting further progress.

The second extension was found by Dave North around the same time. Little information is known about this for conservation reasons. When found it was supposedly incredibly beautiful. The discoverers kept it a deadly secret until they had formulated a way to keep it in its pristine state.

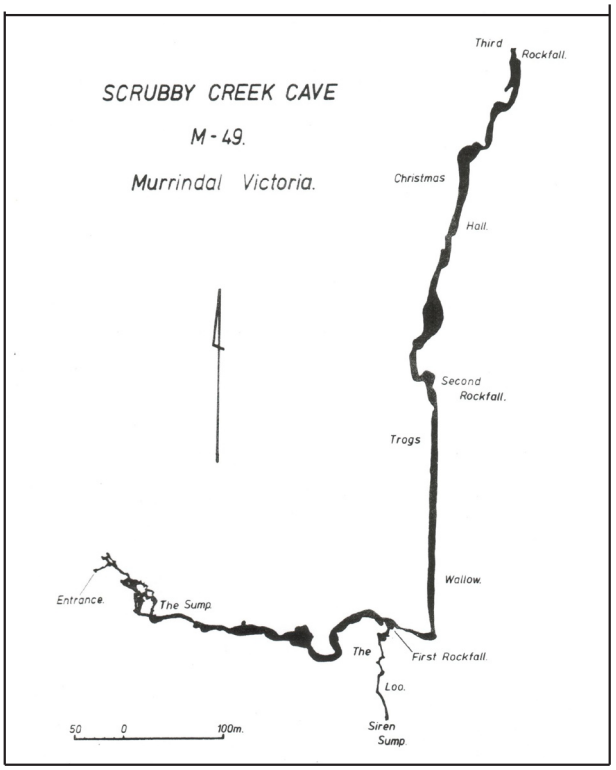
The discoverers surveyed it, photographed it, marked out trails and clean areas and then gated it. A comprehensive Conservation Policy was drawn up (Matthews 1973) which has been strictly adhered to. As a result, the section is probably still in immaculate condition (I don't know. I haven't seen it).

Soon after this Lou Williams noticed a large hole in the Xmas Hole wall. To get to it would require at least twenty-seven metre climb. So in November 1973, he led a trip in to try and scale the wall. (Williams, 1974). Derek Lord and Daryl Carr tried using conventional rock climbing techniques, but failed owing to the walls being of case-hardened mud

A re-think was needed, so in the first week of 1976, Lou led two parties equipped with scaling poles to Xmas Hall (Mill 1970). This also failed because there were not enough poles.

Since then a number of trips have gone into the cave, mainly to familiarize the younger members with the cave. One of these trips penetrated the final rockpile a little further, with some prospects of cracking it. All signs point to more big stream passage beyond it. The surface above the cave has a few small holes and caves, which at times emit gusts of hot air.

Scrubby Creek still has excellent prospects for extensions, and who knows, maybe the next generation of cavers will make the big breakthrough.



GATING OF PHOENIX CAVE

Graeme Smith

ASF Newsletter 81 (1978)

Phoenix Cave was dug from the surface by members of Highland Caving Group in April, 1974. After breaking through to the cave it was explored for about 100m of passage to a depth of 38m. The passage at this stage was generally small and awkward. Progress was stopped by a squeeze (subsequently found to be 15m in length) and high levels of C02. Members noted a remarkable display of etched fossils through much of the cave.

It was decided not to publish the discovery of the cave in the hope that this would distract traffic. Later in 1974 members of the St. George Area Caving Team were shown the cave by HCG and, being smaller in stature, succeeded in passing the squeeze and discovering a further 340m to a total depth of 70m. News of the discovery soon got around despite attempts to keep the location secret.

Macquarie University Speleological Investigation Group visited the cave shortly afterward and noted a remarkable fossil to which they returned on a later week-end with a palaeontologist. However, the fossil had been removed. No-one has claimed responsibility for its removal.

During the survey of the cave a silverfish was found and this has been identified as a new species which is found in a number of caves at Bungonia, and in large numbers (initially) in Phoenix (B60). It has not been found outside Bungonia caves. Also a large number of crickets were noted in the entrance. Such large numbers in one place is unusual at Bungonia and in early 1977. Glen Campbell of UNSWSS began a long term study of the ecology of the crickets of this cave.

In August 1976 Stephen Bunton of HCG/SUSS began a fauna survey, hoping to relate cave species to its derivations from surface species. This project is still continuing. However it was noted that there had been a steady decline in the numbers and types of animals encountered. After the cave entrance was blocked for six months, the number of specimens again proved high. It was presumed that the faunal demise was simply due to the increasing usage of the cave. To minimise this usage permission to gate the cave was obtained from the Bungonia Caves Trust and a gate was installed by HCG in March 1978.

This cave is a unique faunal preserve. It is hoped that its sanctuary will be respected. We have lost many of the fossils but there are still excellent sediment banks and helictites. It is believed that the fauna will re-establish itself if left undisturbed for a few years.

2. Expedition Country

Vast areas of outback Australia were almost inaccessible until barely a generation ago and our longest cave is located in dolomite not known to speleologists until the late 1980s. Remote area expeditions require much advance examination of topographic maps and aerial photographs. Although now long superseded, Joe Jennings' interpretation of aerial photographs was immensely valuable in assisting exploration and documentation by successive expeditions to the Nullarbor. Later, ultra-light aircraft were pressed into service. Next, GoogleEarth?.

AIR PHOTOGRAPHS AND THE NULLARBOR PLAIN CAVES

J. N. Jennings

ASF Newsletter 23 (1964)

Last year during a visit to Perth and the Southwest, I had a look at the three deep Nullarbor caves then known in Western Australia but not included in the 1957 Expedition programme, namely: Cocklebiddy, Murra-el-elevyn, and Firestick Cave. This stimulated me on return to examine the new air photograph cover of the Plain stereoscopically. For the 1957 Expedition only a coastal run of wartime trimetrogon photography was available. Though it revealed something, it wasn't much use for finding possible cave entrances, for example. Since then the Commonwealth and the two States concerned have had nearly the whole plain photographed vertically. It is rather small scale, about 1:85000 (roughly 3/4 inch to 1 mile) but the quality is good, particularly over much of the South Australian side; with a good stereoscope a great deal can be seen. For instance I could pick out the entrances to Murrawijinie Caves Numbers 2 and 3 (N8 and N9), which are rather small features; dolines like that of Murrawijinie Number 1 (N7) – roughly 150 feet across – are easily discerned. Certainly it is unlikely that large collapse dolines would be missed and all the known deep caves lead off from large collapse dolines or even larger related features like the valley leading to Abrakurrie Cave (N3). I haven't finished examining the photos yet, but the parts which remain are peripheral, not very great in extent and unlikely to yield many dolines.

While I was doing this, several things were happening. David Lowry of the Western Australian Geological Survey and WASG was writing to me in connexion with a prospective Nullarbor trip; Rob Bailey, formerly of VCES, and almost a frequenter of the Nullarbor, was corresponding about a January 1964 trip and I was in touch with Ted Anderson, Assistant Leader of the (SUSS) Nullarbor Expedition 1963-4. To David and SUSS, who were going far enough west, I suggested that an important task was to survey the three deep caves mentioned above, and not previously mapped.

David responded by surveying two, Cocklebiddy and Firestick. I was unable to help him with the location of collapse dolines because up to that time I was working on the South Australian photographs at the request of National Mapping Office. He had access himself, however, to the relevant photographs and with their help found two new deep caves about 20 miles north-east of Madura. The photos had already proved their worth for cave hunting!

Meanwhile I had passed to Rob Bailey the locations of various dolines in the east, which as far as I knew had not been examined for caves. Whether he has managed

to do anything I do not know, but he and Dr. Gallus were primarily concerned to do further archaeological work.

I furnished Ted Anderson with maps showing the location of nearly all the collapse dolines from Koonalda to Cocklebiddy, the proposed scene of their operations. Newspaper reports of January 15, of a somewhat garbled nature, suggest that the photographs have led SUSS also to discoveries of new deep caves with lakes in them.

I have sent lists, with photo co-ordinates, of all the collapse dolines I have located so far (together with location maps of many) to CEGSA and WASG as being the groups most nearly concerned and the ones which should be kept informed of all work in the Plain

So far I have listed 105 dolines from the air photographs. Of these 16 are known to have caves of some sort or another, though this includes mere overhangs; 3 are known to have no caves at all, and from examination of the photos it seems unlikely that another 30, approximately, will have caves. This leaves a round figure of 55 where discoveries may be made. Some are distinctly inaccessible and won't be visited for a long time. I suspect that many will yield nothing speleologically and others will lead to shallow caves only. However with the help of the photographs over the next few years some new discoveries of deep caves can be expected. Additionally of course many new shallow caves will be found because many of those shallow caves we already know have solution pipe entrances or small roof windows, which cannot be picked up on the air photographs. So the Nullarbor is an area where the attractive possibility of new cave finds remains a very real one.

To keep things in proper perspective, however, I must say that the view I have previously expressed1, that the Nullarbor is far from being proportionately rich in caves seems to be supported as far as deep caves are concerned by the air photos. Even if 50% of the promising unexamined collapse dolines yield deep caves, a total of about 35 deep caves remains very meagre for an area of limestone of about 65000 square miles. It has been too dry for too long.

The distribution of the dolines supports this assertion for nearly all of them lie within 25 miles of the coastal cliffs or the old sea cliffline which runs behind the Roe Plain. This is the rainier part of the Plain today, and it can be inferred to have been the wetter part during any climatic vicissitudes of the late Tertiary and the Pleistocene. As a result most underground solution leading to caves and collapse dolines has gone on in this coastal belt. Other explanations such as changes in the lithology of the limestones seem less likely; at least along the railway line the Nullarbor and Wilson Bluff Limestones seem to have much the same purity as in the belt where caves and dolines are thickest. A few shallow caves are known from the inner part of the Plain, e.g. Lynch Cave, Loongana suggesting that least the Nullarbor Limestone there is capable of forming caves. Underground drainage will of course increase in volume seawards through integration of supplies from ever increasing areas behind; this, together with greater direct input from the rainier coastal belt, probably accounts for the localization of-the deep caves and collapse dolines there.

1 JENNINGS, J.N. 1961. A Preliminary Report on the Karst Morphology of the Nullarbor Plain. CEGSA Occasional Papers Number 2, page 37.

A new era in exploration opened with the advent of diving under the Nullarbor, eventually locating world-class dives such as the more than 6km long tunnel beyond the lake in Cocklebiddy Cave

NULLARBOR DIVING EXPEDITION

Ian Lewis

ASF Newsletter 55 (1972)

The Expedition covered three main caves: Weebubbie, Cocklebiddy and Mullamullang, with brief visits to Abrakurrie, Murra-el-elevyn, Pannikin Plain and Kestrel Caves. The complement included 7 divers of whom 4 did most of the work in 2 groups of 2

.

Weebubbie Cave

One week was spent camped around the entrance. During the week Nick White (VSA) and Mike Miles (Sydney) found 650' of passage circumnavigating the entrance doline, including a new chamber 150' x 80' x 40' high which contained very large mounds of quite fresh guano. Thus it appears to be a major bat chamber, far eclipsing the one already known further round the doline. This was called the Eastern Ring Route.

250' of water filled chamber with broken rock floor was found beyond the small lake with a maximum depth of 85'. A 3' high flattener at the end of the chamber was not entered due to silting. Six different specimens of weed were recovered from this lake and taken by Nick White to Melbourne

.

A 300' long sump was negotiated beyond the main lake, leading to New Lake, which is oval shaped, 150' x 100' x 12' deep at the shallowest, and having a maximum roof height of 18'. A further extension 250' long and up to 100' deep was entered beyond New Lake. It consists of a sump and tunnel 100' wide closing off to 3 tunnels of 4' diameter at the end. The main sump reached 90' at some points; the floor is all very clean white broken rock with weed for some distance (samples were collected both by us and by Murray Thomas of WASG) extended in vast amounts throughout the length and depth of the main lake. The roof of the main sump was no less than 50' below the surface. The "Railway Tunnel" (the name will stick, I hope) is exactly 500' long to the point where it closes down to a 10' x 10' tunnel, and standby divers in the main sump could clearly see the torches of the advance divers 500' away without any trouble!! Two tunnels off the side of the Railway Tunnel each about 15' x 15' were simply left for the future; both disappear into darkness. Maximum depth of the Railway Tunnel is 100' and roof height was 60' below water level.

The main lake was plumbed all round and found to vary in depth from 45' to 100' near the walls, with an average in the 70s.

Cocklebiddy Cave

1000' of passage found beneath the lake, still going. Only 2 small air pockets were found, one 40' in diameter and 1' high, the other 50' x 12' x 18' high. Maximum depth of the tunnel is 40' and the diameter is 60' - 70'. A dig was commenced in the south end of the entrance valley to the cave using gelignite. The chamber excavated is 15' x 8' x 6' deep and air is howling out. A rare spectacle was witnessed as a waterfall poured over the entrance pitch of

the doline after a 1½" downpour in 3 hours

.

Murra-el-elevyn Cave
A new crawl was located extending laterally from the lake just above water level. A new chamber at the end contained salt or gypsum encrustations, a 30' deep lake and a new bat colony

.

Pannikin Plain Cave
Both lakes were dived with snorkels only, and both were seen to have large underwater tunnels leading off into the unknown. A "dead cert" for a future diving trip. A blind spider was found similar to a specimen in Weebubbie found earlier.

Mullamullang Cave
All lakes were dived with snorkels and all were established to be going nowhere. Maximum depth is 15'. A new addition to Easter Extension was entered – 400' of maze generally heading almost due southeast. 14 side tunnels were not entered as the survey was made, due to lack of time. We were actually pushing as close to southeast as possible because I wanted to see if there was another nearby major passage parallel to the main one. Clearly there are still immense possibilities in Mullamullang and elsewhere on Nullarbor.

AN AIR-PHOTO INTERPRETATION OF THE KARST FEATURES OF THE QUEENSLAND PART OF THE BARKLY TABLELAND

Ken Grimes

ASF Newsletter 63 (1974)

Summary

A study of the air photos of the Lawn Hill, Camooweal and Mt Isa 1:250,000 sheet areas revealed the presence of 80 definite dolines and 69 possible dolines within an area of carbonate rocks covering about 17,000km2. Only dolines larger than about 50 metres across would have been visible at the scale of the photos used.

In addition to the dolines, large scale grike fields could be seen in parts of the northern dissected area, and the general area of springs feeding the permanent streams in the north could be delineated although the springs themselves could not be seen.

Introduction

The main part of the area is a flat plateau (the Barkly Tableland) with a black soil cover and scattered outcrops of dolomite and dolomitic limestone. In the north the plateau has been strongly dissected to give an extremely rugged terrain.

The study was prompted by a reference in Down Under to large springs and caves in the Lawn Hill area, and It was later extended to include the Camooweal area to the south The reference appears to derive from reports by Cameron (1901), Ball (1911) and Whitehouse (1940). Cameron refers to numerous springs, which "well out from under the limestone". Those feed Lawn Hill and Louis Creeks in their lower reaches before they leave the limestone country. Cameron also refers to "caves which have been worn out and show rude rock paintings and tracks of animals"; this description is more indicative of rock shelters than true caves. Ball, who visited the area with Danes comments that "the caves in the limestone (are) almost completely free from stalactite deposits", but he does not describe them further. Ball estimated the discharge from the spring fed Lawn Hill and Louie Cks as 16,000,000 gallons day (21 cusecs). Whitehouse quotes a measurement of 113.5 cusecs for the spring-fed Gregory River in 1931. He also found evidence that the rate of flow of the springs was decreasing.

Danes published two papers about his visit to the Queensland cave areas. The main paper (Danes 1911) is unfortunately in German but J.N.Jennings has translated the relevant parts. The other paper (Dane 1911) is in English and describes several caves near Camooweal but does not discuss the Lawn Hill area. Other more recent publications of interest are a geomorphological study of the region by Stewart (1954) and geological reports by Smith (1972) and De Keyser (1973; the latter has the most up to date stratigraphy. A comprehensive description of the caves near the Camooweal area has been given by Shannon (1970).

The air photographs examined during this study cover a strip of limestone country between Lawn Hill (latitude 18º35'S) and Bullecourt (lat. 21º00'S) - see map. The photographs used were the RC-9 series of 1:85,000 scale flown in 1966 (Lawn Hill, Mt lsa and Camooweal sheet areas). I also examined a set of 1:20,000 scale photos flown by Adastra in 1957 over part of the Lawn Hill area. The Northern Territory part of the carbonate belt was not examined.

The Dolines

A total of 80 definite dolines and 69 possible dolines were identified. These represent depressions larger than about 50m across as smaller depressions would not be recognisable at the scale of the photographs used. The locations have been plotted on a set of the three 1:250,000 map sheets for the area and this set will be placed in the UQSS library. The map with this report shows the approximate locations at a smaller scale.

The doline distribution is not uniform through the region and I have grouped them into five areas which together cover only half the total area of carbonate rocks (see map). The densities of the dolines within these areas are set out in the table below.

The main area of doline development is in the Camooweal area, and cave exploration so far has generally been limited to this area, The former Mt Isa caving group apparently visited several caves in the Barkly Downs area but the locations of' these seem to have been lost (Shannon 1970). Henry Shannon tells me that of the 14 dolines he has visited in the Camooweal area 8 contained caves. Whether such a percentage will be maintained in the other areas is uncertain.

The size of the dolines varied from the minimum visible on the air photos up to about 250m diameter in the case of an unnamed doline 15.5km northeast of Camooweal. In most cases the area of centripetal drainage was limited to the sink itself; drainage channels beyond the rim are uncommon and short, the longest was an exceptional 4 km. The few depressions with large external drainage systems include a stream sinking at the base of a semicircular cliff and are better regarded as blind valleys. In the southern part of the region northeast of Mt Michael, the black soil plains have shallow circular or elliptical depressions with central swamps. These could be due to subsidence over

covered karst.

On the Barkly Tableland the dolines are scattered across the plains but are most common where black soil cover is thin or absent. In the dissected country in the north of the area the dolines are generally found on small residual plateaux and on or near the ridge tops.

Other karst features

Most other karst-forms in the area are of a scale too small to be visible on the air photos. The springs feeding Lawn Hill and Louie Cks and the Gregory River and O'Shannassy River cannot be seen on the photos however their general extent can be deduced from the long permanent reaches of water found in these streams in the last few miles before they leave the limestone area.

The highly dissected country of the northern area corresponds with the drainage basins of these streams. The main features here are the very close dendritic drainage pattern and the high local relief. The dissection has probably resulted from Pliocene (?) upwarping of the tableland relative to the Gulf Country with a consequent rejuvenation of the streams. Apart from scattered dolines in higher areas the only karst features visible are belts of strongly jointed limestone which have developed large scale grikes. The main belt of these is shown on the map.

In a visit to the Riversleigh area I saw numerous small scale sculpturing forms. The limestone in this area tends to form conical and turreted blocks with solutional runnels and flutes. Cameron (1901) figures two photographs of these forms.

In conclusion

The main area of dolines is adjacent to Camooweal itself and this may well remain the main cave area. Exploration further afield will be hampered by long distances and poor access, especially in the north. However the transport problems are no greater than in the Nullarbor karst and the cave potential could be as great, as the collapse doline densities of the Nullarbor are even lower than this part of the Barkly Tableland karst. However the differences in geology and hydrology forbid too close a comparison at-this stage.

Ball, L.C. (1911) : The Burketown Mineral Field. Geol. surv. Qld Publ. 232 : 12-14.

Cameron, W.E. (1901) : Geological observations in northwest Queensland. Geol. surv. Qld. Publ. 159 : 10-15.

Danes, J.V. (1911) : Physiography of some limestone areas in Queensland. Proc. Roy. Soc. Qld. 23 (1) : 75-83

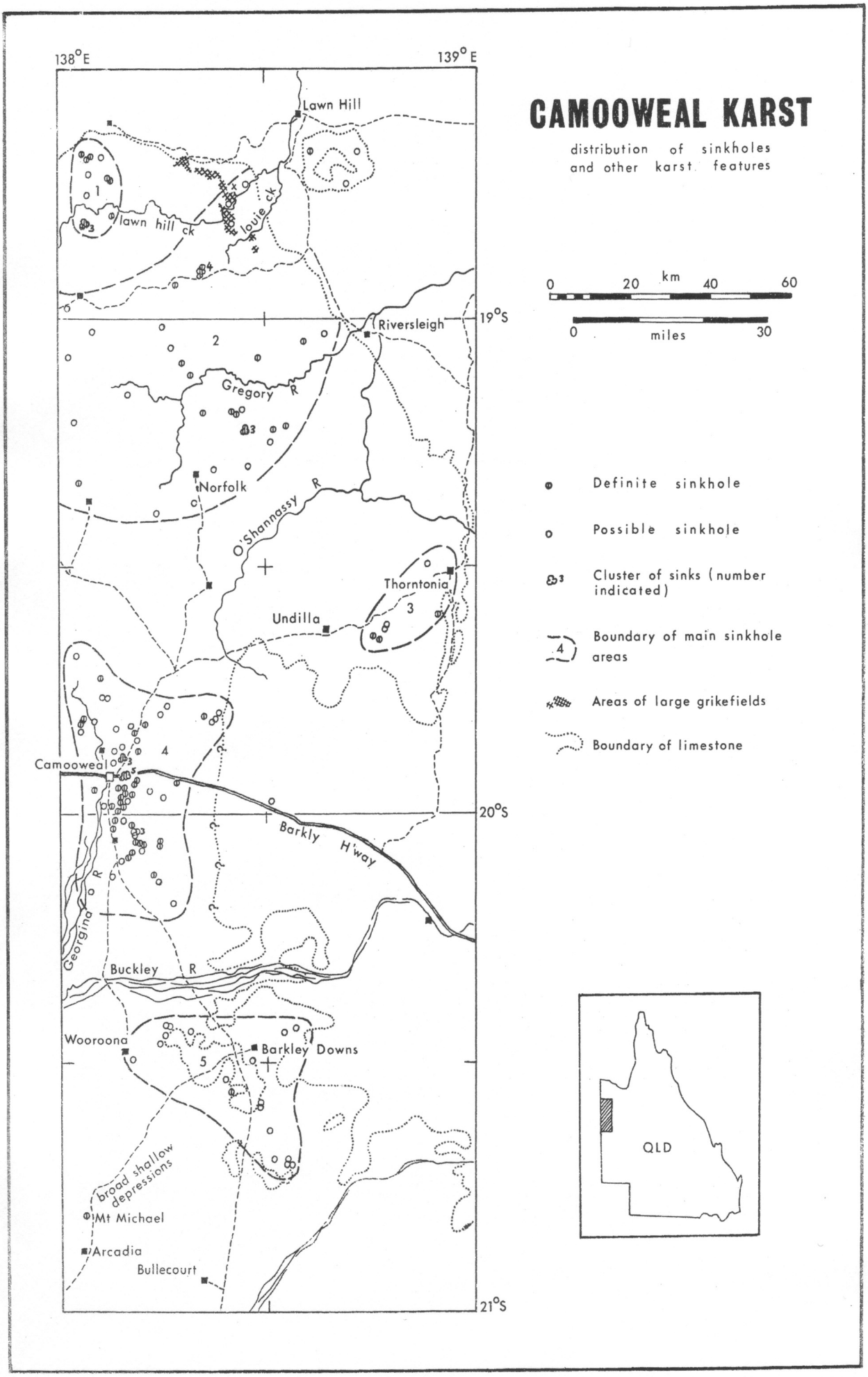
Danes, J.V. (1916) : Karstudien in Australien. Sber. K. Bohm. Ges. Wiss. 7 : 1 -75

De Keyser, P. (1973) : A review of the Middle Cambrian stratigraphy in the Queensland portion of the Georgina Basin. Bur. Miner. Resour. Aust. Bull. 139 : 13 -27.

Shannon, C.H.C. (1970) : Revised cave list, Camooweal Caves, Barkly Tableland. Down Under 9 (2) : 37 -44.

DISTRIBUTION OF DOLINES BY AREAS

Area	definite dolines	possible dolines	area (km2)	Density (no./km2)
1. MUSSELBROOK	10	2	250	0.048
2. LAWN HILL – GREGORY RIVER	19	19	3,750	0.010
3. THORNTONIA	3	3	330	0.018
4. CAMOOWEAL	46	28	1,570	0.047
5. BARKLY DOWNS	1	16	1,010	0.017
Remaining area	1	1	9,620	0.0002
T O T A L S	80	69	16,530	0.009


CAMOOWEAL KARST
distribution of sinkholes and other karst features
138° E
139° E
19° S
20° S
21° S
Lawn Hill
lawn hill ck
louie ck
Riversleigh
Gregory R
Norfolk
O'Shannassy R
Thorntonia
Undilla
Camooweal
Barkly H'way
Georgina R
Buckley R
Wooroona
Barkley Downs
broad shallow depressions
Mt Michael
Arcadia
Bullecourt
0 20 km 40 60
0 miles 30
Definite sinkhole
Possible sinkhole
Cluster of sinks (number indicated)
Boundary of main sinkhole areas
Areas of large grikefields
Boundary of limestone
QLD

BULLITA CAVE SYSTEM, GREGORY NATIONAL PARK, NORTHERN TERRITORY

(by Canberra Speleological Society members)

Australian Caver 145 (1998)

For the last 8 years Canberra and Top End Speleological Societies have been exploring several network maze caves in Gregory National Park. Written by members of CSS this article summarises progress so far in the most extensive of these systems.

In the west of the Northern Territory, half way between Katherine and Kununurra, the Gregory Karst is one of the most distinctive in Australia and is mentioned in notes accompanying the relevant geological sheet (Sweet 1973). Caves were probably known to stockmen during a pastoral period which lasted a century until the late 1980s, and were certainly known to the traditional owners, the Ngarinman people. One or two speleologists had been in the area previously but there is no mention of it in the Australian Karst Index. The first speleological investigations were conducted by two British speleologists (Storm & Smith 1991) and there have been two subsequent preliminary descriptions of the karst and caves (Dunkley 1993; Bannink et al. 1995). CSS and TESS have each organised expeditions at least once a year since 1991, and various members of NUCC, ISS, VSA, CEGSA, SRGWA Hills SG and Mole Creek CC have taken part in these.

In 1993 the CSS trip led by John Brush located the entrance to a new cave and surveyed more than 11km (Brush 1994). Annual trips have gradually extended the surveyed length successively to 19, 29, 42 and 57km to its present length of nearly 65km, and exploration continues. Some of this (about 8km) was achieved by connection to other caves previously known to TESS and CSS.

The passage length does not include open grikes which could not be characterised as a cave. All this is contained within a surface area of perhaps 3 sq.km, and passage densities reach as high as 45km per sq.km To minimise impact, no exploration has been undertaken without surveying, and it is likely that some parts of the cave will never be visited again.

The cave is a complex network maze of passages forming an angular grid developed primarily along parallel and sub-parallel joints. Passages vary considerably but the vast majority are walking size. Decoration is sparse, the most common being cave coral. However there are stalagmites and a few stalactites, crystal streamways and some calcified floor deposits over lengths of at least 20 metres. Sometimes emerging from small cracks and fissures, fig tree roots are often encountered in the cave. Peter Bannink (TESS) has conducted an initial survey of the interesting and diverse fauna in this high energy environment (Bannink 1996).

Passage shapes relate closely to the lithology. In much of the cave the typical cross-section is triangular, higher than wide and tapering upwards, but in deeper parts there are wide and generally lower flat-roofed chambers, More than 99% of the cave is roofed over but there are often daylight holes varying from a few millimetres up to a metre or more in size, inaccessible because of overhanging walls and difficult to reach or identify on the surface because of the rugged terrain. Most of the cave is in the dark zone although the glimmer of daylight is often visible some distance away. Closer to the contact with an overlying non-cavernous dolomite caprock, passages are smaller and completely in the dark zone.

Some ASF members attending the Quorn conference in 1997 were fortunate enough to see Don Glasco's coloured maps of the system. Orderly recording and processing of the data has been a major task, with more than 5,000 survey stations and 500 loops to be adjusted, and this would not have been possible without the fortuitous and dedicated involvement of Don, an American caver living in Canberra from 1994 to 1997. Don transferred all data to the COMPASS cave survey program and integrated it with the powerful ARC/INFO software to produce A3 and A0 sets of maps relating cave passages to surface features.

Management authorities have tentatively named the system after the local property and we refer to it as the Bullita Cave System in recognition of the fact that there are many numbered entrances. BAA34 is presently the lowest numbered of the approximately 24 tagged entrances. Quite a number of distinctive features within the cave have been named but these have no formal status.

There are other cave systems in the area up to 24km long, and the total surveyed length exceeds 100km. The very length and complexity of the cave counsels a need for caution about publicity, and even after 8 years work the full extent and significance of the resource has yet to be evaluated. The Parks and Wildlife Commission of NT is presently drafting a management plan and CSS/ TESS have made a lengthy joint submission about the management of what is certainly one of Australia's most significant karst and cave resources.

Following concerns expressed by the managing authority, a year or three ago CSS placed a notice on the Internet through OzCavers requesting that there be no publicity about the cave. Subsequent discussion at the ASF Conference, in The Australian newspaper and in this article has been undertaken with the consent of the Parks and Wildlife Commission. The caves are sensitive and vulnerable. We ask that speleologists respect our wishes and those of the managing authority, and avoid publicising or speculating about the caves while there is no management plan in place. This means avoiding publicity or speculation about the caves, especially outside the speleological community, and not reprinting from or quoting this article.

References

Bannink, P et al. (1995): Multi-level Maze Cave Development in the Northern Territory. Proc, 20th Biennial Conference Austr. Speleol. Fed., Hamilton pp, 49-54.

Bannink, P. (1996): Invertebrate and vertebrate fauna recorded from the caves at Limestone Gorge, Gregory National Park. Report to Parks and Wildlife Service of the Northern Territory, 15pp.

Brush, J. (1994): Long Cave Discovered (in) Down Under All Over. Austr. Caver 136: 38-39.

Dunkley, J.R. (1993): The Gregory Karst and Caves, Northern Territory, Australia, Proc. 11th Int. Congr. Speleol,, Beijing, pp. 17-18,

Storm, R. & Smith, D. (1991): The Caves of Gregory National Park, Northern Territory, Australia, Cave Science 18 (2): 91-98,

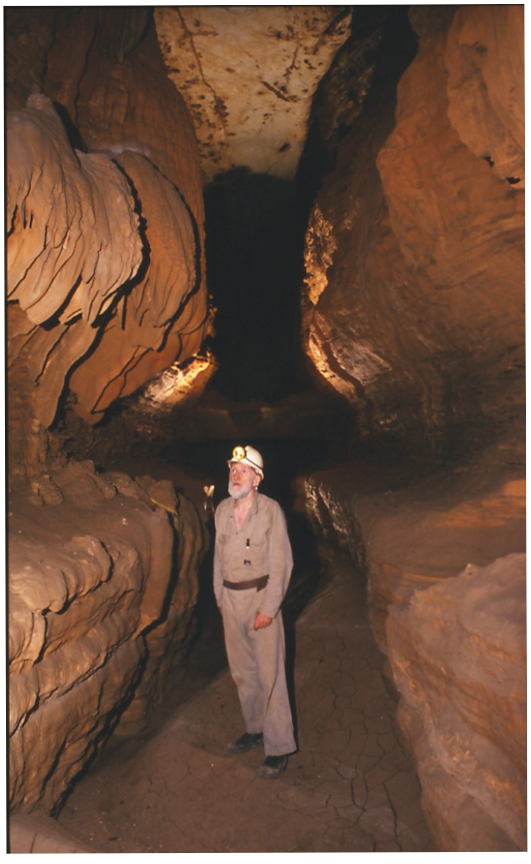
Sweet, I,P. (1973): Explanatory Notes on the Waterloo Geological Sheet. Aus. Govt. Publishing Service, Canberra.

'Tented' passage in the Supplejack Member with fig tree The Frontyard

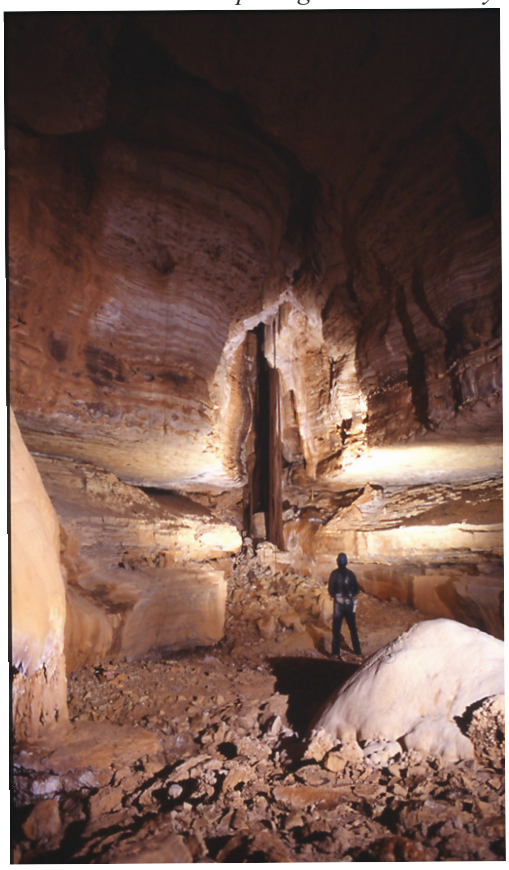
Fig Tree roots in BAA 34

Photos by Mark Sefton

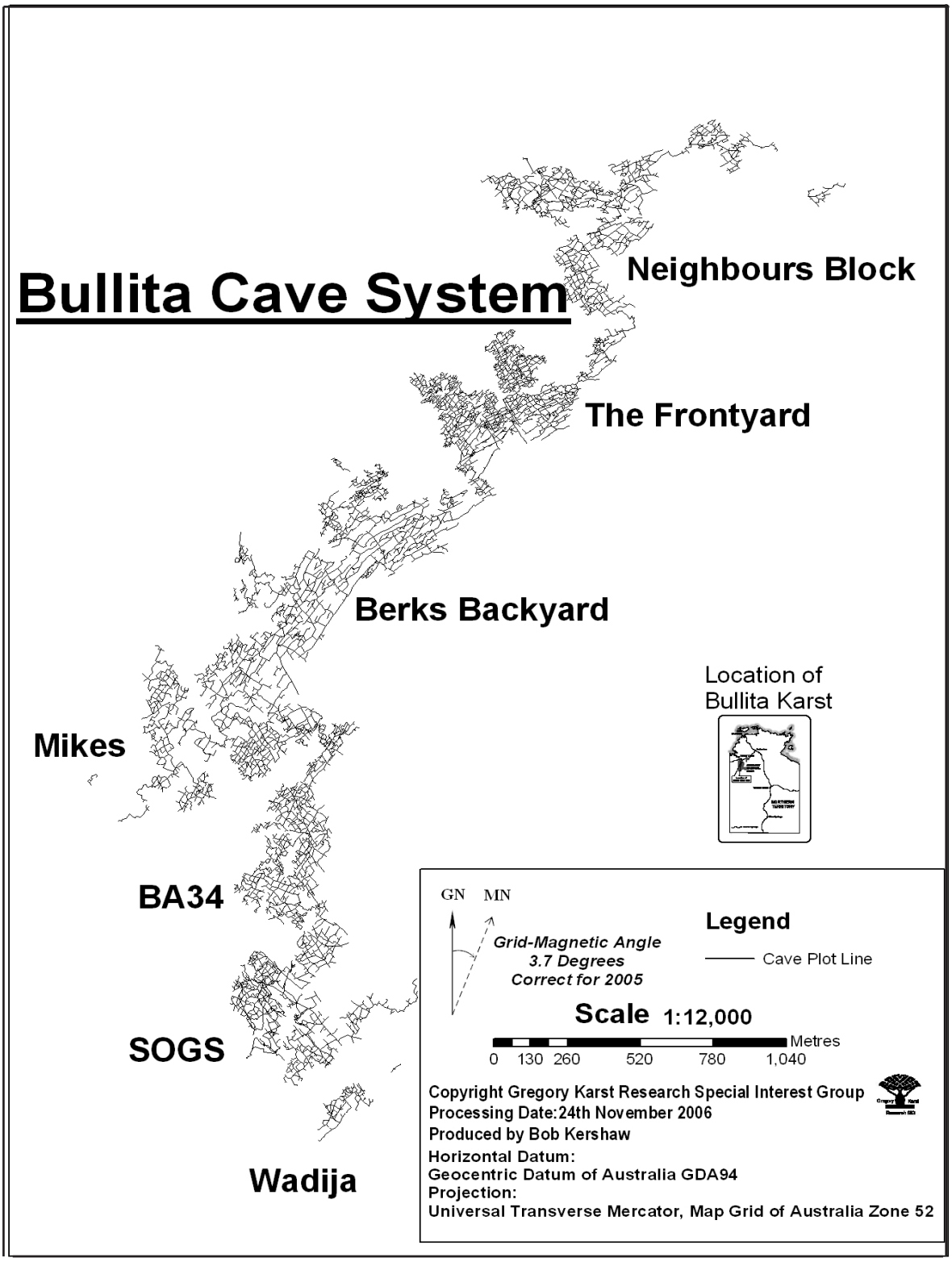
Low level drain in SOGS



Main Chamber with side passage in Skeleton Key



Postscript: see Caves Australia 169 for an update. On the 16th Expedition in 2006 the cave length reached 109km.


Bullita Cave System
Neighbours Block
The Frontyard
Berks Backyard
Mikes
BA34
SOGS
Wadija
Location of
Bullita Karst
GN MN
Grid-Magnetic Angle
3.7 Degrees
Correct for 2005
Legend
Cave Plot Line
Scale 1:12,000
Metres
0 130 260 520 780 1,040
Copyright Gregory Karst Research Special Interest Group
Processing Date:24th November 2006
Produced by Bob Kershaw
Horizontal Datum:
Geocentric Datum of Australia GDA94
Projection:
Universal Transverse Mercator, Map Grid of Australia Zone 52

YEAR OF THE SOUTHERN NING-BING

David Woods

Caves Australia 162 (2004)

The Southern Ningbings never appeared to have much potential in comparison to other areas in the 40 kilometre long Devonian Reef System north of Kununurra. So in the last four years we had been concentrating our exploration and relocating caves in the Central Ningbing, where potential seemed greatest for finding an extensive system.

The only time I had been in to the Southern Ningbing area was with Stefan Eberhard in 1998. He was keen to check out the sump at the end of KNI 19 (Mapped and surveyed by SRG 1991- Ian Riley), for a possible cave dive. And possible it was. KNI 19 became the first Ningbings cave dive and Stefan found no end to this underground system. On this trip I did find a nice joint-controlled cave associated with a grike, only about 150 meters from the entrance of KNI 19. We began surveying that same weekend in 1998 but we hadn't managed to get back to this area since then. Until July 2002 the area received little attention.

Paul Hosie and Geoff Swann, both cave divers and club members, had been in contact with Stefan about KNI 19 as they too were keen to explore the underwater passages of this partially explored cave. Geoff and I had organized a time earlier in the year and on the 20th July 2002 the cavers and divers headed out to the southern Ningbing. Upon arrival I geared up along with Paul Hosie and Geoff Swan and took them into KNI 19 to have a look at the sump and to check the bat populations in the cave. A leaf nose bat roosts in this humid system and numbers vary throughout the year. There were only a couple hundred of bats, which was not many compared to the thousands of bats that can sometimes inhabit this cave. The sump was at a higher level than when I was here with Stefan in '98. The divers inspected the sump and we exited the 110 meters out of the powerfully sculpted phreatic tube.

We waited until after dusk, just to let the bats exit with no obstruction and then the gear was hauled into the cave. Shortly after, Paul and Geoff began their first dive in KNI 19. They came out sometime just before midnight with big smiles and plans to go in again next day to map and survey the area so far explored.

The next morning after sleeping in (that was everybody!), John pulled a long one and stayed up way past his usual bedtime of 8.00pm. Toni and John were drinking and talking the night away until about 2.30am when he noisily found his way to bed. At 3.30am I was awoken again to the sound of Johno hurling and heaving all over his swag … probably because he couldn't move by this stage. Another repeat wake up call at about 4.00am, at which point I moved my sleeping positions to avoid the pungent, fumes wafting my way!! When John arose he was looking rather seedy, but after a bit of brekkie we began deciding our plans of what to do with the day. Geoff and Paul Hosie were off to do their second dive. John, Paul Cornish, Leonie and Clive decided to trek down to a spring marked on a map not too far from KNI 19. The spring had also been tagged as a feature by SRG (KNI 18), but had not been relocated by John or myself. I had been given a bit of vague information on an aboriginal art site by a local bulldozer contractor, it was a bit of a long shot but I thought they had enough people going to try and find the spring, so off I went in the opposite direction to see what I could find.

After walking along the base of the range for a couple of uneventful kilometers, I rounded a corner and saw a small dense patch of vegetation. As I got closer I noticed that there was a dry creek bed amongst the trees. This started looking a lot like the creek that comes from the outflow, which is KNI 19. I started to get excited as I followed the creek up to the foot of the range. I jumped for joy, as this also was another outflow!

This cave was phreatic also and it was evident that during the wet season a great deal of water would flow at pressure from its 1.5 metres wide and 0.5 metre high exit.

On the bare limestone at the entrance were exoskeletons of fresh water crabs, already bleached by the hot Kimberley sun. This was an encouraging sign as maybe a permanent source of water lay within. Being alone, I had only a short crawl beyond the entrance. Once in the cave it widened to about 4 meters but stayed quiet low. I crawled about 20 meters in, to shine my light another 15 meters with no sign of the cave petering out. It now felt even more promising but I crawled out, GPSed the location of the cave and kept on wandering above ground to where I discovered the Aboriginal rock art. The old fellow who told me about the paintings was accurate with his location and I managed to find it, however the art was very weathered and most of it was hardly visible. However it appeared to be an undisturbed site, which is always good to see.

After a short break in an overhang that looked out over the Southern Ningbing, I explored a few other possible depressions to see if there were to any more nice surprises waiting to be found. I followed the base of the range as it started to cut back into a shallow valley with some fig trees scattered around. I explored the area but only found a few exposed limestone plates. After checking another shallow valley with no luck it was time to head back to base camp to help pack up.

However, instead of retracing my steps, I took a short cut back to the first outflow. This took me up into the range a little and I walked a course parallel to the one at the base of the range. Being 20 metres higher and about 100 metres in. I checked all depressions and large fig trees on my way back to my first find of the day. I thought my luck must have ended when only 100 metres from finishing my search a large fig tree gave way to a collapse in the limestone. Yes! This was definitely an entrance of exciting proportions. The tree shaded a fairly gentle slope down 8 metres to the bottom of a chamber. I decided to gear up and go take a short look.

Once at the bottom of the daylight chamber, I noticed signs of water that had flowed down at this level and on to a passage leading into a low phreatic tube. After a short crawl this passage had kept its size of 3 metres wide and 1 metre high. The cave showed no signs of ending so I exited the cave and GPSed the location of its entrance, and walked gleefully back to camp.

I arrived back to camp and cracked a nice cold stubby. The crew who had gone to find KNI 18 strolled in shortly afterwards. I was amazed that no tag had been located, or the spring, as the map had suggested. And it was only 1.5 kilometres away. However, they did stumble into another joint-controlled cave. A nice one too. Paul Hosie and Geoff completed their dive with great success and they had found no end to KNI 19. The area was definitely

exceeding its previous reputation.

When I was walking back to the camp, I was thinking about what had been discovered that day and how I had thought the area would hold little potential. With its low limestone hills covered in cane grass and boabs, it looked to be bare of any caves, especially in comparison to the block limestone of the Central Ningbing.

Until this day, the area kept its secrets well disguised!

I decided I would definitely be back sooner, rather than later.

Postscript:
So, where the hell are the Ningbings?

David Woods

The Ningbing Range lies 50kms North of Kununurra in the East Kimberley Region Of Western Australia. This rugged limestone range was formed in the Devonian Period, around 350 million years old. In this time the sea covered large amounts of the Kimberley Region and a reef complex was formed by calcium secreting organisms. The reef has since been through many geological changes including uplifting and erosion from ice, water and wind, forming the caves that we have today. The Devonian Reef complex that makes up the Ningbing Range is quite similar to the Devonian Limestones of the West Kimberley.

The Ningbing Range runs for about 40 kilometres in a north–south direction. The old grey limestone is studded with large boab trees and ranges from tower karst (up to 70 meters in height) to incredible pavement terraces spanning hundreds of square metres – at its widest point it is up to 7 kilometres wide!

We have a tropical wet and dry season in the Kimberley. The dry season is from April through to October, as is our active caving season. Heavy monsoonal rains in the wet make access to the Ningbings impossible. The Ranges are surrounded by black soil floodplains, which no 4WD or motorbike can get through. Depending on budget, a helicopter would be helpful but the caves have very dangerous flash floods through the wet and caving is done with extreme caution.

The Ningbing Range is situated on Carlton Hill Station. Permission is necessary to gain access to this property. This area also has traditional owners that live at a community in the area. Cultural sensitivity is acknowledged and respected. Anyone wishing to cave the Ningbing area or Kimberley can contact local cavers David Woods (0417-178-310) and John Cugley (9169-1465).

Exploration has been sporadic since the late eighties with most of the work being done by SRG and WASG. Myself and four other members of WASG are permanent locals in Kununurra and since 1998 exploration and surveying has begun again. We have also been relocating lost features that were tagged and surveyed in the late eighties and early nineties. Through the passage of time these locations had been misplaced, but slowly these missing features are being rediscovered.

The area, as with the whole Kimberley, holds great caving potential in the future.

3. International

During the period of Australian administration of Papua – New Guinea, Australian expatriates formed an ASF member club based in Port Moresby, recording discoveries in Cave Talk-talk and Niugini Caver and assisting visiting expeditions. However apart from ventures to New Zealand and New Caledonia and the occasional peripatetic traveller further afield, few Australian cavers could afford to travel overseas before the advent of mass travel in the 1970s. Since then there have been numerous expeditions to Mexico, Thailand and Indonesia in particular.

AUSTRALIANS CAVING IN INDIA AND KASHMIR

ASF Newsletter 9 (1962)

Reports of caves in the massive limestones of the foothills of northern India and Kashmir have enthused two Sydney (SSS) cavers so much that they have set off for these areas, and hope to get there for the month and a half of clear weather between the monsoon and the winter. As far as they can ascertain no serious speleological activity has been carried out in this part of Asia apart from investigation of "temple caves". Many of us would like to have our gear on the yaks which these two, Paull Rose and Tom Hayllar, intend to hire

WANTED: EXPLORERS FOR PAPUA NEW GUINEAS CAVES

R. Michael Bourke

ASF Newsletter 73 (1976)

For many years the tremendous caving potential of Papua New Guinea has been talked about. Now that this potential is being realized, it is becoming apparent that we resident cavers are too few to handle the exploration on our own. Not that we are inactive – far from it! The pages of Niugini Caver testify to that. But seven active cavers scattered around five centres cannot hope to explore the thousands of virgin caves that are to be found all over the country.

So I want to make a plea to Australian cavers to consider Papua New Guinea for a caving trip. The larger and highly organised expeditions have been very successful in exploration, but small informal trips can be just as successful. Obviously three or four cavers could not tackle remote areas such as the Star or Nakanai Mountains, the Hindenburg, Muller, Raulei or Sarawaged Ranges or the Lelet or Keriaka Plateaux. But there are other easily accessible areas where such a group could make an impression, even if they don't break any new records. Australian cavers have a good record in Papua New Guinea. They formed the bulk of members for six of the eight overseas expeditions and have been the backbone of Papua New Guinea caving since 1960. Let's extend

this to smaller trips as well.

Where to go?

Even if you simply want "tourist" trips to big caves, Papua New Guinea is the place to come. There are six surveyed caves over 300m deep, including the deepest in the southern hemisphere; Selminum Tem at 20km plus is the longest surveyed cave in the southern hemisphere; a cave on Bougainville ranks as one of the largest chambers in the world; Ora and Tuki dolines on New Britain are amongst some of the world's largest; stream flows in some of our caves, such as Atea, Ora and Iaro, are gigantic by any standard; and some of the pitches (150 - 180m) are quite respectable. Admittedly most of these are well off the beaten track, but there is plenty of dramatic caving in accessible areas.

For a one or two man surface reconnaissance trip, there are areas with depth potential in excess of 1,000 metres, such as the Saruwaged Range where no caver has yet visited (see map).

Caves are reported from all 19 provinces in the country but obviously some areas are more worthwhile than others. For a small group I would suggest one of the following four areas:

Chimbu Province

Both the Porol Range and the Chuave-Nambaiufa area contain many unexplored caves. You can cave without wheels provided you don't mind lugging a pack up some steep hills. The climate is mild by Papua New Guinea standards; the scenery is good; the people are interesting; there is a reasonable amount published on the province's caves; and the potential for further extensive and deep caves is good. If you're anthropologically minded, there are cave art, burial sites and legends to be found.

A brief synopsis of the recent PNGCEG highland meet might convey why I am so enthusiastic about the area. our first stop was the impressive Hell's Gates not far from Goroka in the Eastern Highlands Province (not the Chimbu). A stream disappears into the 51m entrance pitch - impressive stuff! After descending that and traversing through the main passages, we started some exploration in a small passage that may not have been entered before, despite the relative popularity of the cave over the years. Lack of time cut our trip short. Even our well known caves offer scope for new exploration.

We then moved up to Kundiawa, the provincial capital of the Chimbu. A day was spent in the four kilometre long Irukunguai Cave. Some of the passage here is very beautiful. We did not push possible leads here but spent another day surveying a 740 metre long cave nearby. The rock art and bullet scars (legacy of the first Government-native contact) near the entrance provided an interesting diversion.

Another day was spent pushing an unfinished deep cave last looked at in 1973. We got down almost 200 metres but ran out of rope - not cave! With two days to go, the party pulled out to the Chuave area. Here, a previously unexplored stream sink was descended. The passage at the base of the 45m entrance pitch led into a large river passage which was explored but a short distance before it was deemed wise to leave it till the dry season. (See Niugini Caver 4(l):17-19 for the complete trip report).

The Porol Range is also the location of Bibima, 494 metres deep. There are numerous shafts and stream sinks in the Chimbu that have never been looked at by cavers. Three potentially deep caves, Darua Muru, Mebile and Angunga, await bottoming. The Chimbu would be my first choice for a small informal trip from overseas.

Coastal New Ireland

The Lelet Plateau is where the deep ones will be found on New Ireland. But as we noted in a review article on the island, "Caves are very numerous on New Ireland. At almost every village on the north-east coast from Mangai south, the people know of caves nearby." (N.C. 2(3):193-205). No really extensive or deep caves are known but some are respectable enough. Matapara is a chamber 308 metres long, up to 60 metres wide and 43 metres tall; Kabase is estimated as 100 metres deep and 400 metres long.

Coastal New Ireland is beautiful – it's what unspoiled tropical islands are meant to be; the people are friendly; there is a road along of the north-east coast; caves are plentiful; cave legends and war relics abound. If you're not too heavy on single ropes, but are into relaxing on white sand beaches, fishing, diving, sleeping in attractive villages and finding "new" caves, then New Ireland could be your scene. It costs more to get there than the highlands – but then you can take in a bit of New Britain on the way.

South Coast of New Britain

The extensive karst areas of New Britain have barely been touched, caving wise. Enough has been done to show that caves are abundant both on the coast and inland. Like New Ireland, much of the south coast is pretty, but here transport is a problem. If you would like to see a remote area not so touched by the 20th century with a bit of caving thrown in, then a couple of weeks based at Pomio or Kandrian could be most rewarding.

There is one major advantage to this area: the seasons are the reverse of much of the rest of the country, including the Chimbu and New Ireland, so at Christmas it is relatively dry when most other areas are having their wet. This coast has an annual rainfall of up to 6,000mm so a trip in the wet (July-September) would definitely not be on.

Southern Highlands

Again karst areas are very extensive and cave exploration has not progressed far. The potential is there but the accessible areas such as Mendi-Poroma-Kagua and TariKoroba do not have anything like the potential of the Chimbu. Nevertheless, a cave like Omai near Mendi, where local cavers spent 40 hours exploring without finishing it, cannot be small (See N.C. 1(3):56-58). The people are very interesting and the region is primitive in more ways than one. As in other areas, large rivers disappearing underground are not uncommon and there are plenty of unexplored caves to be had. This is an area for a group interested in colourful people as well as caves.

Information

Much of the PNG caving information is to be found in the pages of Niugini Caver (good value at only $2.00 per annum from the author – end of free advertisement). Kevin Wilde (Box 1055, Goroka) is the local highland caver; Mal Pound (Box 319, Port Moresby) knows his way around the caves near Port Moresby; and I'm the source for the islands (D.P.I., Keravat, E.N.B.). So get in touch if you're contemplating a trip.

If you come to reside in PNG, make contact with the local cavers. Too often Australian cavers have spent several

years in the country and done no significant caving for want of local information or anyone to come out with.

Do's and Don'ts

It's worth remembering that PNG is an independent nation and not an extension of Australia. The laws, customs and people, including the expatriates, are different. For example, the exportation of wildlife, including insects and bats, is prohibited without a permit.

Learn Tok Pisin – if you can communicate with the villagers, it will greatly enhance your appreciation of the country.

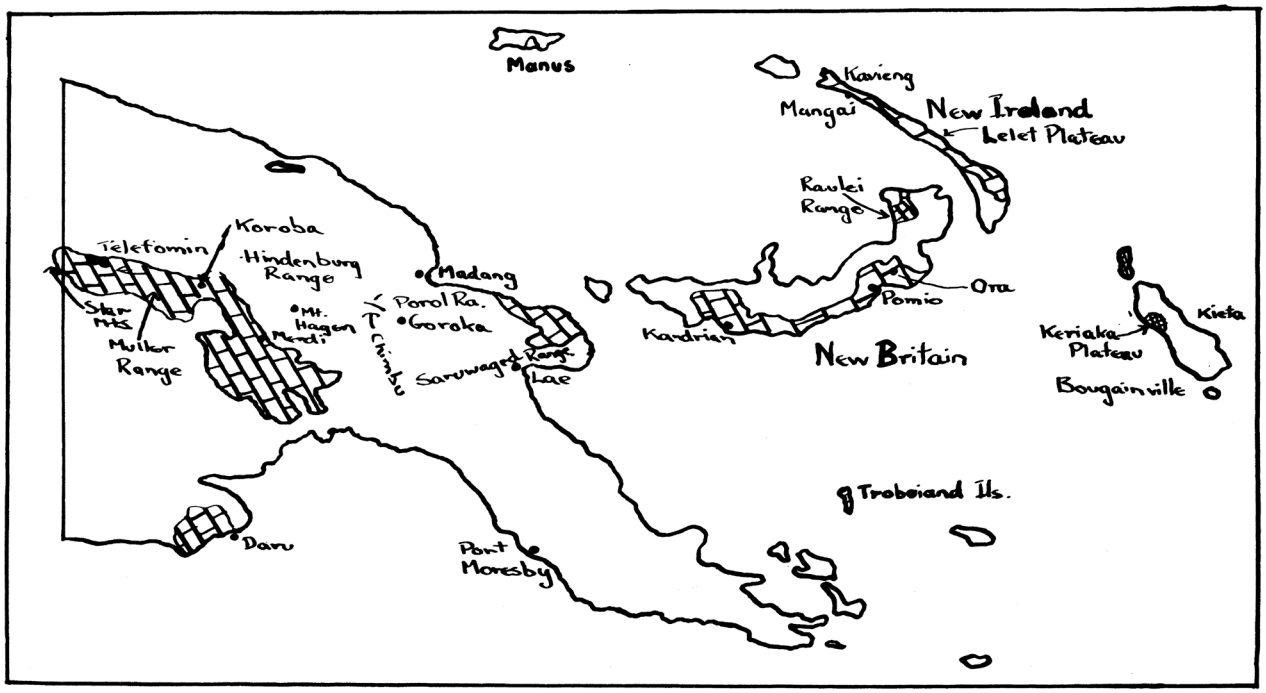
Get into the villages - there are a lot of nice people there. In the towns you're more likely to find spivvy Papua New Guineans and jaded whites. You don't want to come 3,000km to listen to some ocker from Balmain complaining about his local workmates!

Don't condemn the racist expatriates – and then proceed to rip off local employees.

Do publish your caving findings, preferably in a major newsletter or journal. The PNG Government is particularly sensitive about overseas research workers who come to PNG and leave no published record in an accessible form.

Finally

A caving trip to PNG should be a most rewarding and memorable experience. Aside from the caves, there is some magnificent karst country to be seen. The field is wide open for the biologist or other scientist. PNG is the place to come, not only for the big expeditions seeking world depth records, but also for smaller groups intent on some good caving.



UNDER THE GOLDEN TRIANGLE – EXPLORATIONS IN THE NORTH OF THAILAND

John Dunkley & Paul Greenfield

Postscript - Third Expedition, January 1984

ASF Newsletter 102 (1983

Levering this expedition out of the comforts of Chiang Mai wasn't easy either. However the four days in the mountains were immensely productive. Four of us: Thai guide/leader Diu, John Spies, John Dunkley and ex-Jenolan guide Mark McPherson. Another slow, dusty, eight hour bus ride up, down and over the mountains.

"Look at the map. That's where we were last year, the Nam Lang, 30 cusecs disappearing, well a cumec then. Couldn't get in, anyway. Looks like there's where the water comes out again. You can see the bend in the contours near the cliff line. That depression up on the plateau in between the sinking and the rising of the Nam Lang must be the "spirit well" near the Lahu village. A collapse doline. Hundred metres deep, overhung on all sides. Must be a cave in there somewhere."

Local Shan intelligence says, yes, there is a lot of water coming up through rocks at the foot of the big red cliff. No, there's no cave. Counter-intelligence had it that, yes, if you climbed up over the rocks there is a cave. For a small consideration we'll show you. So we spent several hours sploshing along, fording the Nam Khong a dozen times, turn east up the Nam Lang, eh, yes, the water does come up through huge rocks, hell, no way in there. Climb up over the rocks to the very foot of a 300m high, overhanging cliff. Christ, how come no-one knew about this? 30m high, 40m wide, it must be nearly 150m to where the water comes around the corner over there. Resolution: always double check local rumours.

Yes, says the guide, we Shans knew about the cave but nobody's been able to get past the entrance chamber

because of the water. Well, what are we waiting for? Down the rock pile, down the water. Running a bit fast and deep, isn't it? And this is only the dry season, well you can see how it banks up there in the wet. We'd better leave the packs here, won't need the compass or batteries or camera, just take a torch, it won't go anyway.

But it did. Round the corner, over some superb, white, metre-deep rimstone pools. Wow, just like the Golden Staircase in Croesus. Back to the river, walk, wade. Big isn't it? Hell, look, bats, millipedes, big blind white fish, how long would they have to be in here to go like that? Walk, wade, water, wade. Incredible, still 20m high, 10m wide. Ever been to Exit Cave, Mark? Rather similar, water's a lot warmer though. More massive flowstone and rim pools. Formed by that small tributary stream I'd say. Probably drains that other big doline west of the Red Lahu village. The Lahu reckon there's a cave there you know, they used to have their village in the doline, only place for water. Can't waste time on it now.

Walk, wade. How far do you think we've come? Can't even see the roof over that rock fall. Looks rather recent, wonder what the rock fell out of? Wouldn't it be fantastic if we came out of the bottom of the Spirit Well up near the Lahu village? Well, the spirit well is obviously a massive collapse doline, it had to collapse into something, didn't it? Yeah, but the map suggests it's a good 400m higher up the mountain. Must be 40m to the roof, maybe there's a high level passage up there, well we haven't got time to check it out. Walk, wade. Diu'll be wondering where we are. The Shan fellow's keen, isn't he, coming all this way. I thought you said they never go into caves? No, that's the Black Lahu further north. Look, if we're not careful it'll be dark when we get out, and it's 10 km walk back. Better start conserving light too. Walk, wade. OK, another 20 minutes. Another ten. Five. We'll stop at the next corner. Well, alright, the next for sure. Frustrating, eh? A bit smaller here only 10m high and wide. Still going strong though.

FURTHER UNDER THE GOLDEN TRIANGLE

John Dunkley

Australian Caver 108 (1985)

May 1984: The north-west corner of Thailand, near the border of Burma. Driven by the kind of obsession that grips you when you've made a really big discovery, the two of us are 3.5km from the entrance of Nam Lang Cave, the cave now filled with waist deep water and mud continuing into the darkness, still 10m high and 10m wide. Tending camp near the entrance, Diu was the only person who knew where we were. We were tired, short of time and didn't fancy risking even a minor accident so far from help. A larger party, a rubber boat and more time needed. For the second time in this cave John Spies and I decided to leave it for another day, another-year … .

May 1985: The swimming pool at the Airport Hotel in Bangkok, getting our money's worth. A lot of talk, the six members of the sixth expedition hoping John and Diu will wait for us in Mae Hong Son, considering that the early flight on which we're expected has been cancelled. Strange, Thai customs curiously uninterested in yellow rubber boots, hundred metre lengths of rope, spools of polypropylene, a pack full of black garden plastic, or tins of grey powder. Keith is still talking about aeroplanes, having spent almost the entire leg from Sydney to Singapore glued to the rear window of the 747 in a haze of smoke, this being his first plane trip of any kind.

A 737 to Chiang Mai, a 3 hour wait, then the little Shorts 330 across the mountains to Mae Hong Son, and fortunately John and Diu waiting, accompanied by pre-monsoon waves of heat. We couldn't see how the 20 year old short wheel base Land Rover could take 8 of us with gear, but it later did sterling service with 14 passengers and John assured us it had a capacity of 20 Shans. By 6pm we were in wilderness Asia, walking the track down the Nam Khong to the cave entrance, a whole world away from that swimming pool a few hours earlier.

Monday May 6: Into Tham Nam Lang, the whole day spent winding and unwinding the 130m measuring rope. There were several stretches where that wasn't long enough, the longest line of sight reaching about 200m. Next day John Spies, John Dunkley and Keith Oliver continued surveying, photography and exploration of high side passages. Reaching the top of one 50m high rockfall (Doi Hin Yai - Big Rock Mountain), we found the rocks were coming from a vast shaft rising beyond the limits of strong torchlight. Meanwhile, John Taylor, Dorothy Nichterlein, Kevin kiernan and Kerry Hamilton launched the rubber boat at 3.5km and paddled off. Exhilarated and exhausted they returned at 3am, having reluctantly turned back 5.4km along the main stream passage at King Khlong, and having discovered an enormous upper level (Tham Ban Khong Kwan - the Cave Home of Kwan) so superbly decorated as to affect Kerry and Kevin emotionally. A forest of stalagmites (Khan Thai) each rivalling the Khan in Kubla Khan. No end in sight in either case, just shortage of time once again.

A pleasant day was then spent floating the gear down the river on the boats, and a new camp established opposite some small waterfalls next to the Nam Khong (river). These have been built up in travertine deposited by spring water from Tham Susa, and provided delightful refreshment after a hot day as well as safe drinking water. Next morning we breakfasted to the sound of thunder. Pre-monsoon thunderstorms, eh John? Strange though, at 8 in the morning? Especially as there's not a cloud in the sky. Then John recalled 500 Chinese Kuo Min Tang troops filtering through Ban Tham a week or so earlier. Good grief, it's one of those perennial opium wars you read about between rival private armies of drug traders. Later, we learnt that it was a mortar barrage involving a coalition of the KMT with the Shan United Army of Shan State (Burma) against the private army of Khun Sa. Soon a Thai army helicopter choppered overhead, presumably on a reconnaissance. So much for wilderness Asia.

The noise of battle continued to be audible in the entrance passages of Tham Susa, a large outflow cave which below its spring has formed a magnificent delta of travertine. Kevin located some pebble tools in the impressive entrance chamber; this cave is only a few kilometres downstream from one of the seminal archaeological sites of South-Esat Asia, at Spirit Cave, where evidence for early agricultural communities was first found in 1965. The boat was launched and the cave stream followed about 700m to a series of waterfalls requiring climbing assistance for further exploration. Some interesting white (possibly blind) salamander-like creatures were captured trying to climb up the waterfall, adding to an impressive fauna] variety of Tham Susa and Tham Nam Lang. Some other caves in the area were also incompletely explored. Visions of locally manufactured bamboo scaling poles or ladders now arise; these would be easy to find and construct and have the advantage that steps can be cut in the side.

After a night in the comparative luxury of John and Diu's new house at Ban Tham we checked out the Spirit Well, a large collapse feature walled in on all sides, with a 100m high cave entrance visible on one side. Lying close to but 500m above the course of the cave, this had real promise. Kerry and Kevin abseiled down about 80m and demonstrated conclusively that large cave entrances can be disappointing.

Back at Ban Tham, 2 in the morning and Kerry is ill, very ill indeed. We waited until 7, then took him to a small clinic in the nearest village. There was nothing they could do so we took off across the mountains, 3 hours to the nearest hospital at Pai, where doctors correctly diagnosed cerebral thrombosis. Next day, another 4 hours and 4000 bends to Chiang Mai and a good hospital. Six days of anguish, telephone calls, putting on of the hard word, and despair in all before Kerry was delivered to an ambulance at Brisbane Airport. Exacerbated by dehydration and fatigue, something as serious as thrombosis is unlikely on a remote area expedition, but the possibility of evacuation has to be allowed for in planning. All the previous trips have used local buses for transport; how we'd have got by without John Spies and Diu Intikat and their Land Rover. I just don't know. Not to mention Ken Grimes, who was the only person we could reach to handle the Australian end of things. Thai International Airways was also very understanding.

That was about the end of the trip, though there are other tales to tell. There was, for example, the cave deep in the forest with tracks of a tiger in the entrance chamber. Later we had a pleasant chug through the limestone on the River Kwai (Khwae) railway west of Bangkok. By looking at tourist caves at Chiang Dao and near Ratburi and Kanchanaburi, Keith was able to justify his 'on-duty' status to the Tourism Commission of NSW and the tax man, and Kevin was able to contrast the Nam Lang karst with tower karst further south. On this trip sufficient work was done to justify a preliminary scientific paper (Helictite 23 (1), in press), and to establish an organizational pattern for a yet larger expedition. Exploration prospects are still excellent, there is a wealth of potential scientific work and there are about 1,000 dolines awaiting attention, ranging in size up to the massive Nam Lang polje which drains 425 sq.km. No less than 312 of these are at least 20m deep and the Nam Lang polje is about 400m deep! Susa Cave lies nearly 800m below the dolines on the plateau - is there a connection? Circumstances prevented the planned investigation of where the water sinking in Mae Lana polje goes; this promises another a large cave since the water is potentially highly aggressive and there's plenty of it. Finally, the whole area has a compelling beauty and a mystique heightened by the exotic environment and the ubiquitous opium poppies.

Tham Nam Lang, at 7km already the longest cave reported on the mainland of Southeast Asia, is hopefully ready to reveal another 5 or 10km to a well organized assault. Of course, the Lahu and even the Thais would say that assaulting the Spirit Well, we have incurred the displeasure of the phi (spirit) of the cave. In particular, we may have offended Kwan, the spirit in the head responsible for health, wealth and general comfort. Kwan has attacked Kerry. Personally, I think Kwan lives in the newly discovered upper levels of Tham Nam Lang (at Tham Ban Khong Kwan - the Cave Home of Kwan), and will be appeased by finding that the cave and all the features in it have received Thai names rather than the conventional allusions to western speleological mythology. What's more, perhaps Kwan tempers his capriciousness; he seems to be helping Keith give up smoking.

May 1986: Bangkok again. An expedition of 10 or 12 including all the 1985 contingent. Twice as much time, twice as many people, twice the length of cave. But be warned. Kwan is waiting.

(ed. note: In the following 3 years Mae Lana Cave was explored for over 12km. Keith never did give up smoking)

4. Who was here before us?

THE SPELEO BUSHRANGERS

Greg Powell

ASF Newsletter 91 (1981)

Now be honest with yourself. Can you think of a cave system in New South Wales that is not associated with a bushranger? If these evil-doers had banded together to form a Speleo Club, it would have been the biggest and richest that the state has ever seen.

However, they did all their caving alone or in small groups and I doubt whether they would have gained membership to the ASF anyway. They had atrocious safety records.

Let us now examine the exploits of some of these Speleo Bushrangers and to keep it brief they will hereafter be referred to as the BMSC, (Bushrangers Mutual Speleological Club).

We will begin with our faithful James McKeown (whom Jenolan guides will refer to as an escaped convict, not a bushranger). McKeown explored the open arches at Jenolan in the 1830s. His caving career was short, as he was soon evicted by James Whalan. Perhaps McKeown should have applied for a permit for the weekend. His grave is said to be at Hazelgrove near Oberon, though I haven't been out to see.

We must leave Jenolan now as it becomes far too law abiding and travel across the ranges to Abercrombie, the haunt of many a bushranger.

History tells us that Ralf Entwhistle and his Ribbon Gang fought it out with the 39th Regiment around the Arch in November 1831. Three of the gang were shot and the remaining ten were captured after three days when their ammunition ran out. They were hanged in Bathurst in February 1832. The leg irons on display in the Arch date from this time. So ended the longest cave inspection at Abercrombie. Imagine the cost for tickets!

We have to be careful when reading references to Abercrombie that they refer to the Caves, and not the Abercrombie Ranges. I can find no reference to Ben Hall's using or even visiting the Abercrombie Caves. He had friends in the Abercrombie Ranges whom he visited when travelling between the Lachlan and Goulburn districts, but the caves were too well known in the mid 1860s for these to be used as a bushranger's hideout. The caves had been known and visited by everyone from miners to Governors for thirty years prior to Ben Hall's day. They had been explored, lived in and built in (dance floor) before Ben Hall turned to unlawful pursuits. Hardly a place for any self respecting bushranger to try to

stay concealed in. A bushman such as Hall would never allow himself to be caught in the enclosed trap which is the Abercrombie Caves.

However, if any bushranger of note ever used the caves to advantage, it would have to have been Johnny Piesley whose territory was the Abercrombie area. He ranged in the late 1850s, teaming up with Frank Gardiner for a few famous shootouts with police in the area. If Piesley used the caves, it must have only been for a short time, as he was caught and hanged in 1862.

Assuming then that Ben Hall avoided the Abercrombie 'traps', and was not going to be caught like Entwhistle, we will follow him back across the Lachlan Plain where the mail coaches crossed – Ben Hall permitting. In his own Weddin Mountains, he used sandstone and quartzite overhangs for shelter and storage. The question remains – did he use limestone caves?

In Bungonia Caves (1972:9) a reference is made to the possibility of Hall, Gilbert and Dunn's using those caves in 1865, but, as the book suggests, this is doubtful. The bushrangers were not in the area long enough to use the caves. Furthermore, the area was not known to them, the police were close (in a matter of months, all three would be dead) and the unknown terrain at Bungonia would not lead to a safe getaway if the police did close in on them there. Besides, they were not up on SRT and they had forgotten their ladders this time.

Earlier, in 1863, the hooves of the gang's horses had clattered over limestone, at Cliefden, when they were raiding in the area. The caves at Cliefden and Walli are not the type that would be attractive to an outlaw. The caves were hard to find, with small entrances and a little close to Carcoar and the 'traps'. Even old William Montague Rothery, the owner of Cliefden, who was tied to a chair while the bushrangers enjoyed themselves at his expense, never entered the caves. Perhaps the early miner/settler cavers were attracted by large open arches such as Jenolan and Abercrombie, which resulted in the early popularity of these areas and not others.

The Nelungaloo Caves near Parkes have the distinction of being called Ben Hall's Caves. The Lachlan Tourist writes "The legend suggested that Ben Hall frequented an inn on the Forbes-Bogan Gate road and that this escape route, if strangers were sighted, involved having horses tethered in Goobang Creek and a swift ride upstream to a cave. The legend also suggests that Hall rode into the cave mouth from the creek and that the cave could be negotiated for a mile underground".

SUSS, who have been working in the area, have been unable to prove this latter part of the legend. Although the caves are near where Ben Hall was shot, the area is a bit too far north for him to have visited often. But who knows?

As George Knox, the Superintendent at Abercrombie Caves puts it "Of Ben Hall, we are sure of three things only – where he was born, where he lived and where he died. All else is mere speculation".

Not a bad thing to remember, especially in relation to cave areas.

Moving now to other areas we find reference to a man called Glover who was said to be a member of the Hall gang. 1 can find no reference to this. He was supposed to have planted gold in the Cooleman – Blue Waterholes area.

At Timor, the Main Cave is supposed to have 'F Ward 1885' written on the ceiling. Fred Ward was the name of Captain Thunderbolt, a New England bushranger who was shot in 1870. Yes, 1870!

Another inscription in carbon on the ceiling in Cleatmore Cave near Braidwood reads "T Clarke July 1862". The Clarkes (one was Tom) roamed this area before turning to bushranging. As a bushrangers' haunt, Cleatmore Caves are ideal. The Clarkes were hanged in 1867. The inscription may be genuine though the style of handwriting does not look old. However, the fact that the month and year are given adds to the authenticity.

The Hunter River Valley bushranger 'Jewboy' Davis is said to have stored his loot on Pilchers Mountain. There are caves at Pilchers Hill, near Dungog. Where?

Well, maybe they caved and maybe they didn't. Whatever the case, the legends will continue to grow and the facts will become as foggy as a pair of spectacles in Main Cliefden. We do know however, of Bushranging Speleos who are active today, either collecting loot from tourists before a cave inspection or after a speleo trip in the form of trip fees.

5. When things go wrong …

ASF's safety record is outstanding, accidents and rescues in Australia's caves are relatively rare, and the only fatality ever suffered on ASF member club trip occurred more than 40 years ago. Although S & R arrangements exist in all states, only NSW has continuously maintained an autonomous, viable Cave Rescue organisation over the long term, holding numerous S&R practice weekends at Bungonia and elsewhere.

SEARCH & RESCUE CALL-OUT

Tony Culberg

ASF Newsletter 81 (1978)

On Sunday 30th July, the Tasmanian Search and Rescue organisation was given a full scale check.

The officer in charge of a University college had reported that a party of four from his college had not returned from a one day trip to Midnight Hole, part of Entrance cave at Ida Bay. The full Police Search and Rescue Squad and members of both Hobart-based caving clubs and other active cavers assembled on Sunday to plan the rescue. As Midnight Hole is a vertical cave with old bolts (about 9 years), it was feared that there may have been a serious incident.

The local police (Dover) were asked to check the parking-lot at Ida Bay Quarry, and when it was reported that the car was still there we were sure that we had a real exercise.

The gear was taken in a Range Rover and a Toyota 4WD, the people in a Coaster Bus (19 seats) and an ambulance and Holden Sedan went in case.

The Holden, containing senior Constable Keith Harper, Brian Collin and myself arrived first to find the 'lost' party packing gear into their car, and quite adamant that they did not need rescuing. They were further more embarrassed when the rest of the convoy arrived close behind us.

It appears that the trip had been quite okay and it had been planned for two of the party to squeeze out through Matchbox Squeeze and the other two to prussik back to the surface. The prussik team had not taken the correct rope for the final (45 metres) pitch and had abraded half-way through the rope with one person's ascent. (It seems that no rope protectors were used).

On a later pitch (35 metres) a pack had been dropped and much time was wasted retrieving it. The party had reached the surface about midnight, and had not bothered to make the effort to reach a phone (forty minutes walk plus ten minutes drive away) to notify their college.

The only other comment is that the organiser of this trip is a member of an ASF club and is not a trip leader. It should also be stressed that this was not an official club trip, and that this is not the first time that this person has led trips without informing the club and with unsuitable gear.

Perhaps if all clubs had minimum standards for trip leaders and enforced them, as well as conducted training sessions in trip leader techniques then this type of incident need not have occurred. As a result, the time of 20 or more people was wasted, as was a significant amount of fuel, wear and tear etc. on a pointless rescue.

5. And if all that gung-ho stuff is just too hard …

ADVANTAGES OF CAVING IN AN AREA WITH HEAPS OF SMALL CAVES

(Author is anonymous, but denies being from Victoria!)

Australian Caver 141 (1997)

- No more false hopes and aspirations.

- Unless a total nut case, you will never hold false hopes of possibly finding the world's longest or deepest cave. In fact, you'll never have false hopes of ever discovering Australia's longest or deepest cave.

- Safety issues – It is difficult to get lost.

- For experienced cavers it is a simple case of keeping a cool head and remembering to crawl backwards. If a panic attack occurs and you forget which direction is backwards, your mates waiting outside can just grab hold of your legs and pull you out. In the larger caves, where your mates outside can't see your legs (and this is rare), just turn off your light and the daylight beaming in will point the way out.

- Light failure is rarely a problem. Just remember to look around for the light entering the cave from the entrance. This can be a little more difficult if caving at night. The moonlight is not as obvious as the brighter sunlight streaming in but experienced cavers can usually pick it out.

- If you get in any sort of trouble your mates on the outside can always grab your legs and pull you out again.

Exploration and Survey.

- You can honestly say you have seen every bit of the cave if you've entered it. Small caves require less effort to explore. You can often do a complete exploration without even entering the cave . . . just shine the light in and see it all from the outside. (This type of caving is most popular with those who practice minimal impact caving techniques.)

- No need to be weighed down with vertical equipment, struggling up to the cave and spending hours or even days in rigging the thing. In a small cave area its more likely to be a simple chimney down a two meter drop requiring no gear. As a bonus, you can easily 'bomb' the 10 deepest caves in the area in an hour or two.

- You can completely survey several caves in a single weekend and still have plenty of free time. Just imagine how impressive it will sound when you tell your caving colleagues at the next ASF conference that, over the past year, you have surveyed 236 caves while your Tasmanian colleagues are still surveying the same passage in Exit cave.

Other worthwhile advantages

- Cave gates are not needed. They tend to take most the cave space anyway.

- It's never more than a minute to the surface if you have to have a smoke, eat lunch or attend to important bodily functions.

- No need to join in the track-marking debate

- No fear of newspaper headlines blaring 'Cave rescue attempt now in 20th hour'

and if even that's too difficult, caving is only a mouse-click away (is it really only 12 years since this article appeared?)

CAVING ON THE INTERNET

Chris Bradley

Australian Caver 136 (1994)

The Internet is a way to send electronic mail to other people throughout the world. It is where you can discuss topics of interest, obtain answers to questions, find out almost anything. Access to the internet is becoming more common every day. Even if you don't work in a university of a government department, you can access the Internet.

One good reason to access the internet is to join some caving discussion groups. To join a discussion group, you have to get yourself on to the discussion group's mailing list.

In the Internet, a list may or may not be moderated. A moderated list is one where each message is checked by someone to make sure each message is appropriate to the list. An unmoderated list accepts and distributes all e-mail messages from anyone registered to the list. Unmoderated lists generally use programs such as LISTSERV. LISTSERV is a program that manages discussion groups, controlling functions such as subscribing etc.

There are two caving lists that I know of on the Internet and most probably there are more.

The Cavers Mailing List is a moderated list, it is an open forum to share information about caving. Almost daily, the moderator sends out a digest including equipment reviews, caving accident reports, new discoveries and exchanges of cave related information. Anyone on the list can make submissions, which may vary in length from a few to a thousand words. The Cavers Mailing List is particularly helpful if one is travelling overseas or to another caving area and wishes to arrange a caving trip. Anything that is caving related will be accepted. This list is located at Boston University, hence the .bu in the address.

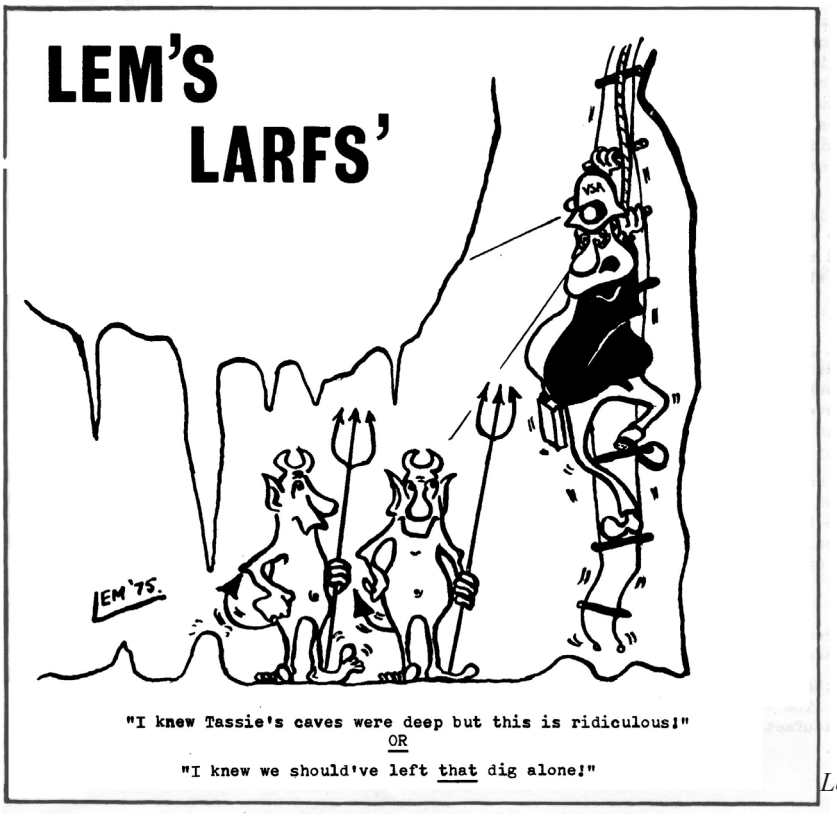
Once you join the Cavers Mailing List you will be sent a Cavers Digest on a daily basis. The digest comprises all the mail sent to the forum.

To join, send a mail message to cavers-request@vlsi.bu.edu. You will be sent a complete listing of the Cavers Digest Archives. So far there are eight index listings, each is about 50k (50,000 bytes) or 16 pages. A reader can then request an article from the archives by sending a mail message to cavers-archive@vlsi.bu.edu.

You will be asked to send a self-introduction which will be included in the Cavers Mailing List Digest.

To send an article, mail to cavers@vlsi.bu.edu.
Have fun!!!

Editors' Note - Update 2006 - This list is still active and can be accessed by the following addresses:
Send all submissions to cavers@caversdigest.com
Send all subscribe/unsubscribe requests to cavers@tomichicreek.com
Visit the cavers digest on the web at http://www.caversdigest.com/



Lems Larf

DOWN UNDER ALL OVER

Beginning with issue 8 in 1960 the Newsletter regularly published a digest of member club activities. Initially entitled "Exploration Activities" or "Around the Societies", by the mid-1960s this feature was firmly established under the heading "Down Under All Over" and has been a regular feature ever since. Contributions sometimes arrived unbidden and if suitable were published as stand-alone articles, but more often the long-suffering Editors had to extract information under duress from member societies or write their own digest from club newsletters. We have included below entries from a variety of fulfilled, frustrated and determined editors.

SOCIETY ACTIVITIES (extracts)

J. David Taylor (editor)

ASF Newsletter 8 (1960)

New societies have been formed or probably will be formed in Port Moresby, Brisbane and in Victoria. This will mean that we now have caving groups in all States and most territories of the Australian Commonwealth.

The Port Moresby Speleological Society was formed in January this year. So far the main scene of operations has been around the Javarere Rubber Plantations, some 45 miles by rugged mountain from Port Moresby. Quite a lot of walking through rain forest is a prerequisite to caving here. To date about 10 caves have been investigated. Interesting stream passages have been encountered, so that surveying and water tracing is planned in order to investigate the hydrology of the area.

Over Easter a CEGSA party traversed the wild and magnificent cliffs along the western coast of Kangaroo Island, in search of caves in the consolidated dune limestone. The stream passage (only in SA) draining West Bay Hollow and the big sea caves at the Ravine des Casoars were visited. The cave, further inland from Cape Borda gives promise of further discoveries in this area.

TCC took advantage of the dry summer to do some work in the Mole Creek area where even the Creek that flows through Honeycomb Cave was dry. The Upper Marakoopa Cave (discovered by Joe Jennings) was investigated and after 300 yds - daylight. Noted already, cave beyond Terrace Chamber in Marakoopa entered for first time and a large creek was found. The Xmas trip along the rugged Gordon River was magnificent, caves paltry. The access "track" into Exit Cave has been cut. Using this new "Kokoda Trail" it takes less than 1 ½ days to cover the 6 ½ miles, so this large and spectacular cave will now be properly investigated.

With the start of the new Uni year, the Sydney University SS have an influx of new members. On one of the "freshers" trips they came on a new extension of the Mammoth Cave (at Jenolan) ("the Northern River") which is on the central level, but has not been fully investigated. New caves or extensions are still turning up at Jenolan. SUSS reports of a cave north of the Serpentine which they didn't know about, though a chap called Hennings carved his name there in 1888. Surface mapping has been carried out at Yarrangobilly, and eighteen miles at Cave Creek they have found caves but not on the scale of Yarrangobilly, and thus were not impressed.

Little news has filtered through from Canberra, save that they are preparing for the Conference. There was talk that they were walking into Bendithera at Easter, as there are reports of mighty chasms in that area. Maybe some of our cavers are missing!

The Western Australian Speleological Group reports the discovery of a new cave which they refer to as "Deeondeeup". They rave about its magnificence – but say little else. This group is exploring the coastal area both to the north and south of Perth. They report excellent prospects in many areas.

AROUND THE SOCIETIES

Keith Clouten (editor)

ASF Newsletter 11 (1961)

What has your society been doing during the past three months? In most cases, I have no idea! Only very little material in the form of club circulars, newsletters etc. has come the way of the Publications Officer, and most of this is from NSW societies. To be representative, this section of the Newsletter should contain some news of activities from every society around Australia.

DOWN UNDER, ALL OVER

Ted Anderson (editor)

ASF Newsletter 23 (1964)

From the national capital: CSS have found more subterranean thermal pools at Wee Jasper. Temperature of these is in the mid eighties (Fahrenheit I presume?). At Yarrangobilly -they've been surveying East Deep Creek Cave; and at Cooleman passage between Right Cooleman and Cooleman Caves has been established.

In South Australia: CEGSA report a small colony of Eptesicus pumilus (Bats to you!) at Punyelroo, where they have also been doing some surveying. Vague rumours indicate that they have discovered a cave at Naracoorte by means of earth resistivity measurements. Last I heard, they were still trying to find a way in.

On the Macleay: after some 90 inches of rain in 1963 and with their beloved river in flood again this year, KSS's catch phrase is "Weather to be or not to be a caver". But despite this, they have been very active, visiting

Temagog, Big Hill, Windy Gap, Carrai, and Moparrabah, to mention a few. Among their many reports are some interesting ones about sea caves at Big Hill (one even decorated with helictites) and a possible lava cave at Tyringham. At Windy Gap they enjoyed a display of glow-worms; and they have been busy numbering caves at various places.

NTUCSS have been far and wide to Jenolan, Colong, Timor and Mudgee as well as joining forces with their Kempsey neighbours.

In Sydney: the mob wearing the triple "S" brand were, last year, making valuable contributions to surface mapping at Bungonia and Jenolan, as well as organizing a giant search and rescue practice attended by Illawarriors (ISS) , HCG, UNSWSS and SUSS. This year, all were stunned by the Society's first change of President in its decade of existence; while at Jenolan the more hardy members have been trying, with some success, to show that J41 might be as large as Mammoth (J13) – and probably muddier!.

Conversely, SUSS are very proud of themselves for demonstrating that the supposedly all muddy Mammoth has some exceptionally beautiful, decorated caverns. They have: discovered an extension to Lower Level which contains, in addition to a fine display of all the usual pretties, numerous delicate straws (some about 7 feet long) and some crystal growths presumed to be aragonite .

UNSWSS have been looking at some of the lesser visited caves at Jenolan, and have added some passages to the upper levels of the re-discovered Wiburd's Lake Cave.

From north of the 29th: my second hand information reveals that UQSS hold certain fears for the continued existence of some of their caves. Cause of their concern are some unnatural disasters: quarrying near Mt Etna and the effect of the proposed Pike Creek Dam on Glen Lyon and Viator.

From Victoria: VCES report some enjoyable (and apparently useful antics) in M3 and Trogdip at Murrindal. Also surface surveying.

In the Conference state: WASG began the, year by discovering an extension to Easter Cave, in the Augusta region, and they've been extending it ever since. This addition, now about 1000 yards long, maintains Easter Cave's high standard of decoration, and contains its largest cavern as well as numerous lakes.

DOWN UNDER ALL OVER ... News from around the societies.

Laurie Moody (editor)

ASF Newsletter 73 (1976)

CEGSA
Dot Peisley reports that there have been a very busy few months in the past with more to come. A Federal Grant to up-grade the Victoria Fossil Cave at Naracoorte has finally come through and CEGSA will be busy helping with a complete survey and pilot tunnel for the new exit. The Grant means complete new wiring, new pathways and an Interpretation Centre. Plenty of trips to the South-East for exploration and surveying. Several trips to the Flinders Ranges with Ian Lewis leading a trip to Wooltana Cave in the Northern Flinders. Wooltana has an entrance pitch of 60 metres! Other trips were held to Bakara Well in the River Murray area, Corra-Lynn which is on the Yorke Peninsula and there has also been an upsurge in membership which has brought fresh enthusiasm and activity into the club. Dot also informs us that occasional Paper Number 5 is now out. This is the South Australian Reference Book (a complete listing of all S.A. caves). Price $6.00 each (extra good value).

CSS
Gordon Taylor informs us that with the warmer weather of Spring, increased activity is evident in the club. CSS are coming out of winter hibernation. Although still concentrating their activity on Yarrangobilly, there have been trips to many other areas. These include Wee Jasper, Wyanbene, Marble Arch, Jenolan, Cooleman and others. A spate of trips (7 in fact) were made to Yagby to dig in Hanging Spring Cave. Digging was quick but now dirt removal and bad air problems have arisen. A portable generator and fan were used to circulate air. Interest has now waned on this project. A detailed report by four CSS members on London Bridge is to appear in Volume 13 of Australian Geographer. Amphipods and Isopods from a cave at Wee Jasper are at present being studied. Preparations are also well in hand for Cavconact. Several notable guest speakers have been engaged and it should prove to be a very productive event. Hope we see you there!

KSS
Jean Piggott reports that news from KSS is rather short this quarter, but does not imply inactivity – just the opposite, for literally tons of rock and rubble have been cleared out of the ½ Way Efflux by some of the biggest working parties seen at the Macleay Caves. The more rubble removed from the cave, the more there seems to be, but it still locks good! By courtesy of Kevin Kenah, use has been made of a block and tackle (Turfa?) and the results from the use of this mighty little gadget have been spectacular. Work is continuing.

LSC
George Bamford informs us that LSC have had a very quiet year with very little caving being carried out. It is hoped that things will improve over the coming twelve months and with George as our LSC correspondent we will no doubt hear much more about this club.

MUSIG
Colin Killick reports that MUSIG have been fairly active of late and a ‘Chocolate Crackle’ sale at the University organised by several female members succeeded in raising about $40 towards a Forestry Compass which was needed desperately for survey work. The 24th - 25th June saw them in Mammoth and Wiburds Lake Caves at Jenolan, collecting specimens of spiders for Australian Museum staff to identify. Hopefully they will be able to continue this work and forward a report of the results for publication. MUSIG is handicapped by not having a publication of its own despite its rapidly growing membership. The matter has undergone some discussion but decided against publishing due to the already heavy market. (I don’t agree with this! Suggest you start publishing even if it’s only a quarterly news-sheet! - ASF Editor.) Colin also mentions that several trips have been held to Bungonia, mainly for digging purposes. They have a dig underway (not B125!). Two MUSIG members, Richard Wilson and David Rothery have recently returned from Papua New Guinea where they were part of Julia James’ expedition.

NUCC
Peter Hart informs us that the first half of 1976 was fairly

quiet, with the following trips being held: Wee Jasper – caves visited were Dip, Gong and Signature and the turn-up was good. Bendethera – small party visited this area with the Landrover Club. Yarrangobilly – a party went in conjunction with Highland's Canberra Branch. Wyanbene – small party visited the main cave, WYl. Wee Jasper – small party of three visited Dip, Signature and Gong caves. Wyanbene – two trips were held, one with a party of two, the other with a party of four. The former party explored Aitchesons Avens and the second explored Caesars Hall and the Gunbarrel Aven. Of late, club activity has increased and this is to be supplemented by a vigorous advertising campaign. A trip to Wyanbene, WY1 has been planned to look around and survey the largely unexplored upper levels. Another visit to Yarrangobilly is anticipated mainly to continue the work on the dig in East Deep Creek Cave.

OSS

Ray Rowney reports that Descent has been resurrected and is being edited by Phil Ireland. Trips have been held to Cliefden mainly for the purpose of replacing some of the gates and gating Jable. Trips have also been held to Canomodine (thankyou) which is an area about 30km west of Orange towards Canonimdra. This is in the same area of limestone which runs from Cliefden north through Cargo to Molong. An area familiarisation trip was also held to Tuglow late in June. Some members have also been practising their SRT although this is not needed at Cliefden. However, they hope to try it in other areas. OSS have also got their fingers crossed that the government is running out of money for the Growth Centre and won't need to build the proposed dam to flood Cliefden.

SCS

Ron Mann informs us that his club has been quite active. Water tracing has been carried out at Mole Creek mainly in the vicinity of Herberts Pot. Visitor and tourist type trips were made to Trowutta' Montagu, Hastings and Entrance Caves. A trip was also held to the Jane River area where a number of dolines were investigated but no major finds resulted. This particular party resorted to bicycles for the last 7 miles of the track. In the Junee area, combined club water tracing proved links between Growling Swallet and Junee Rising breaching the topographic divide – linear distance of 10km. Earlier tracing of Rescue Pot (JF201) and Satans Lair also proved to link with Junee Rising. Club also participated in exploration of The Chairman, a new cave (JF99). Present depth is approx. 155 metres.

SSS

Keith Partridge reports that SSS thrashed SUSS in a football match between these clubs. It turned out to be a great success and provided a good afternoon's entertainment for all who attended. Keith extends his congratulations to SUSS on their great effort but as predicted they were no match for the SSS giants and were thoroughly thrashed 27 - 2. It is hoped that a few more inter-club games can be held. The August edition of the journal gave a reprint of an article on Tuglow Cave which was first printed in the "Sydney Mail" in January 1935. It includes an early history of the cave and has numerous photographs of how the cave used to look in those early days before the vandals got to work.

A recent trip to Wombeyan by Tom Hayllar and friends resulted in the discovery of several small caves, which were mapped and given temporary cave tag numbers. These maps have been reproduced in the July issue of the journal.

The need for extreme care when using SRT was highlighted again recently when one well known lady caver found herself dangling down the side of Bungonia Gorge with a lock of her hair caught in her whaletail. Let this be a lesson to all long-haired danglers – keep your valuables clear of your rigging. In June a trip to Walli discovered that demolition work had been carried out to enlarge the passage between Piano Cave and WA35 and that a very flimsy gate had been placed in the passage and padlocked. This work has been done in the first half of this year but it remains a mystery as to who did it and why. Can anyone supply an answer?

The advantages of permanently locating stretchers and first aid kits at major caving areas was demonstrated recently when the equipment at Bungonia was given its first real emergency workout. While working in the efflux, Bob Holland was struck by a boulder dislodged from above the trench and suffered several broken ribs and a bruised lung. After he was made comfortable an ambulance was called and the stretcher and medical kit were collected from a nearby farm and several volunteers enlisted to help carry it. By the time the ambulance arrived, all the necessary equipment was on hand at the efflux and after a quick cheek by the first aid officer, Bob was placed on the stretcher and taken up the hill and then to Goulbourn Hospital – where he spent three days giving the nurses merry hell. The point here is, that all equipment was on hand in the area and by the time medical help arrived, the stretcher and kit were at the scene of the accident. This is a big time saver particularly where the stretcher has to be manoeuvred deep into a cave – time which is very important to a seriously injured person.

SUSS

Peter Campbell informs us that surveying using gravel-mounted forestry compass was carried out through the squeeze sections of the new extensions to Spider Cave (Jenolan). Documentation in the Southern Limestone (Jenolan) has been brought up to date and further work in this area is being planned in collaboration with UNSWSS, MSS and the guides at Jenolan. SUSS would appreciate hearing from anyone who has knowledge of this area and if so, please contact Bruce Welch. Work on "The Caves of Jenolan 2: The Northern Limestone" is almost complete and this should be available by the end of the year. This publication is in the "Mammoth Book" style and contains information on the Northern Limestone. Other activities at Jenolan include exploration of Lower River and Ice Pick Lake in Mammoth Cave, and the investigation of blocked passages in Naked Lady cave, which unfortunately did not lead to vast unknowns. SUSS has had trips to Wyanbene and Marble Arch. Malcolm Handel and Randall King have recently returned from Niugini and report that the Atea is a good prospect. They surveyed 4km of tributary passage without even examining the main stream passage, in 5 days. They plan a much larger expedition in 1978. SUSS regrets to report the death of Mr. R.E. Murdoch early in September. Mr. Murdoch was the director of the Dept. of Tourism in N.S.W. Although he was not a speleologist, Mr Murdoch always showed interest and gave support to the ASF in its activities in the areas under his jurisdiction. He gave support to Nibicon, and to the Cave Tourism Conference. The protection of Jenolan, Wombeyan & Abercrombie was due to his conservation-oriented attitudes towards access. His influence will be missed.

TCC

Andrew Skinner reports that a recent meeting between SCS and TCC representatives discussed the feasibility of the clubs working in much closer co-operation. The outcome is that meetings of both clubs will be held at 132 Davey St; Hobart, and that there will be closer co-operation in fieldwork. Whilst this falls short of the amalgamation desired by some TCC members, it is still a significant step. Fluorescein tests conducted by Albert Goede and Leigh Gleeson of SCS have proved that the water from Growling Swallet (JF36) flows under the surface divide and resurges at the Junee Rising (JF8); a distance of 9.5km! Prospects for an enterable cave are not good. A spectacular doline discovered by John Parker,

Steve and Anne Annan of TCC / Maydena has now been explored to a depth of 165 metres. This cave, now known as "The Chairman" (JF99) now rates as the 9th deepest in Australia. Prospects for extending this depth are considered to be possible but only further exploration will prove this point. The most gratifying aspect has been the teamwork and co-operation between the members of TCC, SCS and TCC/MB. In August, a previously unrecorded decorated cave (MC114) was explored at Mole Creek. Although not as spectacular as reported, it is still a significant find. TCC has now been established for 30 years. The club was formed on 13 Sept. 1946. This date not only marks the establishment of TCC, but the beginning of organised speleology in Australia. An anniversary dinner was held on the 18th Sept. and was a great success.

VSA
Lloyd Mill informs us that VSA have been busy in the following areas: – Buchan: More trips have been held to Dukes Cave on the Reserve for the purpose of looking at some high-up holes using scaling poles, sadly with little success. Following an invitation from the Reserve Manager, Alan Costigan, a party entered Fairy Cave & re-found Moons Lost Chamber – lost since the turn of the century. Peter Robertson & party found a hole on the side of Hopes Hill East Buchan, recently. It was eventually found to be 43m deep. Bat Ridges: A few trips have been held to this area to continue the River Cave survey & find more caves. A dozen or so have been located. Bureaucracy: Moves are afoot for a dramatic increase in club bureaucracy with new jobs being created faster than they can be filled. Adrian Davey (Pres.) says "we'll have a job for everyone before the end of the year!" A very valued and respected VSA member, Lou Williams, has gone to Europe for a few years. VSA wish him well!

WASG
Kerry Williamson's report is the one we were unable to print last issue and covers March, April and May of this year. "In Easter Cave, AU14, the miners dial traverse has been put through to the water marker in the Epstein Section (just near where the wet passages lead off to the Gondolin), and also through the First Duck to the large chamber past the false floor. The survey is progressing at a good steady rate and there have been several detail mapping trips to the large flat-roofed chambers just beyond the First Duck. Dry gear is ferried through the Duck in plastic bags inside packs. The Epstein section and corkscrew passage has been photographed. Moondyne Cave (AU11) has seen photography, cinematography and video taping trips. Witchcliffe: March has seen a complete underground and surface survey of the Devils Lair/Nannup/Strongs/Mill Cave System (WI60, 61,63, and WI59). This master map has in latter months been extended south to the Crystal Cave (WI62)/Block Cave (WI107) region, and in May has been extended further south again resulting in the recording of two previously poorly documented caves. The resulting map is answering many questions but posing just as many – which is a good thing. A small previously unrecorded cave has been located near Museum Cave (WI31). A small collapse and a cave have been found in the region between Boyabouka and WI45-46. WI9 has been visited and photographed. Tight Entrance (Bussell) Cave (WI101) has been entered – foul air being present. Winjans Cave has been trogged and a movie made of the upstream end of Strongs Cave. Cowaramup: Bats were once again sighted in Quininup Lake Cave (Col). Yallingup: The Cave of the Seven Sisters (YA3) has been mapped and a new cave and several collapses found nearby by the WASG. Yanchep: Has seen recommencement of the work on documenting of the numerous caves in the area. Eneabba: Saw a trip to the Lake Arramall area in May. The entrance area and about half the main passage in River Cave (E23) were mapped. Familiarisation trips were made to Arramall Cave (E22) and the left-hand trend of the Second "Y" Junction pushed to its bitter end. Several new features were also noted in the area. Further mapping of River Cave will have to wait until late Spring when the winter floodwaters recede.

LETTER TO THE EDITOR

ASF Newsletter 91 (1981)

Dear Rosie,

I write the following letter to the editor in the hope of drumming up greater support for 'Down Under All Over' in the ASF Newsletter.

The thirteenth biennial convention of the ASF has come to a successful conclusion in Melbourne. This conference was hosted by VSA and an admirable job they did in its organisation I am told. However, on an entirely different front - their contribution to the 'Down Under All Over' section of the ASF Newsletter has been sadly lacking.

I recently reviewed the clubs that have been contributing to the regular feature in our Newsletter over the period 1978 to 1980. Over this three year period, nine issues of the Newsletter contained 'Down Under All Over' contributions. Of the nine issues, no club contributed in every issue, but WASG came close with eight. Looking at the contributions on a club for club basis, those that did bad to poor were, I believe, VSA (1) and SSS (0). Other only fair efforts were CEGSA (2) and UQSS (2). On the positive side NUCC (7), CSS (6) and CTCG (5) turned in the best state coverage.

Overall, I think that it is a pretty poor effort. The ASF Newsletter is the only publication that reaches individual members of caving clubs and hence the only method you have of informing the cavers of Australia what your club is doing. So you 34 other clubs out there how about appointing a reliable person to send contributions to 'Down Under All Over' in 1981. Let's support our editor and federation in this small but significant way.

Yours faithfully,

Rauleigh Webb (WASG)

DOWN UNDER ALL OVER

Australian Caver 112 (1987)

Hills Speleological Club :

GLENROCK CAVES - NSW's NEWER AREA.

Rick Pinnock

So – who's heard of Glenrock? Not many hands up I see. Well neither had we until a few years ago. What could have been a scungy piece of limestone is anything but, and now yields a very high number of caves.

Glenrock lives in the upper Hunter Valley and the caves are situated entirely on Private Property and any intending explorers must gain permission from the property owner.

The limestone is part of the Tamworth Group (which includes Timor/Isis and Crawney Pass) and is of the middle Devonian Age. The area also contains areas of Paleokarst (which is where volcanic flows change the development of existing karst and later affect subsequently forming karst). The limestone outcrops for about 8 km discontinuously and to widths of 1.5 kilometres and with a possible depth potential of 100m. The limestone varies from massive unfractured, to blocky jointed and highly fractured areas.

The caves are generally small, tight and vertical, often containing foul air in reasonably high concentrations, very sharp bedrock and unfortunately little formation.

Going on the amount of area to be searched and the current rate of cave finding, Glenrock has the potential to yield around 110 to 115 caves. Currently the cave count stands at .... gasp! .... 98. Cave depths vary between 0 and 47m and lengths between 2 and 140m. Foul air has defied further exploration in CR30-Hens Teeth, but has great potential to continue to greater depths, and GR43-Bats and Bandicoots could continue further and deeper by pushing an unstable rockpile in foul air.

We (Hills Speleos) intend finishing documentation early to mid 87 and are currently organizing a photocopy type publication containing cave descriptions, cave maps, and details on the geology etc. of the area.

So there you have it – Glenrock at a glance – a completely new area of 100 caves. Impressive, eh?

Rick Pinnock

Macquarie University Caving Group:

David Hamilton

1986 has been a busy year for the members and executive of MUCG. In the past twelve months club members have been on an MWS&DB tour of the Old Tank Stream beneath the streets of Sydney, been on a couple of trips through the Narrow Neck Tunnel, walked in the Jagungal region of the Snowy Mountains, been on a number of canyoning trips in the Northern Blue Mountains, and been caving at Bungonia, Jenolan, Wee Jasper, Colong and Tuglow. A small group of club members were even able to visit Chillagoe Caves whilst on holidays in Far North Queensland.

The principal project for 1966 has been the exploration and mapping of Shaduf Cave (B.15) at Bungonia. At the beginning of the year word soon got around that the sump passage connecting B.15 with the B.4-5 Extension, which had been flooded since 1983, had finally dried out. Using the club forestry compass, a high grade survey of the whole of Shaduf was carried out, over 400m of passage being mapped. The results of surveying work were fed into a computer, using the Cavsurv programme for all the necessary number-crunching, and the accuracy of the survey was, later, confirmed using Radio Direction Finding gear on loan from the Victorian Speleological Association. During the survey, the plunge-pool aven and a small hanging chamber were explored using scaling poles.

As a footnote to activities at Bungonia, MUCG's previous dig at Bungonia – 'The Great Escape' – has now been numbered and tagged B. 156.

During the past year various executive members have been particularly busy. Club Safety & Equipment Officer, David Rothery, along with Jeanette Jordt and David Hamilton have joined the NSW Cave Rescue Group, David Rothery recently being elected CRG Training Officer.

David Hamilton has been continuing with collecting material for a second special edition of the club journal, Quaver, and has completed abstracting all issues of Quaver to date for inclusion in Australian Speleo Abstracts.

One of the busier members of the executive has been Derek Hobbs, who in addition to his duties as MUCG's ASF Inc. rep., is also ASF Assistant Secretary, NSW Speleo Council Vice-President, Convenor of the NSWSC Subcommittee on Jenolan, Wombeyan & Abercrombie Caves, and is one of the signatories to the lease to the new Jenolan Caves Cottage.

At the end of the 1986 MUCG members look forward to the 16th Biennial conference of ASF – Speleotec'87 – to be held at Macquarie University in January 1987, and members are currently organising a number of events including Speleosport, and will be helping with some of the post-conference field trips.

Metropolitan Speleological Society: THE YEAR IN REVIEW: DECEMBER 1985 - NOVEMBER 1986

Scott MacFarlane

MSS turned 21 years of age on the 13th September 1986. We therefore had reason to celebrate, which we did in the following manner:

December 1985: We discovered a new cave at Jenolan. We called it Winch Cave, which depicts its method of discovery. We plan to call our next discovery Dynamite Cave! The cave is only small, being some 10m in length, however it has dig potential and this is being pursued.

January 1986: We launch our booklet "An Introduction to Abercrombie Caves" at the ASF meeting in Melbourne. The booklet contains 17 pages of information on the area including details of the caves, the history of the area, fauna and speleological activities. Stocks are still available at $2.50 each, so don't miss out as they are selling fast.

February: Our RDF equipment after some years ago suffering the fate of an amateur 'I can fix it' specialist, was successfully reconstructed to excellent

working order with some assistance from VSA. Thanks VSA. We have since put the unit to good use.

April: Halleys Comet. We decided that the hills around Abercrombie would be a good spot to view the monstrous glowing light in our skies .... We are still looking for it! The trip created great interest within the club, with over 60 people attending the trip. A full caving trip was planned together with a comet party and a 21st birthday cake for MSS. The celebrations lasted well into the night and it was amazing how many comets we saw at 3.00am. The next morning a group photograph was taken to commemorate our birthday and the fact that it was our largest trip.

May: Surprise! Our ASF Handbooks arrive and a new game is invented. "Let's spot the errors".

June: Rare bones were found and identified at Abercrombie. Specimens of Protemnodon (Giant Wallaby) and Stenthuras (Stub nosed browsing Kangaroo) identified to be between 30,000 and 1,000,000 years old (give or take a few moons) are being investigated by the Australian Museum.

October: New caves were found at Abercrombie. Sixteen caves were found in one weekend, bringing the total found in the year at Abercrombie to 21. However, we are still looking for that elusive cave which is big enough to fit a battleship!

November: Our 21st Annual dinner was held at the Billabong Restaurant Trunkey Creek. This was an excellent evening, with some of the Society's earlier members present who were able to reminisce with some of our older members.

During the year, MSS held in excess of 20 trips, including Jenolan (4), Abercrombie (5), Bungonia (2), Wombeyan (2), Mudgee, Yarrangobilly, Wyanbene, Wellington, Tuglow, Tasmania (Ida Bay and Mole Creek) and one Field Day. We also held trips to various tunnels and other pseudo caves.

Our membership is steadily growing and is approaching 40 members. Next year will be another busy year. We plan to become incorporated and we also plan to reprint some of the older maps of caves at Abercrombie. These maps are being laboriously redrafted to conform with ASF standards. With the new caves being discovered, we will probably have to print a special edition of our Newsletter.

CAVE AREAS NEAR DARWIN, N.T.

Bill Walsh

ASF Newsletter 18 (1962)

Fenton

The limestone in this area near the Douglas Limestone, very pure in parts, cherty in others, and dolomitic to varying degrees. The beds are very thick and they dip to the south~west at 5 to 10 degrees. Local warping within these dip tolerances seem usual and their effect on the location of caves is being studied by the group. Dry valleys, dolines and water sinks occur in bewildering confusion. Open cave entrances are, however, not so easily found. We are in the difficult position of first having to explore our areas as there are virtually no local inhabitants. Two very minor caves have been visited by the Group and no less than four lost caves are at large (two of them have been lost by us). Blocked or almost blocked (just temptingly, but impossibly small) entrances are common and a few half-hearted attempts at clearing them have been made. All that is needed in this area is time, a few more searches and we should find something.

Douglas River Crossing Area

Two small and apparently related caves (the Dingo Hole and the Quicksand Cave) are known in this area. The caves occur in the bank of the river and are right on the watertable. The passages are low with not much headroom above the water and some unpleasant floor materials with all the properties of a quicksand. A completely flooded pothole (the Homestead Hole) exists in the bed of the river,, and another similar hole has been reported to us. No proper cave searches have been conducted in this area yet, and I am afraid that we may not be able to make one during this field season.

Douglas Gorge

The most delectable reports, but we have been unable to check these yet.

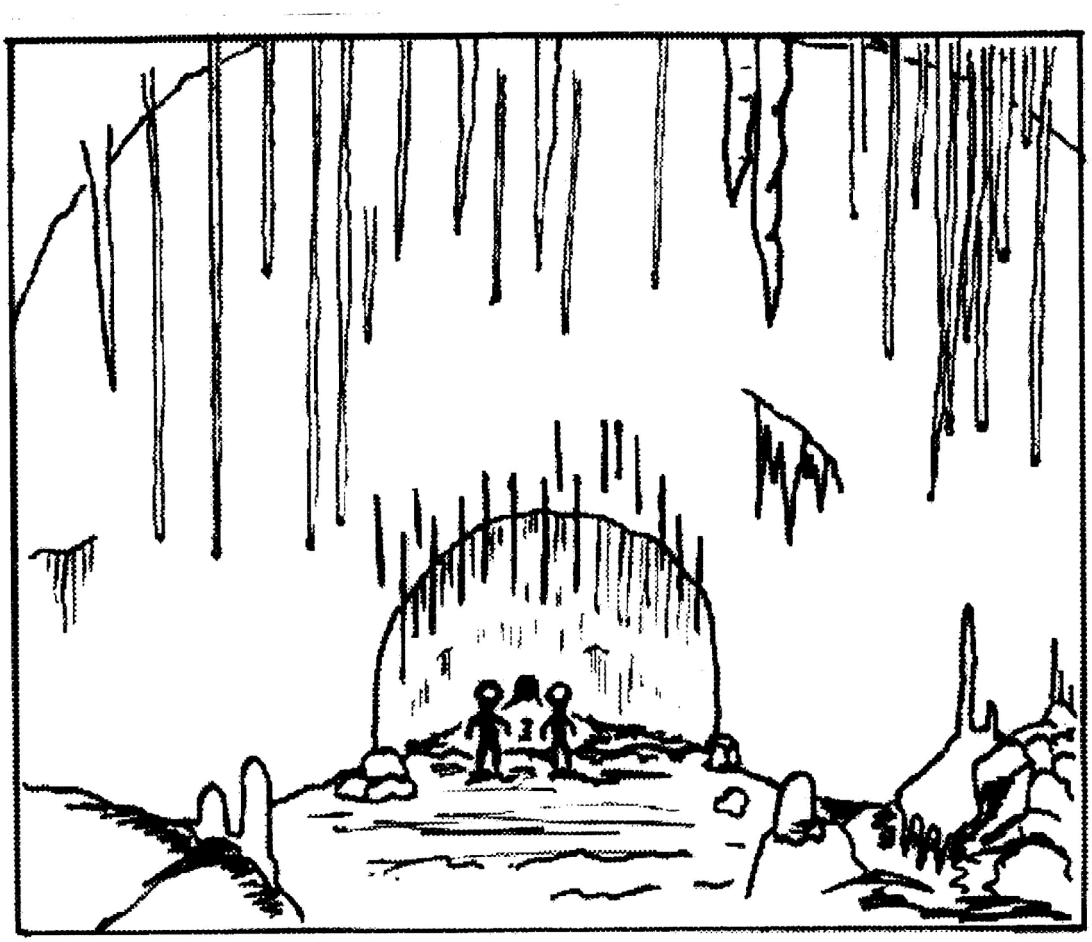
Darwin -Blyth Area

Caves occur in hematite. Two such caves are known to the Group. The Hardy's Creek Cave is insignificant as a cave but very interesting if one is prepared to try and trace the genesis of these caves. The Ochre Cave at Blyth is much bigger but is almost inaccessible. We do hope, however, to get there before the Wet. This cave is at present in use by the local aboriginal tribe. Ceremonial objects are reported to be hidden in the cave and passages have been walled off by the tribesmen. Obviously we must respect their privacy and leave their walls alone. Even while observing these restrictions. we should be able to learn a lot.

Katherine

Although the caves are numerous we think they are the job of the NTSS based at Katherine. The Sixteen Mile we have, however, made an exception of. This has been the most talked-about cave, so some concrete facts should be welcome. The cave is incompletely explored and incompletely mapped. Some conclusions may be drawn, though. The structural geology seems to have had little effect on the siting of the cave passages and it has been suggested that the pattern of the cave was set by drainage patterns developed on the Tertiary sandstones which once overlaid the limestone. The caves were probably formed by phreatic agencies, the main inflow points being the beds of streams which cut through the sandstone allowing an escape of water into the limestone.

The original cave has been modified on elevation to the vadose zone,, and a number of the original phreatic passages have become filled with consolidated sediments and flowstone.



"I tell you what, wouldn't it be fun in here with a volleyball!"

DETERMINATION: Conservation and Management

In the 1960s conservation gradually gained momentum among speleologists against a background largely of community indifference. The 1970s in particular was the decade when ASF members first became closely involved in major conservation issues. Throughout that decade conservation dominated whole issues of ASF Newsletter, editorials were frequently being used to stir more action, and we became more adept at using the media to spread our message. This continued in the 1980s but by then ASF had also moved to building a recognised capacity in an advisory role, establishing a Cave Management Commission as well as a Conservation Commission, preparing consultant reports on a number of cave and karst areas.

1. Editorialising – "stiffen the sinews, summon up the blood …" A Word from the President

Elery Hamilton Smith

ASF Newsletter 53 (1971)

Conservation continues to be one of the major issues facing Australian speleology. This is not just because we have become more aware but rather mining is booming and like all booms, it is running an extremist course. Colong and Mt Etna are known to all of us, Marulan and Buchan are now moving into the limelight. Some Tasmanian areas are threatened and the most recent news includes a possible threat to the fabulous caves of south west Western Australia. There is little doubt that caves are under heavier threat than ever before in this country. This brings me to the few points which I think are important to us all.

We must firstly give very careful attention to the validity of our own arguments. The mining industry recently comforted us all by pointing out that their operations affect only 0.02 percent of Australia's land surface and by highlighting their rehabilitation of mined areas. Their arguments are valid in some situations but where limestone is concerned they are sheer nonsense. The unfortunate reflection is that I have often heard conservationists use the 'gross percentage' kind of reasoning. So perhaps we are hoist with our own petard.

Secondly, we have given inadequate attention to the fact that a cave or cave area is only part of a much wider natural and environmental system. Lloyd Robinson pointed out in a recent letter how the south western caves could be damaged by mining in surrounding areas, not by or during the mining, but by long term changes in the total environment resulting from the mining and accruing of years afterwards. Almost on the same day I received details of the threat to the unique Devils Hole Pupfish of Nevada, which has survived since the Pleistocene in a single isolated colony; it is now threatened with extinction not because of direct damage to Devils Hole but because of the accumulated effect of irrigation pumping many miles away.

Finally, I am deeply concerned about the way in which we are often delayed and disadvantaged in conservation arguments by finding ourselves without adequate records or maps of our own findings. We cannot afford to wait until an area is threatened to accumulate and systematically record information. This must be done over a long time and in a systematic way. We must not depend on data hidden away in personal memory or personal notes, but rather upon adequate formalized records which turn our exploration into hard data to support any argument we may later have to mount.

Editorial

John Dunkley

ASF Newsletter 52 (1971)

In May I spent a profitable day at the Mining Wardens Court in Sydney, listening to the great Bungonia case. It was historical litigation: for the first time ever the "public interest" was being proffered in objection to a mining lease application. Australian speleology can be proud that it has members like Warwick Counsell (UNSWSS) who are prepared to take on the largest business firm in this country, one which loudly trumpets its concern for the environment it helps destroy. The full, unbiased, first-hand report within.

Editorial

John Dunkley

ASF Newsletter 58 (172)

Just as the last newsletter was about to go out, the news arrived of the signal victory in the Bungonia case. This was a fine tribute to Warwick Counsell, to his unflagging energy and full-time devotion.

But at least Warwick is fighting in a state which is increasingly environment conscious, wealthy enough to afford the middle-class ethic of conservation in a pure non-materialist form, and sufficiently farsighted to see the short-term opportunity cost as an investment. Support came from around the country, as it did in the Colong dispute, and interstate cavers awaited the outcome as though it were a local affair.

Ten years ago, even five, it is doubtful that cavers in one state know much of developments in another, much less understood the implications. This newsletter has in recent years increasingly concentrated on conservation

issues, especially the remote ones. The Newsletter, and the Australian Speleological Federation fulfil their function well if they stir people to action not only over the here and now, but also the there and later, over South-west Tasmania, Nullarbor, Fanning River. But we cannot rely forever on the Aslins, Shannons, Grahams, Kevin Kiernans and Lloyd Robinsons to do the work. Most worthy causes start off with a minority of one supporter, but you can't in the final analysis win without some organisational backing. The embarrassing plethora of single-cause conservation bodies around Australia provide grass roots support but can be exploited by their opponents. We need a way of organising cavers to action over Precipitous Bluff as well as Bungonia.

Letter to the Editor, "Sydney Morning Herald"

Warwick Counsell

ASF Newsletter 60 (1973) (published in SMH 15/6/1973)

Senator Wriedt, Minister for Primary Industry, claims (Letters, June 7) that the NSW Minister for Conservation, Mr Freudenstein, is using scare tactics to hasten commencement of work on Pike Creek Dam.

This is not surprising because Mr Freudenstein's statement "we cannot afford to delay commencement of the Pike Creek Dam" reflects the alarm which must be shared by the majority of Government politicians in this state and in Queensland.

The first independent economic assessment of the dam project, by Dr A.J de Boer of the Department of Agricultural Economics at the University of Queensland, condemned it and claimed that previous reports contained "gross errors and unjustifiable assumptions (and that) the costs are seen to far outweigh the benefits".

The Australian Government's enlightened approach to agriculture and the imminent publication of another independent (not Queensland or NSW Gov't) economic appraisal by the Bureau of Agricultural Economics may foreshadow refusal of Commonwealth finance for the dam.

2. The Big Issues

Several major issues brought ASF and some members before the courts, which were not properly equipped to handle conservation cases until relatively recently, the odds being stacked in favour of development until quite recently. Indeed in the early 1970s there was not a single Minister for the Environment in any Government in Australia. In 1971 Warwick Counsell established a legal precedent by obtaining standing "in the public interest" before the NSW Mining Wardens Court but a similar argument in the Mt Etna case failed to move the High Court. In time we went to the Supreme Court in NSW and South Australia over Yessabah and Sellicks Hill, and to the Mining Wardens Courts in WA and Tasmania over Cape Range and Mt Cripps. We won some, we lost some, we had to abandon one, but the principle was that every issue fought, whether won or lost, made it that much less likely that another one would ever arise.

And then there was Mt Etna. We are able to include here only a few of the numerous articles about Mt Etna that appeared over a period of nearly 45 years. This was the longest running environmental dispute in Australia's history.

Cave Conservation in Queensland

Anon, # 17, 1962

In a recent issue of "Down Under", the University of Queensland Speleological Society supplied a brief report on a problem of cave conservation in the well-known Mt. Etna cave region close to Rockhampton. During a one-week visit to this area, society members saw quarrying operations which are endangering caves. Approaches to the Queensland National Parks Association and to the state Mines and Lands Departments are being made. The society would appreciate support from all possible sources.

MT ETNA

Ron Lorraway

ASF Newsletter 54 (1971

UQSS and CQSS have conferred with the Queens
National Parks and Wildlife Association and others
regard to Certificate of Application for Mining Leas
899, lodged at Rockhampton on 30th July 1971 by Ce
Queensland Cement Co. The purpose of the applicati
for mining further for limestone on Mt Etna. It seems
the company is not about to give up Mt Etna. Objec
are being lodged by UQSS and other conservationis
(courtesy The Explorer 2 (4) : 1, Sep. 1971)

(postscript: the quarrying finally ceased at last 33
later)

MT. ETNA CAVES & POLITICS

Glenn Pure

ASF Newsletter 80 (1978)

MT. ETNA CAVES – IS THE QUEENSLAND GOVERNMENT BEING UNREASONABLE . . . OR SIMPLY IMPOSSIBLE?

Some ASF members may not be aware of the Mt. Etna caves issue hence I shall give a summary in the first part of this item. However, the main purpose of this segment is to detail the Queensland Government's startling abuse of powers which recently stopped this issue from reaching the courts.

Mt Etna
Mt. Etna is a conical peak 24 kilometres north of Rockhampton and forming one part of a larger karst unit which incorporates nearby Limestone Ridge and several other features. There are 46 caves on Mt. Etna in the small area of about 12 ha making this mountain the most densely cavernous area in Australia. The caves are of particular interest as they are of the rainwater inflow type and not the classical stream type (1*, 2*).

Most importantly, Mt. Etna is a major bat maternity site. One small cave on the mountain is the sole maternity site crucial for the survival of 250,000 Little Bent-Winged Bats (Miniopterus australis) 1*. During the summer months when the cave is occupied by the female bats, the population is estimated to eat nearly one tonne of insects every night. Mt. Etna is also a haunt for the extremely rare Ghost Bat (macroderma gigas), the Eastern Horse-Shoe Bat (Rhinolophus megaphyllus) and the Unpouched Sheath-Tailed Bat (Taphozous georgianus), (J.Toop, pers. comm., L. Hall, pers. comm.; 1*, 2*).

Sizeable populations of macropods reside on Mt. Etna (L. Hall, pers. comm.; 1*, 2*).

The past
On the 21st. February, 1920, an order in Council in the Queensland Government Gazette proclaimed that a small area 24 km north of Rockhampton and referred to as "Mount Etna Caves" be made a Reserve for Recreation. It seemed then that Mt. Etna had been recognised as an important recreational site and would be preserved as a part of Queensland's heritage. It was not surprising then that local residents were shocked when they learnt just 5 years later that limestone mining leases were granted over much of Mt. Etna and Limestone Ridge. Although these leases were never worked and were consequently forfeited, bat guano mining which had begun several years previously in some of the caves was causing increased damage which is still evident today. Guano mining continued for many more years before eventually ceasing.

The history of Mt. Etna has been a coloured one as it was threatened several more times by assorted limestone and guano mining operations. However, it was not until the middle of this century that the threat as we know it today, came into being. Seven limestone mining leases were granted over Mt. Etna and Limestone Ridge to Central Queensland Cement Pty. Ltd. during the period 1954 to 1973. Another lease was granted to Mt. Morgan Pty. Ltd. on Limestone Ridge.

In 1962 the U.Q.S.S. was formed and conservation activities began immediately. Despite several years of research, lobbying and publicity, mining operation started in early 1967. The limestone was transported from the rapidly growing quarry on the eastern face of the mountain, 18 km south to a cement plant on the northern outskirts of Rockhampton.

From 1967 to date, U.Q.S.S. activity on the issue has been intense. In the late sixties and early seventies there appeared to be considerable disparity in Government policy and considerable confusion amongst the public as to the future of Mt. Etna. In 1968, a Queensland Government Inter-departmental Inquiry, with representatives from the Mines Department, recommended that 31 acres, covering most of the caves on Mt. Etna, be gazetted as a national park. Albeit, it was in 1975 that a clear statement of Government policy was made. In the statement, the Mines minister, Mr. Camm, said that mining would be allowed to continue unabated on Mt. Etna while the three leases on Limestone Ridge would be surrendered pending gazettal of a national park over the same. Mr. Camm carefully avoided mention of the fact that this 'compromise' would allow the destruction of the 46 caves and the huge bat populations which are unique to Mt. Etna.

Suggestions of the existence of alternative limestone deposits to Mt. Etna have been denied, without supplying reasons, by the Queensland Government. Ironically, the Queensland Government recently granted leases over huge limestone deposits at Mt. Larcom, just 100 km south of Mt. Etna. Even more ironically, the leases were granted to Central Queensland Cement's parent company and the limestone is to be used for cement manufacture. The Queensland Government will not deny the findings of an economic report (3*) that the Mt. Etna-based plant is "grossly inefficient" and will be economically redundant when the parent company begins operation of its highly efficient Mt. Larcom-based plant – yet the Queensland Government continues to endorse mining at Mt. Etna!

The present
In Mr. Camm's 1975 statement to parliament he said "An over-riding consideration was that Central Queensland Cement Pty. Ltd. had a legal right to mine limestone at Mt. Etna under the terms of the leases already granted to it." Does the company in fact have an unquestionable legal right to mine?
Avenues of legal action were investigated and it was found that a genuine case existed questioning the granting of the mining leases over the recreation reserve on the mountain.

Because of the nature of the legal action, the Queensland Attorney-General's "fiat" had to be obtained before the challenge could come before the courts. After 19 months of stalling, the Attorney-General replied on June 24th., 1977 . . . "I am not satisfied that the action is one in which I should intervene. In the circumstances, I decline to lend my name to these proceedings . . . "

But just 6 days earlier, on June 18th., 1977, the recreation reserve which was the basis of the legal challenge and had covered Mt. Etna for the 58 years since 1920, was revoked!

Did the Attorney-General deliberately delay 19 months to allow time for the decision to be made to revoke the recreation reserve? It is unlikely that we will ever find out for sure because neither the Attorney-General will explain why he refused to grant his fiat to the action or the Premier explain why the recreation reserve was

revoked!

The Future
The Queensland Government's policies and actions over the years on this issue leaves little to the imagination. They appear to have an unbending attitude that mining should continue at Mt. Etna no matter what the circumstances are. The future of Mt. Etna then must be decided solely by the company – will it continue mining until the mountain is destroyed, or will it stop operations before then for economic reasons as we have suggested they might? CAN WE AFFORD TO GAMBLE?

Help
You can help save this unique area by writing and voicing your opinion. write to:

1. Politicians that you consider appropriate (e.g. Qld. Mines Minister, Cl- Parliament House, Brisbane, etc.)
2. Newspapers:
a) The Australian, G.P.O. Box 4162, SYDNEY, N.S.W. 2001.
b) The Courier-mail, Campbell Street, BOWEN HILLS, QLD. 4700.
c) The Morning Bulletin, 162 Quay Street, ROCKHAMPTON, QLD. 4700.

References
1* Sprent, J.K. (1970) ed., "Mount Etna Caves", Uni. of Qld. Speleological Society.

2* Hamilton-Smith, E. and Champion, R. (1976) "Mt. Etna & The Caves", Uni. of Qld. Speleo. Soc.

3* Ware, J.A. and Metwally, M.M. (1975) "An Economic Study of the Queensland Cement Industry", Capricorn conservation Council. (photo-copied)

Patrick Larkin attempts to serve a writ on the cement company

Mt Etna – The Battle Continues

Peter Berrill

Australian Caver 110 (1986)

Just a short report to let ASF know the CQSS is still active and desperately fighting for Mt. Etna. I (Peter Berrill, President) have just started (2 years) caving again after a spell of 8-10 years and can see no advancement on the Conservation issue after all this time. It is not for the want of trying by the CQSS and UQSS. The State Governments attitude to us is negative and the National Parks seem to be on the side of Central Queensland Cement!

CQC are presently mining a hill of limestone to the immediate west of Mt. Etna.

They have levelled this hill and are going to open cut mine. The open-cut operations have destroyed at least 1 known cave. This cave was found one night by the members and named "Crystal Cave". It has since been completely destroyed. It was photographed extensively because of the quality of cave decorations.

The formation in this cave would have equalled anything in the world. Quite a statement I know but I think it is true! The cave did not have a bare patch of limestone. It was too beautiful for words to describe.

The mining has about 2 years of supply left at their present site and we have stepped up the battle to try and force the issue, but as yet have had no official comment from the company. As for National Parks – well! They seem to be working against us. The Ranger responsible for Limestone Ridge National Park, named "Fitzroy Caves National Park" is not allowed to officially go on Mt. Etna and cannot make any statement on the issue.

When they exhaust their present supply of limestone the next area is the cavernous face of Mt. Etna. At this stage we don't look like stopping them. We, the UQSS and CQSS , have tried all avenues available but come up against a brick wall.

Our active membership only numbers about 12 and with limited numbers it is hard to achieve much.

As I previously said I have rejoined the club after a spell of some years and I am trying to regenerate membership and interest to help the issue.

We have been battling now for at least 20 years. It may be the longest running conservation battle in Australia and they are still mining away our caves and turning them into cement. We need numbers to help.

At this stage the only alternative left seems to be to go underground to stop them. This has been considered by a number of members, but is still only a personal issue.

In 1988 the Mt Etna issue, which had already been progressing for over 25 years, reached the High Court of Australia on a question of standing. It was referred back to the Supreme Court of Queensland, which awarded costs against members when Central Queensland Speleological Society had to abandon the fight. But in time there was a remarkable turning point. In 1999 reconciliation was reached between CQSS and Central Queensland Cement with the Company agreeing to drop all legal action, writs and costs against CQSS supporters, to donate $100,000 towards purchasing Cammoo Caves for addition to the National Park, and to commit to rehabilitation of the quarry site.

The entire contents of Australian Caver 151 (2000) was devoted to the Mt Etna saga.

Angel or Ogre

Australian Caver 151 (2000)

Kerry Hamilton

The Central Queensland Speleological Society has had something less than an angelic public image these past thirty years. That isn't to say that we didn't have our support base obviously we did or this wonderful turn of events we celebrate today would not have occurred and the Mt. Etna Caves National Park would be a hole in the ground.

But this delightful outcome, this refreshing turn-around was not brought about by some Dick Smithian magnanimous gesture or by a sweeping move by a people's government anxious to score a few votes; no this was done by you and me, yes, the "little people" that we hear less and less of in these days of big and bigger government.

Can you imagine how it felt to be able to visualise today's occasion thirty-two years ago and needing to stand patiently by watching priceless natural assets squandered while we waited for pubic opinion to change as we knew it would? It had been changing rapidly all around the world. People were realising that the "dig it up – chop it down" mentality was a short-sighted approach with dire consequences for their children.

And so we waited, and waited some more. And while all this waiting was going on we pulled out our hair, we squabbled among ourselves, we fought vicious battles in "Letters to Editors", around the country, we hauled various "issues" before the courts even to the Holiest of Holies we went, the High Court of Australia. And it hurt, a lot. But what hurt most of all was the alienation, the being set apart from friends, from employers, from promotion and from family in many cases.

Being cursed with foresight had costs that our merry band of young bucks (and fawns) could not foresee. Yes, we had sage old elders too and it seems in hindsight, that they were well aware of what those costs might be, but simply knew there were no free lunches. For their patience, with us and advice to us, we are forever grateful.

Speaking of such things, let's go right back now, to a time when rank commercialism was under control, a time when folk gave more than lip service to their beliefs, to when the Olsen family were proudly showing off their caves to townspeople, who'd travel by buggy the bumpy two hours from Rockhampton. Yes, it seems that in the 1800s there was a greater appreciation of the wonders of nature. Else, why would our great grandparents have sought the highest protection then available to place Mt Etna and its caves under the Recreation Reserve that secured the mountain until the granting of leases to mine in 1962?

"There is a tide in the affairs of men", seems to have been a truth evident even in Shakespeare's time, now we too have seen a most providential turning to the point where we see the two protagonists in the "Mt Etna Issue" coming together in a spirit of reconciliation and understanding. No society remains static in its perceptions; we all come to see that some of our treasured beliefs don't stand up to continued scrutiny. We have in this hand-over today, proof that slow social change, though painful in the getting, is inevitable and unstoppable. Truth has won the day and healed the soul

Postscript: In 2004 the Company approached ASF with a proposal that freehold title to 14ha of its land on Mt Etna, including two caves and a house, be transferred to ASF.

In the late 1970s the gates closed on the Serpentine Dam in SW Tasmania, and the real Lake Pedder disappeared. The next hydro-electric target was the Franklin – lower Gordon River system and several caving expeditions located caves along the river banks, including one discovered by Kevin Kiernan (Fraser Cave, later renamed Kutikina) that was to prove pivotal in transforming public, political and scientific opinion about the value of this remote region. In 1983 the High Court upheld the constitutional validity of Commonwealth legislation overriding Tasmanian state legislation

CAVES, MAN AND ELECTRICITY IN SOUTHWEST TASMANIA: An update on the Lower Gordon situation

Kevin Kiernan

ASF Newsletter 92 (1981)

Tasmania's southwest. Today, valleys of dense rainforest dating from prior to the Gondwana break-up; broad buttongrass plains; deglaciated mountains; deep gorges; valleys floored by limestone seldom, if ever, visited by cavers. But as the climate has oscillated between warmer and colder stages during Quaternary time the forests have alternately expanded over much of the area only to contract to riverine gallery refuges during the intense cold of the glacials, when the declining glaciers spewed forth torrents of turbulent milky-grey meltwater and leaden skies clung to wind swept and ice-capped plateaux. A wilderness seeker's paradise.

Prehistoric Man in the South-west

Twenty-two thousand years ago, man had reached Hunter Island off the north-west coast. Twenty thousand years ago he had reached the Florentine Valley. He reached Tasmania by crossing the Bass Strait land bridge exposed by glacial low sea levels, and roamed a more open and windy environment inland where game animals abounded and he could move freely withdrawing towards the coasts as the forests expanded. Man may not have reached South America much more than 10,000 years ago, but in Tasmania, he endured an ice age. But, within 72 years of the arrival of European man's settlement in 1804, the Tasmanian race had fallen victim to European man's violence and disease.

No early European explorers observed aboriginal man living in the dense rain forests of central western Tasmania, although there were tantalising possibilities hinted at by Surveyor Calder and George Augustus Robinson. In 1979, the Draft Environmental Statement appended to the Hydro-Electric Commission's proposal for a Lower Gordon development concluded that no archaeological sites occurred within the project area, and included a map which indicated the whole of inland western Tasmania to have been unoccupied.

Caves and Archaeology

With limestone areas of easy access close to the main population centres, there was little incentive for cavers to probe the more remote areas of the island. But, as wilder lands fell to the bulldozer, axe and dam, and the value of wild places became more appreciated, some attention was focussed on the threatened areas. Tasmanian caving was somewhat moribund and the task of checking what might be lost in the South-west fell largely to mainland cavers.

The proposed Lower Gordon development implied flooding large areas of limestone, and spurred a series of trips organised by the Sydney Speleological Society with only limited local assistance. By lilo, canoe, rubber boat, punt and jet boat, parties worked upstream through numerous rapids to examine some of the limestone along the sides of the rivers which form natural highways through the region, but they seldom penetrated far inland. A number of caves were found and some named after the politicians who would decide their fate, occasionally to the consternation of the very conservative Tasmanian caving establishment, who remained aloof and disinterested in the conservation of the region. Increasingly, exploration of caves in the South-west was undertaken by unaffiliated cavers, often unrecorded.

Despite this limited search, the caves are already proving significant sources of archaeological and palaeoenvironmental information. In 1979, David O'Brien and Kevin Kiernan located strong circumstantial evidence of prehistoric man in the form of burnt and split wallaby bones in a cave on the Nelson River. These deposits were apparently of late Pleistocene age. Subsequently, Keith Corbett, and later Kevin Kiernan found surface archaeological sites in the Queen River valley, again within the supposedly unoccupied region. On the assumption that man had not lived in the forests, these sites were regarded as dating from prior to the return of the rainforest some 10,000 years ago, following the late Last Glacial stage. In January 1981, Rhys Jones from the Australian National University, state archaeologist Don Ranson and a party from the Tasmanian National Parks and Wildlife Service found some stone flakes on a terrace of the lower Denison River, and again presumed a Pleistocene age. This find received great publicity as it lay beneath the proposed waters of Gordon-Olga project, the lower Gordon hydro-electric option favoured by the state government.

However, the tools occur in the upper few centimetres of a thick deposit of overbank silts of undoubted postglacial age, and it is the present writer's contention that they are very recent indeed. This implies that man at least visited the western valleys in recent times, despite the dense forests.

The most startling discovery came when a Tasmanian Wilderness Society party of Kevin Kiernan, Bob Brown and Bob Burton re-examined bone-bearing clay deposits in Fraser Cave on the lower Franklin River, which was discovered by Kevin in January, 1977. Far from being a fluvial or pit-fall deposit, as previously presumed, the bones were found to be burnt and split, and associated with an abundance of stone tools. For four years, cavers had walked straight past the evidence! A subsequent small excavation of about one square metre in the 100 square metre plus deposit reached a depth of 1.4 metres and revealed perhaps about 50,000 stone tools and an equal number of bones. Rhys Jones regards it as the richest limestone cave site in Australia, potentially one of the six most important sites along the western Pacific rim and equal in richness to the classic cave sites of France, which are still revealing fundamental information 100 years after their discovery. Radiocarbon dates are still not available and glib interpretations of age based on the nature of the sediments would be unwise, but it is possible that both Pleistocene and Holocene occupation is indicated.

In the space of a few months, our conception of man in western Tasmania has been upended. While aboriginal man roamed the arid lands of continental Australia,

his Tasmanian counterparts were living in the often incredibly dense, dank and wet rainforests of the western river valleys and were faced with a totally different set of problems of adaptation.

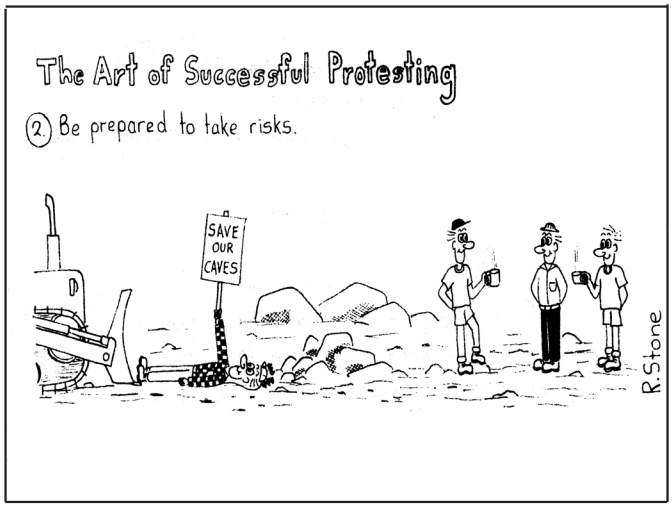
Electricity and Politics

News of the archaeological discoveries was initially treated with disbelief by those in favour of flooding the wild western valleys for hydro-electric power, a situation compounded by the need to smokescreen on the site of the Fraser Cave discovery, to ensure against souveniring by rafters (or even deliberate vandalism) until steps could be taken to record and protect the most sensitive parts of the deposit. The situation was given added political significance when Prime Minister Fraser, who had expressed his pleasure at the original naming of Fraser Cave, responded to Kevin Kiernan after the archaeological find, expressing his interest and extending his best wishes for the project. Meanwhile, the Tasmanian Nomenclature Board was having kittens about the name of the cave, with which it did not agree, and the issue was raised on a number of occasions in State Parliament. But caves are obviously only one small part of the issue.

The discoveries undoubtedly have had public impact, with nationally circulated television coverage and press reports as far afield as Britain. Retaliatory response came from the pro-flooding politicians, chambers of commerce and even the retired former state premier 'Electric' Eric Reece, who fought so doggedly to destroy Lake Pedder, to satiate less than four years growth in electricity demand.

In 1979, Tasmania's Hydro-Electric Commission presented the state government with a proposal to dam the Lower Gordon below its junction with the Franklin. This would flood a massive area, including the valley bottoms which pollen from Fraser Cave suggest have been of enormous ecological importance for millennia as rainforest refugia. Flooding would also eliminate the wilderness value of the region and inundate the lower part of south eastern Australia's last major wild river, the Franklin. A second project is proposed later for the upper reaches.

Last year, the state Labor government opted instead for the smaller Gordon-above-Olga dam further upstream on the Gordon River but which would leave the Franklin flowing free (for now) but still flood the stupendous Gordon Splits, Freedom Gate gorge on the lower Denison, the Nicholls Range caves and much more. But the Tasmanian liberal Party and the Upper House of state parliament demand the full HEC backed Gordon-below-Franklin scheme. Among the members of that upper house are affluent farmers who are the descendants of the 'squattocracy', whose actions led to the spectacular act of genocide committed against the original Tasmanians. whose home they overran- The House in which they sit has already rejected the governments legislation.



In May 1981, the government proclaimed a wild river national park over the Franklin River and some adjacent country (including the Frenchmans Cap Park) to emphasize its commitment- This finally links the Cradle Mountain-Lake St Clair National Park to an extended South-west National Park, such that parkland now extends from Precipitous Bluff in the south to Cradle Mountain in the north. It totals around 763,440ha. But as for the Gordon Splits ……. .And over 250 square kilometres of the park consists of the surface of hydro-electric storage, which drowned lake Pedder and is probably included to distort the figures.

The issue is at a stalemate, and might only be resolved by the Upper House rejecting the supply bills and bringing down the government. The power of the Upper House in Tasmania is such that it would not have to itself go to the people. It might be resolved by the next scheduled state election. In the meantime, inflation cats away at the proposal. The integrated Gordon-Franklin-King development would produce only 340 megawatts for a construction cost of $I.36 billion. Gordon-below-Franklin alone would produce 180 megawatts for $550 million- In justification, the HEC have produced figures for general load production, which, if continued for 50 years would imply demand ten times that of present generating capacity.

And in the meantime. the conservationists goal of no more dams in the South-West is temporarily in force.

Postscript – Radiocarbon assay from Fraser Cave

Charcoal from the basal occupation horizon in Fraser Cave has been radiocarbon assayed at 19,000 +/- 1100 BP. To place this in the context of our present understanding of Tasmanian paleoenvironments, driftwood in silts immediately subjacent to outwash gravels of the Dante Glaciation in the central West Coast Range assays at 18,000 +/- 500 BP (ANU 2533) (Kiernan, 1980). This represents the best date so far obtained for the Last Glacial maximum in Tasmania.

On face value, the date from Fraser Cave would imply man being present prior to the onset of full glacial conditions in Tasmania and having to adapt to a sub Antarctic existence. However, the standard deviation on the date is high, and bracketing by two deviations gives a range of 16,800-21.200 BP. If the high standard deviation reflects contamination by younger organic material , its effect would be to produce a younger apparent date, that is the true age may be older than the assay result. Irrespective, Fraser Cave is clearly a Pleistocene site. Until now, literally. a small handful of ice age tools have been known from Tasmania. Fraser Cave contains tens of thousands or probably hundreds of thousands of tools.

Moreover, unlike most Tasmanian sites which indicate general foraging for food resources on the coast, the abundant bone material in Fraser Cave indicates specific targeting of marsupials and macropods in particular. Man probably stayed at the cave for brief periods while moving up and down the Franklin Valley, carrying with him exotic rock for tools, including Darwin Glass, an impactite from the Darwin meteorite crater in the tributary Andrew River Valley. In the little explored karsts of western Tasmania's wild river valleys, the implication is that other sites probably await discovery.

extract from Hansard, House of Assembly, Tasmania, 24 May. 1981, pp. 6044. 6045. 2 April. 1981, pp. 6611, 661z.

ASF Newsletter 92 (1981)

NOMENCLATURE – SOUTH-WEST CAVE

Mr SANDERS - My question is directed to the Deputy Premier who I understand is responsible for the administration of the Nomenclature Board.

(1) Is it a fact that Mr Kevin Kiernan recently discovered an archaeologically significant cave on the Franklin River?

(2) Is it a fact that in common with Captain Cook, Abel Janszoon Tasman and other Tasmanian explorers, Mr Kevin Kiernan named his discovery after a contemporary existing political figure – to wit, Malcolm Fraser?

(3) Is it also a fact that the Nomenclature Board has refused to accept the name of "'Fraser' Cave" because Mr Fraser still holds office?

(4) If so, why has the Nomenclature Board broken with universally accepted centuries old tradition by refusing the name?

Mr SPEAKER - Is the Deputy Premier in charge of the Nomenclature Board?

Mr BARNARD - No, Mr Speaker, I am not. That question should appropriately be directed to my colleague, the Minister for Lands – I did not listen because I did not realise it was directed to me

Mr SANDERS - Mr Speaker, I originally planned to address it to the Minister for Lands, but I asked who was the minister in charge, and he said it was the Deputy Premier.

Members laughing.

Mr Pearsall - Will the real minister please stand up?

Mr Groom - Does anybody know?

Mr SPEAKER - Order. If the honourable member for Denison requires an informed answer, I suggest he places the question on notice.

Mr LOWE - I suggest that that course be adopted, Mr Speaker.

Members laughing.

Mr SANDERS Mr Speaker

Mr Devine That night off has done you the world of good, Norm

Mr SANDERS Can the Minister for Lands advise the House on recent developments in the continuing saga of the Nomenclature Board and Fraser Cave?

Mr LOHREY The continuing saga seems to be more concerned with abstractions than with reality

Mr Pearsall - Are you the Minister for this board? Have you found out?

Mr LOHREY - Yes. When the member asked me the other night

Mr Pearsall - That is nearly as important discovery as the Fraser Cave, in fact.

Mr Gray - Probably more important, if the truth be known.

Mr LOHREY - for some reason I had it in my head that he was talking about the Signs Committee which is looked after by the minister in front of me. The Nomenclature Board does in fact come under my authority. I understand it is the Board's policy not to name features or places after living people. To me, the name 'Fraser' represents everything to which I am opposed. That geological feature is, of course, a very significant one

Mr Cleary - We will call it 'Lohrey Cave'.

Mr Lohrey - and the symbol given to it by the Wilderness Society is not appropriate. I have written to the Board asking for clarification of its policy. As much as I do not like the name I think it is a horrible name - I think the person …

Mr Gray - I am sure Malcolm does not want to be associated with it, either.

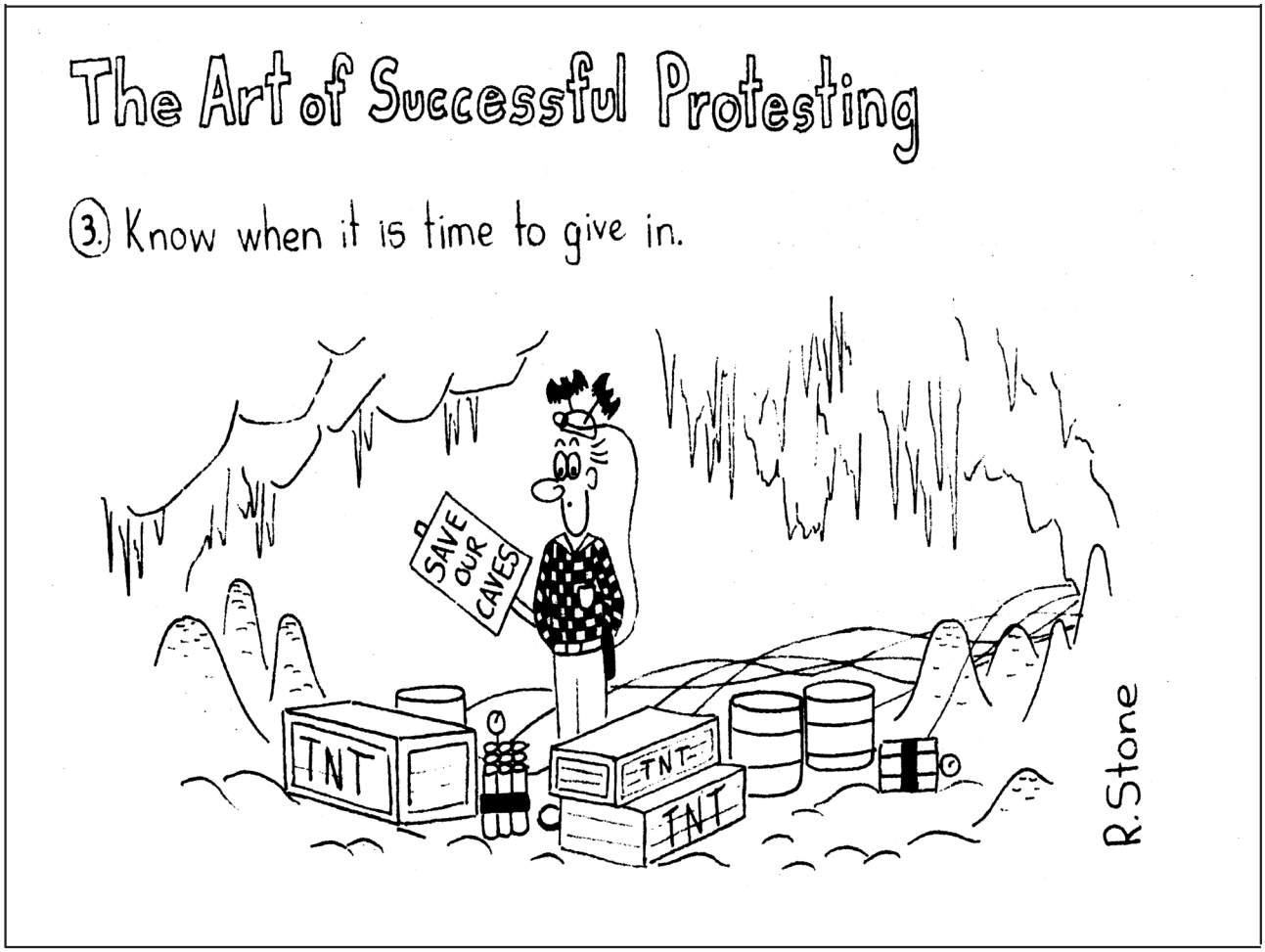
Mr LOHREY - Well, he has written and said that he likes the idea and wants to be kept informed. There is a great big hole in the ground and they have called it 'Fraser'.

Mr Gray - He might be planning to bury you lot down there when you bankrupt the State.

Mr Polley - At least he doesn't go round biting people first thing in the morning.

Mr Gray - Climb back in your tree.

Mr LOHREY Perhaps it is suitable. There are a lot of old bones in it and a lot of dirt; there is not much else in it, except a lot of history. I have asked for clarification of the Board's policy on this matter. It seems to me there are not many explorers left today; there are not many things left to explore. Caves are perhaps the only things left to be found and the people who find them should have the possibility of putting forward what they consider an appropriate name. That has been the historic precedent. The islands and other features around Tasmania were certainly named by early explorers after living people, and the reason for that was of course political patronage. It seems to me we have moved away from that historic tradition perhaps because we have run out of things to find in terms of geological features. Caves seem to me to be the last things which individuals may discover and for that reason I think it should be the right of the discoverer to put forward what he considers to be an appropriate name, even though it might be a shocking name like Fraser. I have written to the board asking for clarification of its policies and we will be holding further discussions along the lines which I have just mentioned.



SELLICKS HILL QUARRY CAVE, 5A20.

Australian Caver 136 (1994)

Chronology of events

DATE	ACTION
Sept 1991	Initial exploration of the cave by members of CEGSA. Non-disclosure Agreement required by Southern Quarries.
Nov 1991	Last entry into the cave.
1992	Ongoing negotiations and contract drafting with Quarry legal representatives.
1993 10 DEC	Attempt to implode the Big Room by Southern Quarries.
11 DEC	State Election.

13 DEC	The caving fraternity holds a press Conference, resulting in the Premier stating that "he would get to the bottom of this".
15 DEC	Mr David Wotton appointed as Minister for Environment, Natural Resources and Development.
16 DEC	Willunga Shire Council, in which the Quarry operates, meets and votes in favour of the cave after hearing evidence from all parties.
6 JAN 1994	Mac McDonald, Grant Gartrell and Alan Jevons from CEGSA and the South Australian Speleological Council meet with Mr Wotton and try to explain what has happened.
25 JAN	Review of the Facts called by Dep't of the Environment and Natural Resources (DENR)/ Dep't Mines and Energy (DME). Application to List 5A20 on the State Heritage Register made by the South Australian Speleological Council.
26 JAN	Public Holiday. Terms of Reference released for the Review.
27-28 JAN	Review held. Ken Grimes and Adrian Moore are the Assessors. Pat Larkin (ASF) and Armstrong Osborne argue our case at the inquiry.
29 JAN	ASF Council Meeting, Canberra.
10 FEB t	Questions raised in Parliament by Caroline Pickles, Opposition Spokesperson for the Environment. Mike Elliott. leader of the Democrats and their spokesperson for the environment announces a motion to investigate the issue of Sellicks Hill Quarry Cave by he Joint Parliamentary Standing Committee on Environment. Resources and Development.
17 FEB	Southern Quarries' solicitors claim that Southern Quarries have been defamed by Grant Gartrell.
27 FEB	Draft legislation drawn up by the ASF and the Environmental Defenders Office, Sydney – concerning the Mining of Carbonate Rocks – sent to the Minister for DENR.
11 MARCH	Government announces that " . . . [the] impressive features [are] not exceptional [and] limiting quarry operations is not justified" .
14 MARCH	The Grimes and Moore reports are released to the public.
17 MARCH	State Heritage Authority Meeting. Provisional listing and Stop Order placed over the cave.
18 MARCH	The Minister, Mr Wotton, overrides State Heritage Authority decision of the previous day.
21 MARCH	ASF engages the firm, Norman Waterhouse, to act on our behalf.
23 MARCH	Supreme Court action brought against the Minister by the ASF. Brian Hayes Q.C. acts on behalf of the ASF.
30/31 MAY	Listed for Trial in the Supreme Court of South Australia

POSTSCRIPT ON SELLICKS HILL
SELLICKS HILL QUARRY CAVE – COURT CHALLENGE

Miles Pierce

Australian Caver 137 (1994)

The Case mounted by the ASF Inc. and heard by Justice Bollen in the South Australian Supreme Court on 30 and 31 May, as reported in AC No. 136, was decided against the Federation. After considering advice from the QC who represented the ASF, a second opinion from an independent Queens Counsel, plus costs estimates from our solicitors, it was decided not to proceed with an appeal. After negotiations, a settlement has been reached with the Defendants which waives the costs order made against the ASF by Justice Bollen.

It is regrettable that the earlier representations to the South Australian Government and the court challenge were unsuccessful. Avenues to obtain a stay of mining around the cave and require a physical assessment of it now appear to be exhausted. It is hoped, however, that at the least, similar conflicts will be better handled in the future in South Australia and that the Federation's court action has shown the preparedness of cavers to challenge decisions which adversely affect important karst heritage.

MINING AT YESSABAH HALTED

Keir Vaughan-Taylor

Australian Caver 129 (1991)

FRIDAY 16 Nov, Sydney. Three Judges of the Court of Appeal of the Supreme Court have ordered a halt to all mining at Yessabah. The Court unanimously held that the granting of the mining lease to David Mitchell - Melcann Pty Ltd was unlawful because it had not obtained an environmental impact statement.

The case is a landmark decision as mining leases for every mine, even existing mines, are now subject to control by environmental laws. This means that every 21 years or so even existing mines must prepare a new EIS, considering their likely environmental impacts of future operations, in order to justify their continuation. The court also decided that a mine cannot move sideways into undisturbed land without an EIS.

It has been a long fight but we've won. Well done team.

Yessabah was no sooner settled than another quarrying issue arose in southern Tasmania. ASF was contracted to prepare an accurate survey of parts of Exit Cave to determine its relationship to drainage from Benders Quarry. The whole area was eventually included in the Southern Forests World Heritage Area

EXIT CAVE THREATENED BY BENDERS QUARRY EXTENSION

Arthur Clarke

Australian Caver 129 (1991)

Current plans to extend Benders Quarry in early December are threatening numerous caves in the Exit Cave catchment area. As the boundaries presented in the Quarry Development Plan have constantly been changing it has been difficult to assess exactly what caves are going to be mined. It seems, however, the proposed extension south into the saddle will mine on three sides of March Fly Pot (IB46) and within 10 metres of the entrance. March Fly Pot includes Pleistocene deposits of extinct macropod fauna, the remains of Thylacines, the extinct Sthenurus, and Macropus gigantus (which has never been previously recorded south of Hobart).

It is expected that caves also consumed by this new extension will include Little Grunt (IB23), Track Cutters Cave (IB211), an important invertebrate fauna site, Fly Wire Cave (IB 101), Exits Nostrils, a drafting cave at the back of the quarry, and a natural arch (IB124), as well as other unnumbered smaller karst features.

A Rhodamine W T trace from Little Grunt has been found in the Eastern Passage of Exit Cave. Fluorescein traces originating from holes in the working area of the quarry have been traced into Bradley-Chesterman Cave, north of the quarry and the Eastern Passage of Exit. These traces were carried out by hydrology consultants for the Dep't of Parks, Wildlife and Heritage.

Further to this dye tracing, on the 20th of November Rolan Eberhard, Ian Houshold, Vera Wong and Stefan Eberhard discovered a major passage (of at least 1 km), leading from Little Grunt to a rock fall. The main conduit route is an average of two metres wide (railway tunnel type). This find will make Little Grunt the second longest cave in the Ida Bay Area. The passage contains 6 large dripping avens and a flowing stream along much of the main conduit route. There is also 800 metres of side passage which runs back towards the quarry, almost parallel to the main conduit, which is heavily decorated and heavily silted with several other passages also silted.

This is a clear indication that Exit cave is affected by Benders Quarry, and that no scope exists for either extension or continued operation of the quarry. The mine extension is due to occur following the acceptance of the Environmental Management Plan. Negotiations are occurring between speleologists and the government.

For further information contact Arthur Clarke. (002) 282099 (list of politicians to contact omitted here)

MINING COURT RECOGNISES HIDDEN TREASURES IN NORTHERN W.A. (edited from a more comprehensive article)

Jay Anderson

Australian Caver 155 (2001)

Halfway up the Western Australian Coast, 1200 kilometres north of Perth, is the Cape Range peninsula, also called the North West Cape peninsula. Encompassing an area bounded by the Ningaloo Reef (that stretches along the coast about 260 kms) to the west and the Exmouth Gulf to the east, it is a breathtaking place of world heritage significance. The Peninsula is listed on the Register of the National Estate. Additionally, a report by the Department of Environmental Protection found that the Peninsula had the necessary values for it to be nominated for World Heritage Listing. A significant portion of the eastern foothills of the Cape Range has been recommended to be included in the Cape Range National Park.

Why is the Cape Range so important?
The fossil records, the flora, the geology and the above-ground and below-ground fauna have all contributed to an extensive and increasing knowledge of our past. One of the attributes of the Cape Range, which make it so special, is its subterranean fauna. Caves and mesocaverns provide the habitat for subterranean fauna of great rarity and variability: troglobites, stygofauna, spiders, millipedes and molluscs. It is this special region of "karst" that has the interest of speleologists in Australia and other professionals around the world.

The cave fauna of Cape Range has only been studied extensively over the last decade, especially by WA Museum staff in conjunction with members of ASF caving groups from throughout Australia, and shed new light on the country that we live in. A recent discovery in a water-filled cave at Cape Range has been compared

to finding a living dinosaur! This small aquatic animal is believed to have been living on earth since the time of the dinosaurs and was truly an exciting discovery.

Despite the fragility and acknowledged importance of the karst and reef systems, the area is under pressure from tourism, oil and gas industries, mining and other human activities. Only a small part of the karst system lies within the National Park. This area is also of interest to the mining industry for extraction of the limestone that forms the karst system.

In 1995, in response to competing land use interests, the State government accepted a controversial dual-purpose policy, brokered between the Department of Minerals and Energy and the Department of Conservation and Land Management. This policy allowed the State government to propose the setting aside of a significant area of the south-eastern foothills of Cape Range as a 'section 5(h) reserve' for the apparently inconsistent purposes of conservation and limestone mining. The area is currently under pastoral leasehold, with compensation to the leaseholder for the excision of the 5(h) reserve remaining unresolved.

Objection to the proposed mine and leases
During 1999, Finesky Holdings Pty Ltd applied for a grant of 10 mining leases over 8,250 hectares of Cape Range, covering approximately 80% of the proposed "5 (h)" reserve area, and over which the company holds mining exploration licenses. They intended to convert the existing exploration leases into mining Leases.

Among others, the Western Australian Speleological Group (WASG) and the Speleological Research Group Western Australia (SRGWA) objected on behalf of the Australian Speleological Federation (Inc) (ASF), with legal representation provided by the Environmental Defender's Office. ASF Conservation Commission WA Co-convenors, Rauleigh Webb and Ric Brown coordinated a response from the groups.

The Hearing
The environmental attributes of the Cape Range Peninsula, and in particular the value of its subterranean fauna, were considered at a hearing in the Perth Mining Warden's Court over 8 days during August and September 1999. There were 8 grounds for objection:

• The unnecessary size of the 10 combined mining leases;
• The visual impact of a mine within the proposed Mining Lease;
• The potential impact on the karst aquifer within the proposed Mining Lease;
• The potential impact on the karst within the proposed Mining Lease;
• The potential Impact on the caves within the proposed Mining Lease;
• The potential impact on the cave fauna within the proposed Mining Lease;
• The potential Impact on the proposed listing of the Cape Range peninsula on the World Heritage List; and
• In all of the circumstances it is in the public interest that the application should not be granted.

All our witnesses recommended an alternative site at Rough Range to the south of Cape Range. Some of the witnesses were:

• Elery Hamilton Smith provided details of why the Cape Range should be placed on the World Heritage List, how that process is conducted and why the granting of the mining lease would impact on the listing.
• Andy Spate provided geomorphology information to the Warden particularly relating to micro and meso-caves of Cape Range Karst.
• Bill Humphreys provided details of the unique nature of the cave fauna at Cape Range and how any mining activity may adversely impact the fauna.
• Stefan Eberhard covered the impacts of pollutants on cave fauna – in particular the impacts of quarry activities on the Ida Bay karst.
• Kate Morse provided information on the anthropological and archaeological significance of the Cape – with respect to Aboriginal occupation and artefacts, rockshelters, middens and evidence of the earliest of human decorative traditions.
• Darren Brooks provided further information on the caves of the Cape Range and the particular area under submission, in reference to his "Cave Survey Report".

The Warden's decision and recommendations
On 9th February 2001 the Mining Warden Graeme Calder recommended that limestone mining should not occur over 99.98% of an area in the Cape Range Peninsula covered by mining lease applications because of its extraordinary subterranean fauna and world heritage values. In relation to the environmental values of the area, Warden Calder found that the area applied for "is located within a unique karst system which is outstanding on a world scale in terms of its location, geological structure, subterranean fauna inhabitants, both aquatic and non-aquatic, and its integrity ... in its present state, were the Cape Range karst system to be nominated by the state of Western Australia for World Heritage listing, it would be listed."

It was clear that the Warden accepted the evidence of several experts called by the ASF, indicating that granting the proposed mine would have a significant impact on the karst system and the subterranean fauna. The Warden recommended that, if it was considered acceptable by the EPA for the proposed mine to operate in the 5(h) reserve, then his recommendation was qualified as follows:

• A mining lease should only be granted for the area presently proposed to be mined (thus rejecting 99.98% of the area applied for).
• The mining lease should only cover an area that is necessary for the proponent to conduct an efficient mining operation.
• This small mining lease should only be granted if the EPA finds that the proposal to mine is environmentally acceptable.
• EPA assessment of the proposal to mine should be made (contrary to present policy) before the Minister makes his decision.
• If it is found that the mine should not be sited where it is presently proposed, then the applicant should not put the mine in any other site within the lease area without going through the process again.
• The Minister for Mines should take advice from the Department of Minerals and Energy and the EPA before making a decision about the mine site, if the Minister is minded to grant a mining lease large enough to move the mine to an alternative site.

Speaking on behalf of the Western Australian Speleological Group, Jay Anderson said "We are pleased that the World Heritage value of the area has been recognised. The acknowledgment by the Warden has significance in the protection of the extraordinary karst system that is contained in the Cape Range Peninsula. The Warden's recommendations are quite favourable towards continuing to protect the area. We hope that the EPA will now find that the quarry proposal is environmentally unacceptable."

The Australian Speleological Federation President, Peter Berrill commented "that although we are happy with

Mining Warden Calder's decision in so far that he has accepted the evidence presented by the Federation's expert witnesses which recognises 'that the entire area of Cape Range has significant environmental values worthy of World Heritage listing', we are disappointed in his recommendation to the Minister that, 'a small quarry might be developed'". Mr Berrill stated further "I can't justify this decision when he has stated that even a small quarry has the potential to irreversibly impact on the karst systems, destroying the unique subterranean fauna, resulting in a negative factor to be taken into account during World Heritage assessment. In light of this I call upon the Minister not to grant any mining lease in the Cape Range area."

Environmental Impact Assessment (EIA)
During late July 2001, the E.P.A. published the "E.R.M.P. Draft E.P.A. Guidelines: proposed limestone quarry located 35km south of Exmouth near Learmonth, Cape Range (Learmonth Limestone Pty Ltd)". The ASF, WASG and SRGWA made submissions regarding the draft guidelines, which were some of the most comprehensive developed for the assessment of karst in W.A. Some aspects were not included in the Guidelines:

• The potential destruction of unknown karst features, including caves, that occur on the site.
• The leaching of water into the water table, through microcavems and mesocaverns.
• The impact of water with high sediment levels on cave fauna and caves.
• The Run-off of high quantities of water (in a storm event) into caves/cracks in the quarry and the potential pollution of the karst system and water table by blasting residues, sedimentation or spillages that infiltrate into the ground.

Some of the areas suggested for inclusion in the Guidelines were:
1. Develop a plan for what is to occur when a cave or karst feature is intersected during mining activities. Procedures need to be developed where speleologists assess the karst features as soon as they are entered by mining activities.
2. Develop procedures to assess/manage the impact of sediment and large quantities of water on karst features, cave fauna, and the water table.
3. Develop a comprehensive quarry rehabilitation plan that includes the management of karst features.
4. Ensure that experienced speleologists or karst management consultants are employed to assess each environmental issue.

Conclusion
The Warden's recommendation highlights some very important issues regarding the Cape Range of Western Australia. His decision makes a careful distinction between the role of the Mining Warden's Court and the WA State government mining policy in determining the appropriateness of mining activities in relation to conservation goals. It highlights the uncertainty that the creation of dual-purpose reserves presents for industry and the community.

It is known from past fauna studies that there is a large variety of troglobitic fauna in the Cape Range area. Preliminary information regarding the fauna collected from drill holes placed on the proposed mining lease indicates several possible new species. The Fauna Report indicated that there are several new genus and species of troglobitic fauna identified. One species had not been previously found in the Cape Range or elsewhere, while another is a new family record for Australia. It will be interesting to see what the Proponent does with these results.

The proponent released their environmental review document for public submission, and the speleological groups made further comments in a formal submission. However, it is the Minister for Mines who has the final decision regarding the granting of the mining leases. W.A. Speleological Groups encourage all Australian Speleological Group members to share the information regarding this issue with their friends and families. We recommended that individuals write letters to Government Ministers and send submissions regarding the Cape Range Issues.

Finally, the ASF and the WA speleological groups really appreciate the huge amounts of work that was undertaken by the lawyers of the Environmental Defenders Office and their staff in the preparation and execution of this case. It was hoped that the new government in Western Australia would adopt the recommendation of the Mining Warden against the grant of mining leases in Cape Range, and examine the nearby Rough Range as a suitable alternative for a strategic limestone reserve.

Whatever the outcome of this case the A.S.F. will need to continue to:
• oppose limestone mining on the Cape Range peninsula
• call for the Government to remove the strategic limestone mining purpose from the proposed 5(h) reserve
• enlarge the Cape Range National Park
• advocate for and nominate the Cape Range peninsula for World Heritage Listing.

Endnote: as of November 2006 there has been no final decision made by a State Minister, and this issue of mining at Cape Range has not been resolved.

3. Smaller Conservation Issues

There were many reports of conservation issues that were handled without resort to the Courts or even the media, especially as environmental awareness and stronger legislative provisions arrived from the 1980s onwards and Ministers and bureaucrats became less adversarial and antagonistic. Victoria in particular had a number of notable successes which received little publicity. ASF Newsletter often ran a Conservation Action column to publicise these less-heralded examples.

Conservation Action

ASF Newsletter 54 (1971)

SOUTH AUSTRALIAN CONSERVATION REPORT by Grant Gartrell

Recently I was pleased to represent CEGSA as part of a delegation from the South Australian Mountain Activities Federation (SAMAF) who were received by the State Minister for Conservation, Mr Broomhill, only recently appointed. The purpose of the visit was to acquaint Mr Broomhill with some of the more urgent conservation desires of bodies belonging to SAMAF and to seek his co-operation.

Mr Broomhill gave the impression of being sincere and sympathetic. Government resources are limited and conflicting interests are encountered. It is not sufficient to merely ask that caves be conserved – to get anywhere we must present him with a strong case which will enable him to argue in the parliamentary market place. On this occasion the submission took the form of literature produced by the Group, including Caves of the Nullarbor and Mullamullang Cave Expeditions 1966 as well as some papers outlining the problems of cave conservation. The next steps will be to prepare three distinct cases:

1. Overall legislation to prevent caves being used as rubbish dumps. – This will be facilitated if caves occur in water catchment areas or in association with underground water resources.
2. Perhaps even more urgent, we must arrange our known caves into some order of priority according to scenic, scientific and recreational importance. We need to present the Minister with an ordered list showing location, reason for protection, proposed means of protection including physical (gates etc.)
3. We have a responsibility to promote the preparation and distribution of educational material in the cause of cave conservation and to foster practical means by offering to fence or gate caves that era causing landowners trouble.

STREAM CAVE and HEREFORD CAVE by Trevor Maddock

Serious concern has been expressed about the future of these two caves in the farming country of south east South Australia. Hereford Cave has been completely blocked up with dead cows, sheep, wire and racks, while Stream Cave is in similar danger. Stream Cave is unique in being the only cave in the state with a running stream and it epitomizes the danger of groundwater pollution in a region with very little surface drainage. As well Stream Cave may have biological significance; although in no great numbers, bats have been sighted and in 1966 one was banded

4. Looking after what we have

OPEN LETTER TO KUBLA HELPERS

Bob Woolhouse, Northern Caverneers

Australian Caver 108 (1985)

(Particularly to Andrew Pavey, Nicholas White and Jim Campbell, who have offered to make notices, maps and markers. Up to now, Norm Poulter is the only person we've needed to call on in this respect.)

Dear Andrew et al.,

As you know, we were experimenting with felt-pen notices on A4 paper laminated in plastic, to test audience reaction and find exactly what we needed for permanent notices. Where possible we tried to judge the success of the system by having cavers unfamiliar with the route attempting to lead us through. Much to our surprise, we found that many parts we thought were obvious and not worth marking, were in fact not obvious at all. Our rerouting over flowstone between pitches 2 and 3 (see diagram) is marked with flagging tape, and gives no trouble. However, without both precise instructions and markers, pitch 3 goes into a muddy area and misses the Waiting Room completely. Ken Boland decided (quite correctly) that Khyber Pass was about to develop into an overhang like that on pitch 3, and traversed up to the left into an impossible position well above The Traverse. Ken will be interested to hear that the marker he fixed at the true start of The Traverse was seen by the next visitor, but the crack of The Traverse was not recognised as a route. Apparently, a descending traverse was made towards the sandbags which were visible half way down the Steps. This was described as "rather hairy". It's a slow business drilling to fix markers, and we still haven't got any partway along the Traverse. Someone suggested hammering in masonry nails. These give an unpleasant vibration to the fingers holding them and eventually the rock splits and the nail drops out. The present system is to drill a 3mm hole about a cm deep and use a 4mm fluted aluminium nail. Ordinary adhesive tape reflectors stuck to aluminium strip were tried, but Norm's reflective discs (with a hole in the centre for the nail) had a better visibility. Also being white, they are indistinguishable on photos (but not to the naked eye) from reflective calcite crystals.

We had hoped that the authority to issue permits, which was given to Mole Creek NPWS for the ASF Conference period, would be quietly allowed to continue indefinitely. When it was suddenly withdrawn, I took the opportunity to write a carefully phrased letter to the Director to the effect that N.C. were prepared to continue with the work in Kubla and requested help with some of our problems. In a helpful reply we were given an open permit for 1985 and offered the services of the Operation Officer in Hobart in making and laminating notices. We also

have the loan of Mole Creek's cordless drill, although the service is so hard up it can't buy us masonry drill bits in the size we use.

We may have set a useful precedent in that the Director is allowing an ASF member club to control conservation measures in a restricted access cave. It is very important, however, that the NPWS not the club, should control the issue of permits.

Coming back to the notices, The Service Operations Officer (Tony Blanks) turned out to be very co-operative. He photocopied my sectional sketch of Kubla and double laminated a copy (his suggestion to make it stiffer) which I intend fixing with a brief explanatory notice at the upper entrance to the cave.

After a lot of messing about, we now know what we are trying to do, and we would be able to offer specific projects for which a club or group could take responsibility. For example, no complete survey exists for the whole cave and the plan in "Vertical Caves Guide – Tasmania" is positively misleading.

Finally, thanks everybody

WEEBUBBIE – A CHRISTMAS CLEANUP

Norm Poulter, SRGWA.

Australian Caver 108 (1985)

Weebubbie Cave 6N2, a declared water reserve (19713) and aboriginal site is one of the most widely known of the Nullarbor caves and has had a couple of cleanups over its history as a water reserve for the nearby Eucla Roadhouse. The last was apparently in 1978 involving members of the Western Australian Museum.

Sometime between late 1982 and December 1984, the pump and active piping was removed from the cave when the roadhouse sank a bore closer to their complex, thus leaving a view of the main lake free of unsightly pipe.

However – there are lots of unsightly pipes, drums, timbers and other associated junk about 5-10m below the surface of the lake in full view of the cave's many visitors. This junk is a relic of previous generations of administrators of the Eucla roadhouse. There is apparently no provision in the terms of the water reserve agreement that compels the roadhouse management to clean their junk from the cave.

Since May, when members of WASG deposited visitors' books in several Nullarbor caves, Weebubbie has had 147 visitors (May-Sept. 1985), an enormous number by Nullarbor standards. Despite the number of visitors there is surprisingly little fresh rubbish in the dry part of the cave – but rubbish there is and everyone knows that rubbish breeds rubbish.

SRGWA is co-ordinating a cleanup of the cave over the Christmas, New Year period (Dec.28 - Jan.4) in an effort to remove all the rubbish from the cave, both wet and dry. Negotiations are in progress with the Water Authority of W.A., the cave managers, for the loan of equipment to make it easier to haul junk out of the doline.

The SRGWA Navy in the form of Norm Poulter's 5m Canadian canoe will be assisting in salvage operations (top that VSA).

In order to accomplish the cleanup, SRG is calling for volunteers including dry cavers, snorkellers and SCUBA divers to assist and for those wishing to participate to contact Norm at 18 Hammersley Ave, Morley 6062 (H 09 2762495 W 09 380 2770) before the end of November. It will be a great chance to socialize and go canoeing on the spectacular Weebubbie Lake.

Would You Like to Ride in my Nullarbor Canoe?

4. Working for better management of our caves and karst

In 1972 ASF organised the world's first Conference on Cave Tourism and Management, continuing to organise 6 similar gatherings until the formation of the Australasian Cave and Karst Management Association in 1987. In some places caves were still in danger of being damaged or destroyed, but where they were relatively safe in protected areas we became increasingly involved in providing advice to public land managers throughout Australia, either by way of submission or as experts in the field of cave and karst management: at Cutta Cutta, Yallingup, Nullarbor, Jenolan, Tantanoola, Naracoorte and the NSW Central West. World Heritage listing was eventually obtained for several karst areas, at least partly due to work by ASF and our members.

NULLARBOR KARST STUDY

Adrian Davey

The Federation is currently undertaking a study of karst management on the Nullarbor for the W.A. Department of Conservation and Environment. The objectives of the study are to identify the caves and karst features on the Nullarbor which should receive specific kinds of management, and to suggest ways of co-ordinating conservation, recreation, tourism, and land management of the area.

The first phase of the study, involving field reconnaissance and an initial report, is well under way. A group of six ASF personnel recently spent a fortnight out on the Nullarbor, accompanied by representatives of the W.A. Department of Conservation and Environment, W.A, National Parks Authority, and the W.A. Museum. The first report is due to be submitted to the Department in October.

The ASF personnel associated with the study at present are Nicholas White and Elery Hamilton-Smith in Melbourne; Ian Lewis, Jim Cundy, and Kevin Mott in Adelaide; Ken Lance, Kerry Williamson, and Bob Shoosmith in Perth; and John Dunkley and Adrian Davey in Canberra. Adrian is co-ordinator of the project

Phase II of the project will be a Development Study of Weebubbie Cave. Fieldwork for this part of the study will be undertaken in conjunction with the Perth conference this summer. There will need to be an even wider group of people contributing to this part of the operation, including civil and electrical engineers, surveyors, divers,

biologists, and planners. The final report is due in about April 1979.

As well as the Development study, it is likely that we will organise several work parties to clean several of the Nullarbor Caves, and undertake minor protective measures. If you can help, please mention the fact when you register for the conference field trips on the Nullarbor.

NULLARBOR WORLD HERITAGE NOMINATION PROPOSAL FOR ASF SPONSORSHIP

(Adrian Davey)

ASF Newsletter 103 (1984)

Introduction

1. The Nullarbor Plain is one of the largest karst areas in the world and is arguably the most significant of all Australian karst areas at the International level, on account of unusual features arising from its semi-arid setting.

2. Many of the natural features of the Nullarbor Plain area are of outstanding international interest.

3. The Nullarbor area has a rich cultural heritage, especially Aboriginal.

4. The caves of the Nullarbor Plain offer outstanding cave exploration challenges (especially diving) of a character very different from caves anywhere else in the world.

5. The Nullarbor Plain in the sense of a vast and supposedly flat treeless landscape is as much a part of the Australian consciousness and folklore as Ayers Rock or the Great Barrier Reef.

6. The geological and environmental entity comprising the karst area, the flora and fauna and the cultural features of the Eucla Basin clearly fit the criteria for world heritage areas as outlined under the convention.

Basis for World Heritage Proposal

7. The property: The area to be nominated for listing on the world heritage register will be defined on geomorphological and ecological grounds as the entire onshore Eucla Basin.

8. Land use: The nomination will be made on the basis that the following land uses may continue within the area, subject to appropriate controls at sensitive sites: grazing, communications, transportation, car-touring, tourism accommodation and servicing, outdoor recreation including cave exploration, nature conservation, cultural features conservation, petroleum and mineral exploration, meteorological observation, survey and navigation and groundwater utilisation.

9. Land tenure and management: It is desirable for there to be active resource management of the entire area. This may encompass arrangements under the following land tenures: pastoral lease, special lease or other ownership of service centres, homesteads, communications installations etc., Aboriginal land, national park, wildlife or nature reserve, conservation park, or similar, or specially managed Crown land. management arrangements for the lands of whatever tenure or use must provide for: landscape protection and management, maintenance/restoration of range condition, conservation of important natural and cultural features, fire management, appropriate tourism and recreation. and proper maintenance of access and structures and disposal of wastes.

10. Management co-ordination: It is desirable for the Commonwealth to provide some mechanism for co-ordinating the management of different land tenures and uses within the two states concerned, but it is envisaged that all direct management would be the responsibility of the state.

11. Management plans: The nomination will propose that an overall co-operative management plan be prepared fez the entire area and that the detail be carried into effect via formal management planning instruments appropriate to the tenure of individual areas.

Nomination Procedure

12. Nomination of a property under the world heritage convention must come from the national government concerned. Protocol in Australia is that the Commonwealth only acts on the recommendation of the relevant state(s).

13. ASF has a special interest in one very important aspect of the proposed nomination and has wide experience of the area. It is proposed that ASF draft a detailed nomination and formally sponsor the initiative. ASF would then ask the two state governments to support the proposal and seek Commonwealth action to make the eventual nomination.

14. The states and/or the Commonwealth may considerably supplement the content of an ASF draft nomination. Nevertheless, it is highly appropriate that ASF sponsor the initial proposal. The state governments and appropriate Commonwealth authorities will be consulted during the process of preparing the ASF draft to make sure the preliminary submission has wide support.

Recommendations

15. That ASF formally adopt the proposal to seek world heritage nomination for the Nullarbor karst area, in recognition of its outstanding international significance.

16. That the executive be authorised to approve a final nomination for submission on behalf of ASF to the two at-ate governments and the commonwealth and to take appropriate action to advance the proposal.

17. That member societies be asked to cooperate in preparing the submission as much as possible.

18. That the submission be compiled and edited by someone working in consultation with the executive.

Postscript: In 1992 ASF members were involved in a Study of the Nullarbor region for the Commonwealth Government as part of the World Heritage nomination process. The nomination foundered for lack of the trilateral support required from the three governments involved, but is now being resurrected.

Jenolan Caves included in World Heritage listing of Blue Mountains

Australian Caver 153 (2000)

After its Executive Bureau had twice rejected the nomination, the World Heritage Committee meeting in Cairns on 29 November (2000) accepted the nomination of Greater Blue Mountains to the list. Jenolan Caves is included, not for its cave values as such, but because its karst is an integral part of the diversity of the Blue Mountains which was the key determinant.

It is now 15 years since we (ASF) first raised the issue with the then responsible authority, the NSW Department of Sport, Recreation and Tourism. World Heritage was not exactly flavour of the month at the time – the Director and other bureaucrats in Sydney were in no hurry to take that suggestion on board. Perhaps they envisaged F111s swooping around the Grand Arch the way they did down the Franklin.

In March 1988 we managed to get it as the very first goal for management action when the current Management Plan was drawn up. ASF has had statutory representation on Jenolan Caves Reserve Trust for the last decade – a Trust that has shown itself to be somewhat more enlightened than the old school of bureaucrats.

There will no doubt be debates about what practical advantage there can be for World Heritage listing. Although Jenolan is a relatively small part of the 1 million hectares listed, its significance certainly outweighs its size.

NHT PROJECT COMPLETED IN NSW CENTRAL WEST

Australian Caver 153, 2000

Late in 1998 the Federation received on behalf of the NSW Speleological Council, a grant to raise awareness of karst and karst-adapted vegetation in the central west of New South Wales, update documentation of all karst features, and to prepare a Regional Karst Management Strategy in consultation with other agencies.

Chris Dunne did a great deal of administrative work in 1998 and 1999, tightening the original application, liaising with government agencies and managing the project until huis departure for Brisbane. Since then it has been brought to completion by a management team chaired by John Dunkley and including David Bennett and Evalt Crabb. Documentation was conducted by OS and HCG, the key field team including Bruce Howlett and Denis Marsh (OSS), and the driving force behind it was Peter Dykes, who conceived and coordinated it from beginning to end.

9 clubs and 65 members assisted in this mammoth task, visiting 22 karst areas and increasing the number of known karst features from 46 to 548. Hundreds of trees were planted, fences erected, community workshops conducted and other land management agencies consulted. The 104-page main report lists 51 recommendations for management action to protect the karst, caves and remnant vegetation, and to improve water quality. An interesting conclusion is that the 255 dolines in the region are probably the most significant karst feature and require much better management. Detailing all karst features in the region, a supplementary report to the funding body will be used as the basis for a future volume in the new Australian Karst Index series.

Only 97 of the features are caves but the work by so many clubs and individuals demonstrates that speleologists are prepared to put time and effort into the conservation and sound management of all karst features. Copies of the Report will be available to all participating clubs and a summary may be prepared for future publication

CAVER IMPACTS CONFERENCE

Clare Buswell

Australian Caver 128 (1991)

In June of this year I attended a conference organized by the NSW Speleo Council and the Australasian Cave and Karst Management Association, titled Caver Impacts on Caves. The conference was well attended by around eighty people mostly from NSW but there were representatives from South Australian ASF affiliated organisations and from the VSA. Cave Management was represented by Andy Spate, NPWS, Ernst Holland, Jenolan Caves. A number of papers were presented in the morning with the afternoon session being given over to workshops on cave management. The aim of the conference was for cavers and managers of caves to highlight some of the different ways in which both perceive karst, our impacts upon it and to set about finding some solutions to minimise those impacts.

Andy Spate presented a paper co-authored with Elery Hamilton-Smith which reviewed the literature on human impacts in caves. The paper is comprehensive and aims to present a broad perspective on the impacts of human use and possible solutions to those impacts. The users range from biologists to rock hounds and the solutions to dealing with impacts ranged from hardening the environment in order to reduce the impact of visitors to exporting the demand [to go caving] to other countries. The paper concludes on a positive note in that, in Australia we have the opportunity to avoid the British experience where, "... no cave now exists which has a human sized entrance and undisturbed biology or sediments …". We should make use of our national organization to develop a Low Impact Caving Ethic and make it widely available to member societies, equipment shops, land managers.

Martin Scott from SUSS presented the cavers points of view by trying to answer the question: why do we all go caving. His answer revolved around finding out what is

there and to document and publish it.

Nick White from the Victorian Speleological Federation presented an overview of the current karst management and speleological issues in Victoria. The reasons that management practices have been successful is due to the importance of having strong governmental support for karst management over a long period of time, the close involvement of the VSA in the development of those management strategies and having only one government department which looks after karst, the Dep't of Conservation, Forest and Lands. This has resulted in most of the Victorian caves being in Reserves, and those that are not are required to be managed as if they were. In 1986 there was a major cataloguing and classification (using the Worboys system) of all known Victorian caves. This document, Management of Victorian Caves and Karst, has formed the basis of current management practices.

Ernst Holland presented a management view and in the afternoon workshops set in motion some ideas to get the caving fraternity to measure the impact they are having on the caves they visit. Some examples of the type of experiments that are going to occur are: Changes in air / water flow; humidity levels; soil compaction in passages; monitoring visitation levels via visitors books and electronic people meters; photographic monitoring; monitoring speleothem breakage; mud/clastic sediment transfer and track marking, does it lessen impact? These experiments are to occur over the next year with another conference being convened to discuss the results.

One of the most important recent legislative moves to protect Karst was also launched at the conference by the Minister for the Environment, Mr. Tim Moore. The Legislation was originally introduced into the NSW Parliament as an amendment to two Acts, the National Parks and Wildlife Service Act and the Wilderness Act. On the second reading of the legislation in early July, the two amendments were amalgamated and the legislation is now known as the National Parks and Wildlife Service Karst Conservation Amendment Bill, 1991, No. 2.

At present, the only way the Service could conserve a significant limestone cave area was to obtain title to the land above and rely on the Common Law principle that title to a parcel of land extends "to the centre of the earth". The aim of the legislation is to establish underground National Parks and Wilderness Areas at a certain depth under the surface land, by allowing the NPWS and the Wilderness Service to acquire, through purchase, the underground area. In effect, strata titling.

The current process of declaring a reserve around the immediate entrance does not protect the catchment areas. In order to protect the catchments of seepage flows and the chemistry of seepage waters, the protection of surface areas, via conservation agreements or wilderness declarations, to areas larger than the immediate entrance

5. Unusual Cave Conservation Cases

Almost the first conservation action undertaken by ASF was a protest about the use of caves for establishing records for staying underground. In time we came to frown on underground camping for any purpose except in the most exceptional circumstances.

NEWS FROM THE NORTHERN TERRITORY

Anon

ASF Newsletter 17 (1962)

The present attempt by three people (originally four) to break the recently-set world record for staying underground has received much publicity. Unfortunately, newspapers gave the impression that the members of the party are recognised speleologists, but this is not so. Only one of the party, leader Bill Penman, has ever been in a cave previously. They have chosen one of the hottest, humid and most unpleasant caves in the world – the Sixteen Mile at Katherine – for the endurance test.

Re PENMAN AND RECORDS

Gordon Bain (editor)

ASF Newsletter 21 (1963)

The attempt by Bill Penman to gain a world cave-sitting record has gained considerable attention both within and without ASF in the last year. It recently came to the attention of the Executive that Penman was about to attempt another similar venture in the 16-Mile cave. In view of the many protests received from those who have seen the fantastic desecration of the cave during the last attempt, it was decided that we would write to Mr Penman suggesting he desist from this latest attempt, as well as to make protest to the relevant authorities in the Territory. It was felt that we cannot stand silent when all principles of cave conservation are being so flagrantly violated as in this case

DANGERS: Safety and Techniques

Because they can date quickly we have included only a few articles relating to techniques. Safety has been regularly canvassed in newsletter articles (e.g. no. 56, 1972) and guideline documents prepared for several aspects of safety, so that ASF's safety record is outstanding on a world scale and it is over 40 years since the only fatality ever incurred on an ASF member society trip. While hypothermia is well recognised, especially in Tasmanian caves, we have included articles on hyperthermia, a significant problem in tropical caves including northern Australia.

DIFFERENTIATING NYLON & TERYLENE

Simon Jolly

ASF Newsletter 91 (1981)

Most cavers are aware of the alleged danger of the concurrent use of lead acid batteries and nylon vertical gear, and similarly alkaline batteries and terylene gear. So, is that tape of yours nylon or terylene?

It is a simple process you might think, to test the effect of acids and alkalines on a small sample, but in practice this gives far from clear results. Concentrated mineral acids rapidly dissolve both nylon and terylene and weaker solutions often have no appreciable effect on either. On several terylene samples I have tested, prolonged boiling in a concentrated sodium hydroxide had no visible effect.

If one looks up the text books, it seems a definite test for terylene (polyester) is that it dissolves in boiling O-dichlorobenzine in less than six hours. Furthermore, hot formic acid will dissolve nylon (polyamide) but not terylene.

A far simpler test I have found is to immerse fibres of the tape to be tested in a saturated solution of potassium permanganate (Condy's Crystals). The solution must be super saturated, that is with crystals undissolved after vigorous mixing. In a day or so nylon fibres are considerably weakened and soon disintegrate completely. Terylene remains completely unaffected.

You can now go caving with that 'Montgomery ring of confidence', though I can't help thinking if this morbid fear of the vulnerability of our tapes is really justified.

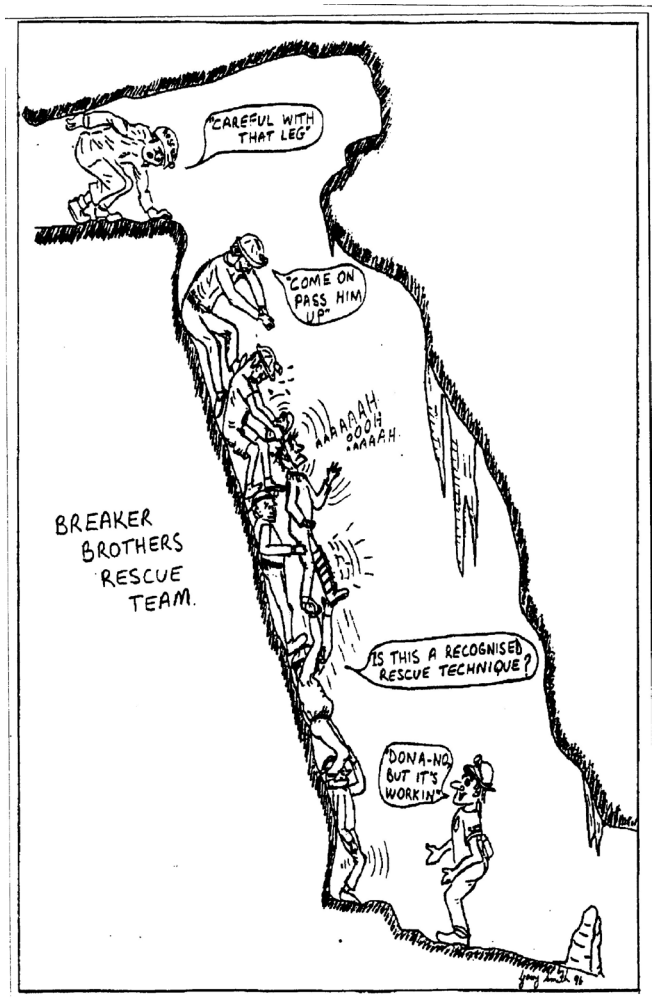
HOW LONG WERE YOUR ROPES?

Alan Warild

ASF Newsletter 102 (1983)

For several years it has been known that synthetic ropes shrink with use. During the last 12 months I've been taking some comparative measurements to find out how much. While collecting ropes for the Muller '82 Expedition we made a point of marking lengths on all ropes, and quickly found that ropes brought in as 50m. lengths were characteristically only 43 to 46m. long when measured (8-14% shrinkage). Following on from this we found an almost new 100m. Bluewater III to be 93m. long (7% shrinkage).

Muller '82 took 5 x 200m. rolls (measured at 202 m to 204 m) of Beal Dynastat to New Guinea. When cut into quarters, and used a lot we ended up with 4 x 45m. ropes (ie total of 180m; 10% shrinkage)). Equally dramatic shrinkage occurred in my Bluewater 9mm. Bought as a 200 m roll in December, used in New Zealand for 4 weeks its total length by the end of January was 179m. (10% shrinkage). It appears that you can expect a 10% to 15% shrinkage during the first few uses and thereafter it begins to stabilise. So if you want a 50m. rope perhaps it would be a good idea to buy at least 55m.



A GUIDE TO CAVING ROPES

Alan Warild

ASF Newsletter 103 (1984)

A great deal has been said and a little written about caving ropes over the last year or so. To such a degree that several "experts" have got their sit-harnesses somewhat knotted as to what is safe/dangerous/spins/bounces/costs too much etc.

When buying a rope you either know what you want or ask advice. Unfortunately the most often volunteered advice comes from those people trying to sell you the rope. As no one shop sells all of the available brands of rope it is unlikely you'll get an objective story from anyone!

After reading and hearing a considerable amount of dubious information on caving rope I have put together some of my own tests and experience and combined this with work from other sources to give what I hope is a more complete picture.

By knowing something about what you want and why you want it, "beginner" rope buyers, can make a more informal choice and the experts may re-think about whether they are getting what they thought they were getting.

Diameter

In general terms, the thicker the rope the "safer" it is. Thicker ropes are easier to hold on abseil and when used as handlines. Ascenders usually climb better on thinner ropes. Most people seem to prefer an 11mm rope – probably for the feeling of security it gives, although, when badly rigged even the toughest rope can be dangerous. Virtually all of the rope characteristics to be discussed are controlled largely by the rope's diameter.

Breaking Strain

If you look only at ultimate tensile strength then almost any synthetic rope over 8mm diameter would be "strong" enough but unless you are lifting boulders with your prussik rope the load will never progressively increase until it reaches the rope's ultimate tensile strength.

The more important "strength" to consider is whether or not the rope can withstand a "shock" load. Climbing ropes must survive a series of falls in which an 80 kg load is dropped 5 metres and stopped (hopefully) by a 2.5 m length of rope. This is known as a "Fall Factor 2 Fall (80kg)" and while highly possible in climbing is relatively rare in SRT.

A fall factor 1 (fall=rope length) is the usual maximum (greater than Fall Factor 1 falls could occur if you are above the belay point when clipped to the rope as many people are, when preparing to abseil.) See Figure 1.

Static ropes, because of their lower stretch and consequent lower shock absorbing ability cannot perform as well as climbing ropes but they should survive at least one "Fall Factor 1 (80kg)" fall. This is especially important to those who still use sailing ropes such as Marlow and Downs. Recent tests in the UK have shown that even good 10mm Marlow never survives even one "Fall Factor 1 (80kg)" fall.

Most ropes are constructed such that the whole of the rope absorbs load progressively until it breaks. Ropes such as Viking Super Speleo and Beal Dynastat have a different construction and are designed to perform in a different manner. They both utilise a low stretch care which supports the load in normal use. If a severe fall should occur though, the low stretch core would be unable to survive the shock load and would break. The load would still then be supported by stretchier shock-absorbing sheaths. Although the Kevlar core of the Viking appears to be quite "strong" in relation to the total strength of the rope it has rather poor shock absorbing ability - hence the need for a stretching sheath.

The next time you prussik up to a main belay point consider how far you would fall should that belay fail. Compare it with the length of rope to your secondary belay. (Fortunately a lot of shock would be absorbed by your body, harness and pendular movements.) This gives the lie to those who consider that shock loads don't happen in caving

Elongation at Failure

Greater stretch indicates greater shock absorbance but otherwise a useless statistic unless you want to calculate whether you'll hit the bottom before or after the rope breaks.

Elongation in use

Stretch is highly variable even within the same type of rope. New ropes normally stretch less than older ones. Low stretch ropes are easier to prussik on, especially if using the Frog System against a wall. It is also easier to guesstimate the placement of protectors and to allow for stretch between belays.

Stretchy ropes absorb shock loads better and so place less strain on belay points and falling cavers. It is not hard to get used to prussiking on stretchy rope.

Rope stretch is roughly related to diameter so some compromises must be made. Few cavers are willing to drag around a 13mm rope just to ensure bounce-free abseils. At the other extreme I prefer to use the stretchier 9mm ropes and carry much less weight around.

Resistance to spin

With the advent of kernmantle ropes spin is a non-event unless you coil your ropes. Coiling can generate twists with each loop on or off the coil and can lead to some unpleasant side effects (helical chunders etc.).

Abrasion resistance

Abrasion resistance is an extremely difficult thing to measure and as yet consistent reproducible test results have not surfaced.

As a general rule the better wearing ropes have a harder more compact sheath and as a consequence are normally stiffer. As far as total destruction goes the thicker ropes last longer (more or less) but if you are only looking at "biting" a hole in the sheath this may not be the case.

Thicker, tougher ropes are more suited to those who don't want to spend the time and effort involved in rigging ropes free of the rock. No matter how careful you are about rigging your rope it will still wear out from the effects of nasty dirty cavers sliding down it.

Again a compromise must be found because tougher ropes also tend to be heavier, stiffer and more expensive while lighter, softer, cheaper ropes don't normally wear as well.

Handling and Knotability

Ropes normally start out nice and soft and head toward "wire" rope. A rope which is stiff when new has a considerable head-start on one which is initially soft. Stiff rope has only one advantage – it tends to run through ascenders better.

The main disadvantage of stiff rope is that you simply can't get as much of it in your pack as you can with similar soft ropes. If you leave the rope outside your pack it will only get even stiffer and wear out faster. Stiff rope can also be rather nasty to abseil on, especially with non-variable abseil devices.

Tying knots in stiff rope becomes a real test of strength and often requires a lot of rope. Thicker ropes tend to be harder to bend so stiffness is more of a problem with them. By washing and fabric softening your rope between uses its downhill slide to "wire" rope will be slowed markedly.

Weight

Weight is a crucial factor if you are rigging a deep cave with only a few people. If the cave is high up a mountain then weight is even more important.

The new weight is a reasonable guide but ropes only ever seem to gain weight. It has been said that nylon ropes gain 10% - 15% extra weight by absorbing water during their first wetting and then retain that water. This is not so. If you buy a new rope and measure and weigh it, then wash and dry it, you will find that it is about 5% shorter and weighs exactly the same. But if you calculate its new weight per metre it will now be 5% heavier.

Some ropes shrink up to 15% with only a few weeks of heavy use so you can expect it to be up to 15% heavier per metre with age. A rope's weight when wet (i.e. completely saturated like it is in your rope pack) seems to be consistently 35% - 45% above its dry weight, the values for old ropes being more relevant. Some ropes dry out much faster than others which may be important if your rope also goes canyoning.

I'll bet you thought your old Marlow was heavy when wet, I found that it had a 64% weight increase when saturated and lost no measurable weight hanging in the sun for 15 minutes!

Price

Although price is an important consideration it is usually better to buy what you want if one particular rope is in your opinion "outstanding". Remember that a thinner, cheaper rope could cost you more if you wear it out faster. Most shops will give you some discount if you buy a full 200m roll.

Part Two of this article, entitled "Which Rope Is The Best", will be printed in the next issue.

PETZL AUTO-STOP DESCENDER: MARK's OPINION

Mark Wilson

ASF Newsletter 103 (1984)

With a NZ trip coming and faced with the thought of carrying my New Guinea-proof 12" water pipe bar rack across, but mainly up, mountains I decided something lighter was the go.

Enter TSA catalogue, and about three months later, after French translations, bank drafts, customs and Australia Post officials' "Sorry, but we seem to have lost half your package, but pay the duty any way" I ripped open the package to see the auto-stop in the flesh – bright blue body and sexy red handle. So with just one quick trip down Drum (B13, Bungonia NSW), to try it out it's off to New Zealand.

To cut all the drivel that seems to have filled the page above, the big question is "Is it any good?" The answer "BRILLIANT".

The auto-stop works well on ropes up to 12mm, it definitely won't work on NZ-type-rope 10/80H (suitable only for mooring ferries). Although I didn't take any totally-out-of-control plunges down shafts to try out the auto-stop, it did seem to work well, but it did creep a little when there was no bottom weight (this was on brand new Blue Water 9mm at the bottom of the pitch).

I found the auto-stop great for rigging, just slide down the rope, release the handle to stop, rig away to your heart's content, then grab the handle and you're away (watch out you don't bash the handle or you may go when you want to stay, quite exciting . . . beginner's mistake!)

The Petzl also has the advantage of being very quick on and off the rope, unlike the old PNG "knee breaker". The Petzl in comparison is also much shorter (about 8") and lighter (just over 300g), and rated by the manufacturer at 1500kg. As for the big pits, it was great on Harwood's (176m) using Blue Water 9mm although it did get a little warm (if you take it slowly you won't need your water pistol!).

The Petzl is slightly faster than other devices I have used but it is only a matter of improving your technique and using your body occasionally to generate more friction.

Although the auto-stop won't give you the same super frictional variation as a rack or whaletail, this is the only time it comes in second place.

SUMMARY

GOOD:
Light
Short
Quick on/off time
S/Steel capstan

NOT SO GOOD:
Two hands needed
Less frictional variation
Single rope only
Heats up easily

BOLTING IN CAVES

Alan Warild

Australian Caver 110 (1986)

A recent trip to Maydena has forced me to make a few comments regarding bolts in our caves.

I believe in placing bolts in caves. Once in, they make rigging faster, safer and lighter. The problem is that there appears to be an alarming number of people who have very little idea about how to best use bolts. This is not surprising, considering how little practice the average Australian caver gets in using them.

So possibly a few pointers are in order:

The position of the bolt is most important. After all, the main reason for using bolts is to put an anchor in a place where nature didn't provide one. Be especially careful to place bolts so that the rope will hang free below. In most cases you have wasted your time if you need a protector below the bolt where the rope goes over an edge.

One example to illustrate my point: The top of the last pitch in Dwarrowdelf probably has the worst case of "BoltRash" in Australia – 9 bolts when 2 or 3 would suffice.

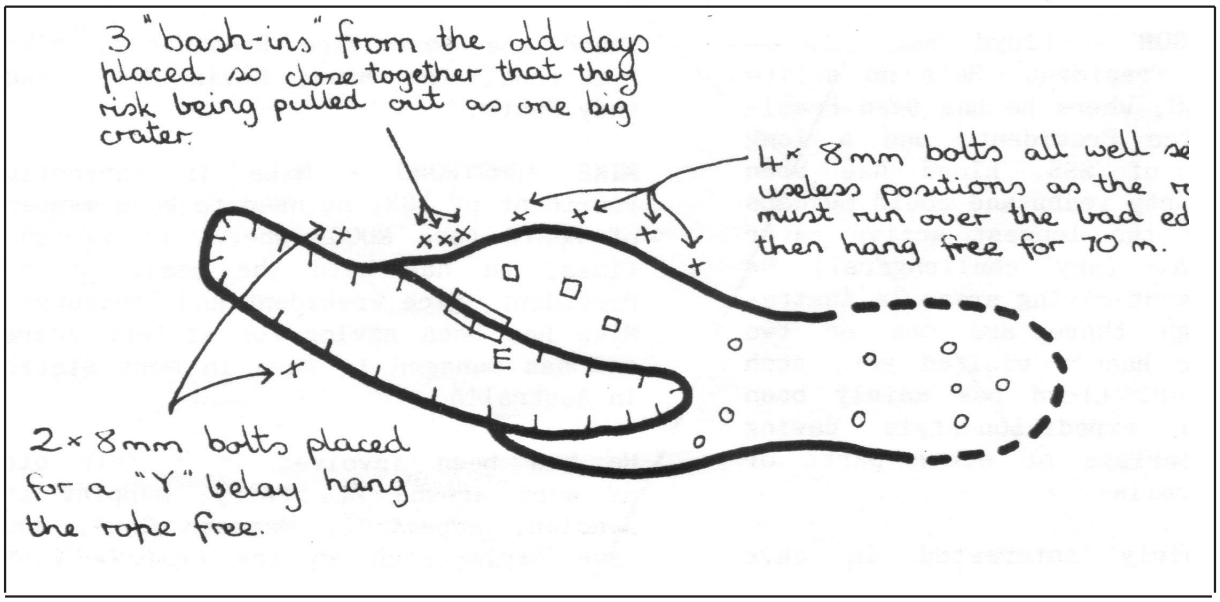
In this case the 7 bolts along the wall are unnecessary. Setting bolts can often be a "displacement activity" to avoid the "awesome drop below." Any of the 7 make a useful handline for getting on and off rope without interfering with the pitch above, so one of them isn't totally wasted.

With the exception of traverse lines to get out over the pitch it is well worth the time to "test hang" the rope from the proposed bolt position. Don't be afraid to hang out in some odd position for 20 minutes to place a bolt. I've seen people use 'skyhooks' to cling in impossible positions, just to get that 'perfect hang'. If you do your job well enough the next caver will have no option but to use the good rig-point you've provided.

While you're out there, take care to set the anchor properly. Before you actually set it, use the drill to "sculpt" the edge of the hole so that the anchor will lie flush, or just below the surface. (It helps to overdrill the hole by 1 - 2mm. Most new drivers are designed to let you do this.) Then smooth the surrounding rock so that the hanger will sit well. Do all this smoothing last so that you don't have to drill a hole with a blunt drill.

When you leave, take your hangers with you. In wet caves especially, they only increase corrosion of the anchor unless well greased. It is also helpful to take some tool (wire hook, sparkplug cleaner etc.) for cleaning out dirty anchors.

Finally, place bolts with discretion. Perhaps the best one is that which will never be found again. Normally it is best to place them so they are readily visible to avoid a later caver missing yours and putting another nearby.



Bolting diagram

Steve Bunton

AN INCIDENT AT GUY CAVE, KATHERINE N.T.

Guy Bannink & Karen Magraith

Australian Caver 130 (1992)

In October 1991 an incident involving severe dehydration and suspected hyperthermia occurred in Guy Cave on Cutta Cutta Nature Reserve, during a Top End Speleological Society trip. Fortunately the incident was not as serious as it could have been, but it served to illustrate some of the unique caving conditions and safety requirements of the Top End.

There were four people in the party, two experienced NT cavers and two novices who were present for scientific purposes. They were physically fit and were well acclimatised to the NT conditions. The purpose of the trip was to go to the water table to inspect and sample shrimp, and investigate rumours of the presence of blind fish.

Both in Darwin and before entering the cave, the NT cavers impressed upon the novices the dangers of hyperthermia and dehydration, and they were advised to have frequent drinks and rest stops. The party entered the cave at 9pm, as the air flow into the cave cools the deeper passages at night and the return journey to the surface would be less stressful. Approximately two litres of water per person was carried along with spare lights, and scientific equipment. At the water table conditions were expected to be extreme, with temperatures around 31 degrees and humidity about 98%.

The trip to the water table, about 800 metres into the cave, took about one and a half hours. Most of this distance involved crawling or difficult walking. Every twenty minutes the party stopped for a rest and a drink. During these stops the novices were encouraged to drink. One of the novices, insisted that he was not thirsty. It was noted that both novices' overalls were completely saturated. There didn't seem to be any problems on the way in and both novices commented that they felt comfortable but were quite hot.

There was no evidence of foul air at the water table and the group spent about an hour collecting shrimp specimens and waited for traps to catch fish. Most of the cavers spent this hour lying around in the dark, which allowed them to cool down and wait in relative comfort.

Before the return journey all water containers were refilled. Shortly after starting, the novice complained of thirst, weakness and feeling overheated. His overalls were completely saturated with sweat, whereas the experienced cavers' overall were only just damp. The other novice was also hot, but was otherwise well. The party stopped to drink water and rest to allow the person to cool and rehydrate. As the party was moving to the surface the ambient temperature was dropping noticeably. After a short crawl he began to vomit and was unable to move for some time. He was eventually able to continue slowly, with someone else carrying all his gear (and the vomitus!). On the route he continued to vomit, and was becoming dizzy and incoherent. A decision was made to continue to move as opposed to stopping and sending for help, because the temperature was dropping and an inflowing breeze helped to cool the party.

With some firm handling, slow progress and a change in the route the party made an exit after two and a half hours. It normally takes about 30 minutes for experienced cavers to reach the surface from the water table. At no time did the group run out of water. On arrival back at camp the casualty was very tired and uncommunicative and retired to his sleeping bag after having some oral fluids

Our assessment was that the person was significantly dehydrated, hypotensive, (low blood pressure) and probably had suffered hyperthermia. The next morning, he felt much better, but was determined that he would never enter a cave again! Despite this unfortunate incident, the trip was not entirely unsuccessful, as a new

genus of shrimp was identified in the specimens collected at the water table.

Since this incident, TESS has changed its policy about which caves novices may enter, in order to prevent an incident which may be more serious next time. We have developed a set of safety guidelines, which includes a protocol for logging in and out of caves, and proposed guidelines for cave rescue in the Top End which take into consideration the extreme conditions in the caves and the dangers of dehydration and hyperthermia.

HEAT AND HUMIDITY IN THE TOP END

Karen Magraith and Guy Bannink

Australian Caver 131 (1993)

This is the second of the series on articles dealing with caving safely in the Northern Territory. This article looks at heat related disorders and their treatment.

With temperatures in the high twenties to low thirties, and the humidity usually over 90%, caving in the Top End is a strenuous exercise. The risk of heat stress and dehydration is always present and must be borne in mind on all trips.

The three heat related disorders which may occur are heat exhaustion, external heat injury and heat stroke. Heat stroke is the most serious of these, and is potentially fatal.

Risk factors for the occurrence of these problems include:

1) Temperatures over 35 degrees and humidity over 60%.

2) Increasing age.

3) Preexisting medical conditions, especially heart disease and diabetes.

4) The use of alcohol and certain drugs, including diuretics ('fluid tablets) and drugs used in mental disturbances.

5) Lack of acclimatisation to the tropical climate (this usually takes four to seven days).

Prevention

This is much easier than treatment.

1) Acclimatise to Top End heat before going caving.

2) Cave in the coolest part of the day.

3) Ensure adequate fluid intake, both before and during the trip. This must consist primarily of water

4) Rest frequently and don't over-exert yourselves.

It is easy to underestimate water requirements. Unless you drink regularly regardless of thirst, dehydration can occur very rapidly. We estimate that the average person moving through a cave would lose 500 to 1000ml of fluid each hour.

This point was illustrated to us in an experiment conducted on a Top End Speleological Society (TESS) trip. A group of TESS members measured body weights before and after a four hour trip, during which we all drank as much water as we normally would. I had been drinking frequently, and consumed almost two litres. At the end of the trip 1 had lost two kilograms, or 3.3% of my body weight. If 1 had not been drinking it would have been 6%. One caver was 5% dehydrated and would have been almost 10% if she had not been drinking water. Dehydration of 5% or greater usually necessitates hospital treatment, and levels of more than 10% can be life threatening. This exercise made us aware of the short time in which dehydration and death could occur in the case of cavers being lost or injured, or running out of water.

Recognition

Early recognition that someone is suffering from a heat related disorder or dehydration (which are very closely linked) is crucial to successful treatment.

Symptoms include:

1) Headache, weakness, dizziness, chills, nausea and vomiting, muscle cramps, confusion, incoherent speech, rapid, shallow breathing,

2) Cool clammy skin, (heat exhaustion or exertional heat injury) or

3) Hot dry skin (heat stroke), collapse and unconsciousness.

In the case of heat stroke, collapse may occur without any other preceding symptoms.

First Aid

The extent to which this needs to be taken depends on the severity of the symptoms.

1) Get the person to a cool place with good air circulation if possible.

2) Cool them down quickly as best you can. Wrap them in cold wet sheets. Cooling must be continued until the victim's temperature is 39 degrees or less. If there is no thermometer, keep cooling them until temperature can be measured, or they have fully recovered.

3) Give them fluids. Make the victim drink as much water as possible. Do not give salt or concentrated drinks (eg. Cola).

4) Massage the victim's arms and legs to improve blood flow and thus heat loss through the skin.

Although the heat related disorders described above occur uncommonly, TESS is conscious of the need to prevent heat stress and dehydration. When we go caving, each person must carry their own water supply. All cavers are made aware of the fact that thirst is not a good enough indication of the body's need for fluid and that they must drink regularly regardless of thirst. The party only moves as fast as the slowest, hottest person.

We impress upon all cavers the need to prevent heat stress and dehydration, and ensure that cavers are aware of relevant basic first aid measures. These factors are all especially important in the event of a rescue.

SUUNTO COMPASSES – TIPS AND TRAPS

Ken Grimes (Convenor: ASF Surveying and Mapping Standards Commission)

Australian Caver 141 (1997)

I think that most Australian cave surveyors use the SUUNTO KB-14 series compasses, and the matching PM-5 clinometer. These are compact rugged units, but there are some potential problems in their use that you must be aware of.

Sighting through the SUUNTO.

If you use a SUUNTO KB-14 series compass in the manner usually recommended you may find you are getting errors of several degrees in your bearings.

The "recommended" Two-Eye Method involves looking into the eyepiece of the compass with one eye and simultaneously looking with the other eye past the compass to the survey station. One's brain sees an image of the compass scale superimposed on the image of the station. The alternative One- Eye Method involves shutting one eye and alternatively looking through the compass eyepiece and over the top of the compass towards the station. With experience one can get a position where both the scale and the distant target can be seen simultaneously. This second method would seem less accurate but an experiment suggests otherwise.

Some time back I collected data at a UQSS S&T day. A group of 14 cavers took sightings at three distant features. Twelve used the recommended two-eye method, with first the left and then the right eye looking into the compass (the other two knew they had eye problems that made it impossible to use this method). Six of them then took sights using the one-eye method, looking over the top of the compass.

I averaged the results to get the presumed correct bearing for each feature, and calculated "errors" as differences from this mean. The standard deviation from the mean was about one degree for each station.

The Two-Eye Method was decidedly less accurate than the one-eye method for most people. 12 people (6 experienced surveyors, and 6 novices) took a total of 66 sights using the two-eye method. The average error (difference from the mean) was 1.1 degrees, but the maximum error was 3.8 degrees – this latter was from an experienced surveyor, who was however aware that he had one eye dominant over the other, and who normally used the one-eye method. There was little difference between the experienced cavers and the novices. However some novices initially made gross errors due to reading the scale in the wrong direction (I was the first to sight in each case, so I spotted these errors and showed them the correct way - which is right-to-left). Some novices also made gross errors with the clinometer reading in the wrong direction, or reading the 'percent grade' scale.

The One-Eye Method was more accurate, though one must remember that this was tried only by the six experienced cavers. The average error for the 6 people that did the one-eye method was 0.5 degrees, and the maximum error was 1.2 degrees. Again, the maximum error was from an experienced surveyor! But, not the same one as above. However, it was only in one of his three readings so perhaps he had an intermittent glitch?

The problem with the two-eye method would seem to be that some (many?) people have "lazy eyes" which do not always point in parallel directions. The problem becomes worse when one is tired – i.e. in the second half of a long surveying trip! I have this problem myself – possibly a result of many hours spent looking at stereo air-photos, where one deliberately swivels ones eyes in different directions!

Surveyors using Suunto compasses (and that is most of us) should check their own eyesight - trying both methods (and trying both left and right eyes to the compass window in the two-eye method). If you tend to get significant differences between the methods or between left and right eyes in the two-eye method then perhaps you should change to the one-eye method.

There is a SUUNTO model that has a prismatic housing mounted on the top. I am told that this is not as easy to use as the usual model, but it might be more accurate if used one-eyed.

Lighting the SUUNTO.

As with all compasses, one has to be careful not to bring magnetic or ferrous objects close to them. There was also a suggestion that the current through a light bulb might generate a significant magnetic effect. I experimented with my cave lights. My electric cap light had no effect when worn in the usual position. Switching it on & off made no difference. From this position it is possible to light the compass by holding your hand above and partly in front of the light so that some of the photons are bounced down onto the card – it helps if you have a clean hand! Moving
the cap lamp closer to the compass caused a deflection when it got within 5cm.

My Premier (hand held) carbide light started to effect the compass if held closer than 35cm. The brass helmetmounted carbides might be better.

Both my backup battery-powered pencil torches caused strong effects (regardless of whether they were turned on or off). Depending on just where you held it the effect could be seen while the torch was up to 15cm away from the compass. One torch had a metallic case (but I think it's aluminium) and the other was plastic but both gave similar effects. After a bit I thought to try a penlight battery (alkaline type) on its own. It also gave a strong effect - similar to that of the torch. There is a polarity effect - one end of the battery is north, the other south. So in effect any battery powered torch should be kept well away from a compass and not used for reading it!! With experiment I found that the effect was minimal if I lowered the torch vertically so it was exactly above the centre pivot of the compass card (i.e. the magnetic field was even on all sides of the compass) - but I would not rely on being able to do that accurately in a cave! I do not have a PetzI Zoom or similar unit with helmet-mounted battery. If you do, it might be worth testing it. In theory, a battery pack mounted at the back of a helmet should be more than 15cm from the compass, and also the 4 batteries usually mount in alternating directions and so might tend to cancel each other - but test your own unit.

Candies & cyalumes should not be a problem!

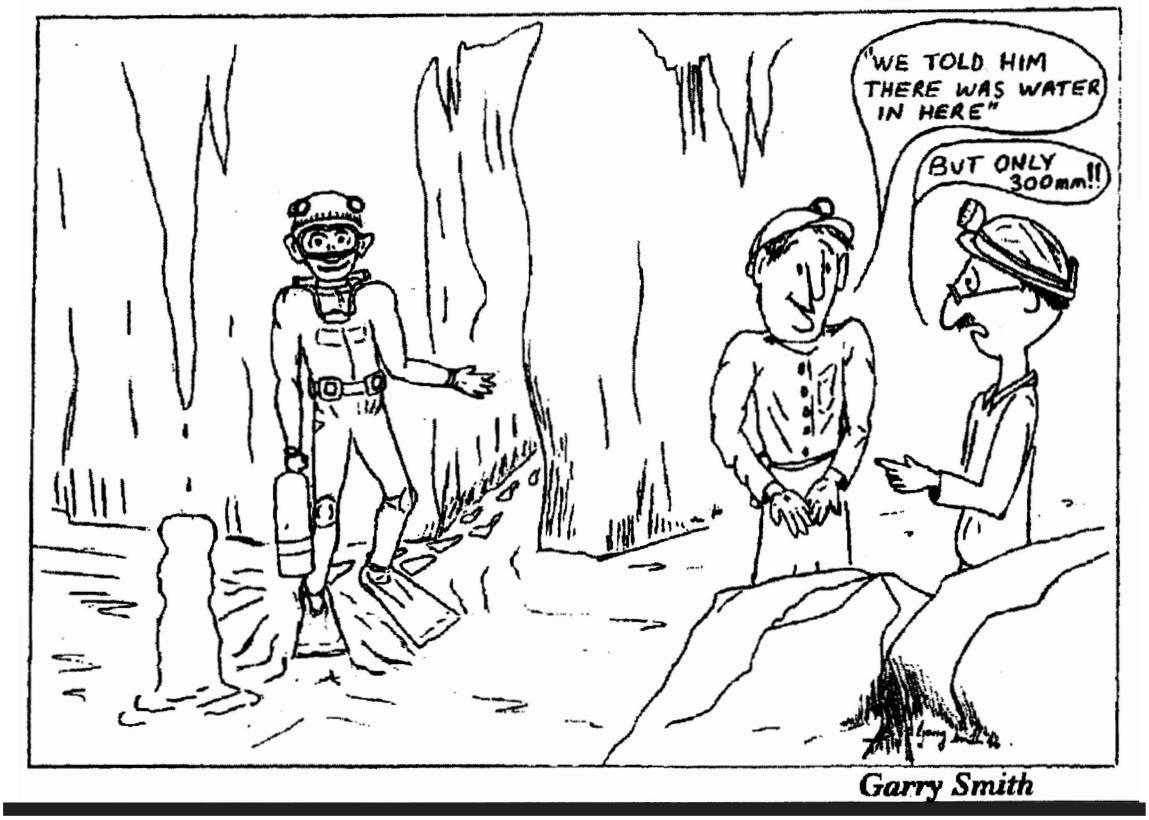
SUUNT0s with internal lights.

I have just bought a SUUNTO (KB- 14/36ORB) which has a built-in battery light. I have yet to use this in a real cave survey, but I tested it at home. Switching its light on and off had no effect. Removing the battery pack had no

effect. This is as one would expect - obviously SUUNTO have done a proper job on the design. The battery is a tiny (match-stick diameter) thing with a match-head sized bulb at one end. You press a rubber button to turn it on. The light & battery unit plugs into a hole in the side of the compass and is held in place by the friction of the rubber seal. I was uncertain about how water-proof this would be, but a Tasmanian user at the recent ASF conference indicated that he had had no problems in wet Tassie caves. I am not sure how long the battery lasts. I intend to extend its life by using my hand over my cap lamp to light the unit whenever I can, and only resorting to the internal light when that is impossible.

SUUNTO also has a KB-14/360RT compass with a Tritium "light". Tritium emits "soft" beta particles which cause fluorescence of a coated plate mounted above the card. A user at the ASF conference said that this light source was a bit weak, but the intensity of the glow could be enhanced by holding it in front of one's helmet light immediately before use. I once used a different brand of compass with a tritium light and found the light OK, but the compass itself was not! Note, that the tritium light becomes weaker with time (tritium has a half life of 12.5 years - so the light intensity will halve over that time).

These lighted versions of the SUUNTO cost about $50 more than the standard model, but are worth considering as they avoid the problems of magnetic effects from other light sources.



DISCIPLINES: Cave and Karst Science

From the foundation of ASF there has been a symbiotic relationship between those with interests tending to the scientific and those with a largely recreational interest in caves: caves cannot be studied or managed until they are discovered and surveyed. On remote-area expeditions in particular these have often taken place simultaneously. Most results from scientific work in Australian caves are published in Helictite or other similar journals and many preliminary studies have first appeared in Proceedings of the ASF Conferences. The Newsletter has been used as a medium mostly to assist cavers in related investigations, to alert readers to recent scientific work, and to sharpen their skills of observation and interpretation.

A TROPICAL PHENOMENON?

Norman Poulter

Caves Australia 163 (2004)

Following the 22nd ASF Conference in Rockhampton in early 1999, I was fortunate enough to be taken to "The Cave With The Thing That Went Thump" (E-5), a cave known more for its name than anything it contained. Just inside, I encountered a most unusual stalagmite decoration. It was not so much the stalagmite itself which was only about 300mm high which attracted my attention, rather the unique calcite "growth" at the top. The stalagmite was fed by quite rapid dripping just off the centreline of the decoration which had created an intricate "boxwork" pattern of micro-heligmites. There was much speculation at the time, as to what dynamics led to the formation of this incredible feature.

A few days later, I was back to photograph the feature in company with Angus Macoun (RSS), Mary McCabe, Dianne Vavryn and Nathan Berrill (CQSS). Several hours and rolls of film later, we struggled back through mosquito-infested foliage and encroaching darkness, to the vehicles. I was quite pleased with the results of some of the photographs. Angus was not so lucky, he had been using extension rings and suffered severe splashing on his lens whereas I had been using a bellows and bellows lens from a "stand-off" position, well out of the splash range.

During a trip to the Kimberley Ranges earlier this year, I was on a short trip (arranged for us by John Cugley (WASG)) to caves of the Ningbing Range, just north of Kununurra (I had visited the region twice before). The last cave visited was Nice Cave (6KNI-50), so named by the husband and wife team who discovered it, finding it was "nice" to get inside from the oppressive heat outside - the mere fact that the cave ultimately revealed nice decoration too, was a pleasant bonus.

Anyway, to cut a long story short, while photographing some of the cave's charms, I came across a stubby stalagmite with a striking similarity to the top of the stalagmite of "The Cave With The Thing That Went Thump". Although slightly further from the entrance and much lower to the ground than the 4E-5 feature, it was still forming under much the same circumstances i.e. rapid dripping.

Just how does it form? Is this type of decoration unique to the tropical regions or can it form under the same rapid dripping conditions anywhere in Australia - or the world for that matter?

I would like to close with a plug for East Kimberley caving. John Cugley could do with some help documenting the caves in this remote corner of Australia where the discovery of new and significant caves is virtually guaranteed - three were found during a morning's walk on our weekend jaunt during May. In some respects, the term "remote" is a bit of a misnomer, the Ningbing Range lies within 100km of Kununurra, the equally spectacular Jeremiah Hills are even closer to town - it's just that Kununurra is an awful long way from anywhere else. John can be contacted at PO Box 1845 Kununurra 6743. Winter is the most comfortable time to visit.

AQUATIC TROGLOBITES OF SOUTH AUSTRALIAN CAVES and SINKHOLES

Peter Horne

Australian Caver 111 (1986)

A considerable amount of cave research has involved the forms of life which are to be found in ‘dry’ cave environments, but until relatively recently, very few studies of ‘wet’ cave lifeforms had been undertaken in Australia.

Some workers long ago began recording the more obvious forms of life which were to be found in certain springs, ponds and open sinkholes (resulting in some instances in the discovery of rare or unique creatures as in Ewens and Picaninnie Ponds – Hallam and Lipson etc) but the first true troglobites to be found underwater in South Australia, a previously unknown species of crustacean was discovered and captured by this writer in January 1981 whilst engaging in recreational cave-diving near Mount Gambier, in the Lower South East.

The significance of this discovery was immediately obvious to the South Australian Museum’s Curator of Marine Invertebrates, Wolfgang Zeidler, who identified the centipede-like animal as a syncarid, and further studies showed that the specimens caught were well-adapted to cave environments having extra-long antennae, no eyes, and being found anywhere between the underwater twilight zone and the very deep regions of the dark zone. Previous discoveries of syncarids in Australia occurred many decades ago, in Victoria and Tasmania, where they were to be found in shallow surface pools and were not blind (pers. comm. W. Zeidler 1983). It is an interesting coincidence that the ‘type locality’ for the syncarids, L81 or “Fossil Cave” (also called the Green Waterhole) is also the sight of very significant fossil bone discoveries in recent years, where extinct species of kangaroo, cuckoos and Marsupial Lions, to name a few, were identified through their bones being carefully retrieved by cave divers (CDAA Occasional Paper #2, 1981).

Spurred on by this unexpected discovery our small group of interested divers began to spend much of our time collecting anything that moved underwater! Soon, we had found other unidentified life-forms, including molluscs, freshwater sponges (found mainly in the dark zone of two major sinkholes even beyond 40m depth), and more recently, blind amphipods. All of these specimens have now found their ways to the S.A. Museum for possible future study by interested parties.

Of interest is the fact that both syncarids and amphipods are frequently found in the same caves, usually those with very little pollution in the case of the larger cenotes or in shallow semi-permanent pools deep within the dark zones of some of the more common fissure-caves of the region. Productivity is evidently very low for all troglobites found underwater to date.

A cave which was unexpectedly found to contain blind(?) amphipods is NARRINA (F11) in the Flinders Ranges (Fig. 1) - not to be confused with NURINA, in the Nullarbor Plain, where amphipods have also been found recently (ASF Newsletter #101, 1983 p.3). A member of our underwater mapping party, Geoff Newman, took note of my somewhat casual comment to "look for anything that moved!" and to my amazement, discovered amphipods under a single decomposing bit of wood! This discovery in June 1984 is interesting in view of the fact that a much better equipped party had unsuccessfully explored this cave in 1978 specifically searching for underwater life-forms. The "nil sightings" of that trip prompted some to consider introducing fish into the cave to possibly observe 'troglobitisation' but fortunately, this was never done. This subsequent amphipod discovery proved that just because something isn't readily visible in a cave doesn't mean it isn't there!

I sincerely hope that the cave diving community and the caving groups can work together to add to the steadily-growing speleological knowledge of our Australian caves – with more trained and interested people entering this field, there is promise of many great discoveries to come.

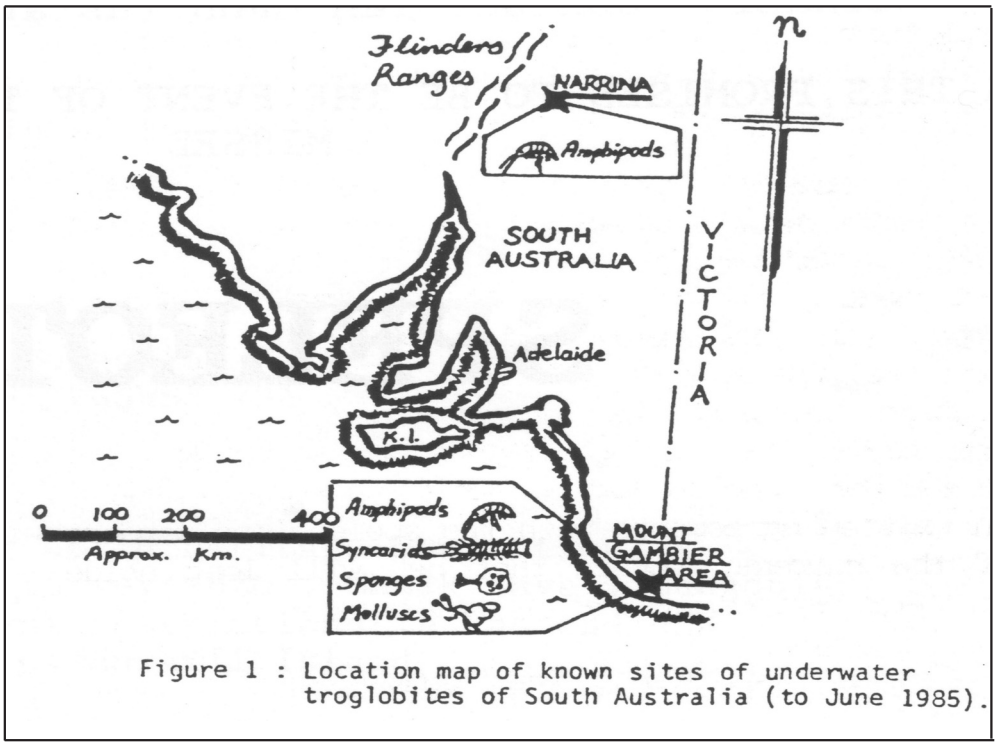


Figure 1 : Location map of known sites of underwater troglobites of South Australia (to June 1985).

BATS, CAVES AND CAVERS

Belinda Cardinal

Cavers are constantly reminded of issues regarding the preservation of the cave environment. These are of vital importance and include issues such as touching formations or walking on flowstone, trampling of mudbanks, following marked paths and removing waste. Cavers are aware of these issues and generally attempt to minimise their impact. For many years it has been recognised that human presence inside caves containing bat roosts has a detrimental effect on the inhabitants, however this information and advice on impact minimisation has been slow to reach the practical caver. Most cavers will have encountered bats or will encounter bats at some point. Many cavers are aware of the problems and do take steps to minimise their impact. However, other cavers are not aware of the importance of this issue or are unsure of the correct way to approach the situation.

We must try to remember that we enter caves as visitors and we should respect them as valuable geological sites as well as the bats only available habitat. Without these sites, cave dwelling bats can no longer exist.

Approximately one third of Australias 75 bat species rely on caves. In south-eastern Australia, there are three species of cave dwelling bats which may be encountered. These are the Large bentwing bat, Eastern horseshoe bat and Large-footed myotis. In the southern regions, cave dwelling bats are more likely to spend the majority of the cooler months in torpor. Torpor is a state of lowered metabolic rate where body function slows and the bat cools down to conserve energy over the winter months when insect availability is reduced. During this time the bat survives on accumulated body fat from the previous

autumn. Bats must wake from torpor from time to time in order to drink. For cave dwelling bats water is usually available from the cave roof or from condensation on the bats fur so the bat does not need to wake up completely. Waking from torpor requires the use of some of the bats stored energy. If the bat does need to fly in order to obtain water, more energy is used up. Bats usually pay for the cost of the flight by capturing insects on the wing. It is for this reason that bats are more likely to obtain their water on a mild night when insects are more likely to be available. Unnecessary arousal from torpor caused by disturbance from humans results in the bats using some stored energy. If they are woken during the day and therefore cannot leave the roost, they cannot replace the lost energy. Alternatively they may be woken on a cold night and unable to replace the lost energy since there are no insects available. The more often bats are woken from torpor, the more likely it is that they will not survive the winter. This aspect of bat biology should be a large consideration to any caver considering a trip during winter.

In northern regions of Australia, the number of species of cave dwelling bats sky-rockets. Due to the warmer weather in the north, the insect availability is higher and remains so year round. Unfortunately this does not mean that the bats are unaffected by disturbance. In all areas of Australia, disturbance of bats can easily lead to their leaving the safety of the roost. Bats are very active in warm conditions. Their agitation can be swift and if the disturbance is prolonged the bats will leave the roost, even in broad daylight, where they are easily caught by birds of prey such as falcons and currawongs. If the site is visited by people consistently it is possible that the bats will cease to use that site. Summer is the breeding season for cave-dwelling bats and they require very specific conditions for raising the young. This limits the available maternity sites (to only 5 in south-eastern Australia for bent-wings) and makes disturbance a real threat. Bats leaving a disturbed maternity roost may leave behind pups too young to fend for themselves.

Disturbance of bats does not require extreme behaviours. Sounds such as voices, walking through still water or the scrape of packs is enough. Light also causes disturbance. Disturbance of torpid bats is of most concern. If torpid bats are encountered unexpectedly, disturbance can be minimised by making as little noise as possible. This includes no talking, and moving very carefully through the cave, back towards the entrance. If the bats are in torpor, they will not wake immediately. This does not mean they haven't been disturbed. They are slowly bringing their body temperature up to a level at which they are capable of flying. If the disturbance is very minor and lasts only a very short time, the bat may not reach full alertness and return to torpor, thus saving some energy. It is therefore advised that lights are not shone onto the bats. The very worst thing that can be done to a torpid bat is to touch it as this will definitely result in arousal. In this situation it is best to leave immediately. In summer there is virtually no way that you can enter a bat roost without disturbing them.

Most caves have had the presence or absence of bats recorded in the past. These records may be old but it does provide a starting point or an expectation for that site. The best way to minimise impact on bats is to simply refrain from visiting bat roosts when bats are present, especially in the depths of winter or the maternity roosts in the height of summer.

However, it may be known that bats may roost only in certain parts of a cave which can be avoided. This sort of information is usually only discovered by cavers diligently recording where bats are roosting on trip reports which helps build up a picture of bats cave use.

If a roost is used year round and vital work must be carried out, this work could be done at night (during a warm period to reduce the effect of waking bats from torpor) when the bats have the opportunity to safely leave the roost. In the event that this is impractical due to the location of the site the entrance could be covered to prevent bats from leaving the roost during daylight hours. However this measure, of covering the entrance, is a last resort and should only be done when all other options have been ruled out.

It is obvious that disturbance will not always be avoidable. Situations may arise where bats were not expected to be present at a particular site and the bats are disturbed before their presence is realised. If this does occur the best thing that a caver can do for the bats is simply to leave the site.

My involvement with bats stems from my research into Miniopterus schreibersii, the large bent-wing bat. 1 am undertaking a population genetics study of these animals throughout their southern distribution. It is hoped that this study will aid in the effective management of the populations. During the course of my research 1 have travelled extensively throughout Victoria, New South Wales and South Australia to many known bat roosts. My experiences with members of the Victorian Speleological Association, The Jenolan Trust, the respective parks and wildlife agencies and private landholders has demonstrated that most people, especially after seeing the bat at close quarters, are pleased to be able to contribute to the conservation of these vulnerable species. People wishing to assist in this project are encouraged to do so. 1 am interested in all information on roosting sites of the Large bentwing, especially (but not only) in the south and would greatly appreciate any assistance cavers may be able to provide.

If you are interested in helping to protect cave dwelling bats, there are a number of things that can be done:

Cavers can play a very important role in recording information about the distribution of cave bats. The trip report is the most basic way to record information. Other ways include contacting researchers such as the author or officers in the relevant state wildlife agency who have an interest or sending the records to state based Wildlife Atlas type system helps us all to develop an understanding of and familiarity with the animals we encounter.

Learning to identify different bat species is useful for cavers. This helps provide more detailed information on trip reports.

Join the Australasian Bat Society (ABS).

Get a bats person to come and talk at your caving club (contacts through the ABS will probably be able to come up with someone just about anywhere), rope them into running a hands on bat experience trip or participate in someone's on going project.

Find a good bat book . (A good one is Sue Churchills 'Australian Bats') or surf the net, try Bat Conservation International or Australasian Bat Society for a starting point.

DISTINCTIONS

ASF Awards

Several awards are given by the ASF in recognition of the contributions and achievements of speleologists to ASF itself, to the reputation of Australian speleology generally, or to a particular club or special interest. Recipients range from scientists and cave managers to recreational cavers and to those who have devoted years of their life to cave conservation. Awards are usually announced biennially at Conferences.

Fellows of the Australian Speleological Federation (Life Membership)

1974	Elery Hamilton-Smith	1991	Nicholas White	2003	Peter Berrill
1985	Peter Matthews	1993	Lloyd Robinson		
1987	Andrew Spate	1997	Patrick Larkin		

Edie Smith Award (see "Who was Edie Smith" article in Australian Caver 154, 2001)
Awarded for outstanding service to Australian speleology over a long period of time. Edie Smith was a distinguished pioneer of Australian speleology, a life member of Tasmanian Caverneering Club and the first woman President of an Australian speleological society, Canberra Speleological Society.

1972	Ted Lane	1985	Dr Albert Goede	1997	Dr R. A Osborne
	Dr Aola Richards	1987	Barry Loveday		Neil Anderson
1974	Dr Joe Jennings	1988	Dr Julia James	1999	C. Henry Shannon
1976	Elery Hamilton-Smith	1993	Ernst Holland	2003	Lex Bastian OAM
1978	Ben Nurse		John Bonwick		Rauleigh Webb
1980	John Dunkley	1995	Dr Brian Finlayson	2005	Arthur Clarke
1981	Dr Kevin Kiernan		Dr Rod Wells		Alan Warild
	Vince Kinnear		Dr Grant Gartrell		

Award of Distinction
Established to recognise those who have made an especially notable contribution to speleology

1994	Doreen & Norm Pershouse	1997	Nopparat Naksathit	2001	Dr Bill Humphreys
			John Spies	2005	John & Glenda Wylie

Certificate of Merit

1983	Bruce Dunhill		Evalt Crabbe		Keith Tritton
	Ross Ellis		Grace & Don Matts		Wayne Tyson
	Dr Julia James		Stuart Nicholson	1999	David Martin
	Ian Lewis	1988	Miles Pierce		John Toop
	Neil Montgomery		Graham Pilkington	2001	Peter Dykes
	Lloyd Robinson		Paul Wilson		Mick Godwin
	C. Henry Shannon		Members of CQSS		Denis Marsh
	Roy Skinner	1991	Lex Bastian	2003	Julie & Peter Bauer
	Andrew Spate		Alan Cummins		Fr Ken Boland
	John Taylor		Jackie & David Lowry		Darren Brooks
1984	R.Michael Bourke	1993	Arthur Clarke		Daryl Carr
	Col Carter		Kevin Mott		Peter Horne
	Adrian Davey		Norman Poulter		Athol Jackson
	Stefan Eberhard		Trevor Wailes		Tom Porritt
	Rolan Eberhard		Rauleigh Webb		Susan White
	Greg Middleton	1995	Fred Aslin	2005	Stephen Blanden
	Barry Moore		John Brush		Louise Coleborn
	Alan Warild		Craig Hardy		Rob Foulds
1985	Ken Grimes		Ken Keck		Penny Jansen
	Andrew Pavey		Max Meth		John Kersey
	Les Pearson		Lloyd Mill		Bob Kershaw
	Tom Robinson	1997	Peter Ackroyd		
	Cathie & David Rothery		Peter Bell		
	Dr John Watson		Chris Dunne		
	Members of VSA		Bruce Howlett		
1987	Ron Allum		Neville Michie		

Awards in the Order of Australia (General Division)

Awarded by the Governor-General of Australia for achievement or for meritorious service, the following members of ASF have been recognised for services related to speleology:

Member (AM): Elery Hamilton-Smith (2001)
Medal (OAM:: Don Matts (1993), Anne Atkinson (1998), Norman Poulter (1999), Lex Bastian (2003)

ASF Publications

This list includes all publications and major reports by ASF, its Committees, Commissions and State Speleological Councils. It also includes titles published by the former Speleological Research Council Ltd, ownership of which was acquired by the Australian Speleological Federation Inc in 2000, and items published in cooperation with other institutions. At least one copy of these is archived and/or available from the ASF Library.

1. Serials

ASF Newsletter, Australian Caver, Caves Australia
1 – 6 (1957-59), irreg. 4to/f'cap, dupl..
7 - 22 (1960-63), qtly, 8vo, dupl..
23 – 52 (1964-71), qtly, 4to, dupl..
53 – 56 (1971-74), qtly, 4to, offset
67 - (1975-), qtly, A4, offset

Helictite: Journal of Australasian Cave Research
Published by E.A.Lane (to Vol. 13, 1975), then Speleological Research Council Ltd (to Vol. 36, 2000), and since by Australian Speleological Federation Inc.
1 - 11(4) (1962-73), qtly, 4to, offset
12 - (1974 – one or 2 issues per volume, 4to, offset

Australian Bat Research News
(in conjunction with CSIRO Div. Wildlife Research'
1 – 6 (1964-66), irreg, 4to, offset
7 – 13 (1967-1974), irreg., 4to, offset

Cave Management Newsletter
Issued irregularly: 1, July 1978 to 8, Sept. 1986; superseded by ACMA/ACKMA Newsletter.

2. Biennial Conference Series

Conference Proceedings

7th, Goolwa SA
P.Matthews, M.Matthews & A.L.Hill, 150pp, n.d.

8th, Hobart Tas
A.Goede & R.Cockerill, 100pp., 1972

10th, Brisbane Qld
A.Graham, 110pp, 1975

11th, Canberra ACT (Cavconact)
A.Spate, J.Brush, M.Coggan, 157pp, 1977

12th, Perth WA (Waccon)
A.Saar, R.Webb, 172pp, 1980

13th, Melbourne Vic (CaveConvict)
P.J.Mackey, 123pp, 1987

14th, Adelaide SA (Speleovision)
G.Pilkington, 174pp, 1984

15th, Hobart Tas (Speleomania)
(no editor named) published in Helictite, 23 (2): 37-59, 1985,

16th, Sydney NSW
I.Mann et al. published in Helictite 25 (2), 1987, 56pp.

17th, Tinaroo Qld(Tropicon)
L.Pearson, vi + 138pp, 1988

18th, Margaret River WA (Cave Leeuwin)
S.Brooks, 113pp. n.d.

19th, Launceston Tas (Tastrog)
(no editor given), 110pp, n.d. (loose-leaf & bound formats)

20th, Hamilton Vic (Vulcon)
G.Baddeley, 100pp, 1995 (issued as Precedings)

21st, Quorn SA
J.Walsh, 135pp, 1997

22nd, Yeppoon Qld (Cave Queensland)
D.Roberts (?), 147pp, n.d.

23rd, Bathurst NSW (2001 A Cave Odyssey)
C.Brown, 196pp, 2002

24th, Bunbury WA (UnderWAy)
R.Newton i/c (?), 274pp, 2003

25th, Dover Tas (DownUnder at Dover)
A.Goede & S.Bunton, 112pp, 2005

Proceedings for Conferences 21, 22, 23, 24 and 25 were also issued on CD

Conference Abstracts

Advance abstracts, programs and general information were issued for the following Conferences (name of editor given when mentioned):

10th (15pp.), 11th (A.P.Spate, 14pp.), 12th 10pp), 13th (15pp.), 14th (14pp.), 16th (I.Mann, 24pp.), 17th (….), 18th (included with Guidebook), 19th (?????), 20th (replaced by Precedings), 21st (P. & J.Krahenbuehl, J.Walsh, 14pp.), 22nd (12pp.), 23rd (J.Rowling, 32pp.), 24th (????), 25th (A.Goede, A.Clark, S.Bunton, 24pp.

Conference Guidebooks

11th Guidebook to the Caves of South-eastern New South Wales and Eastern Victoria. R.Nicholl, J.Brush, 85pp. (also includes Caves around Canberra, J.N.Jennings, 23pp.)

13th Victorian Caves and Karst: a Guidebook for the 13th ASF Conference. L.Mill, S.White, P.Mackey (eds.), 86pp.

18th Guide to Caves of South Western Australia, WASG, 24pp.

14th Speleovision Field Notes. G.Pilkington, K.Mott, G.Ninnes with CEGSA, vii + 76pp. (as CEGSA Occasional Paper # 6, 1984)

17th Tropicon Handbook (various), 7pp.

18th Cave Leeuwin, 32pp.

20th Vulcon Guidebook. G.Baddeley, 116pp

23rd Caves, Karst and Canyons: a Guide to Central-western New South Wales. E.Crabb (ed.), Evalt Graphics, Liverpool, 66pp. (published in lieu of a guidebook)

24th ?

Australian Cave Management Conferences

Organised with the support of the NSW Department of Tourism, the first Cave Management Conference at Jenolan in 1973 was also the first such conference held anywhere in the world, and ASF organised the first seven Conferences until the formation of ACKMA in 1987. Conference Proceedings were usually marked as

published by ASF along with the sponsoring government department. In 2001 all Proceedings were also republished in CD format in conjunction with ACKMA.

1976: Cave Management in Australia. (Jenolan 1973) E.Hamilton-Smith, 109pp.

1977 Cave Management in Australia II (Tasmania 1977) (with NPWS Tasmania). G.Middleton, 119pp.

1980 Cave Management in Australia III (Mt Gambier 1979) (with NPWS SA) (no editor given), 170pp

1982 Cave Management in Australia IV (Yallingup 1981) (with National Parks Authority of WA), J.Watson, 82pp

1990 Cave Management in Australia V (Lakes Entrance 1983) (with Buchan Caves Advisory Committee & ACKMA, 67pp.)

Cave Management in Australasia VI (Waitomo NZ, 1985)

Cave Management in Australasia VII (NSW 1987)

3. Consultant & Management Reports

1974: Cave Reserves of the Katherine Area: A Report prepared for the NT Reserves Board by the ASF. E.Hamilton-Smith, C.R. Champion, L.Robinson, 68pp.

1978: Yallingup Cave Park: A Management Plan, A.Davey, M.Pierce, K.Williamson with mapping by B. & F.Loveday, 120pp.

1978: Resource Management of the Nullarbor Region, WA. (to WA Environmental Protection Authority). A.Davey (ed.), 115pp.

1984: Jenolan Caves Resort – Some Management Issues (for NSW Dep't Leisure, Sport & Tourism). E.Hamilton-Smith (ed.), vi + 165pp.

1985: National Estate Grant Report, Project 74/5-02 (NSW): Cave Information. P.G.Matthews, 160pp.

1988: Jenolan Caves and Karst: The Resources and their Management. J.Dunkley, K.Kiernan, E.Hamilton-Smith (in) Jenolan Caves Reserve Draft Plan of Management Vol. 2: Specialist Papers. Cameron McNamara Consultants for Tourist Commission of NSW and Crown Lands Office, 51pp. + 5 appendices 20pp.

2000: Karst of the Central West Catchment, NSW: Resources, Impacts & Management Strategies. J.Dunkley, P.Dykes, 103pp.

2000: Karst of the Central West Catchment, NSW: Supplementary Report. P.Dykes (ed.) (limited circulation), 60pp.

TANTANOOLA – mentioned as being at printers in AC#98 – where is it?

NARACOORTE study – no copy held

4. Cave Conservation and Management Submissions

1973: (Submission to the Minister for the Environment and Conservation and the Minister for Primary Industry on the) Proposed Pike Creek Dam. (no author given), 8pp incl. maps & photo.

1973: Conservation of Mullamullang Cave, Western Australia. Submission of ASF to the Committee for Conservation through Reserves, Dep't of Environmental Protection, Gov't of Western Australia. J.R.Dunkley (ed.), 8pp.

1974: (n.d.) (Report to the NSW Lands Department on) Proposed Development of Caves and Surface Areas of the Bungonia Caves State Recreation Reserve, A.Pavey, 15pp. incl. maps (NSWSC)

1975: Conservation and Management of the Nullarbor Caves (to WA Dep't of Conservation and Environment.

1975: (n.d.) Master Plan for the Development of Jenolan Caves (to NSW Dep't of Lands), J.Dunkley, 30pp

1979: An Introductory Information Submission on the Deua National Park. P.Bowers (coordinator), 11pp + photos (NSWSC)

1983: Alice Springs to Darwin Railway: Draft Environmental Impact Statement (to Dep't of Home Affairs & Environment). R.J.Webb, 5pp.

4. Conservation & Management Series

1962: Caves and Conservation: being the Report of the ASF Conservation Committee. E. Hamilton-Smith (convenor), 4to, 9pp.

1988: The Management of Soluble Rock Landscapes: an Australian Perspective. K.Kiernan, 62pp. (reprinted 2002)

5. Bibliographic & Abstract Series

1970-1979 Australian Speleo Abstracts
(in association with Sydney Speleological Society)
1970(1) – 1972(2) bi-annual, 4to, dupl..
1973, 1974, 1975 annual, A4, dupl.
1976-1979 single volume, A4, offset.
1978 (n.d.) A Bibliography of the Jenolan Caves Pt 1: Speleological Literature, J.R.Dunkley, 4to. 52pp.
1981: Bibliography of Caves and Karst in Australia. P.B.Matthews & E.Hamilton-Smith, 11pp. (also published in Cave Management Newsletter 3 (1981) and in Cave Management in Australia IV, pp. 73-82.
1988: A Bibliography of the Jenolan Caves Pt 2: Literature. J.R.Dunkley, A4, 45pp.

6. Cave and Karst Documentation Series

1968: Speleo Handbook. P.Matthews, 4to, 322pp.
1972: An Index to Cave Maps in NSW (compiled by A.J.Pavey), f/cap dupl., 54pp.
1979: Checklist of Australian Caves and Karst. P.G.Matthews, A4, 71pp.
1985: Australian Karst Index 1985. P.G.Matthews, 4to, 494pp. (reprinted 2002, also reprinted 2002 in same format listing only caves in NSW & ACT)
1994: Thailand Caves Catalogue. J.R.Dunkley, A4, 44pp.

7. Digest Series

1973: Australian Speleology 1971. A.J.Pavey (ed.), A4, 160pp
1974: Australian Speleology 1972. D.Gillieson (ed.), A4, v + 110pp.

8. Australian & International Cave & Karst Series

Australia

1967: Caves of the Nullarbor: a review of speleological investigations in the Nullarbor Plain, southern Australia. J.Dunkley & T.M.L.Wigley, 4to, vii + 66pp, photos, maps

(Second edition reprinted & updated, 1978, 64pp.)

1971: The Exploration and Speleogeography of Mammoth Cave, Jenolan, J.R.Dunkley assisted by E.G.Anderson, 63pp. (2nd edition updated with additional material by P.J.Winglee, 1978, 62pp.)

1976 Caves around Canberra. J.N.Jennings, 23pp. (appended to Proceedings of 11th ASF Conference Guidebook, apparently also published separately)

1995 Wee Jasper Caves. J.M.James, D.J.Martin & B.R.Welch (eds.), 46pp.(second edition, 1995, 46pp.)

Papua – New Guinea

1974: Papua New Guinea Speleological Expedition (NSRE): the Report of the 1973 Niugini Speleological Research Expedition to the Muller Range. J.M.James (ed.), A4, 69pp.

1980: Caves and Karst of the Muller Range: Report of the 1978 Speleological Expedition to the Atea Kananda, Southern Highlands, Papua New Guinea. J.M.James & H.J.Dyson (eds.), A4, 150pp.

Thailand

1986: Caves of North-west Thailand. J.R.Dunkley & J.B.Brush, 1995, A4, 62pp.

1994: The Caves of Thailand. J.R.Dunkley, 124pp. (also Addendum 1995-97 published 1997, 12pp.)

9. Cooperative Publications

1976: The Caves of Jenolan 2: The Northern Limestone (with Sydney University Speleological Society), B.R.Welch, 131pp,

2000: Discovering Caves. (multiple authors) Kit containing poster, Activities & Fact Sheets (with Australian Geological Survey Organisation)

2001 ACKMA Insights: CD containing Proceedings of Cave Management Conferences (with ACKMA)

2003: Beneath the Surface: a natural history of Australian caves, B.Finlayson, E.Hamilton-Smith (eds.), University of NSW Press, 182pp.

10. Internal Publications

1972 (? n.d.) Administrative Handbook. E.Hamilton-Smith (ed.), 4to, 25pp.

1983: Australian Karst Index: Data Preparation Manual. P.G.Matthews, A4, 70pp.

1985: Administrative Handbook. M.Pierce (ed.), A4, 30pp.

1997 Administrative Handbook. M.Coggan & P.Nicholson (eds.), issued in A4, A5 & electronic versions, approx. 106pp.

11. Miscellaneous books

1974: Caves through the Ages colouring book. M.Dorrell & J.M.James, drawings by George Hangay, 15pp.

1958 (n.d.) Caving in Australia (no author given), 24pp.

1985: Jenolan Caves: as they were in the nineteenth century. J.R.Dunkley, 60pp.

1995: Caving Safety Course Manual 1.1 ASF-CLAG (Caving Leadership Accreditation Group – Tas). J.Butt & D.Morgan, 92pp.

ASF OFFICE BEARERS

An incomplete list of office bearers! If anyone can assist us with further information please contact the editors. In particular not all vice presidents are listed here. Apologies for inaccuracies!

Year	Meeting venue	President	Vice-President	Secretary	Treasurer
1957	**Adelaide**	Brian J.O'Brien		E.Hamilton-Smith	B.Nurse
1958	Sydney	Brian J. O'Brien		E.Hamilton	B.Nurse
1959	**Hobart**	Joseph .N.Jennings		E.Hamilton	A.Hunt
1960	Melbourne	E.Hamilton-Smith		P.Aitken	A.Hunt
1961	**Canberra**	Warren Peck		E.Lane	R.Paine
1962	Sydney	Warren Peck		E.Lane	R.Paine
1963	**Kempsey**	E.Hamilton-Smith		P.G.Matthews	J.Noonan
1964	Melbourne	E.Hamilton-Smith			J.Noonan
1965	**Perth (Araluen)**	E.Hamilton-Smith		T.Bain or P.G. Matthews	J.Noonan
1966	Canberra	Roly Webb		J.Dunkley	J.Noonan
1967	**Mirboo North**	Roly Webb	A.Spate	.Dunkley	J.Noonan
1968	Orange	Roly Webb	A.Spate	E.Crabb	J.Noonan
1969	**Goolwa**	Roly Webb	A Spate	H.Dengate	J. Noonan
1970	Melbourne	Roly Webb	A.Spate	E. Crabb??	J. Noonan
1971	**Hobart**	E.Hamilton-Smith	A.Spate	M.Pierce	J.Taylor
1972	Canberra	E.Hamilton-Smith		M.Pierce	J.Taylor
1973	**Sydney**	E.Hamilton-Smith	W.Counsell		J.Taylor
1974	Melbourne	E.Hamilton-Smith	L.Brown, Roatch	A.Culberg	J.Taylor
1975	**Brisbane**	Nicholas White		A.Culberg	J.Taylor

1976	Wollongong	Nicholas White	L.Brown, A. Spate, A. Skinner	A..Culberg	J.Taylor
1977	**Canberra**	Nicholas White	A Goede, K. Lance, L. Robinson	A..Culberg	J.Taylor
1978	Wollongong	Nicholas White	A Goede, K. Lance, L. Robinson	A..Culberg	J.Taylor
1979	**Perth**	Ken Lance	A.Pavey, G.Pure. J.Cundy	A..Culberg	J.Taylor
1980	Buchan	Ken Lance	G.Pure	P.Radcliffe	L.Mill
1981	**Melbourne**	Ken Lance	John Dunkley, M.Pierce, Julie Moore	C.Rothery	L.Mill
1982	Canberra	Ken Lance		C.Rothery	L.Mill
1983	**Adelaide**	John Dunkley	Rauleigh Webb, S. Nicholas, Willson	C.Rothery	L.Mill
1984	**Wollongong**	John Dunkley	M.Armstrong S.Nicholas D.Warden	T.O'Leary	L.Mill
1985	**Hobart**	John Dunkley	M.Armstrong S.Nicholas D.Warden Rauleigh Webb,	T.O'Leary	L.Mill
1986		Lloyd Robinson	M.Armstrong, I.Mann, K.Mott, C.Parr, A.Spate	T.O'Leary	L.Mill
1987	**Sydney**	Lloyd Robinson	M.Armstrong, I.Mann, K.Mott, S. Nicholas, A.Spate	T.O'Leary	L.Mill
1988		Lloyd Robinson	P. Larkin, K.Mott, C.Parr, Rauleigh Webb,	T.O'Leary	L.Mill
1989	**Tinaroo, Qld**	Lloyd Robinson	P. Larkin, L.Mill, Rauleigh Webb, P.Berrill	C.Dunne	B.Ferrari
1990		Lloyd Robinson	P. Larkin ,L.Mill, Rauleigh Webb, P.Berrill	C.Dunne	B.Ferrari
1991	**Margaret River**	Lloyd Robinson	L.Mill, Rauleigh Webb, P.Berrill	C.Dunne	B.Ferrari
1992		Lloyd Robinson		C.Dunne	B.Ferrari
1993	**Launceston**	Miles Pierce		C.Dunne	C.Riley
1994		Miles Pierce	P. Larkin, P.Berrill, P. Kraehenbuhl V.Schuman	K.Vaughan-Taylor	C.Riley
1995	**Hamilton**	Brendan Ferrari			C.Riley
1996		Brendan Ferrari			C.Riley
1997	**Quorn**	Peter Berrill			C.Riley
1998	Melbourne	Peter Berrill			C.Riley
1999	**Yeppoon**	Peter Berrill			C.Riley
2000	Canberra	Peter Berrill	J.Dunkley (SVP)		G. .Matts
2001	**Bathurst**	Peter Berrill	J.Dunkley (SVP)	K.Rowsell	G. .Matts
2002	Melbourne	John Dunkley	N. White (SVP)	K.Rowsell	G. .Matts
2003	**Bunbury**	John Dunkley	J.Anderson	K.Rowsell	G. .Matts
2004	Mittagong	John Dunkley	J.Anderson	W.Weiss	G. .Matts
2005	**Dover**	Jay Anderson	J.Dunkley (SVP)	W.Weiss	G. .Matts
2006	Sydney	Jay Anderson	N. White (SVP)	W.Weiss	G. .Matts

CONFERENCE DATES AND VENUES

ASF Conference years, names and venues.

Year		Conference name	Conference venue
1957	1	***Inaugural Conference***	Adelaide
1959	2		Hobart
1961	3		Canberra
1963	4		Kempsey
1965	5		Araluen (WA)
1967	6		Mirboo North (Vic.)
1969	7		Goolwa (SA)
1971	8		Hobart
1973	9	*Nibicon*	Sydney
1975	10		Brisbane
1977	11	*CavConACT*	Canberra
1979	12	*WACCON*	Perth
1981	13	*CaveConVict*	Melbourne
1983	14	*SpeleoVision*	Adelaide
1985	15		Hobart
1987	16		Sydney
1989	17	*Tropicon*	Tinaroo (Qld)
1991	18	*Cave Leeuwin*	Margaret River
1993	19	*TasTrog*	Launceston
1995	20	*Vulcon*	Hamilton
1997	21		Quorn (SA)
1999	22	*Cave Queensland*	Yeppoon (Qld)
2001	23	*2001 A Cave Odyssey*	Bathurst
2003	24	*UnderWAy*	Bunbury
2005	25	*DownUnder at Dover*	Dover
2007	26	*Caves Craters & Critters*	Mt Gambier

VOLUME 38 (1) 2002
Helictite
Journal of Australasian Speleological Research

VOLUME 39 (1) 2006
Helictite
Journal of Australasian Speleological Research

Thylacoleo carnifex, Victoria Fossil Cave, Naracoorte. Ken Grimes

Blue stalactite, Cli[illegible]n Garry K. Smith

VOLUME 38 (2) 2003
Helictite
Journal of Australasian Speleological Research

Entrance doline to Nowranie Cave, Camooweal. Stefan Eberhard

VOLUME 37 (2) 2001
Helictite
Journal of Australasian Speleological Research

Christmas Island Karst
special issue