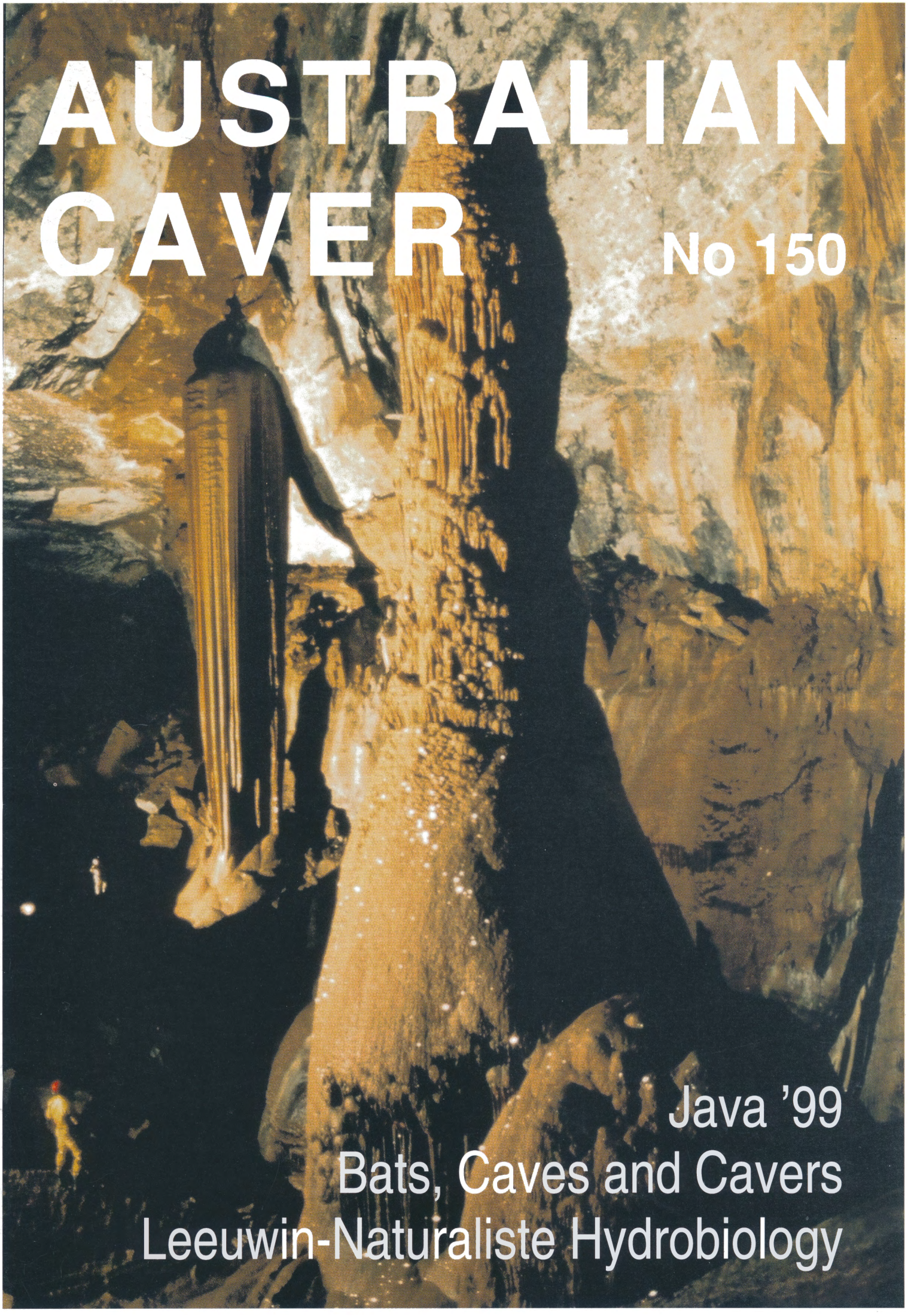
AUSTRALIAN CAVER

No 150



Java '99

Bats, Caves and Cavers

Leeuwin-Naturaliste Hydrobiology

2001 A Cave Odyssey

23rd Biennial Conference of the Australian Speleological Federation

28th December 2000 - 3rd January 2001

Bathurst NSW, Australia

Contact PO [redacted]

COMING EVENTS

28th December 2000 to 2nd January 2001. 23rd A.S.F. Bi-ennial Conference in Bathurst (see Notices section for further details). Contact: the Conference Convenor, Angus Macoun on [redacted]

16-18 June 2000. ACKMA AGM Buchan Caves, Victoria.Registrations close 13 June 2000. Contact: Dennis Rebbechi, P.O. Box 1450, Southport, Qld 4216. Tel & [redacted]

2001 July International Congress of Speleology, Brasilia, Brazil

Coming in the next Issue of Australian Caver no 151:

Mt Etna Special!

edited by CQSS (issue 151 only)

Please send all articles for issue 151 to:

Debbie Roberts - [redacted]

Articles & photos relating to the Mt Etna campaign particularly welcome!

Australian Caver Issue No 150 - Feb 2000

Editor (this issue)
Sherry Mayo

Please send articles for issue 151 to:
Debbie Roberts
[redacted]

"Australian Caver" is published quarterly in the months of February, May, August and November by the Australian Speleological Federation Incorporated.
PO Box 388, Broadway, NSW 2007
[redacted]

All contributions are welcome.

Advertising rates are as follows:
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Smaller sizes available upon request. For upfront payments on a series of four advertisements a 10% discount shall apply.

The views expressed in the Australian Caver are not necessarily those of the editor or of the ASF Australian Speleological Federation Inc.

Contents

Front Cover: The Khan stalagmite and The Begum column, Kubla Khan Cave, Mole Creek, Tasmania. Photo Stefan and Rolan Eberhard.

Back Cover: "Alice in Wonderland", caving in the Kimberly. Photo Stefan Eberhard.

Inside Back Cover: Blind Nullarbor cave cockroach, Trogloblatella nullarborensis, on tree root. Photo Stefan Eberhard.

Editorial

Welcome to issue 150 of Australian Caver. This is not as previously advertised dedicated to Mt Etna, this will instead be featured in the next issue nº 151. Nonetheless there is an interesting range of articles within ranging from cave science and conservation to cave exploration in Java.

This is also my final issue as editor. My 2nd daughter is due to arrive within the next 4 weeks which will leave me no spare time to devote to magazine editing! As yet there is some uncertainty as to who will be replacing me so if you're interested IT'S NOT TOO LATE TO VOLUNTEER! Editing Australian Caver does involve a fair amount of work but it is very satisfying to see the end results landing in the mailboxes of your fellow cavers.

Finally, I'd just like to extend my thanks to all the contributors who have sent me so many great articles. It's the efforts of the contributors, rather than the editor, that make the magazine worth reading, so please keep those articles coming!

NEWS &NOTICES

DIVA OZTeK2000 - Australian Diving Technologies Conference, 08-09 July 2000, Melbourne

The Australian Diving Technologies Conference is on again! In conjunction with the Dive Industry of Victoria (DIVA) Dive Expo and the Melbourne BIA Boat Show the OZTeK200 Conference will be the premier Diving Conference of the region for 2000. Held over two days on 08-09 July 2000 at the Melbourne Exhibition Centre the conference is central to Melbourne city and all amenities.

Well known International & local speakers will highlight two days of "Talking Tech" and OZTeK 2000 will build on the successful inaugural OZTeK99 conference held in Sydney last April.

Already confirmed are: Gary Gentile, wreck diving explorer and author (USA), Jarrod Jablonski, world record cave diver and WKPP Training Director (USA), Olivier Isler, record setting cave diving pioneer & explorer (Switzerland), Tom Mount, IANTD CEO and ex Chairman of the NACD (USA), Nuno Gomes , world record deep diver & cave diving explorer (South Africa), Chris Parrett, author of the ABYSS Dive Planner (USA), Lamar Hires, Dive Rite CEO and world renowned cave diver (USA)

Additional international and local speakers will be confirmed over the coming months. With both formal presentations, equipment workshops and industry updates the OZTeK2000 Conference will cover Cave Diving, Wreck Diving, Tech Diving, Rebreathers, Decompression Theory, Dive Planning and diver Physiology. Try dives on current recreational and technical rebreathers will be available and a full list of units available for show will be announced shortly.

Already sponsored by DIVA, TDI, IANTD, Dive Rite/Aqua Tech, Poseidon Diving Systems, Abysmal Diving and Dive Log Australasia additional sponsorships inquiries are welcome. Exhibition space will be available through DIVA and the Victorian Dive Expo.

Ticketing details are to be advised but will be available from a number of outlets in Victoria and around the country. Look out for a SUPER PRIZE RAFFLE and Door Prizes! Accomodation packages being arranged by Always Dive Travel, the Offical OZTek 2000 Travel Consultants, and will be announced shortly.

Any questions regarding OZTeK200, sponsorship arrangements, speaker submissions and exhibitors can be emailed, phoned or faxed to the following members of the organising committee:

Jane Bowman, President DIVA (ph. 03-9579 2600, fax 03-9563 8594, email info@abocean.com.au) Barrie Heard, IANTD Australia (ph 03-5627 6474, fax 03-5627 6441, email bheard@dcsi.net.au) Richard Taylor, TDI Australia & NZ (ph 0500 834 269, fax 02-9958 3795, email tdi_aust@compuserve.com)

See you there!

Richard Taylor

All Over Down Under - news from SRGWA

Caving has been quiet but productive over the last few months. During July, members of SRGWA led a predominantly Australian expedition to continue exploration of vertical caves in the Pacitan region of East Java, Indonesia. As well as continuing the surveys in the extensive systems of L. Ombo and L. Jaran, discovered during previous expeditions, the team found several new, challenging systems. Further trips to the region are planned.

A Nullarbor trip in September focussed some of its attention to areas bordering the Trans Australian Railway. SRGWA member Paul Devine had made some cave and troglobitic fauna discoveries in this region over the past year or so and wanted assistance surveying the finds. One cave harboured 45 Tartarus spiders that differed markedly from

Errata and Apology

Last issue (149) contained some errors and omissions regarding photos from Peter Ackroyd's Nullarbor article. The photo of Peter Ackroyd digging out a rockhole on page 1 was taken by Max Meth, the photo of the ladder climb in Thampanna Cave on page 10 was taken by June MacLucas, and all the remaining photos accompanying the article were by Peter Ackroyd.

their southern relatives in that the females spin a vertical or horizontal flat sheet web [similar to juvenile males] rather than the characteristic conical web found closer to the coast. The Janusai muiri spider also inhabited one cave - this greatly expands the range of both spiders. A live troglobitic centipede [first seen by SRGWA back in 1987] was captured in Nurina Cave.

A long-term climate study has commenced utilising one of the club's data loggers in Crystal Cave [6Wi-62] in the Leeuwin-Naturaliste Ridge. The logger will be placed in the cave [recording CO2, temperature and humidity] for two weeks every three months over a one year period in the first instance. The resulting data will then be correlated with surface conditions obtained from a nearby Bureau of Meteorology automatic recording station.

Data recorded during October 1999 indicated that the cave temperature variation was only 0.2°C.

The society continues seeking research funding for the Nullarbor fauna caves, recently missing out on one source but reaching the short list of another. More applications are in the pipeline.

Norman Poulter OAM

Another karst terminology reference

The US Environmental Protection Agency has just published "A Lexicon of Cave and Karst Terminology with special reference to environmental karst hydrology"

It is a 200 page document and is available in Acrobat format on

http://www.epa.gov/ncea

They also have a limited numberof hard copies available.

Elery Hamilton-Smith

Updated ASF Constitution

Anyone who needs the latest copy of the ASF constitution it has been updated and replaces the old version at:-

[redacted]

A link already exists to this constitution from the ASF site.

Rauleigh Webb

Wanted: Editor for Australian Caver

To take over editing the ASF's quarterly journal from issue 151 onwards (issue 151 is due out in May 2000).

The editor will need a reasonably powerful PC and will be supplied with up-to-date page layout software. The editor's task is to layout each issue of Australian Caver and to output it in a suitable electronic format for sending to a printer. Printing and distribution are handled from from that point by Angus Macoun.

The editors job is a busy but rewarding one. It makes a valuable contribution to the activities of the ASF without being too involved in the politics! If you think you might be interested but want to find out more first, you can contact the current editor, Sherry Mayo on (03) 9533 0437 or mayo@mst.csiro.au.

Wanted: Advertising Coordinator for Australian Caver

It involves:

* Seeking out advertisers;
* Liaising with the Editor and advertisers to ensure correct advertising copy and position in the Journal;
* Liaising with the Publisher and advertisers to ensure correct billing.

This position will inject funds which will allow for:

* Better quality Journal with better paper, print quality, size and colour;
* Less funds required from the Federation's budget which will keep our fees low.

If you wish to make a positive contribution without much time outlay, this is the job for you!

Expression of interest in either position should be forwarded to:
Angus Macoun [redacted]

ACKMA NOTES

The Australasian Cave & Karst Management Association Inc. (ACKMA Inc.) will be holding its Annual General Meeting at Buchan Caves, Victoria, on the weekend of 16-18 June. The program is as follows:

FRIDAY, 16th June:

Delegates arrive. BBQ in Buchan Caves Reserve on Friday Night. Provided by Parks Victoria. 6.00pm start.

SATURDAY, 17th June:

8.30 am. ACKMA Committee meets.

11 am. ACKMA Annual General meeting. Venue: Buchan Valley Log Cabins Conference Centre.

12 Noon. Lunch. Provided by Parks Victoria.

1pm onwards. Tours of Fairy, Royal, and Federal caves. Discussion of management issues, etc.

7 pm. Dinner. At Willows Café Restaurant. 3 Course Meal (in registration fee, drinks at own expense).

SUNDAY, 18th June:

8.30 am. Trip to the Potholes. Surface walk, discuss issues.

10.30am. Tour Lilly Pilly, Shades of Death, and Murrindal Caves.

1pm (approx). Finish. Members depart. Afternoon caving will be arranged on request.

Members of any ASF-affiliated Club are most welcome to attend the ACKMA AGM, and any associated field trips and functions. Accommodation in Buchan is each individual's own responsibly. Those wishing to join with ACKMA members for any lunch, or the Saturday night dinner, do need to book. The fee is $35.00, which covers all meals (except breakfasts). Bookings close on 13 June with: Dennis Rebbechi, ACKMA Treasurer, [redacted]

Letters

An Open Letter to the ASF Executive from Elery Hamilton-Smith & Miles Pierce re: ASF Documentation Project

This letter is prompted by the recent decisions of the ASF Executive in relation to the Karst Index Data Base and related questions. However, it is based not on any sort of knee-jerk reaction, but in both our long experience in speleological administration and our professional experience over many years in the management of information systems.

We commend the Executive for seeking a range of opinions as part of their deliberations on this important matter. The issues appear to have been tackled in a positive way, and we trust the outcome will be a profitable one. However, we write with the intention of furthering the achievement of the overall project,

1. The currently available software, not withstanding its DOS-based operational constraints, is proving itself and functioning smoothly in actual use. The 1985 data has been fully entered to the new database, and VSA is successfully adding new data. We believe that wherever feasible, state co-ordinators should continue to input new data to the record for their state while development of the new generation software proceeds. This will achieve two things:

* It will avoid having a prolonged delay for entry of new data when the new generation of software is developed and fully tested. There is no question that if the new software is to be effective (see below), data from the current system will be completely and easily transferable to the new system.

* It will mean that state co-ordinators will have current experience in the input and management of the data base, and so will be able to better define their own needs, and make a constructive contribution to the design of the new generation software. Without this experience, the new software will be less likely to met the real needs of its users.

2. Turning to the design of the new system, we cannot agree that the new system should be windows-based as demanded by the resolution of the Executive. For maximum data portability and ease of access, it should be platform-independent and hence accessible to the end user irrespective of the platform being used (which might be Windows, Macintosh, DOS, Unix, Linux, or even others).

Although the use of Microsoft Access has been considered and sometimes advocated, we would see this as particularly inappropriate, given the Microsoft practice of version incompatibility. It would only provide a short-term solution, and surely the whole project must be seen in the long term. We support the proposal by Jill Rowling and Mike Lake that a web-based solution is probably the best way to proceed, although we suggest the use of JAVA be also investigated. The stipulation that it be mouse-driven is un-necessary.

We also note the phrase 'readily compatible with a GIS System'. The issue is not one of compatibility with A system, but rather achieving a format and data transfer protocol which is acceptable to any GIS systems (This is understood to be the case with the current software).

3. Although the resolution suggests that 'field definitions and specifications of the existing ASF KI data system will be made available. . .", this is not sufficient. The new generation software will only be fully viable if it actually conforms with the key structure, field definitions and data transfer protocol as they currently stand. The key structure is vital to maintaining the uniqueness of each record and the relational character of the database. New field definitions, of course, may be added, but the existing ones are vital to preserving the integrity of existing data bases. Finally, the current data transfer protocol ensures full portability.

4. We note that although the executive consider the objectives of the Documentation Commission to have been achieved, most of the terms of reference refer to continuing processes which are not provided for by simply developing new generation software. Attention needs to be given to how these will be implemented.

In dealing with these issues, consideration should also be given to the fact that since the terms of reference of the Documentation Commission were compiled, and properly included due reference to the International Union of Speleology, there are at least 10 major new players, including at least four inter-governmental agencies, in the karst science and conservation arena. These are already seeking data of the kind contained in the Australian documentation system. Further, the establishment of an Australian post-graduate program, specifically focussed on karst management, will be announced shortly and will also generate new kinds of demand.

Population Policy or Population Extinction. James Maxlow - SRGWA First published, "Caver's Chronicle" Vol.26 #2, November 1999

In commenting on Norm Poulter's article on Population policy and the ASF, published in Cave Queensland, 22nd ASF Biennial Conference Yeppoon, Queensland, January 1999, and reprinted in the Australian Caver No. 147, and the Caver's Chronicle 26/1, I would like to point out a geologically well known fact that geological history is littered with naturally occurring population explosions, documented in the rock record as fossils. An explosive increase in any species population is generally followed by a rapid decline and/or extinction of that species, also recorded in the fossil (or lack of) record. In ALL cases the particular species were no doubt blissfully unaware of their impending doom, and continued to procreate until such time as population either: exceeded the capacity of the environment to continue feeding them; a second species evolved to take advantage of that species, or; a natural or self imposed disaster decimated the species. Contrary to popular misconception the human species is NOT immune to extinction. We are human because we have mastered (abused) our environment to suit ourselves, to the exclusion of all other species. We supposedly have the capacity to dictate our destiny, and have generated an air of self-righteousness to the point where we consider it our right to procreate. To this we can add another misconception that we, the

human species, consider ourselves to be eternal.

In a very short time from now, certainly within our lifetime, we will all be forced into the stark realization that by doubling our global population, as Norm points out, we need to double our suburban sprawl, double our farm lands, double our water reserves, and double our production of raw materials, to name a few. Accompanying this we will double our crime rate, double our ethnic and religious intolerance, more than double global malnutrition, double the extinction rate of misplaced species, double our pollution, halve our eliminate our natural resources, halve or eliminate our remaining forests, halve and/or eliminate our remaining natural aquatic stocks, and significantly deplete or eliminate our natural energy resources. In light of the present global instability can any of you consider living with this? The moment population exceeds our ability to provide natural resources, energy, food, water, or combat disease we set in motion a rapid population decline, i.e. we PERISH. It's as harsh and stark as that. Geological history will be repeated at our expense and we will not necessarily survive to tell the tale

To me, the human species is too selt centered and entrenched in surviving in their own little world to be concerned about the global population crisis (i.e., what crisis?), let alone preserving our natural heritage. In the majority of cases the human species is controlled, and indeed dictated by self imposed religious and ethnic beliefs. Attempts at population control will be violently opposed because of our instinctual mistrust of our ethnic or religious neighbors, leading unwittingly to the point of genocide. Reality, fellow cavers, reality. Human pollution

What has this got to do with speleology and population policy, as Norm so rightly asks? For a very brief and insignificant interval of geological time a lot, but in the geological long term not a lot. The question really needs to be considered in view of whether or not the human species wants to survive, or will perish. If the Boranup Forest in W.A. is the last remaining strand of forest on Earth, human needs, I'm sure, will prevail to the detriment of the forest and speleology. Once we get rid of the human species caves will recover in time, flourish again, and decline naturally. But, by then there won't be anyone around to enjoy speleology anyway, except maybe the few surviving cave dwellers, so what does it matter?

I am sure the human species has the capacity to control and recognize imminent doom, although we are too busy searching the heavens for catastrophic extraterrestrial space debris to recognize problems on the home front as yet. In the mean time it matters a lot that WE take the time to preserve what little we have left, be aware that the human species IS vulnerable to natural extinction just like all the preceding fossil species, and be particularly aware that our very existence, let alone our spelean interests, IS degrading our caves faster than natural decline

Population policy, as Norm proposes, is vital and necessary to raise our speleo awareness. Speleo awareness must be raised within both SRGWA and the community, and fully appreciated by all, to the point of realization as to why we preserve, record, track-mark, gate, restrict access and so on. These are not inconveniences imposed on the young and eager by those of us who have been there, seen that. These are our only means of preserving what we have now, for the enjoyment of others to follow, assuming the human species survives. I for one am as passionate at surviving as Norm Poulter is, however, at what cost to the speleo-environment. Remember:

What we have now is (becoming much) less than we had yesterday.

James Maxlow Speleological Research Group Western Australia Inc. (SRGWA).

ACKMA AND ASF MEET!

Kent Henderson

The great and the good of the ASF and ACKMA!

ACKMA and the Australian Speleological Federation (ASF) Committees held a Joint Executive Meeting in Canberra on 8 October 1999, to discuss matters and concerns of mutual interest. The ACKMA delegation was led by our President, Brian Clark, and others present were Andy Spate (who acted as meeting chairman), Ernie Holland, and Kent Henderson. The ASF delegation was led by President, Peter Berrill, and included seven members of the ASF Executive.

The meeting opened with discussion of the roles of the two organizations, and while both were seen as having a different focus, it was clear there was much in common. A lengthy discussion followed on cave conservation and resource development, which canvassed a wide range of issues, and highlighted the mutual interests

of both organizations.

The matter of a joint fee structure was then discussed, an issue which has been bubbling for several years. It was noted that there was a significant cross-membership between the two organizations, and that while there were organizational difficulties to a joint fee structure requiring further consideration, it was unanimously considered that the two organizations had a unique and close relationship, which both would continue to foster. It was agreed that to further enhance this, a column would regularly appear in each organization's newsletter/journal. It was further agreed that the respective Liaison Officers (Ernie Holland – ACKMA, and John Dunkley – ASF) would jointly investigate the benefits of discounted cross-membership fees and issue a report in due course. In order to enhance liaison still further, it was agreed that the Presidents of the two organizations would each directly receive a copy of the other's quarterly magazine.

A detailed discussion then followed the matter of karst consultancies, and it was noted that the ACKMA Executive Officer was in the process of preparing a skills list data base. It was resolved that ACKMA would prepare a document on its approach to consultancies, and ASF would create its own skills list data base, whereupon the lists would be melded and distributed appropriately under the logos of both organisations.

The meeting then moved onto a discussion of cave documentation and the management of the resultant data. ACKMA's main concern was access to caver-generated data by management, while for ASF the main issues were appropriate credit for the work done in collecting the data, and the security of its subsequent use. It was generally felt that the concerns of both parties were eminently resolvable to everyone's benefit and satisfaction. It was resolved that ACKMA prepare a draft protocol on the collection and use of cave data, which could then be widely circulated through both organizations for input and resolution. It was noted that the final result would not be binding on any cave-related organization or management authority, but it was seen that such protocols had the potential to be very useful to all parties.

Joint initiatives in cave-landholder relations was the next item on the agenda. A number of possible joint initiatives were discussed, including management planning, joint submissions for project funding, and the importance of relations with private cave-landholders. No definite outcomes emerged on the matter, but further discussions will continue.

Discussion then turned to other joint actions. The desirability of a further joint executive meeting was unanimously supported. The ACKMA Executive Officer and ASF secretary would be asked to liaise on a suitable date in 2000, possibly in combination with the ACKMA AGM at Buchan Caves next June. The respective organization's 2001 conferences were then discussed, and ACKMA invited ASF to provide a keynote speaker for its Conference (which was accepted) and ACKMA was asked to suggest management topics appropriate for the ASF Conference and provide the appropriate speaker/s.

The prospect of a joint ACKMA – ASF Conference was discussed, and despite timing difficulties, it was resolved to continue discussions in this area. It was resolved that the ACKMA Executive Officer would write to ASF regarding changes to Conference scheduling to an interim 18 months schedule, with the aim to effect the conferences of both organizations in consecutive years, rather than the same year as at present. It was also resolved that each organization should have an official representative at each other's conference, to be available to represent it and answer questions. Each official representative will be given reciprocal complimentary registration.

The matter of the biennial Australian karst studies seminars were next on the agenda. The possibility of this becoming a third cave/karst –related organization was discussed. It was noted that the seminars were presently effectively organised by leading ACKMA members. The consensus of the meeting was that it may be appropriate for karst studies seminars to be joint ACKMA-ASF – sponsored and organized functions, with this to be discussed by attendees at coming seminar at Wellington Caves next February.

The final matter for discussion was the use by others of ASF Safety, Ethics and Minimal Impact Codes. It was noted that ASF had no objection to its codes being distributed and used by management organizations, and that ASF would issue a permission letter to appropriate bodies to that effect.

Overall, the meeting was harmonious and of great benefit to both parties. The need for future consultation and actions was widely recognised and seen as an ongoing commitment, auguring very well for future cooperation.

ASF and ACKMA committee members get down to business

Leeuwin- Naturaliste Karst Hydrobiological Management Study

Stefan Eberhard

LEEUWIN – NATURALISTE KARST AREA

The Leeuwin – Naturaliste karst area is located in the Margaret River region in the south western corner of Western Australia. The karst occurs as a ridge of dune limestone some 2 to 5 kilometres wide, and extending about 90 kilometres from Cape Leeuwin to Cape Naturaliste. Some 300 karst features have been recorded on the ridge, with about 100 of these features being caves. The caves in the area are renowned for their superb speleothems, bone deposits, and recreational caving amongst other values. The most famous cave is Easter Cave, some 8 kilometres long and one of the best decorated caves in Australia. A number of the caves are developed as show caves, which are one of the major tourism attractions in the region, along with the wineries, beautiful coastline, forest and other attractions.

CAVEWORKS

CaveWorks, which stands for Caves World of Research and Karst Science is a 1.5 million-dollar eco-tourism project and major environmental undertaking of the Augusta Margaret River Tourism Association (AMRTA), opened in December 1996. The AMRTA is a non-profit organization. Through CaveWorks, the AMRTA manages the show caves - Lake, Mammoth, and Jewel – as well as a small number of undeveloped caves, including Easter Cave. CaveWorks integrates caves interpretation, provides a visitor information service for the Leeuwin Naturaliste National Park; a centre for caves research in the region, an educational facility for schools, user groups and cave visitors.

CONSERVATION ISSUES

Hydrology

- Water levels in some caves have declined dramatically over the past 30 years, especially in Easter Cave, Jewel Cave and Labyrinth Cave (Webb 1988).
- The flow of the Augusta Waterwheel Spring has also declined (Appleyard 1989).
- The drop in water levels may affect natural karst system processes, and threaten communities of animals which depend on the water for survival.
- The cause of the drop in water table is uncertain, but may be related to climate, vegetation, fire history, or land use activities such as groundwater pumping.
- Further research is required to understand and safeguard the water resources and the water quality of the cave systems.

Biology

- The cave waters contain unique communities of aquatic species (mostly crustaceans) which depend upon the cave waters for survival (Jasinska 1997), and which are threatened by the declining water levels.
- The communities have been determined to be Critically Endangered by the Department of Conservation and Land Management (English 1999), and submitted for listing on the federal Endangered Species Protection Act 1992.
- Further research is required to ensure recovery of the fauna communities.

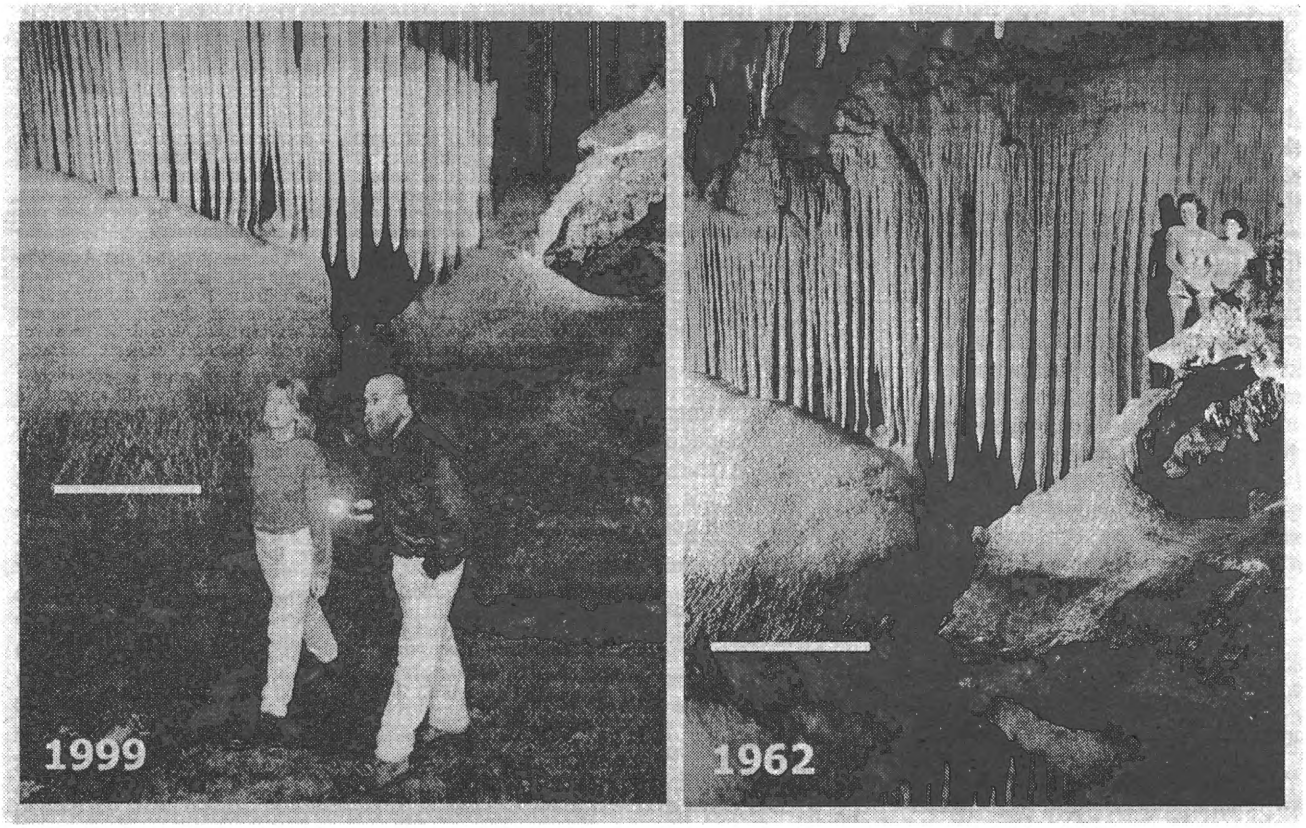

Figure 1: Jewel Cave lake has dried up. White line indicates water level circa 1962.

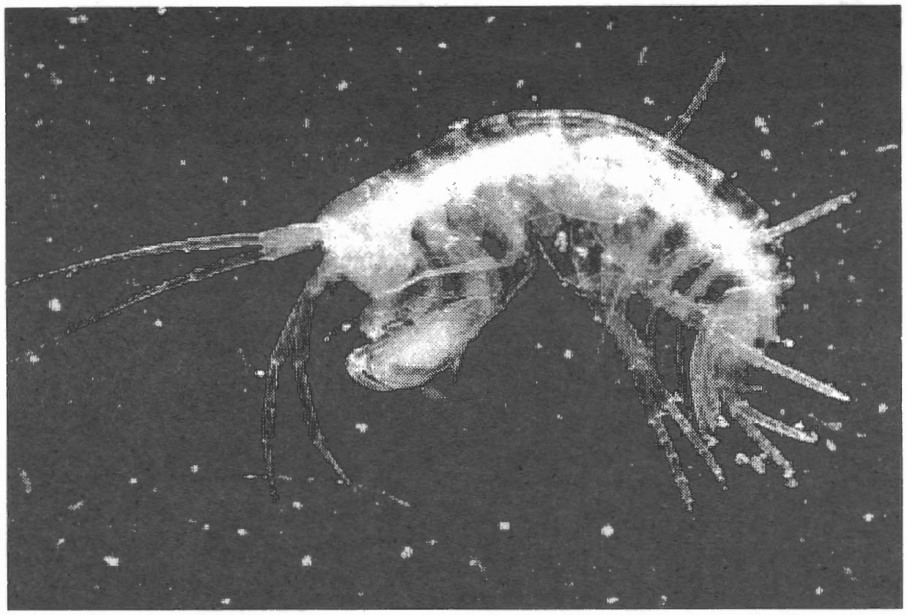

Figure 2: Blind white cave crustacean. Length approx. 10mm. Photo Stefan Eberhard.

RESEARCH

In July 1999 CaveWorks commenced a three year ($180,000) research project into the hydrology and biology of specific caves in the Leeuwin – Naturaliste karst. Stefan Eberhard has been appointed as Research Officer to undertake the study. The hydrobiological management study is specifically directed to improving the conservation of:

- Cave water resources and water quality;
- Subterranean aquatic fauna, including some of the endangered communities.

The study is based in the Gordon Reid Foundation Laboratory at CaveWorks, and aims to:

- Investigate the causes of water level decline in Easter Cave, Jewel Cave, and Labyrinth Cave.
- Investigate the distribution and ecological requirements of aquatic subterranean fauna on the Leeuwin – Naturaliste Ridge, including some of the communities which are listed as critically endangered.
- Publish results of the research, and develop management strategies for cave water resources and subterranean fauna.

The 3 year study will benefit cave conservation by:

- Improved understanding and management of water resources in specific karst catchments on the Leeuwin – Naturaliste Ridge.
- Improved understanding and protection of subterranean fauna, including some of the endangered communities.
- Improved interpretation of caves and karst to the wider community.

RESEARCH COLLABORATORS

Water and Rivers Commission

The Water and Rivers Commission (WRC) is cooperating in the study through provision of specialist guidance and services. A review group consisting of WRC experts has been formed to participate in setting research directions and to review progress. In addition, the WRC is providing analysis of water samples.

Murdoch University

Murdoch University Environmental Science Department is supervising the biological component of the study.

CALM

The Department of Conservation and Land Management (CALM) has endorsed the study and is supporting the research by providing resource information and access to caves.

RESEARCH PROGRESS

The first 6 months to December 1999 have involved:

- Collation and review of existing information.
- Investigation of catchment boundaries and inflow points of Lake Cave and Mammoth Cave karst drainage systems.
- Measurement of flow rates.
- Water sample analysis.
- Monitoring of water levels in Easter, Jewel and Labyrinth Caves.
- Producing a line survey of Easter Cave.

EASTER CAVE

A major focus of the study will be the declining water levels and endangered fauna communities in Easter Cave. The results of the study will contribute substantially to the ongoing protection and management of the cave. The production of a map is fundamental to the research and improved management of Easter Cave. The map will enable:

- The cave catchment area, which crosses several land tenures, to be defined;
- The distribution of critically endangered fauna communities to be defined;
- Appropriate catchment classification and surface management planning;
- Appropriate management of visitation in the cave.

The Western Australian Speleological Group have contributed to production of a line survey map of Easter Cave by loaning CaveWorks some of the original survey data. CaveWorks have now completed the line survey of the cave, but this has required considerable amounts of additional field work to orient the existing data, as well as further surveying to fill in gaps which are missing from the original data set. CaveWorks will be undertaking further work as required, so that the cave morphology can be adequately portrayed and interpreted.

WATER LEVEL FLUCTUATIONS

A major aim of the study is to reconstruct the history of water level fluctuations within Easter, Jewel and Labyrinth Caves over the past 40 years. Whilst there has been an overall decline of about 1.5 metres, there have been a number of significant rises recorded within that period, for example circa 1964 and 1974. The water levels also fluctuate annually in response to seasonal rainfall. The water levels may also be influenced by factors such as fire, logging and associated vegetation changes, and land use activities within the catchment such as pumping of groundwater. The study will examine these factors and develop a scientific model of the cave

system hydrology. The model will facilitate protection of the cave water resources and water quality, and protection of the endangered subterranean fauna.

The efficacy of the model is highly dependent upon the quality of the data used to derive it. Thus it is important to reconstruct the history of water level fluctuations with as much detail and accuracy as possible. This is where cavers can make an extremely valuable contribution to the study by providing previous records of water levels as recorded in photographs and field note books for example.

WANTED! – PHOTOS AND OLD RECORDS

Quite a few water level measurements have been made by cavers over the years, but only a few of these have been documented in the speleological literature (eg. Webb 1988).

- The study would be very interested in ANY water level readings taken within Easter, Jewel and Labyrinth Caves over the past 30 years, and which have not been published in The Western Caver.

Previous water levels may be accurately determined from photographs. Given the date of the photographs it will be possible to reconstruct the chronology and rate of water level fluctuations.

- The study would be very interested in ANY photographs taken within Easter, Jewel and Labyrinth Caves over the past 40 years.
- The reconstruction of the water level history and development of the model depends on obtaining as many data points (viz. photos/dates) as possible.
- ANY photos showing water, or dry sections previously known to hold water, are of interest.
- The date of the photo needs to be known – preferably day/month/year but approximate year is better than nothing.
- Photos or transparencies loaned to the study will be stored securely and returned promptly in undamaged condition. All costs will be covered by CaveWorks.
- Full acknowledgement in any publications or reports will be given to authors of photographs which are used.

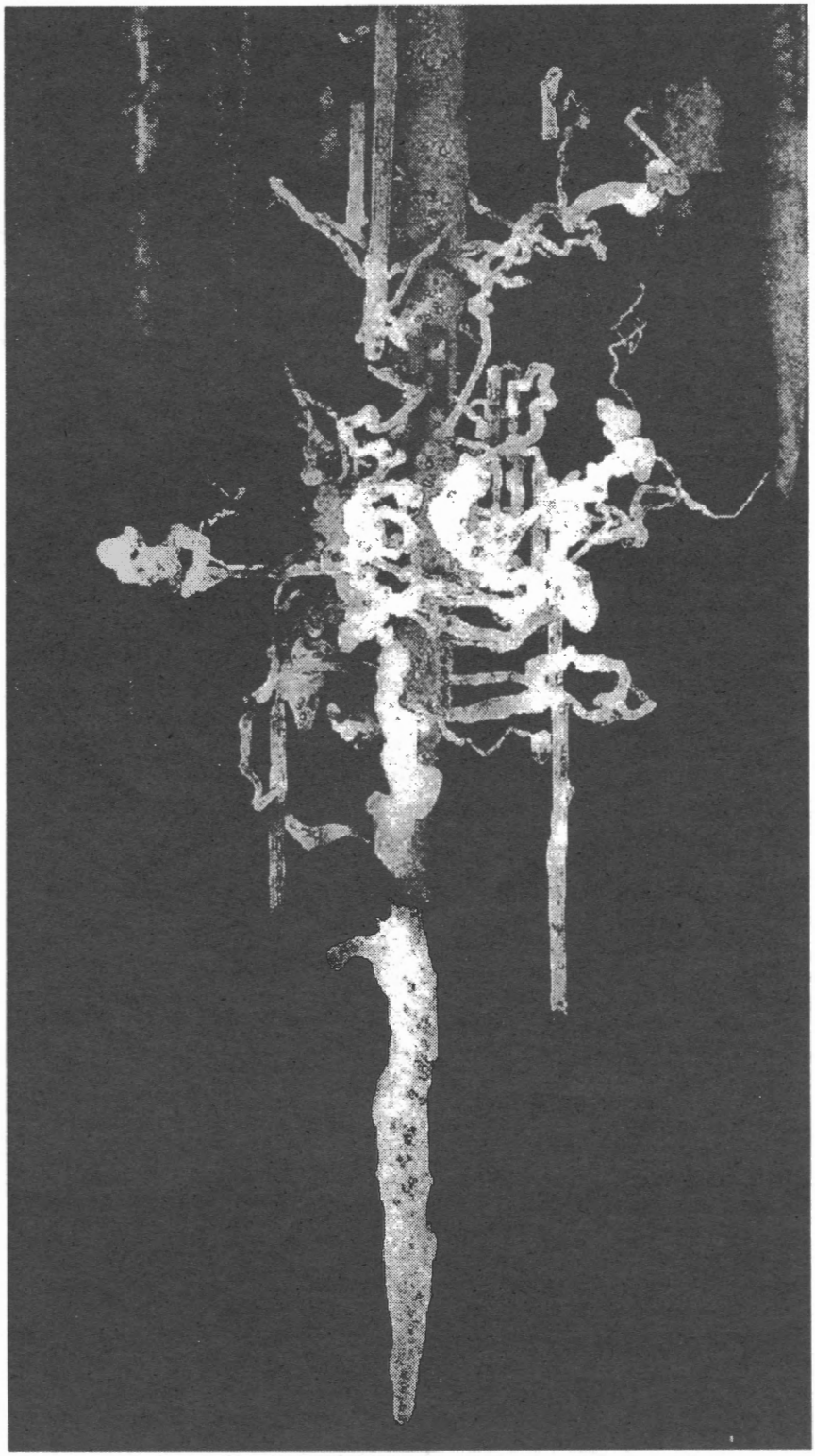

Figure 3 *Figure 3: Formation in the Gondolin Extension, Easter Cave. Photo Peter Bell.*

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Demise of the "Hook"

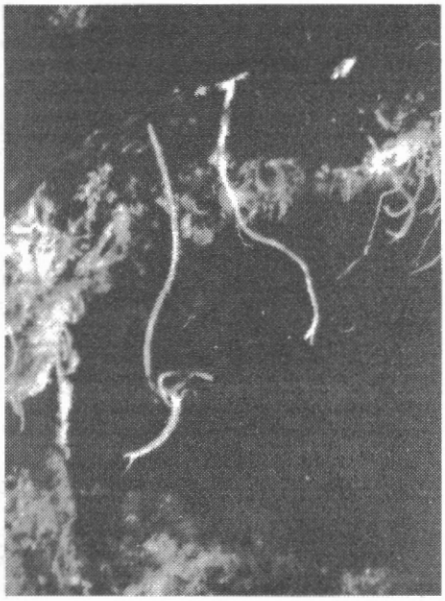
Norman Poulter OAM (SRGWA)

Way back in June 1997, I received a note from CEGSA member Bart Jansen lamenting the lack of protection for the "famous" halite decoration that greets visitors crawling into Mullamullang's [Easter Extension], Salt Cellars from the Coffee and Cream.

I speak of course of what could conceivably be called "The Hook", a spectacular halite extrusion in the shape of a hook that had "captured" a broken piece of halite in the curve of the hook. The decoration has been photographed many times and appears in the lower left-hand corner of page 39 of the "Mullamullang Cave Expeditions 1966" and as Fig. 1-10 on page 9 of "Caves of the Nullarbor" [1967].

I had seen "The Hook" for the first time in early 1972 when the only circuitous crawlway through the region passed a "safe" distance from it. Over the years, other visitors had created an unnecessary "short-cut" that passed very close to "The Hook" and other halite extrusions. Needless to say, the amount of halite decoration in this area diminished, but thankfully, "The Hook" survived.

Bart commented that "..... it was swaying in the breeze caused by people crawling past it. Its movement would have subtended a chord of 5mm or so. People going past may not realise its precarious attachment to the ceiling and accidentally cause it to 'bite the dust'. ....."



The Hook - photo Norm Poulter

"The Hook" was inspected during SRG's January 1998 expedition where it was noted that the decoration was indeed "swaying in the breeze", but this time not caused by people. The natural draught through the passages [for which the Nullarbor is really famous] could, and was seen to be causing the swaying. It was further noted that the feature's attachment to the ceiling was much smaller than its cross-sectional area lower down, making the decoration even more vulnerable to air movements. [Caver's Chronicle Vol.25 #1, pp14] Therefore, a recommendation was put to the SRGWA committee to [string-line] barricade the "short-cut" in order to leave a larger "protection zone" around the feature. This action was endorsed and carried out during April 1998 [Caver's Chronicle Vol.25 #1, pp 23] together with the installation of an explanatory sign nearby.

The Hook - another view - photo Lucinda Coates

However, when SRGWA again visited Mullamullang during September 1999 we found "The Hook" lying virtually intact on the ground with the barricades undisturbed leading us to postulate that the decoration finally succumbed to the cave's natural breathing. It's just another piece of decoration debris now. One could speculate that the feature's demise may have been accelerated by several years of visitors crawling too close to it along the "short cut", generating unnecessary eddy currents, but it will remain just that - speculation.

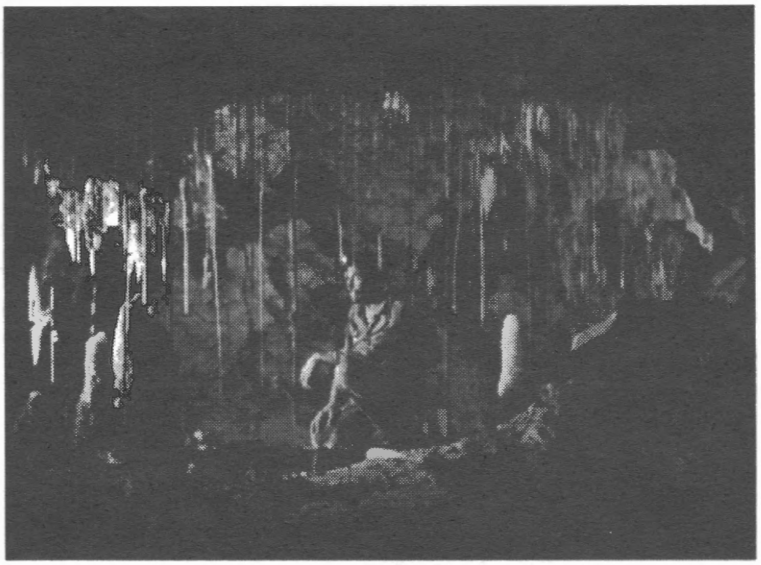
Sadly, "The Hook" is no more. Another beautiful piece of Mullamullang heritage has gone, relegated to memories, photo collections and the occasional publication. Maybe human visitation played no part in its demise, but its passing should sharpen our resolve to minimise the potential damage we could cause to this and any other cave we may choose to visit.

Cave Leadership Course

for the caves of the Leeuwin-Naturaliste Ridge

Heather Jefferies

1999 saw Edith Cowan University become the provider for the (Department of Conservation and Land Management) C.A.L.M. Cave Leadership course in W.A.



The caves of the Leewin-Naturaliste Ridge (Margaret River region of W.A.) are young caves of aeolian calcarenite; heavily decorated, and particularly fragile. Increased visitation over recent years both by cavers and members of the general public has seen a great deal of damage occur to many of these caves. The Department of Conservation and Land Management has been proactive in karst management in the region by drawing up what is, in essence, a three pronged attack to counter this increased visitation damage.

Firstly, a permit system was established, limiting the number of trip members, as well as numbers of trips into caves was devised. This has been running since the early 1990's with success. In order to increase compliance with this permit system, gating of many of the more accessible and popular caves in the region was undertaken.

Secondly, the recent appointment of a Cave Manager (Ann Wood) for the region has focused efforts on sound karst management. One of Anne's first tasks was to co-ordinate the track-marking of many of the more heavily visited caves, in order to decrease damage by groups, whilst maximizing the experience for these groups within conservation parameters.

The third "prong" has been the development of this Cave Leadership course. It is designed to ensure that all cave leaders who take groups into the caves designated available to the public, have attained a basic standard of both cave and group leadership. The objective of the course has been to modify the "in-cave behaviours" of leaders (and groups) in order to increase compliance with many of the conservation strategies undertaken within these caves. CALM has set a date of January 30th 2000, by which time all non-caving club leaders will be required to have completed this course, or lose their cave access. Caving club Trip Leaders are exempt from this process, in acknowledgement of their speleological experience, both theoretical and practical, gained during trip-leader training within the three caving clubs of W.A.

The Cave Leadership course is undertaken over three days; the course content has been fine tuned after feedback from a pilot course held early in the 1999, which was attended by both cavers and commercial operators. The course currently involves a theory day, which focuses on the specific topics of geomorphology of the region, the cave permit system, cave related palaeontology, archaeology, and zoology, cave conservation issues, group leadership, risk management, and accident protocol. This theory course is supported by an in-depth manual.

The theory day is followed by two practical days which involve visiting two caves each day, with an instructor modelling group leadership skills, and also focusing on specific cave details, and it is hoped that visits reinforce aspects discussed in the theory day such as conservation issues specific to each cave, track-marking, points of scientific interest etc.

The course ends with the participant completing a theory exam, however full assessment is not accomplished until the participant is assessed running a trip into one of the caves available to them on the permit system.

The Cave Leadership course is run within the framework of the A.S.F. safety guidelines, the MICC, and ASF Code of Ethics. No S.R.T. skills are taught on the course - participants wishing to be eligible to lead trips into vertical caves must first obtain the Ministry of Sport and Recreation *Abseiling Instructor* qualification. Participants wishing to be assessed on a trip into a vertical cave will, however, have their ropework assessed under a "best practice" framework by their assessor.

The course content has been (in the most) prepared by members of the three caving clubs of W.A. and is a credit to the hard work of the club members involved. The course itself is overseen by the Cave Leadership Assessment Panel, membership of which is drawn from each of the three caving clubs, and representatives of the commercial operators, community service organizations, and the Camping & Outdoor Education group of WA, and is chaired by CALM. Course fees are set to reflect the actual costs involved in running the course. Any profits recovered by the course provider are shared, with half going into course development, and half going into conservation of the caves of the region. CALM subsidizes some aspects of the course, including the course manual being provided free of charge to participants. The course provider until the end of the year 2000 is Edith Cowan University.

Whilst the development of this course will attract criticism from those who will highlight the negative aspects of regulation, CALM as the karst managers of the region have recognized the need to develop this multi-faceted plan in order to conserve and protect the caves of the region, and this Cave Leadership course forms an integral part of the overall plan.

Further information concerning the course can be obtained from;

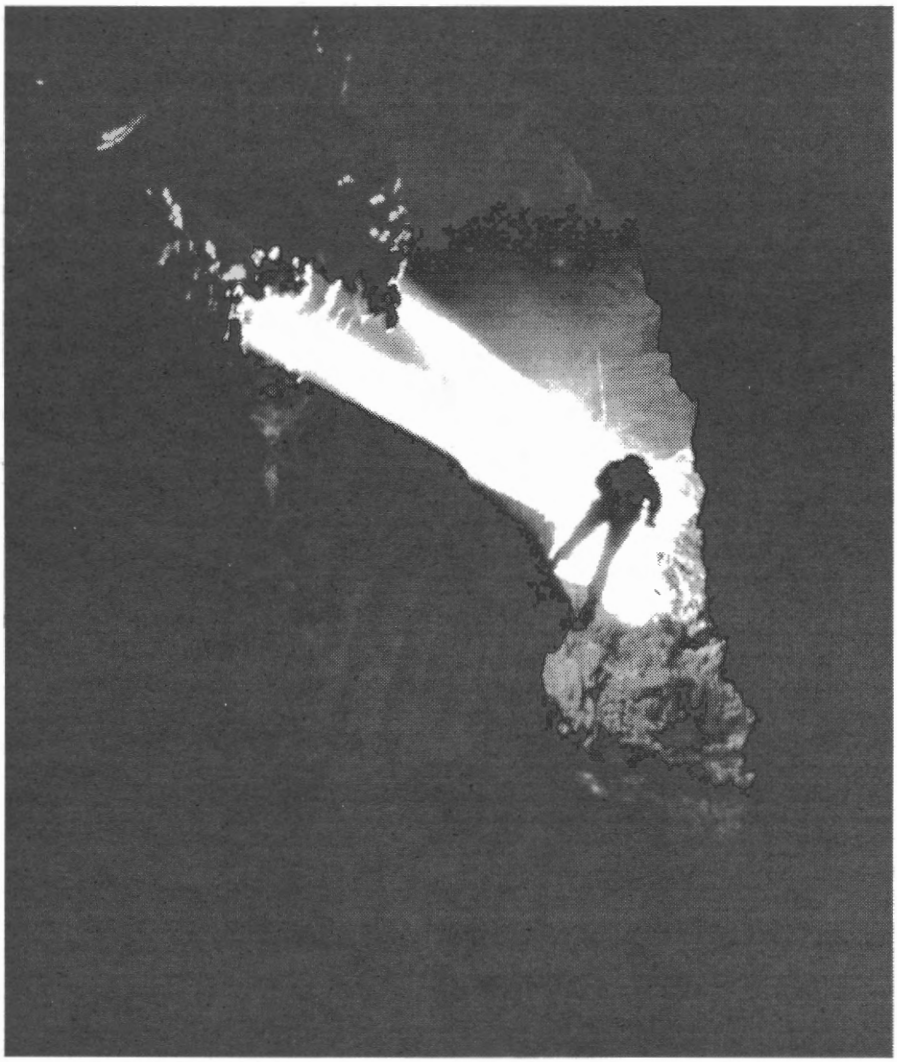
Dr Heather Jefferies (course co-ordinator):

[redacted]

JAVA 99 Speleological and Culinary Expedition to Eastern Java

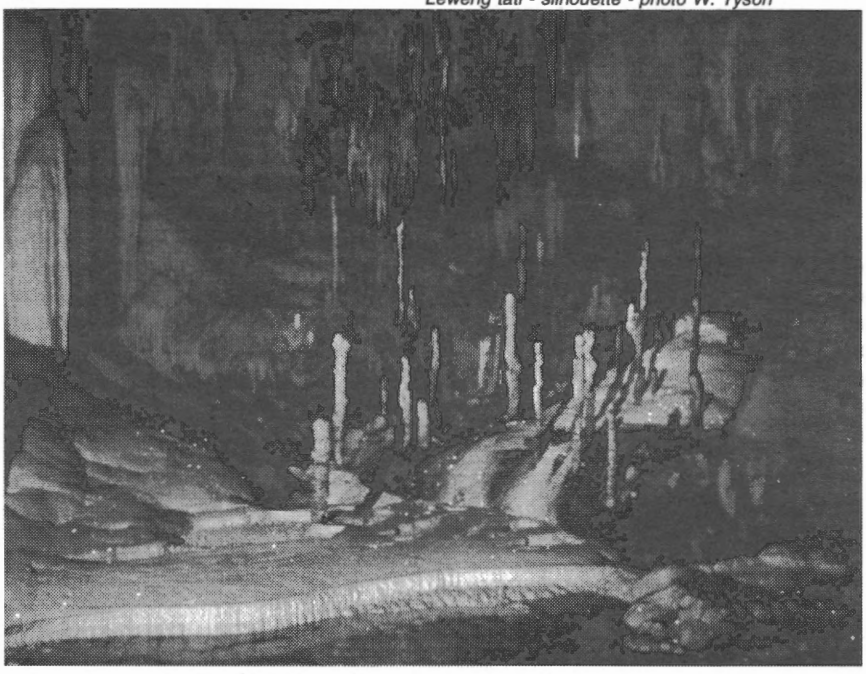
Heather Jefferies & Wayne Tyson

"What do you mean we have no seats on this flight - here are the tickets - we reconfirmed twice".the saga of Java '99 began with scenes reminiscent of every other caving trip I'd been on. I smiled a lot, laughed a lot, flirted a lot, and it seemed to work - 4 seats materialised for us on the flight from Jakarta to Yogya, with just 15 minutes to spare.



Leweng tati - silhouette - photo W. Tyson

Our expedition was based in Pacitan, a small town on the coast in eastern Java. Pacitan is central to the karst region of Gunung Sewu (transl "a thousand hills"), a spectacular region of cone karst which Wayne Tyson had previously run expeditions to in '84, '86, '90 and '92. One of the objectives was to push two leads in Leweng Jaran, an 18 km cave that the '84 trip discovered, but the main objective would be to continue surveying Leweng Ombo, a 6 km system first entered by the French in '82. Luckily, the French rapidly dismissed the cave as a lost cause when they got to the 1.6 km point. The French team very kindly handed Ombo over to the Australian team who pushed it to 6 km, until on the last day of expedition they were forced to leave it at big booming stream passage disappearing into the distance. Enough to give an avid caver nightmares for years until the next expedition. And hopefully when we got sick of endless long big spectacular systems, we would have time at the end of the trip for some prospecting of a region to the east of Pacitan.



New Section of Jaran cave found during '99 expedition - photo W.Tyson

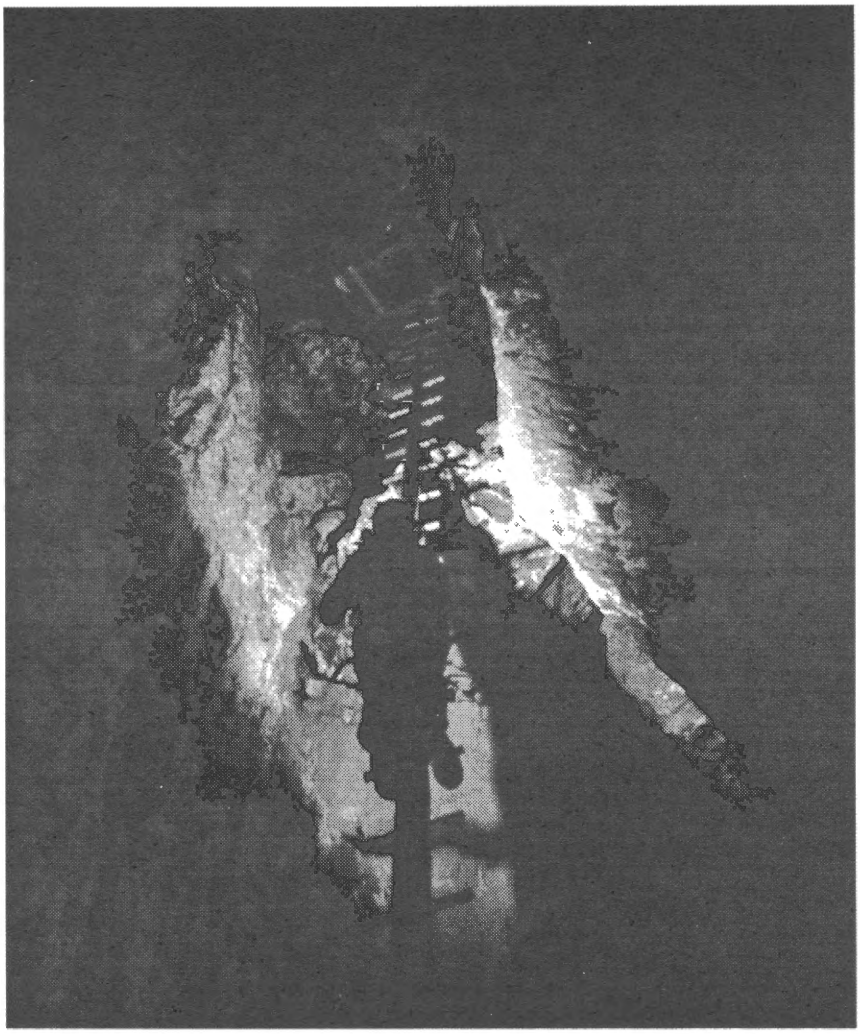
This trip consisted of a couple of "old hands" - myself & Wayne Tyson from Perth, Jim Campbell from Canberra (an ex-Java-ite of '84 & '86), and Carol Layton from Sydney (SUSS), who most recently joined us on a trip to Vietnam in '97. Added to this motley bunch were Phil Maynard from Sydney (SUSS), Neil & Gail Taylor from Margaret River (CLINC), and Jeremy Wilkinson from the U.K.

After a surprisingly trouble free arrival at Yogya, we were met by Dr Robby Ko, a dermatologist-entrepreneur who has an avid interest in speleology, facilitating expeditions and co-ordinating FINSPAC, the Indonesian caving body. Robby

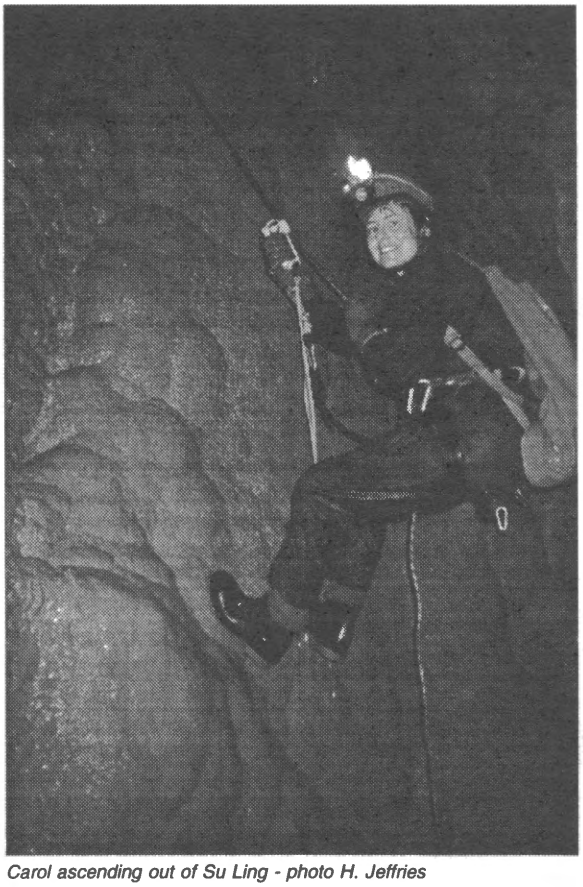
introduced us to our two drivers, and most importantly to our two Indonesian guides, Octave and Jack, who were both University students and gung-ho cavers. Jeremy met up with us first thing the next morning, and after the obligatory money changing, the team piled into two 4WD look-alikes and we headed off to Pacitan. A minor vehicle problem allowed us two hours to sight-see at Prambanan, an impressive Hindu temple built on the plains east of Yogya, between the 8th & 13th century.

We arrived in Pacitan relieved to find the weather less humid. After a quick comfort survey, we all lobbed in to the Bali Queen hotel, reportedly the best hotel in Pacitan.hot and cold running cobwebs, and cold running Mandi's. Accommodation for all ten of us cost a huge $35(AUS) per night! We settled in to Pacitan and savoured the many taste delights. The team decided to officially change the expedition name to "Java '99 Speleo and culinary expedition".

Over the next few weeks between frequent visits to the nearby Srikandi Restaurant, the group made a return visit to push and survey a few minor leads in the spectacular Luweng Jaran. Unfortunately one passage was now sumped blocking off a large northern part of the cave, and the larger prospective passage off Kerbau streamway went for just over 200m.



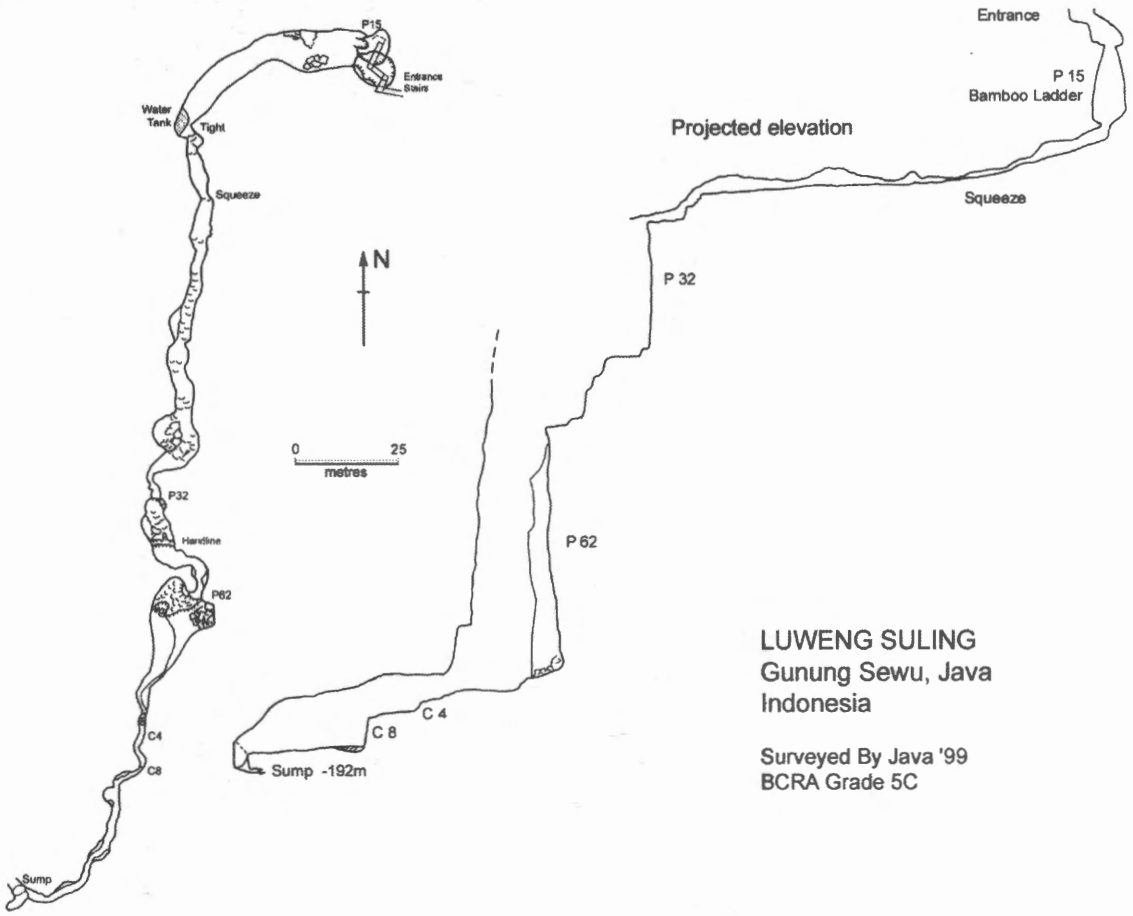
Bamboo entrance ladder, Su Ling Cave - photo W. Tyson



Carol ascending out of Su Ling - photo H. Jeffries

The main objective, the Kepon entrance of Luweng Ombo, was the next sight in our target. Three people immediately fell ill from over eating and left the physically draining rigging of this cave to the younger team members, who did an admirable job despite trying to blow up one of our guides with carbide. (He recovered but looked silly without eyebrows for the next few weeks). An initial roof sniff through a sump was followed by a long, meandering, sodding rift passage, which for inconvenience sake most of the time just less than shoulder width. The first pitch required bolting - a free-hanging 36 metre abseil down a smooth walled shaft, ending in the obligatory water. Several smaller pitches required rigging before the main, booming stream passage was reached. With Kepon rigged, the "statesman" team members made a recovery and went down to look at the first 35m pitch where an attack of the jelly knees struck once more. The more intrepid members pushed into the main stream (trying to drown our "replacement" guide, he might have had intact eyebrows, but he swam like a brick) and up to the far point of the cave where the survey and exploration stopped in 1992. As always with caves of this sort, members are lured onto the expedition with tales of big booming passages, warm water and new exploration. The last survey point in Ombo was all of these, and the team hurried on up the cave keen to see the further wonders this huge system would offer. 100 metres later the passage sumped. Bugger. The derigging trip was nothing less than a nightmare for all involved.

Feeling robbed of the major prize, the second option was taken - a grotty little stream passage narrow and muddy which, just to spite everybody, went for over a kilometre before it became too unpleasant to bother with any more. At least another km had

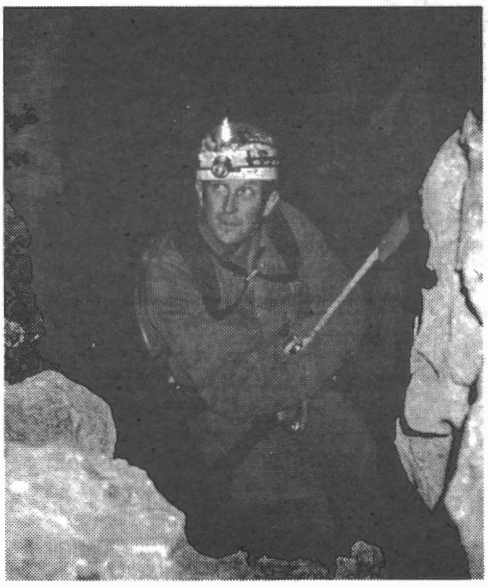


been added to Luweng Ombo, but not in the grand manner that we had hoped. Further narrow muddy leads await any foolish enough to push them.

Not far away, Jim Campbell had been busy with map, compass and phrasebook and had been led to a small shaft named Luweng Suling. This cave was used by the local villagers as the main water supply which was accessed by climbing down a 15 metre long bamboo ladder made from a single stalk of bamboo with rungs nailed through it at 30cm intervals. At first it was viewed with some scepticism however it quickly proved remarkably stable (more so than a modern aluminium ladder) and we were all eventually using it in preference to prusiking.

Suling proved to be a remarkable cave that kept pulling surprises on us. The initial 15 m entrance pitch with bamboo ladder led to an uninspiring crawling stream passage which eventually got big enough to walk upright in just before a 32 metre pitch. Extremely awkward to rig and sodding unpleasant on a bouncy 9mm rope, everyone was relieved to get down only to be confronted by a 62 metre pitch. Of course this was only found out after trying to rig it with a 50m rope and a pained cry from the bottom "It's too short!" Next day we took in the 100m rope just to make sure and of course (Murphy's Law) the cave levelled out and sumped soon after.

Many other minor sites were visited over the course of the expedition, including the recently opened Goa Gong tourist cave. Whilst important survey and management plans were being discussed by the team Karst Manager, Neil Taylor, the girls would hijack the guides and haggle over the price of jewellery and carved ornaments in the street stalls outside. Some good surveying was done an great shopping was done, and I could just see our excess baggage bill soaring. The tourist caves in this area are under huge pressure from visitors who have no idea that climbing all over the formations, snapping off straws, bathing in rimstone pools and smoking in the cave are simply destroying it. The district Governor asked us to write a management report which we handed over as we were leaving town on the last day. They may have run us out of town anyway if we had taken any longer.



Neil Taylor descending - photo H. Jeffries

Desperately in need of a hot shower, WT suggested a trip out to the hot springs north of Pacitan. Tourism is obviously flowing into this area for instead of the concrete lined pits that were the former baths, two impressive swimming pools now were nestled into the hillside. The pools are VERY hot, and the locals were shocked by the girls in cossies!

One of the last caves visited was the small Luweng Tati, an interesting cave with an 8 m dry stone wall at the

entrance. This lead to a boulder choke at the top of an overhanging 27 m pitch, rather spectacular as we managed to enter at just the right time of day to see a shaft of light from the entrance pierce down the pit. Unfortunately, from the bottom of that pitch things got desperately muddy, so we did what brave men do, and made the Karst Manager & the Pom go down "poo hole" - that was a 6 m pitch into more mud and gour pools. The stream continued a short way but sumped under formation. A quick trip back the next day gave some spectacular photos in the shaft of light.

A tourist trip back to Jaran (which involved finding a new small but spectacularly decorated section), and some body surfing at the beach were a good way to end off the expedition. We all carried excessive baggage home, both in our luggage and on our waists. We are currently planning a surface recce trip back to a different region of Java later this year, with a follow-up expedition listed for next year.

Edith Smith & The Edie Smith Award

John Dunkley and Peter Berrill

(first published in ASF newsletter no 42)

EDITH SMITH

Edie Smith was born at Forth in north-western Tasmania and was the granddaughter of James (Philosopher) Smith, at early pioneer who became famous as the discoverer of the Mt. Bischoff tin deposits. She was educated in Launceston and during World War II she joined the Women's Australian Air Force. After demobilisation she commenced a science course at the University of Tasmania majoring in geology. The Geology professor, S.W. Carey, had founded the first caving club in Australia - The Tasmanian Caverneering Club - in 1946 , and a number of staff and students of his department were active cavers. So Edie became interested in caving and joined T.C.C. in August 1948. She took an active part in caving being interested in it not only as a sport but also as a science. At Hastings she was the driving force behind the tunnelling project to provide a wet weather link between Newdegate Cave and the Binney Cave. This project was highly Successful and opened up much new ground for exploration Edie also had an interest in fossils, cave bone deposits and cave fauna. As well she took an active part in the running of T.C.C. She was on the Club committee for six years in succession, including one year as vice-president and three as treasurer. In August 1955 she was made an honorary life member of The Tasmanian Caverneering Club, the first member of the club to be so honoured.

Late in 1955 she moved to Canberra to work with Bureau of Mineral Resources. Here she became the firs woman member of the recently formed Canberra Speleological Society They soon discovered her qualities as a caver as well a person and in 1958 she became president of C.S.S. - the only women ever to become president of an Australian caving society. While in Canberra much of her caving was concentrated in the Wee Jasper area. She made her mark as a cave surveyor as well as a keen explorer. She was one of the first to pass through the water traps in Dogleg, but her best known exploit was the great link-up between Signature and Punchbowl caves by what is known as Edie ' s Tunnel. [Since cemented up by CSS members to stop vandals having easy access to Punchbowl cave].

In 1963 she returned to Hobart. Already her illness was as beginning to take its toll but with her characteristic courage she continued to take an active interest in caving. Her best known effort during this time was the digging of a tunnel in Junee Cave near- Maydena to by-pass the water-trap. Unfortunately, this was not successful. She also took the lead in beginning the construction of a new low-level track to Exit Cave in 1965. Although grey in the face and utterly exhausted by the effort she headed the party in thick scrub. She was unable to take part in later trips to this area but had the satisfaction seeing the project finished and sharing the excitement of new discoveries in Exit cave before her death. Even a few months before her death she took a party of scouts to Kin George V cave in Hastings to introduce them to the fascinations of caving. She died on August 29 1967, at the home a friend in Launceston. Edie will be remembered not only as an enthusiastic caver but also as a sincere and dependable friend by those who knew her. She had an inner strength of character which more than made up for her limited physical strength.

Perhaps our feelings are best reflected in the words of Joe Jennings who said of her "The other thing we shall always remember in Edie was the warm kindliness of her- her character which reached everyone but most of all young children and animals. Conservation of nature and natural beauty was another expression of the loving care she had for all around her. She was very firm but never fierce with anyone who looked like leaving a dirty campsite. The world is a lesser place without her and we shall not meet her like very often".

THE EDIE SMITH AWARD.

This award is intended as a tribute to a lady of high personal ideals who gave much of her life and energy to Speleology. However, the method of administration of the award has been designed to achieve far wider benefits for the cause. It will, for example, ensure that those who follow in Edie's footsteps will gain some recognition for their work. The award will carry her name but it will also act as a stimulus to those who work for speleology and reward them in a small way for their efforts.

But, most importantly, the Award will help to put Speleology on the map. It will help to give a proper status to caving and identify it with other similar endeavours which have already instituted similar awards.

Suitable publicity will attend the presentation of the award and will help to put Speleology in the public eye.

The greatest difficulty we have in gaining public approval of our aims is public ignorance. Most people have never heard of Speleology. Publicity, provided it is good publicity, will help to dispel public ignorance and establish the Science of Speleology in its rightful place. The 1967 Committee Meeting at Orange NSW took the following decision:

That an Award be established by the Federation to perpetuate the name of Edie Smith and to give recognition to outstanding contributions to Australian Speleology.

Bats, Caves and Cavers

Belinda Cardinal

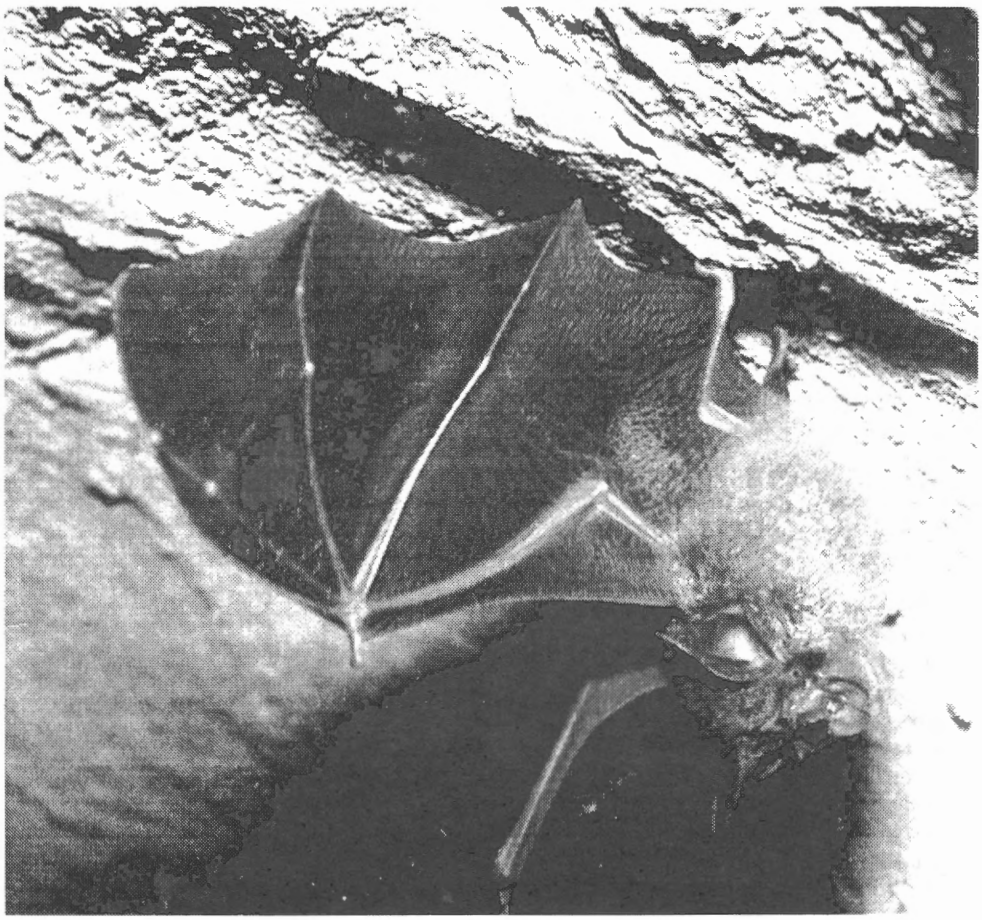
Cavers are constantly reminded of issues regarding the preservation of the cave environment. These are of vital importance and include issues such as touching formations or walking on flowstone, trampling of mudbanks, following marked paths and removing waste. Cavers are aware of these issues and generally 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.

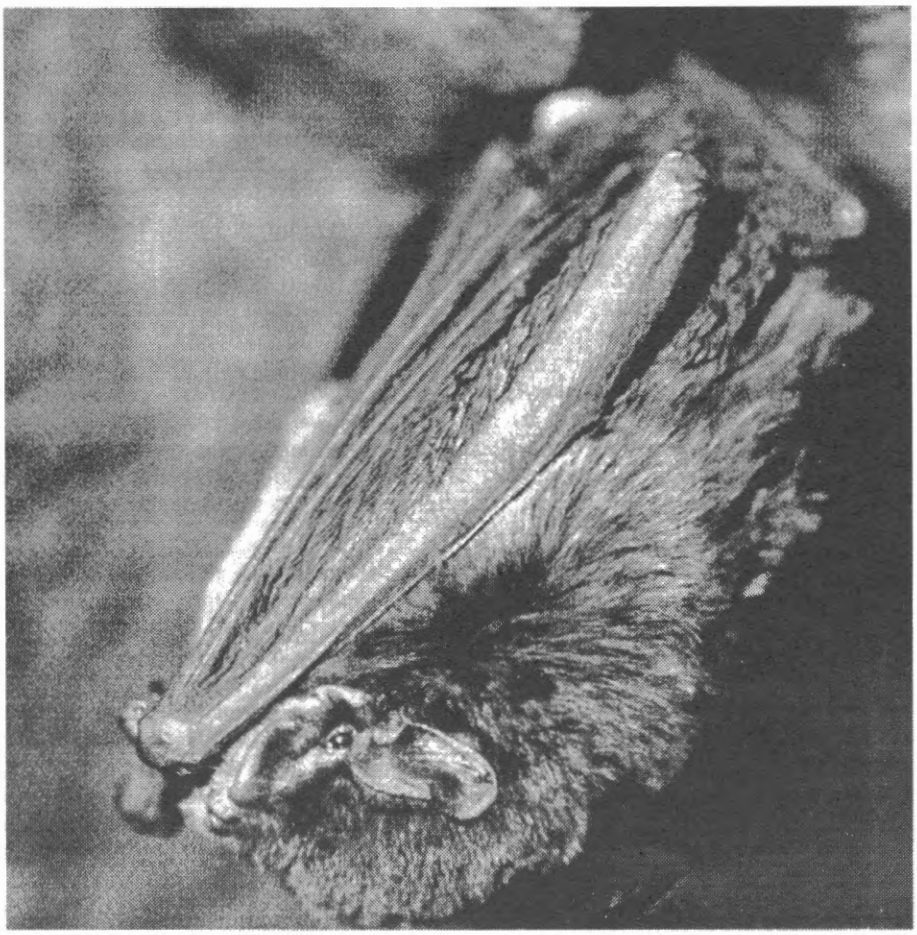
Disturbance of bats does not require extreme behaviours. Sounds such as voices, walking through still water or the scrape of packs is enough. Light also causes disturbance. Disturbance of torpid bats is of most concern. If torpid bats are encountered unexpectedly, disturbance can be minimised by making as little noise as possible. This



Eastern horseshoe bat in the Gloucester Caves - North of Newcastle - photo Garry K. Smith

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.



Bent-wing bat in Pilchers Hill Caves NSW - photo by Garry K. Smith

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. I 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 I have travelled extensively thoughout 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. I 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 agancy 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 s.

• Learning to identify different bat species is useful for cavers. This and 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 someones 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 Autralasian Bat Society for a starting point.

VRA Nav Shield 99
a caver and competitors report!

Joe Sydney

The NSW Cave Rescue Squad along with cavers entered three teams in this years 11th Wilderness Rescue Rogaine Competition held on 3/4 July 1999. This years event was held in the Tallowa Gorge area with the base camp being at an old disused airstrip near Wingello - NSW. Many will recall the name as it was an area devastated by bushfires in 1994 with the sad loss of 5 Regional Fire Services comrades.

Along with Cave Rescue members, speleological clubs also supported the VRA under the banner of the NSW Cave Rescue Squad. Squad and club members running in the event were:

Team 1 - Overnight

Joe Sydney - Highland Caving Group/SSS and NSW Cave Rescue Squad (Team leader)

Jason Moule - Highland Caving Group

Peter Bauer - Highland Caving Group and NSW Cave Rescue Squad, and

Scott Lloyd - NSW Cave Rescue Squad.

Team 2 - Overnight

Terry O'Leary - NSW Cave Rescue Squad (Team leader)

Kevin Coleborn - Blue Mountains Speleo Society

Ian Lynch - Blue Mountains Speleo Society, and

Glen Roberts - Blue Mountains Speleo Society.

Team 1 - Day

Angus Macoun - Rover Speleo Society

Andrew Perry - Rover Speleo Society, and

Andrew Forsyth - Rover Speleo Society.

All team members arrived on the Friday before the event which gave us time to think about plotting a course. As usual, the course looked difficult covering terrain from rolling hills, pine forests to rugged canyon type gorges covering an area of approximately 140 sq kilometres.

Old familiar faces from the various emergency services peered over our shoulders while we plotted wanting to know where we were going and wishing us well while jocularly reminding us of our disastrous yet amusing late return in 1997. The day team were happy with their route as they had to return by 5pm on Saturday as some of the team members had to go to a wedding that night. Team 2 were also pleased with their course which headed somewhere into the neck of Tallowa Gorge and up to the road which housed Radio check point 1. My team looked at the map, scratched their heads and gave up until early morning!

We all awoke to the sounds of officials organising the mornings activities. Not long after breakfast, I briefed all three teams ensuring they knew the rules and were adequately prepared for the duration. Closer to the start time, my team managed to put their heads together and sort out a course. Tension was high as eager teams paced the start area warming up for the run. Keith Maxwell briefed the teams and then they were off!

As usual, my team were not quite ready but we left soon after the brief. Taking the Spotted Gum Road, our first check point was No.30 in Running Creek scoring 30 points. Following Running Creek, we proceeded down stream to the main gorge junction at check point 50. Great, another 50 points.

At this point we pondered as to whether we should go for No.62 or continue into the gorge with all the high scoring check points. While pondering, three teams overtook us and followed the side creek to No. 62 away from the gorge. After a quick break, we decided to head down stream and rock hop into the gorge! After a kilometre, the gorge walls were noticeably higher and narrower but the creek was surprisingly very easy to walk along. Running to checkpoint 64 was a breeze as the river banks were wide with clean sand. Continuing down the gorge we overtook a team by going around the creek boulders and following the base of the cliff until check point 92. While walking to the cliff base we passed through some magnificent rain forest with huge birds nest ferns. From here on the going got tougher as we had to walk from creek level to up to the cliff base and back and forth. More cold water, more huge boulders and lots of that persistent lawyer vine.

By the time we hit checkpoint 90, we needed a break!. We had managed to cover about 8 kilometres through canyon country and were well ahead of schedule. We expected to reach the exit point at around 5pm and it was only 3pm. We bumped into Bob Golding from Police Rescue Zetland and we decided to have a short break with a hot lunch.

After 20 minutes it was time to head off and out of the gorge to checkpoint 63. Looking at the map it seemed like a reasonable way out - wrong! At one point as I was climbing up a rock face I grabbed what I thought was a decent hand hold on a two tonne boulder only to find it crashing to the floor of the gorge. My instinct was to yell 'below' and fortunately - there was no-one below me. Checkpoint 63 at the top of the canyon exit scored 60 points and then it was off to No.54. We passed a Wollongong SES team to later find that just after we passed them, their team had to pull out due to a member being injuried. It was getting dark by the time we reached No.54 (5:30pm) so we be-lined it up the creek to the main road. At the main road I was feeling pretty stuffed so we took a well earned break before heading off into the dark to Radio check point 1.

At Radio 1, we learnt that our second team also had an injury. Terry O'leary had pulled a hamstring so the team had to drop out. That left our team as the only Cave Rescue 2 day team left in the event. WICEN informed us that our Team 2 hobbled down to Delmonts Swamp for water as there was no water available at the radio check point. We had dinner at Radio check point 1 and soon after decided to head down the road and go for No.82. Pushing on down the road we found our second team camped up about 100 meter from the radio checkpoint. We had a good chat as we were concerned for Terry. He seemed alright and explained that they will get a lift back to the main base in the morning. It was about 9pm by now so we decided to trudge on and find checkpoint 82.

By this time we were feeling pretty tired and walked along the road in a zombie like manner. Trudging along the road, and having passed Delmots swamp, I realised that we missed the

turn off we were looking for. My immediate thought was that if we were that tired, then we needed to rest. The team wanted to go on but I decided it was time to head back to where Terry O'Leary's team was and have a break for the night. When we got there, the relief of taking the pack off was overwhelming. It was about 11pm by the time we crawled into the tents and into the comfort of our sleeping bags.

Joe Sydney (right) member of Highland Caving Group and NSW Cave Rescue Squad receives his 10 year attendance clock from the minister for Juvenile Justice - Ms Carmel Tebbut - photo Jason Moule

It was around 6:30am when I awoke and started to rustle the lads to awaken. Scott just laid there in his bivvy bag and decided not to get up until the last minute and take advantage of the warmth in his sleeping bag. Camp broke at around 7am and it was off to Radio checkpoint 1 to inform them of our intentions. Walking away from Radio 1, we found a track that lead almost all of the way to the next check point, No.65. That was the easy part and now it was time to find a break in the cliff line which seemed to block the entire gorge. Dropping into the pass, we fumbled and climbed our way down with shouts of 'I think it's this way, no it's not - go back!'. It was about half way down the break in the cliff we were thankful of bringing 20 meters of tape to use as a hand line as at that point it was most definitely needed.

The main creek was wide and rocky with spectacular views of high surrounding cliffs. Following the main creek was easy and the highest scoring checkpoint was just as easy to find. It sat on the south side of the creek on the river bank reflecting its colours in the sun. After a quick break we headed down stream until we reached the first major northerly break in the cliffs. Looking at the map it seemed horrifyingly steep! The first stage to the cliff base took an hour of hard slogging and climbing. At times it was sheer vertical! We saw a team of 4 trying to climb a narrow squeeze so we decided to find a way around them. Jason was just in front of me and climbing a rocky section when he yelled out to be careful of the 1 tonne portable hand hold. When I reached the top, I decided to knock it over the edge as it was just too dangerous to leave it knowing that more teams are following.

The tape was used again at the last section of the climb out. By the time we set it up, another two parties had arrived so we decided that in the interest of safety, that they should use it as well. By the time we got to the top of the first cliffs it was 11:30am so we decided not to go for check point 80. Continuing up it took another 45 minutes before we reached the top of the ridge and walked into Radio checkpoint 2.

It was an interesting site with teams started to pour in looking a real mess. One Police officer from Katoomba walked in with a massive split in his head after an argument with a rock while climbing out of the gorge. Another complained of his ankle being twisted. After a quick break it was time to hit the road again and trudge along the 7 - 8 kilometres of road.

It was reassuring to get back at camp at around 1:30pm to the sounds of 'nice to see you made it back this year! We checked in and then collapsed in a collective heap at camp.

As teams arrived, the score sheets were constantly undated. For quite some time we did not know where our teams were placed. Looking at the day team results, they did extremely well considering that they had to return early as they were off to a wedding that night. The day team managed to come 12th out of 50 teams with a score of 340 points.

We were taken by complete surprise when we discovered that the remaining overnight team had scored 720 points and came 16th out of 42 overnight teams. This meant that the team had won the VRA category. I'd like to congratulate Berrima as they had an impressive score of 440 points and Central Coast with 230 points. We honestly thought that Berrima would win it this year – again!

And of course mention should be made to the overall winners of the main event: 1st - Springwood Bushwalkers scoring 1600, 2nd - Shoalhaven Ambulance Team and 3rd - Kangaroo valley Bushfire Brigade.

Presentations for event winners were made by the Minister for Juvenile Justice - Ms Carmel Tebbutt. Presentations were also made to three long term participants of which one was myself. All three gratefully received a 10 year participation desk clock. Reflecting back over the years, I'd averaged out that if I walked 30-35 km over a weekend, then that's over 300 km of walking in wilderness.

Our extreme thanks to VRA Wilderness Rescue for selecting such a challenging course and conducting the event. Hopefully next year it will become Australia's' Premier rogaine event and not just for New South Wales. And not to forget the magnificent effort of all my colleagues in VRA Cave Rescue and the speleological community who supported the VRA in this years event.

For further information regarding the results of NAV99, they can be found on the following web site:

[redacted]

Joe Sydney

The NSW Cave Rescue Squad Inc

The Highland Caving Group

Australian Speleological Federation

CAVE RESCUE SERIES
No 3. - Kendrick Extrication Device

By Mark Somers (This article first appeared in Nargun)

In cave rescue situations, the confines of space make recovery and extrication, at the very least, difficult. People are hard to move when they cannot move themselves. Humans do not come with handles or other handgrips. As a result of their experiences, rescuers have developed various devices to aid them whilst undertaking a rescue.

Whilst there are many different types of devices on the market, for this article I shall concentrate on the Kendrick Extrication Device, also known as a KED, which is the device approved by the Victorian Health Department as standard on Victorian Ambulances. Other extrication devices such as the Russell Extrication Device, may also be used by other rescue services.

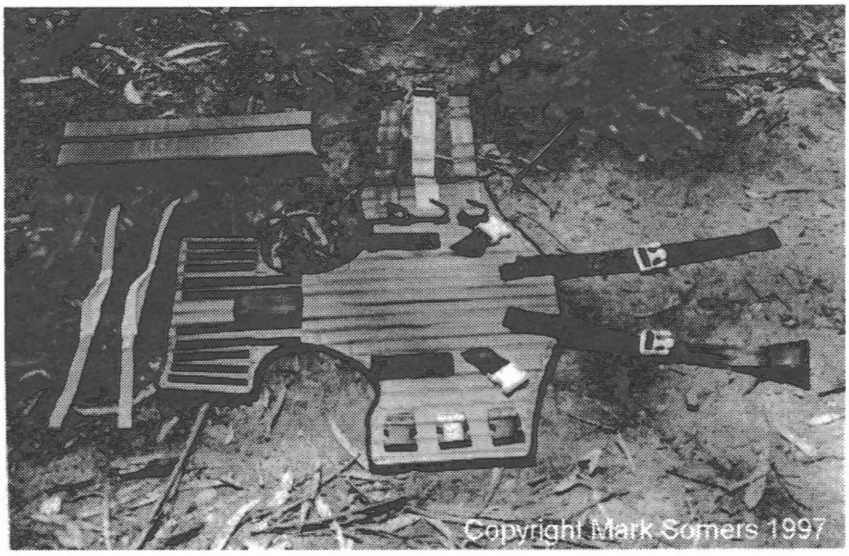


Figure 1

Originally designed for motor racing in 1978, the KED provides good immobilisation of the cervical and thoracic spine. It is designed to place three "handles" on a person and therefore make it easier to move then around. They have one handle behind the patients head and one on either side of their chest.

The KED can be used to raise or to drag a patient. They are rated at 226 Kilograms (500 pounds). They cost around $400:00. The take approximately five minutes to fit in ideal circumstances.

It can also be used for fractures of the pelvis and hip or other areas of the body where the patient is unable to help themselves. They are suitable for use on children.

The KED is constructed of vinyl coated nylon with plywood battens. They have two pairs of fold around flaps, one for the head and one for the chest. They have 3 color coded chest straps and two thigh straps with quick release snap lock buckles. Two straps are used to secure the patients head.

A large pad is may be inserted behind the patients head to ensure correct alignment (refer figure 1).

A KED weighs about 3 kilograms.

When used by Ambulance Officers, they will first apply a cervical collar (refer to last month's article).

The officers will then slide the KED in behind the patient. The color coded straps are applied. and the KED lifted to sit firmly under the patients armpits. The leg straps would next be fastened. Head pads and straps would be applied next to secure the patients head. Finally, all straps would be tightened and checked prior to lifting (refer figure 2).

The KED when used as a lifting or hauling device, should be used with great care as there is no head, arm or leg protection for the patient. Placing any type of helmet on the patient could increase the risk of moving or distorting the spinal column and thereby risking spinal damage. Exposed limbs could be at risk of injury when hauling. The use of the KED on the patient with a fracture of the upper leg should also be done with great caution, if at all.

Bearing these disadvantages in mind, the KED makes an ideal device to move a patient through a series of awkward moves, providing better mobility than larger stretchers, when the patient is unable to move themselves.

Figure 2

This piece of equipment, as with most rescue equipment, requires both theoretical training and hands-on practice prior to being used "for the real thing". Instruction should only be sought from persons qualified and experienced in its use.

In the next issue, I will discuss the use of the paraguard rescue stretcher.

Bibliography

Mark Somers is a Clinical Instructor with the Metropolitan Ambulance Service in Melbourne. Mark also operates Adventure Tag Along Tours, an outdoor adventure pursuits tour company and has had many years caving and rescue experience. He is a member of the Victorian Speleological Association.